ForesTalk

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ForesTalk

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Planning for the best use of B.C.'s forest and range resources requires input, not only from technical experts, but from the resource users themselves. That is why the Ministry of Forests has made a priority of fostering public involvement in planning for the integrated use of our forest and range resources.

Throughout the province the Ministry is establishing methods for ongoing consultation with the public at regional and local levels, and regular avenues of communication are being developed through which the public can contribute to the Ministry's normal resource planning and decision making processes. As well, a booklet and handbook are being developed to assist people in gaining access to the Ministry's public involvement program.

Tom Waterland

Hon. Tom Waterland, *Minister of Forests*

Province of British Columbia — Ministry of Forests

It's fall, and many home owners prepare to build up their woodpiles for the coming winter. Alder is a popular firewood, and the photograph of the stack of alder on this issue's cover is by Vancouver freelance photographer Jurgen Vogt. But while many people think of alder — and B.C.'s other hardwoods —as being of little value except for firewood, serious consideration is being given today to the commercial development of British Columbia's hardwood forests.

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What's Ahead For B.C.'s Hardwoods — Alder, poplar, birch, and the rest of B.C.'s hardwoods have long been ignored by the forest industry. But recently foresters have been taking a second look at these so-called weed species. by Jack Danylchuk 3

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WHAT'S AHEAD FOR B.C.'s HARDWOODS

by **Jack Danylchuk**

PHOTO: PETER ROSEN

PHOTO: JOHN THOMSON

Alder, poplar, birch, aspen, cottonwood and maple trees crowd the moist bottom lands from Sooke on Vancouver Island to Fort St. John in northern B.C. Long considered weed species, these B.C. hardwoods have been "hacked and squirted" into submission in the name of preserving the softwoods which are the mainstay of the province's forest industry. Recently, however, foresters have been taking a second look at this hardwood resource.

B.C.'s hardwood trees are concentrated in the northern part of the province, and the 14 million cubic metres of hardwood in B.C. account for 2.6 per cent of British Columbia's total forest resource. Whether alder (previous page) or aspen (below; bottom), hardwoods form just a marginal part of the B.C. forest economy.

Since the retreat of the most recent ice age, hardwood and softwood species have been engaged in silent competition for growing space throughout North America. In eastern Canada and the U.S., climate conditions allowed hardwood stands to become self-perpetuating; in British Columbia, softwoods continued to dominate the forest landscape. But when softwood forests are destroyed through fire or land-clearing, or are harvested, the faster-growing hardwoods can move in and dominate for the better part of a century. Today, hardwoods are a fact of forest life in many regions of the province.

The problem with British Columbia hardwoods is that not only are they at odds with the major forest resource and the industry built around it, but they are also at odds with the images evoked by the word. When one says "hardwood," the typical reaction is to think of mahogany, teak, ebony, oak — materials associated with rich panelling, elegant cabinetry and durable floors. In fact, "hardwood" applies to all deciduous trees found in B.C. The major species are red alder (western alder), western white birch, broadleaf maple, trembling aspen (white poplar), cottonwood and balsam poplar. This hardwood resource is concentrated in the north, but the various species can be found throughout the province. It is estimated that there are more than 14 million cubic metres of hardwood in B.C., but that is only 2.6 per cent of the total forest resource. Depending on one's perspective, that is either a little or a lot.

PHOTO: DOUG CONNELL

PHOTO: ROB HERCUS

British Columbia hardwoods could be used for everything from pulpwood to plywood, from laminated veneer lumber and panelboard to pallets and furniture. But regardless of species or their location, they are hardly used at all. Over the past five years, the modest hardwood harvest in B.C. has actually declined.

Problems with hardwoods begin in the forest. Some species, especially cottonwood, thrive in low, wet land, inaccessible for much of the year because of unfavourable ground conditions. Water content in some hardwoods is high, adding to transportation costs and drying time. Many of the logs, particularly aspen, contain rot and other defects, necessitating time-consuming and costly sorting operations which result in a high degree of waste. In most regions of the province hardwoods are scattered about in small stands or are mixed in with softwoods; this drives up the costs of logging. Because of these and other obstacles, logging companies and mills have been slow to respond to the Ministry of Forests' urging that the hardwood resource be better utilized.

Lack of utilization bears most heavily on the northern interior, where 85 per cent of the province's hardwoods grow. Aspen and cottonwood, along with birch, make up 33 per cent of the timber found in the eight-million-hectare Fort Nelson Timber Supply Area. Since the forest industry is making little use of these hardwoods, concentrating instead on familiar

softwoods, the Ministry has limited the allowable cut in the Fort Nelson area to reflect this under-utilization. Industry, for its part, claims that high costs and lack of market opportunities is the reason for passing over hardwoods.

The success of any northern hardwood venture awaits the development of manufacturing processes which make the fullest possible use of all the wood fibre, regardless of the trees' considerable deficiencies. The hurdles to be cleared in processing northern hardwoods are somewhat similar to those which confront users of alder, cottonwood, birch and maple on the lower mainland and Vancouver Island. Here, hardwoods are widely utilized in comparison to the north.

PHOTO: JOHN THOMSON

Red alder grows almost exclusively in the coastal region and has gained recognition as a dense, stable wood of attractive colour and grain pattern capable of taking a variety of finishes. It has been used traditionally as a structural component in upholstered furniture and is now being used by some manufacturers in place of more expensive material such as walnut. But with the exception of small custom operations, wood furniture manufacturing is an insignificant fragment of British Columbia's industrial picture. As a result, all but 25 per cent of the alder milled last year by West Coast Hardwood Ltd. of Burnaby, the province's only established hardwood lumber producer, was shipped out of B.C.

British Columbia's alder lumber production runs a poor second to that of Washington and Oregon. In 1977, mills in those two northwestern states produced 150 million board feet of alder; West Coast Hardwood marketed 2.5 million board feet the same year. At the same time, Washington and Oregon mills were able to market hardwood wood waste to pulp manufacturers.

"With a market for chips, the Washington and Oregon mills have a distinct advantage in pricing," says R.M. Carl of West Coast Hardwood. "They can underwrite a part of their milling cost with the price they get for the residue." And with a stable chip market, the northwestern U.S. mills can handle large volumes of hardwoods.

Carl's problems with disposing of lower grades and waste are shared by newcomers to the hardwood processing scene. W & D Hardwoods of Cumberland on Vancouver Island has been milling between 60,000 and 70,000 board feet of maple and alder a month since opening for business a year ago. Top grade kiln dried and planed lumber has found easy entry into the cabinet and furniture trade but, as W & D partners Dave Simmons and Walter Spruyt point out, that accounts for only 20 per cent of all the lumber milled.

"Since last November we've had trouble marketing lower grades," says Simmons. "Most of it is used in furniture frames, and the prices offered don't cover the cost of the logs. Sawdust and slabs are carried away by gardeners and people with wood stoves."

Another point which concerns R.M. Carl of West Coast Hardwood is the export of raw hardwood logs from Canada to Washington and Oregon. Under a "letter of refusal" system established by the provincial government several years ago, logging companies with hardwood supplies are required to first offer these logs to a B.C. mill. If the logs are refused, they become eligible for export. Such a system should be expected to protect the local sawmiller, but according to Carl it has a built-in loophole.

"The system is easily overcome by watering large bundle booms and then asking for our offer or refusal, knowing full well we cannot absorb the volume of small tops and the rapid succession of booms being watered," he says. "The logs then go to Washington mills and come back to haunt us as finished lumber."

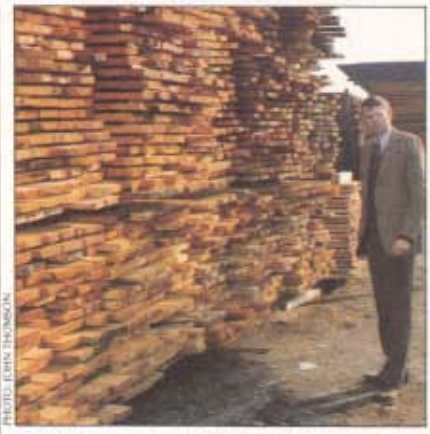


PHOTO: JOHN THOMSON

B.C.'s one established hardwood lumber producer is West Coast Hardwood Ltd. of Burnaby. The company mills alder logs into lumber (top) which is used mainly in the making of furniture. West Coast's R.M. Carl (above) notes that, unlike softwood mills which can market their sawmilling waste to pulp manufacturers, Carl's mill has no ready market for its residue. Disposing of wood waste is one of the biggest problems facing any would-be hardwood processor.

Cottonwood is a bright spot in British Columbia's hardwood picture. While most of this wood finds its way into plywood for the furniture industry, Scott Paper in New Westminster uses about 77 thousand cubic metres of cottonwood annually to produce over 28 thousand tons of pulp for use in sanitary paper products.

It has often been suggested that British Columbia softwood pulp producers combine hardwood chips with their operations, thereby providing a local market for hardwood chips such as those produced by West Coast Hardwood. However, E.T. Barnes of Prince George Pulp and Paper says the proposal is unworkable. Much of B.C.'s softwood kraft pulp goes into the making of paper in Eastern locations where hardwood pulp is readily available. The papermakers blend the high-strength B.C. softwood pulp with locally-produced lower-strength hardwood pulp to control the strength of the paper produced. Papermakers don't want the softwood pulp to arrive already mixed with less desirable hardwood pulp. Says Barnes: "Hardwood must be marketed as a pure fibre."

Cottonwood is a bright spot in British Columbia's hardwood picture. This species, harvested on the lower mainland and Vancouver Island, is being well utilized by the New Westminster operations of Scott Paper Ltd. and Weldwood of Canada. Most of this wood finds its way into plywood for the furniture industry. Weldwood sells some of its residue to Scott Paper, which uses about 77 thousand cubic metres of cottonwood annually to produce 28,500 air dry tons of pulp for use in sanitary paper products. Most of Scott's cottonwood supply comes from its own tree farms or from independent suppliers.

Scott uses cottonwood because of the high degree of natural brightness associated with fibre from young trees. The pulp, produced by mechanical means, requires only a single-stage, low-polluting, bleaching process that wastes little of the

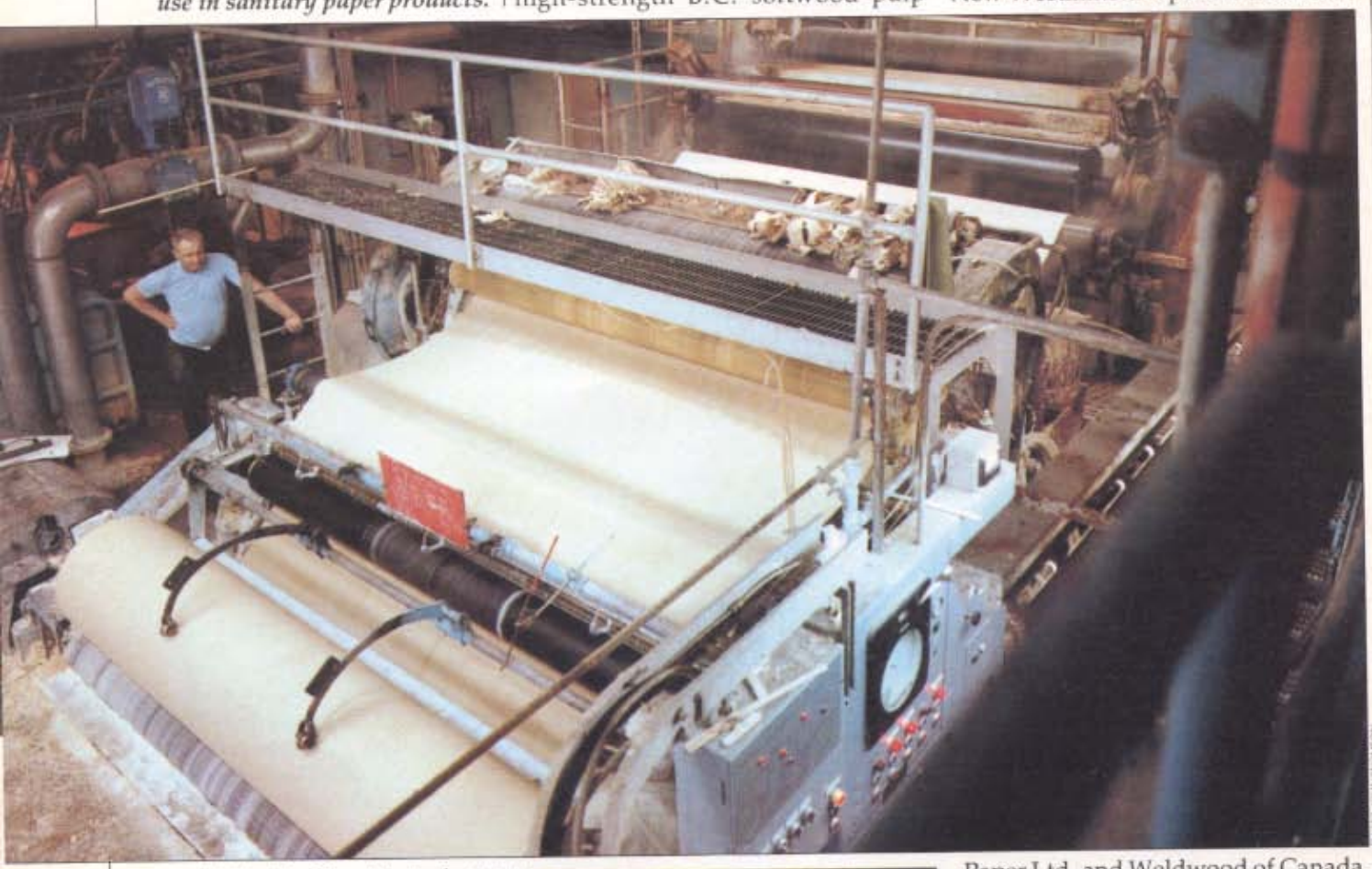


PHOTO: JOHN THOMSON

At Scott's New Westminster installation, sawn and split cottonwood blocks are loaded into grinders (right) on their way to becoming screened and cleaned groundwood pulp (above). Scott uses cottonwood because of the high degree of natural brightness associated with fibre from young trees. The company's attempts to use aspen in this process have been limited by the quality of the pulp produced.

PHOTO: JOHN THOMSON

fibre. Scott representative Al Riches says the company has relied on the Fraser Valley as a source of cottonwood, but is now going farther afield as traditional supplies dwindle. The company's attempts to use aspen in this process have been limited by the quality of the pulp produced.

The use of aspen in B.C. has pretty well been limited to the firewood pile. Although this poplar species has been successfully processed and marketed east of the Rockies and in the U.S. as wafer board and pallet lumber, commercial use in British Columbia has been negligible. Again, the dominance of softwoods and the distance from potential markets have been limiting factors.

This softwood dominance extends to plywood manufacturing, where softwood plywood products have found eager domestic and foreign buyers. While this softwood plywood industry was being developed on the coast, a panelboard industry using poplar developed in Saskatchewan, Ontario and the Eastern U.S. Poplars are chipped, glued and compressed into panels which are used for sheathing, sub-floors, fences and furniture.

The American Plywood Association predicts that in the next 25 years conventional plywood production will increase by 10 billion square feet annually, and wood-based structural panels by 20 billion square feet. The question is whether B.C.'s hardwood resources in northeastern B.C. could be developed to share in this predicted expansion.

Don Grant, former Ministry of Forests Regional Manager in Prince George, observes that to date, use of the northern hardwood resource has been of a limited and experimental nature. In McBride, one company is using birch to make two-by-fours from which sills, door frames and mouldings are made. Another company in Prince George is experimenting with trial hardwood shipments to Japan. Fort Nelson companies are also conducting experiments with aspen lumber and veneer, and Forintek Canada Corporation has run tests on producing hardwood laminated veneer lumber.

Regional Manager Grant concludes: "Unless and until the situation changes as a result of a significant change in market demand, or because of a technological break-through, any Ministry incentives to industry to harvest northern hardwoods are likely to prove ineffectual."

PHOTO JOHN THOMSON

While most spokesmen for the forest industry and the Ministry of Forests hold out limited hope for any immediate commercial development of B.C.'s hardwoods, Dr. Paul Thomas of Econotech Services Limited of New Westminster believes his company, together with Sylvatech Industrial Corporation, has come up with a solution to the problems of economically processing this hardwood resource. Econotech has developed a technique which can make use of almost any quality of wood to produce panels and structural members. It involves crushing (rather than chipping) the logs into long fibrous strips which are then glued to form useable building materials.

"The process can use a broad range of raw materials, and that will keep prices down," Thomas says. "Residue is a major problem with much of the available hardwoods. Unless a manufacturing process can use trees in almost any condition, much of what is cut is wasted or goes for firewood." Thomas says the company hopes to be able to announce government backing for a substantial production facility in the immediate future.

If Econotech's plans are realized, this might prove to be a breakthrough in the current impasse facing the B.C. forest industry in its efforts to utilize hardwoods. It is clear that unless markets and processes are established to deal with all qualities of hardwoods and with mill residues, B.C. hardwoods will remain marginal participants in the province's forest industry.

PHOTO JOHN THOMSON

Because hardwoods typically contain a number of defects, much of what is harvested commercially today either is wasted or goes for firewood. In an effort to overcome this waste problem, Econotech Services Ltd. of New Westminster together with Sylvatech Industrial Corporation, developed a technique that crushes rather than chips the hardwood into long fibrous strips which are then glued to form usable building materials (above).

COLLECTIONS

KRAFTY MARKETING

Bleached kraft softwood pulp is easily B.C.'s major pulp-and-paper product. It looks like a cross between cream of wheat and soggy wool, but this versatile, chemically-made pulp is the base for those paper products that have to be strong — envelopes, printing paper, tags, tissues and other fine papers. The more run-of-the-mill paper products, from telephone books to milk cartons, are made from semi-bleached kraft pulp mixed with other pulp types.

The province's 17 bleached kraft pulp mills produce more than 8 per cent of the world's supply. Over three million metric tons were shipped to world markets last year; that's enough to fill a 150-boxcar train every day. As a matter of fact, most of the pulp shipments to the United States (about a third of the total kraft pulp exports) are by rail. For easy handling the pulp is dried and baled in sheets. All overseas shipments are by freighter, with Europe taking about 40 per cent of this amount, and Japan around 15 per cent.

On the other hand, most of the *unbleached* kraft pulp made in B.C. stays in the province, where it is made into kraft paper and paperboard in B.C.'s four kraft paper mills. Linerboard and sack kraft made in B.C. are known for their high quality and are in great demand in world markets. So if you happen to be shopping in a West German supermarket, chances are your grocery bag was made in B.C.

Do you know any interesting facts about forests? Don't hold them back. Collections deals with anything from machinery to forest products and uses, from unusual facts and interesting people to forest legends. We invite you to contribute. Mail submissions to: ForesTalk — Collections, Information Services Branch, Ministry of Forests, 1450 Government St., Victoria, B.C. V8W 3E7. Information should be brief, accurate, and sources included where possible.

MARTIN ALLERDALE GRAINGER (1874-1941)

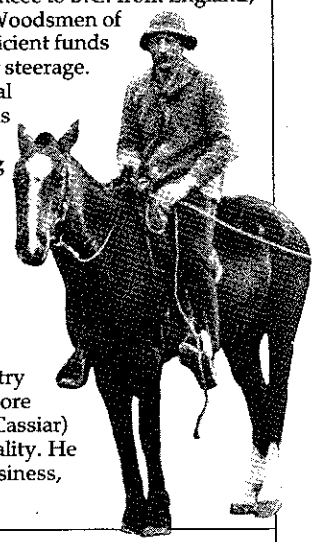
CHIEF FORESTER (1917-1920)

As one of the delegates to the 1920 British Empire Forestry Conference was being presented to King George V at Buckingham Palace, the Monarch noticed that the man was wearing moccasins. But this particular choice of footgear was not considered to reflect any lack of respect; it was common knowledge that the Chief Forester of British Columbia always wore moccasins. The man was Martin Allerdale Grainger, sometime miner and logger, journalist and novelist, and eventually one of B.C.'s founding fathers of forestry.

Born in London, England in 1874, Grainger graduated from King's College, Cambridge in 1896 and promptly joined the Klondike gold rush. Making it only as far as the Cassiar district of northern B.C., he backpacked supplies for the Hudson's Bay Company and crewed on the Stikine riverboats.

At the outbreak of the Boer War in 1899 Grainger made his way to South Africa and enlisted in Lord Roberts' Horse cavalry unit. After the war he was engaged in a wide variety of pursuits, including placer mining in the Cassiar, handlogging, journalism, teaching mathematics, and running a jujitsu school in London.

Once, in order to raise money for passage for himself and his fiancee to B.C. from England, Grainger wrote a novel about logging on the west coast. Entitled "Woodsmen of the West," the semi-autobiographical work provided him with sufficient funds to allow the future Mrs. Grainger to travel first class. Grainger went steerage.



Somewhat by chance Grainger became secretary to the first Royal Commission on Forestry in B.C., which carried out its investigations between July 1909 and November 1910. He was well suited to the task and devoted his energies to gathering information and drafting the report of the Commission. During 1911 he was largely responsible for writing the Forest Act, which when passed in 1912 created the B.C. Forest Branch and laid the foundations for forest administration and management.

In the fledgling Forest Branch, Grainger assumed the part of Assistant Chief Forester in charge of the Records Office. H.R. MacMillan was B.C.'s first Chief Forester, and Grainger succeeded him in 1917. During his term in office Grainger infused the Forest Branch with an *esprit de corps* and was a well-known figure in forestry circles, both here and abroad. A health food devotee who always wore moccasins (a result of frostbite during his backpacking days in the Cassiar) Grainger was a tireless worker possessed with an engaging personality. He resigned as Chief Forester in the fall of 1920 to enter into private business, and went on to live another 21 active years.

A Puzzling Tree

You see it in front of homes in Victoria and Vancouver, about 10 to 15 metres high, its long drooping branches ringed with overlapping green spikes. Most people call it the monkey puzzle tree, and it's otherwise known as the Chile pine (*Araucaria araucara*). On the Andean slopes the Chile pine grows all the way up to the snow line, doing especially well in a bed of volcanic ash. Introduced into England in 1785, the Chile pine adapted easily to the northern climate, unlike many other tree species brought back from the southern hemisphere. So many were planted that they became as "thick as TV aerials in the suburbs of late Victorian England." The tree's exotic look obviously also appealed to early B.C. homeowners, although, sniffs one writer, the Chile pine is "most unsuitable" for suburban gardens.

As for its nickname, one touch of a monkey puzzle's branches confirms the Englishman's comment: "It would puzzle a monkey to climb it."

JOE MONTFERRAND

MOVE OVER, PAUL BUNYAN

Paul Bunyan may have been the hero of lumberjacks from Maine to Michigan, but to the French Canadian *bucherons* (loggers) the big man of the woods was Joe Montferrand. Only Joe was for real.

Born in 1802, Joe Montferrand worked the logging camps up and down the Ottawa Valley in the 1820s and 1830s, at the height of Canada's square timber trade with England. Because of his size, strength and his fighting skill, Joe soon became a legend around eastern Canadian lumber camps. A boxing champion from the age of 16, he once knocked out the champ of the British navy.

Many stories were told of his tussles with the "shiners", the Irish navvies of Bytown (Ottawa) who built the Rideau Canal. Once he took on a gang of 150 shiners, swinging one of them like a club to mow down the others. But it is said that Joe only fought to repay insults to his people and himself. Like any self-respecting *bucheron*, Joe visited the bars and flirted with the girls (although he didn't drink much and apparently was quite religious). One of his smaller feats was a jump-kick that left his bootmarks on the ceiling beam of a bar.

Joe Montferrand died in Montreal in 1864, soon after marrying and having a son. His name was already legend in the U.S. where he was known as "Joe Muffraw." Who knows? Maybe one night in a Michigan lumber camp a creative story teller changed Joe Muffraw to Paul Bunyan, and . . .

This is going to hurt me more

In many old-world cultures a woodcutter wouldn't fell a tree without first asking its permission, or pardon. This ritual, which persisted in backwoods Austria and Bavaria until the turn of the century, is a remnant of an earlier belief that trees contained living spirts; to harm the tree would injure the spirit. An old English report claims that when an oak tree is felled, "it gives a kind of shriekes or groanes, that may be heard a mile off, as if it were the genius of the oake lamenting. E. Wyld, Esq., hath heard it severall times." In some places it wasn't enough to ask permission before cutting: the tree-spirit needed a small offering or else it would bring misfortune on the woodsman.

Our forbears in Japan and Bulgaria seem to have given fruit trees quite the opposite treatment. To get the tree to bear fruit, one man would threaten it with an axe, asking if it intended to produce fruit that year. Another man, sitting in the tree's branches, would answer on its behalf, promising to yield a crop if the axeman didn't harm it.

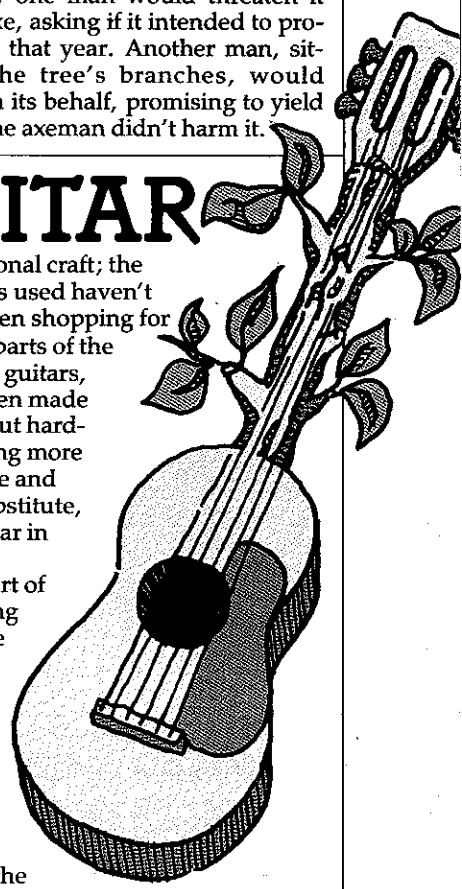
Zaps ON THE MAP

Unlike their predecessors who stood watch all summer long on mountain-top lookout towers, the three lightning spotters who recently went on duty in the Kamloops Forest Region aren't likely to get lonely. That's because the newcomers are electronic — the last word (almost) in detecting forest fires.

First tested in Alaska four years ago, this lightning detection system can pinpoint a lightning strike just about everywhere in the Kamloops region, as well as in parts of the Cariboo and the Kootenays. A strike shows up on a map at the master console installed in the Forest Region headquarters in Kamloops. The detectors can also tell how strong the strike was. In a full-fledged lightning storm the machine goes mad, flashing like a hot pinball machine as it instantly records each strike.

With this immediate information at its disposal, district fire protection staff will be able to cut down considerably on the time needed to get to the site of a lightning strike. There's one more refinement needed, however: at present the detectors can't report on the state of the ground fuels, so it can't tell whether a lightning strike actually started a fire. Maybe that will always need the human touch.

PICKING A GUITAR WOOD



Guitar-making is a traditional craft; the tools, methods and woods used haven't changed in centuries. When shopping for the seven or eight woods that make up the different parts of the guitar, the craftsman gets very picky. In fine classical guitars, the backs and sides of the sound-box have always been made out of Brazilian rosewood, a rich-grained, resonant but hard-to-work-with species; modern guitar-makers are using more and more East Indian rosewood, which is more stable and less brittle. Honduras mahogany is a second-best substitute, and for cheaper guitars, maple and walnut are popular in North America.

For the top of the guitar box — the most visible part of the instrument — it's important to pick a good-looking wood grain. European spruce is the traditional choice for guitar tops, while the fingerboards usually have been made of Gabon or Makassar ebony, extremely hard woods that will stand up to decades of hard wear. For the neck, Honduras mahogany is the guitar-maker's choice because of its strength and stability.

In such a tradition-bound craft, it is surprising to find that B.C. woods are establishing a place in the guitar-making market. Old-growth spruce from the Queen Charlotte Islands and Alaska has been the most sought-after material for guitar tops, and B.C. red cedar is also in demand. It seems these species yield a straight vertical grain, even and close, just what the craftsman wants for looks and stability.

Another B.C. wood that has found favour with instrument-makers is broadleaf maple. For the carved or arched backs of the violin and the jazz guitar, B.C. maple has proven "freer" — less dense, easier to carve, more resonant — than eastern maples. And makers of flamenco guitars and Appalachian dulcimers are turning to B.C. yellow cedar as an alternative to the traditional Spanish cypress used for the backs and sides.

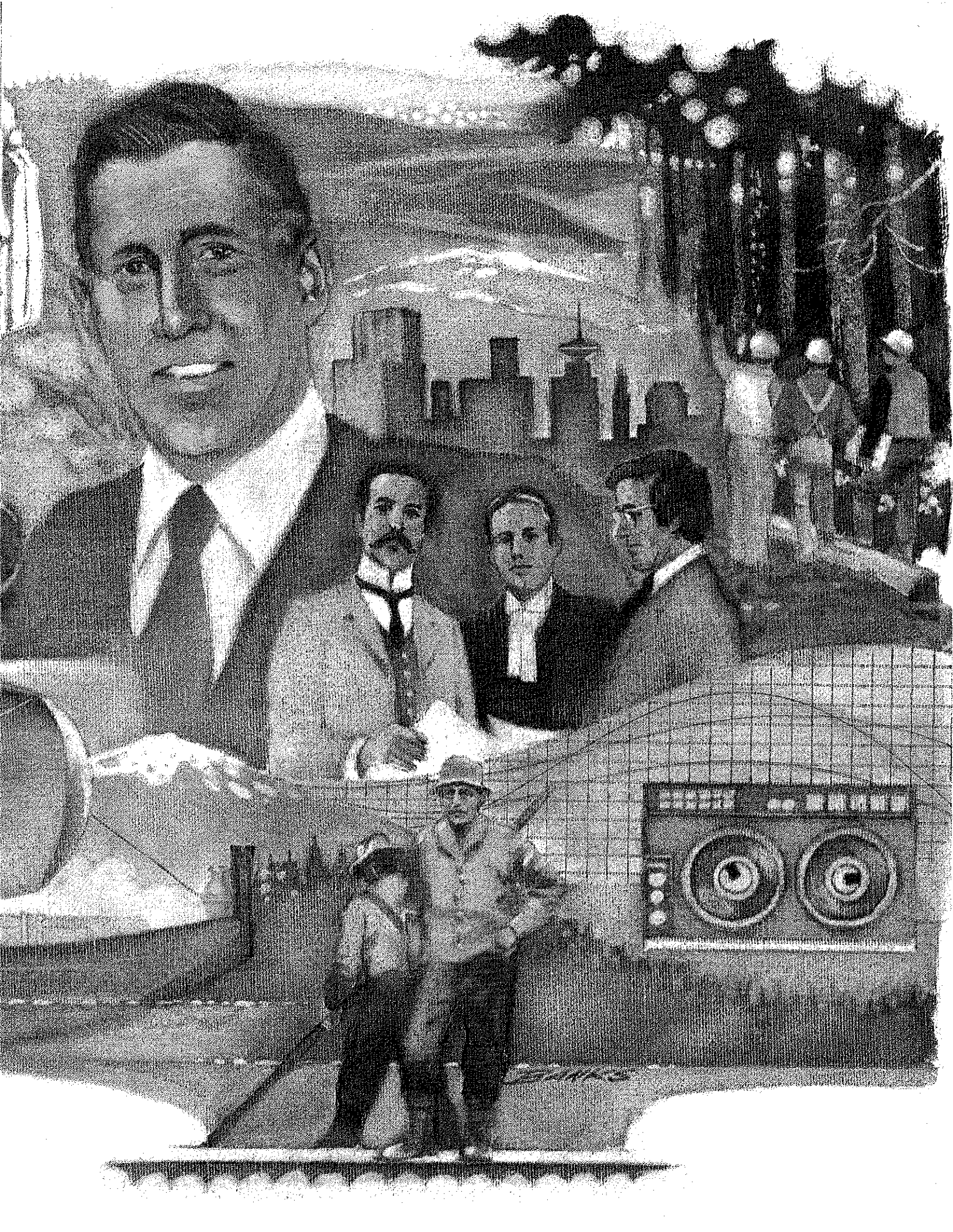
WILL B.C.'s FORESTS BECOME

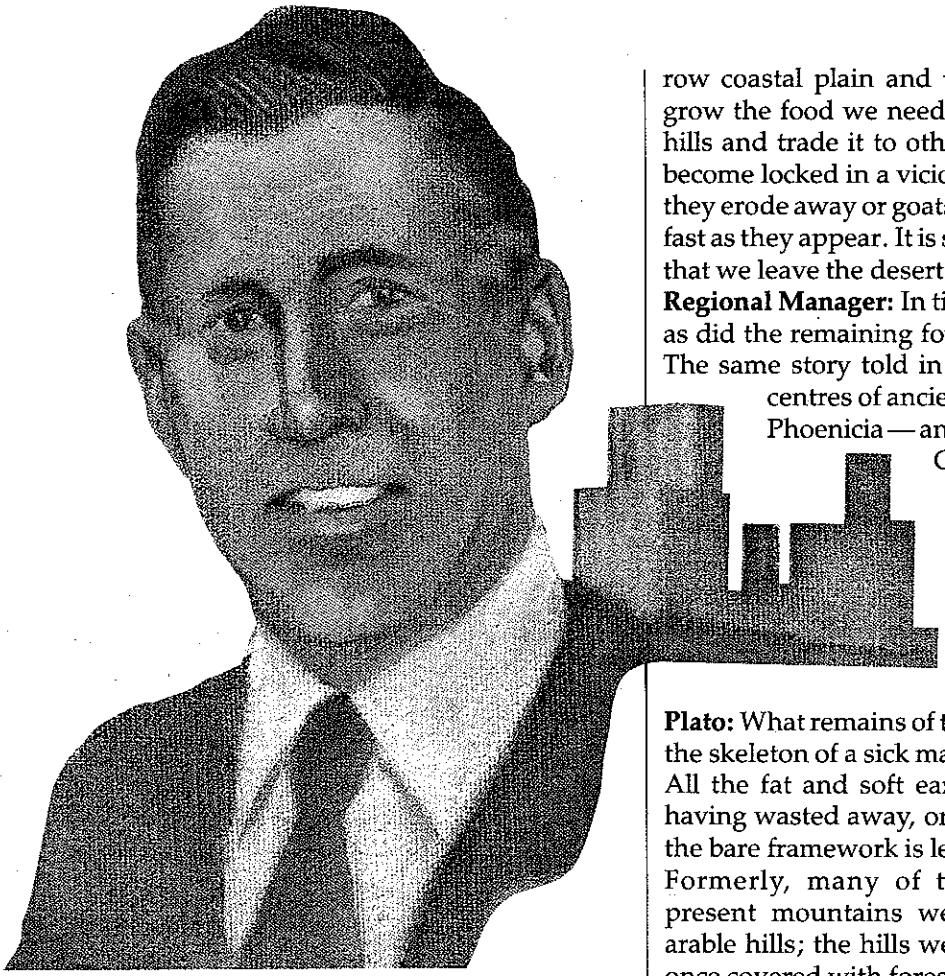
VICTIMS TO HISTORY

by **Gord Price**

The drama of forestry is as old as the earth itself. That makes it a long story, one that rarely gets told. But what if the B.C. forestry epic was made into a big-budget movie, starting far back in history and building up to a climax revolving around the forest ministry's recently released Resource Analysis and Five-Year Program? The screenplay might look something like this.

ILLUSTRATION: ROBERT BAIRD





The camera pulls back from a mountainside covered with trees until an entire range of forested peaks is revealed. As the view widens, a Ministry of Forests Regional Manager – the film's narrator – enters the scene.

The camera continues to pull back until it is discovered that the Regional Manager is standing on top of the Marine Building in downtown Vancouver. The North Shore mountains provide the impressive backdrop.

Regional Manager: We are the inheritors of the efforts of loggers and entrepreneurs, of merchants and millmen. In less than a single century they built an industrial society more dependent on forestry than anywhere else in the world. But today, British Columbians are faced with the challenge of discarding our roles as pioneers of the frontier and exploiters of a raw resource — to becoming tree farmers. And we must make this transition in the few years left in this century. Otherwise, we are doomed to repeat the mistakes of civilizations thousands of years before us.

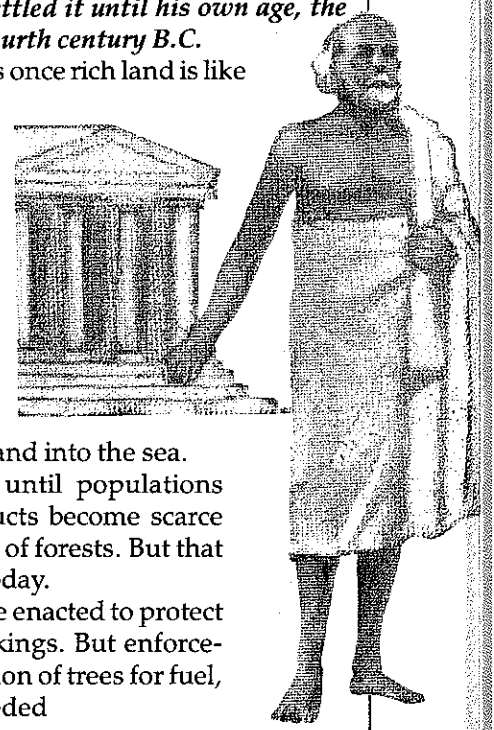
The Mediterranean Sea. The camera reveals a Phoenician merchant dressed in bright robes; a representative of the great seafaring traders who spread civilization throughout the region from 1000 to 500 B.C. He stands on a ship made from cedars – the famed Cedars of Lebanon. He is, in fact, carrying a load of lumber to Egypt to trade for grain.

The Merchant: My country too is based on wood. We live on a narrow coastal plain and there is never enough room to grow the food we need. So we cut the timber from the hills and trade it to others for grain. In truth, we have become locked in a vicious cycle: as we clear the slopes, they erode away or goats eat the windblown seedlings as fast as they appear. It is said of us — and I fear it is true — that we leave the desert in our footprints.

Regional Manager: In time, Phoenicia fell to Alexander, as did the remaining forests to Greek and Roman axes. The same story told in Mesopotamia, Crete and other centres of ancient culture was told once again in Phoenicia — and would be repeated yet again in Greece.

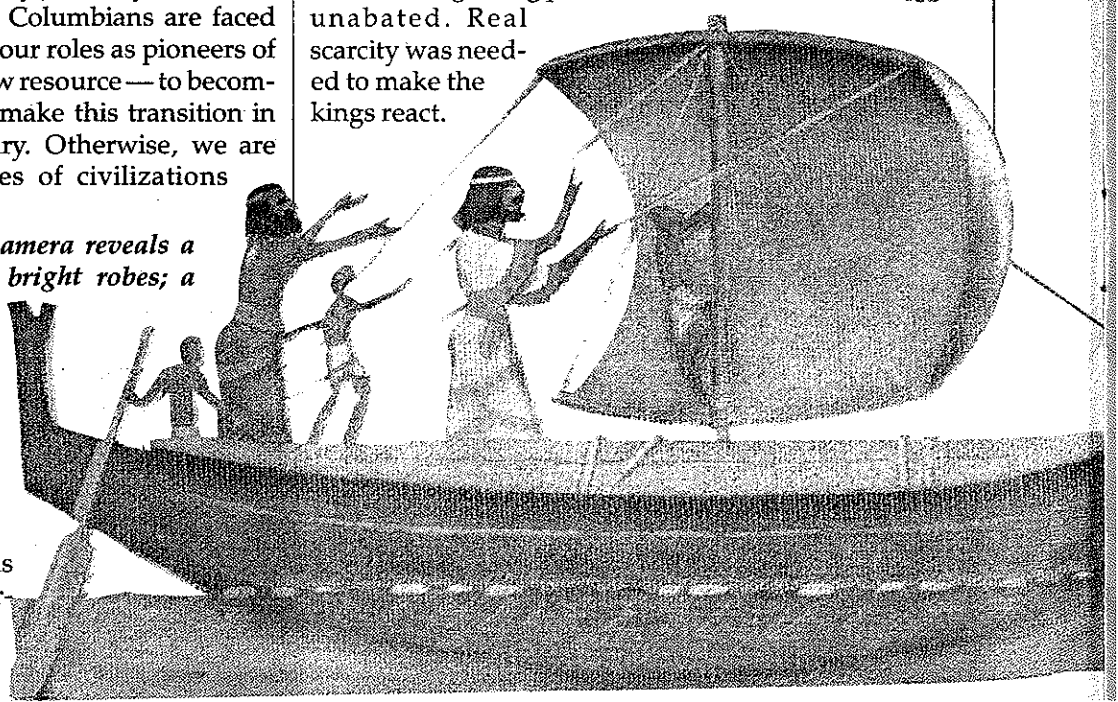
A stony slope in Attica. The great philosopher Plato stands alone and describes the changes which occurred in his country from the time the Greeks first settled it until his own age, the fourth century B.C.

Plato: What remains of this once rich land is like the skeleton of a sick man. All the fat and soft earth having wasted away, only the bare framework is left. Formerly, many of the present mountains were arable hills; the hills were once covered with forests. The land was enriched by yearly rains which were not lost, as they are today, by flowing from the bare land into the sea.



Regional Manager: Not until populations multiply and forest products become scarce does man realize the value of forests. But that realization is slow, even today.

The first forest laws were enacted to protect the hunting preserves of kings. But enforcement was lax and destruction of trees for fuel, lumber and grazing proceeded unabated. Real scarcity was needed to make the kings react.



The Court of Henry VIII. The great bulk of a monarch is seated behind a desk and elaborately signs the document before him.

Henry VIII: Herewith I decree an act intituled "The Bill for the Preservation of the Woods." Coppice and high forest must be fenced after felling; swine above ten weeks of age are prohibited from entering unless ringed . . . et cetera and et cetera. That should do it.

Regional Manager: But of course it didn't. The English cut and ravaged their great oak forests until even their naval power was threatened for lack of ship wood. Indeed, a great attraction of British Columbia to Captain Cook was the impressive source of ships' spars which became this province's first export.

Real progress in forestry only began to occur at the turn of the 19th century in Germany and Austria. Those countries established forestry schools and produced a succession of brilliant foresters who by 1825 had established the basic principles of forestry. But these men lived in countries with long histories of forest destruction and with strong social needs for small, self-sustaining forests.

Over in the New World, the settlers were faced with a continent full of vast, virgin, old-growth forests. The pioneers considered trees a necessary evil, and logged and burned them as fast as they could. But British Columbia timber reserves were just too big to liquidate, and the politicians had decided earlier on that the Crown would retain ownership of the land and only sell the right to cut timber.

A man is seen standing on a raft floating in a spectacular tree-lined fiord up the B.C. coast. This is hand-logging country and the man is N. Allerdale Grainger, the province's second Chief Forester. He tells what it was like in those early days of timber speculation.

Grainger: Years ago, the mill companies and the pulp-concession speculators secured great stretches of timber for their future use — on nominal terms that rankle now in every logger's breast. Then suddenly it dawned on everybody that such claims were limited in number, and were being taken up rapidly. So there arose a fierce rush to stake timber. Hundreds and hundreds of men blossomed as "timber-cruisers." The woods were furrowed with their trails. They staked the good timber, and then the poor timber. In the end, what happened to all these claims I do not know. They were sold successfully, I believe, to vague 'American interests', and to readers of advertisements in Chicago and Philadelphia and the East generally.

Regional Manager: And then, just as suddenly, this timber speculation stopped; the government had become worried about overcommitment. Enough timber had been allocated, it was thought, to last to the end of the 20th century. It was time to take a look at where we were and where we were going.

Thus began one of the great traditions in British Columbia resource management: the government's periodical appointment of a Royal Commission to examine the state of the timber resource.

The Rotunda of the Legislative Library; marble columns rise four storeys to the cupola. In the reading room are stacks of royal commission reports, and seated around the table are three men – the Royal Commissioners of forestry in British Columbia: Mssrs. Fulton, Sloan and Pearse.

Fulton: It was my pleasure to conduct the first Royal Commission of Inquiry on Timber and Forestry in 1910. Out of my deliberations came the first Forest Act and the creation of the Forest Branch. I did feel at the time —now rather amusing in retrospect —that the province already had used up two-thirds of its merchantable timber. So I recommended that the rest be held in reserve, except for some short-term timber sales.

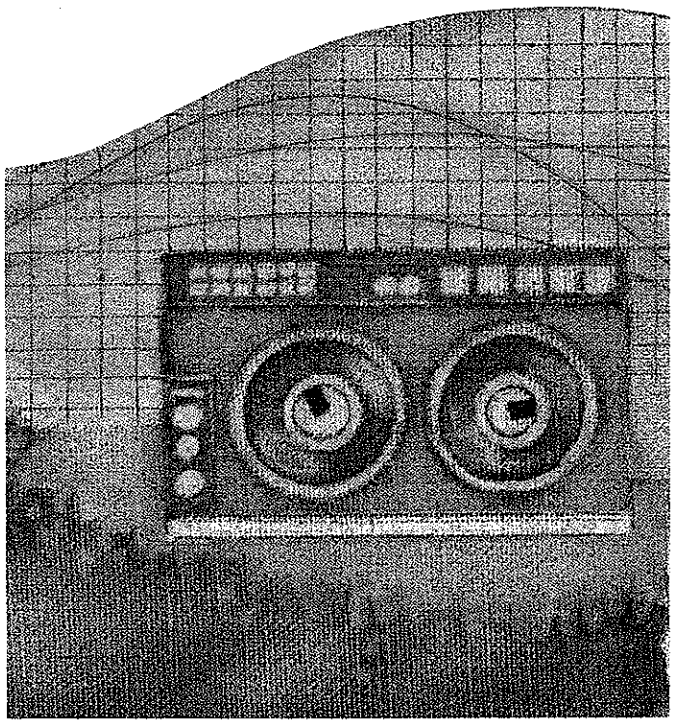
Regional Manager: Did you decide how much timber we should cut each year and still be assured of supplies in the future — a balanced rate of harvest?

Fulton: I am afraid that question was beyond our abilities to answer. You must remember that British Columbia was a frontier province; we did not even know how much timber we had!

Sloan: Your question lies at the heart of my 1945 Royal Commission report. I wrote at the time that our forest industry had been living on its capital — trees that had taken hundreds of years to accumulate at no cost to either the province or the industry. The time had come to put something back; to provide adequate growing stock for continuous production. So we adopted the policy of sustained yield management, which was simply the adoption of the principles of classical European forestry. Under that policy, we would be assured of perpetual supplies of timber, and so avoid the pitfalls of previous civilizations which liquidated their forests.

Regional Manager: It was certainly true that the forest industry prospered and the province benefited at a rate unparalleled in our history following your second report in 1956. New technologies, new utilization standards, new markets all combined to shatter past levels of production. Harvesting increased 300 per cent, with a boom in jobs, towns and mills. But throughout that period, the question remained: could we maintain the rate of harvest? Was sustained-yield management working?

Pearse: This is where I come in. In my 1976 report I concluded that current controls on harvesting could not be assumed to result in a steady yield of timber. Rather, I questioned the very sustained-yield goal of a more or less constant flow of timber volume over long periods. I felt it was more important to protect and enhance the forests to produce the maximum long-term economic and social benefits from the timber resource. That is not the same thing as an "evenflow" of timber — and may even be the opposite in some cases. What we needed, I said, is a system that provides flexibility and points the way to achieving the highest possible returns for all forest values, not just for the generation of fibre for industry. Best of all, such a system is well within the capabilities of our existing technology.



The camera cuts quickly to a computer room: lights blink, reels whirl, printers clack out reams of paper. The Regional Manager takes a printout and unfolds it before the camera.

Regional Manager: This is a future forest; at least it's a computer's projection of what a future forest might look like. And it's part of the Ministry of Forests Resource Analysis and Five-Year Program — the first resource plan of its kind in Canada.

Following Dr. Pearse's report, the Forest Act, the Ministry of Forests Act and the Range Act were passed in the B.C. Legislature in 1978. One of them, the Ministry of Forests Act, required the Ministry to assess the state of the forest and range resources and present alternative programs for their management over the next five years. The next analysis is due in 1984, with subsequent reports to follow every ten years.

Tools unavailable only a few years before were used to handle the huge amounts of complex data. Computers spun out elegant curves which forecast the future as lines on a graph. Consultants predicted how the marketplace would behave to the end of the century. Many other government agencies participated. Other uses of the forest were recognized; recreation, in particular, was dealt with in detail. And it is expected that future resource analyses will concentrate more heavily on non-timber resource values as new data becomes available.

A year of work by Ministry task forces resulted in the release, in March, 1980, of three green-backed volumes which make up the analysis and five-year program. The main lesson to be distilled is quite clear: Demand for our products looks good; we'll be able to sell everything we can produce. But wood-supply problems lie ahead—some in the short term and some in the long term—unless changes are made. Up to now B.C. has lived well on the gift of old-growth timber, but the time for transition to the use of well-managed second-growth forests is at hand.

A classic old-growth forest: great hemlocks, cedars and firs rise to the sky – the coast forest that the first loggers encountered. The camera spots a group of men in the distance and moves in for a closer look. Talking over the Resource Analysis and Five-Year Program are the Regional Manager and three foresters. One forester is from industry, another works for an environmental organization, and the third occupies a research position at a university.

Regional Manager: Years ago, when all of us started out in this business, our primary concern was protecting the forest from fire. Today, with the five-year program we'll be able to get into silviculture in a big way. Already in this coastal region we've tripled our effort from last year, after doubling it the year before. We're going to be doing more fertilization, root-rot control and juvenile spacing — in addition to basic reforestation. Of course, all this must tie in with the management of other forest uses.

Industrial Forester: Yes, I think the proposed silvicultural program has a good chance of improving timber yields. But I don't know about your efforts to knock off the backlog of forest lands that have been inadequately reforested. You'll be from here to Kingdom Come before you plant it all.

Regional Manager: Well, we're counting on you in industry to help solve any timber supply problems with better utilization.

Industrial Forester: Improvements in the mill and the woods are functions of the market. With a higher price for timber—which is what we expect—we can afford to do a lot. We certainly expect to do things like commercial thinnings before harvesting.

University Forester: I'm afraid your intensive silviculture program will be inadequate when figured out on a unit basis. And I'm afraid you're still going to be practising "extensive silviculture," not "intensive silviculture."

As for the timber supply problem, I don't think anyone anticipated it. The first recognition I recall seeing was in a 1974 report that recognized that some timber was economically inaccessible.

Environmental Forester: I think the decision to maintain the present harvesting rate for five years is a decision to make no decision. You've decided to buy time while you think out an approach to alternative harvesting rates. Your own figures suggest the need for an orderly transition to a *lower* level of harvesting. By all means, take the benefits of intensive forestry — but only once they appear on the ground.

Industrial Forester: I can't agree. In order to encourage intensive forestry, the hook must be baited. That means incentives. So why not allow us to harvest extra volumes now in anticipation of improved future yields?

Environmental Forester: But according to the report, increasing harvests in the short term would mean earlier and larger timber-supply deficits.

University Forester: These timber supply deficits will not be alleviated unless we give priority to our best forest lands. The relatively small amount of money available for forestry should be spent on lands which will grow the most wood in the shortest period. Intensive management of good sites is the only hope of meeting timber supply shortfalls within the next 20 to 30 years.

Industrial Forester: I agree. If the government doesn't protect the forest land base, it will be writing the scenario for eventual timber shortages. You'll find in places like Sweden, which has come through a very depressing period of timber shortages, they realize the standard of living is directly connected to the standard of forestry.

Environmental Forester: I'm convinced that to the extent the Ministry of Forests assumes leadership, many of these problems can be dealt with. For an agency that was once only really concerned about protection, it had a lot of growing up to do to recognize the importance of economics and public values. The Resource Analysis and Five-Year Program, despite the inadequate data base and absence of economic criteria with which to judge expenditures, is a great potential vehicle for change.

Industrial Forester: That's right. People are starting to see the forest for the trees. The timing now is critical. Our lead time will be eaten up if we put off action. I'm hopeful that what will separate us from the mistakes of history is that we are in the game of long-term planning; we can analyze our problems earlier and take corrective action.

The camera pulls back from the group and begins to rise until it is floating over the tops of the trees. The old-growth forest is found to be a checkered quilt of logging shows, clearcuts and second growth forests. It is sunset and the green textured forest, turning darker by the moment, appears limitless. Until, on the horizon, lights from towns and highways multiply like fireflies.

Larch Magic

Photo Essay by **Art Twomey**

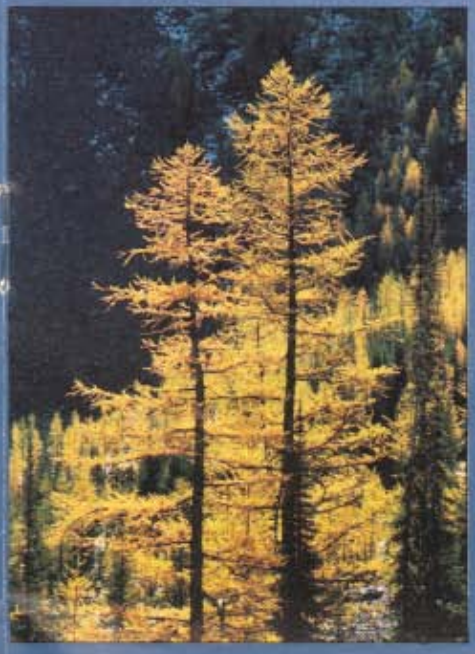
Sometime in mid-September the sombre tones of the alpine zone are transformed into luminous gold by one of North America's most unusual conifers, the alpine larch. Nowhere is this extravagant display more impressive than in the alpine parklands of the Purcell Range in southeastern B.C.

Unlike its lowland cousins (the western larch and the tamarack) the alpine larch is confined to isolated timberline stands in the southeastern interior. Normally found at elevations of 7000 to 7700 feet, it has an affinity for cold rocky sites. Perhaps because its naked winter limbs shed heavy snow loads so efficiently, the alpine larch stands erect while other timberline conifers are reduced to stunted shrubbery. Occasional trees 700 to 1000 years old may reach heights of 85 feet and diameters in excess of four feet, but the average mature alpine larch is 30 to 40 feet tall and one to two feet in diameter.

During its period of winter dormancy the alpine larch stands frozen in a hostile arctic waste. Blizzards tear at it and avalanches pour around it, but tenacious roots and flexible limbs allow it to survive. Its only visitors may be cariboo which browse on lichen clinging to its bark and branches.

But fall is the magical time for the alpine larch. Although it is a conifer, this unique tree is also deciduous. Its needles begin to yellow in mid-September; by the end of the month most needles have been shed and the gray alpine landscape is painted in splashes of larch gold, contrasting vividly with the bright blue skies of autumn. Ptarmigan tracks highlight the first skiff of snow in the larch groves. An elk bugle call pierces the crisp morning air. Mosaics of matted larch needles drift in miniature booms down alpine streams.

The display is over by mid-October; ten months to wait until the alpine parklands are once again touched by the magic of the larch.



ForesTalk Interviews

Greg Taylor

of the Cariboo Lumber Manufacturers' Association
by **Peter Grant**

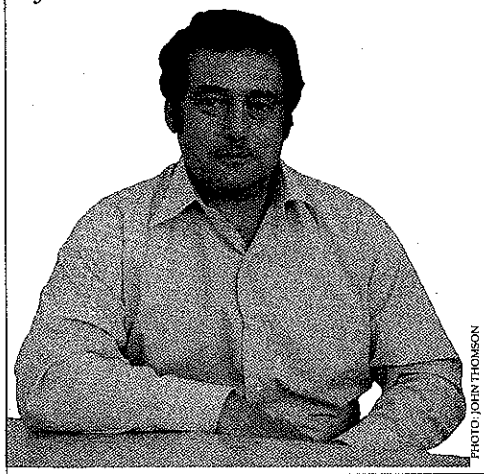


PHOTO: JOHN THOMSON

The lumber industry in the Cariboo region of B.C. is a relatively new force in British Columbia's economy. Spread from Boston Bar to Quesnel, Lillooet to Kamloops, the 30 millmen who together form the Cariboo Lumber Manufacturers' Association (CLMA) produce roughly 12 per cent of the province's total output. That's quite an industry, considering that its post-war beginnings consisted of a handful of pioneer lumbermen – the Jacobsons of Williams Lake, the Ainsworths of 100 Mile House – who set up small mills and ran their own businesses.

Recently, the Cariboo lumber industry has suffered a serious slump because of the sudden drying-up of its major market, the U.S. housing construction industry. The resulting region-wide slowdown has pointed up the fact that the Cariboo forest industry is based largely on supplying a few products (mainly spruce-pine-fir dimension lumber) to a limited number of customers.

Formed in 1958, the CLMA performs several key functions for its member companies. One is to maintain the standards of quality of the lumber they produce. Another is to promote new markets, through international affiliations, promotional programs and market tours. The CLMA's forestry committee works on another front, monitoring the Ministry of Forests' management of the region's timber resource, and promoting the industry's views on such matters as resource-use planning and harvesting regulations.

A key man in the CLMA is its manager, Greg Taylor. A graduate of the University of Toronto's school of forestry and the Yale University graduate school in resource economics, Taylor exemplifies the aggressive, forward-looking spirit of today's Cariboo lumber industry.

FORESTALK: How serious is the slump you're going through?
TAYLOR: It's the worst slump I've seen. It may be the worst slump in the history of this well-developed industry since the Second World War.
FORESTALK: We understand it's hitting the Interior lumber industry harder than the coast operations.
TAYLOR: That's because we're much more dependent on shipments to the U.S. rail market.
FORESTALK: How did the slump get started?
TAYLOR: With the increase in interest rates last October. As they increased, housing starts simply declined. Prices for lumber dropped about a hundred dollars in one week. One week we had a market; the next, there was virtually no market at all.
FORESTALK: What effect has the slump had on the Cariboo's economy?
TAYLOR: So far, it's been less serious than common sense would have dictated.
FORESTALK: What do you mean?
TAYLOR: From the point of view of return on investment, the owners should have shipped the few orders they had left last November and then shut down their mills. Instead, except for one or two mills that can stay close to breaking even (or even make a slight profit because of low production costs), the mills here have continued to operate at a loss.
FORESTALK: Why don't they just close down?
TAYLOR: They have to maintain some kind of cash flow, and they feel a responsibility to the work force. But there is a limit to how long a company can sell at a loss.
FORESTALK: Is there any way of cushioning the sudden loss of revenue?

"It may be the worst slump in the history of this well-developed industry since the Second World War."

TAYLOR: We sought some relief from the government on stumpages. If we'd got it we would have a little more cash in our pockets.
FORESTALK: What's the issue with the stumpage rates your members pay?
TAYLOR: The minimum stumpage — that's the minimum payment a licencee makes to the province for the timber he logs — was increased over a year ago; it used to be $1.10 per cunit and it's now around $3.00, depending on hauling distance and other logging factors.

Stumpage is based on the average market selling prices of lumber; as the price of lumber rises or falls, the stumpage follows. But during a period when the market is very weak, the operators still have to pay the minimum stumpage. The increase in the minimum stumpage rate is adding to the already severe loss of revenue from the market decline.
FORESTALK: Could you back up a minute and give a sketch of the history of Cariboo lumber industry?
TAYLOR: Most of the mills started up at the end of the Second World War. The 1950s saw a move from small bush camps into the larger communities. Parallel to that was an increase in the size of most mills and a decrease in their number.

The 1960s was a period of innovation: companies added new equipment, like small-log equipment for smaller timber. With some refinements, that's what the industry looks like today.
FORESTALK: How do the CLMA members line up in terms of size and ownership?
TAYLOR: Our members range from very small operations producing maybe a half million board feet a year, to very large ones. West Fraser Mills in Quesnel is our biggest single sawmill; it produces over 200 million board feet of lumber a year.

There are four integrated companies in the Cariboo; the rest of our 30 mills are independent. And since we're talking about growth since the 1950s, the medium-sized companies — and even the larger ones — remember their humble beginnings. Most of them were owner-operated to begin with.

FORESTALK: Can you give us a breakdown of your major products and their main markets?

TAYLOR: We do most of our business with the United States — mainly kiln-dried S-P-F [spruce-pine-fir] and green Douglas fir lumber. We can never pin it down, but probably 90 per cent of this lumber must go to housing construction.

"We sought some relief from the government on stumpages. If we'd got it we would have a little more cash in our pockets."

Our shipments total about 1.5 billion board feet of lumber a year. That translates into enough lumber to build about 150,000 homes. Last year about 68 per cent of that went to the United States. In previous years the percentage has been higher — upwards of 75 per cent. The drop in U.S. shipments reflects the growth of the off-shore markets.

FORESTALK: Where are your off-shore markets?

TAYLOR: We've been selling normal dimension lumber to the Japanese market since 1975, as part of the promotion of the platform frame construction method in Japan. The CLMA has made three promotional visits to Japan in the three and a half years I've been here.

FORESTALK: Why is Japan such a big target for B.C. lumber?

TAYLOR: Japan has between 1.5 and 1.7 million housing starts a year; in the U.S. the number vacillates between one and two million. In other words, Japan has the same construction activity as the U.S., with half the population.

FORESTALK: Are there other ways, besides opening up new markets, of avoiding the kind of slump you're in now?

TAYLOR: Yes, by making more diverse products. To give you an idea, in the last year three finger-jointing plants were built in the Cariboo. A finger-jointing plant takes short lengths — mainly two-by-fours — that would have gone into chips or been sold at a reduced price, and upgrades them. This involves cutting a finger-joint pattern on the ends of these short lengths and glueing them together with waterproof glue to make prime-length lumber. We also have remanufacturing plants where dimension lumber rejects or low-grade material are resawn to recover a better grade.

FORESTALK: What's the attitude of your members to the Ministry of Forests' intention of setting up a small business program for the forest industry?

TAYLOR: The government's policy of encouraging a greater small business segment could lead to greater instability in the industry. Look at the market right now. Would small business operators be able to carry on as long as the established operators have?

Besides, you have to appreciate that the established licencees have a considerable capital investment. If some of their timber quota is turned over to small operators, you're threatening that investment — and the job security of those with positions in the established mills.

There's no reason why small business operators shouldn't pioneer; all our mills started out as small mills.

FORESTALK: How closely is the CLMA following the developments in the Ministry of Forests new programs?

TAYLOR: Prior to the announcement of the new Forest Act we responded to the Royal Commission and to the Forest Policy Advisory Committee that followed up on the Pearse Report. Today we're very happy to see the Ministry's Resource Analysis and Five-Year Plan. An initial reaction is that the plan is an excellent first effort at outlining the status of the forest industry and some of the problems and opportunities which will face it in the next five years.

FORESTALK: Do you welcome the recent announcement of creating provincial forests in your region?

TAYLOR: It's a necessary step. We're concerned about the alienation of forest land from forest use. In a town like Williams Lake, 55 to 60 per cent of the economic base can be linked pretty directly to the forest industry. As long as the industry is so important to the economy, and because forestry requires an extensive land base, we've got no alternative but to preserve that land base.

FORESTALK: On what scale has forest land in the Cariboo been given over to other uses?

". . . people who want to sightsee or hunt or fish had better be prepared to pay the cost."

TAYLOR: At a fairly alarming rate, especially to agriculture. There's no complaint about the alienation of high quality agricultural land, if it's going to be used wisely, on a long-term basis, for agriculture. But we've seen abuses of the agricultural lease program in the past.

FORESTALK: We understand there's some conflict over how much value to give wildlife in calculating the rate of harvest for the Cariboo. What's your view?

TAYLOR: My economic background inclines me to believe that wildlife should pay its own share. In other words, people who want to sightsee or hunt or fish had better be prepared to pay the cost, because we simply can't afford these forestland alienations strictly for wildlife habitat. Besides, wildlife can survive in a managed forest.

FORESTALK: What's your forecast for the industry in the Cariboo, looking both at your timber supply and at markets?

"We'll be lucky if we start pulling out of the slump by early 1981. But we've lived with market cycles in the past."

TAYLOR: So many people are concerned about their jobs — especially looking at the layoffs in the auto industry — that they're going to postpone any decision on housebuilding. We'll be lucky if we start pulling out of the slump by early 1981. But we've lived with market cycles in the past.

As for the timber supply, we support the intensive forestry program wholeheartedly. We'll have adequate supplies if we can overcome the problem of alienation of forestland for other uses.

PLANNING TO WRANGLE
OVER THE RANGE

by **Anne Edwards**

British Columbia's Crown rangeland manager — the Ministry of Forests — is getting lots of free advice these days. Throughout the province it's involved in a process known as Coordinated Resource Management Planning, where other government agencies and range users have their say in what's to be done. Although the process is not without its problems, especially in the East Kootenay where it all got started five years ago, this kind of advice-taking seems to work. It has to.

PHOTO: B.C. CHALLENGER

In the East Kootenay, the south-eastern corner of the province, the ranchers are still smiling; perhaps without the brilliance they showed in 1975, but enough to show they still support the Coordinated Resource Management Planning program. "We have to go this way if we are going to survive," says Maurice Hansen, who runs a yearling operation near Kimberley and is president of the East Kootenay Livestock Association (EKLA). "The range has already improved, and we have surplus grass in some situations." Hansen leads an organization of perhaps 200 ranchers who, he says, run a total of about 25,000 head of cattle. Nine thousand of these graze on Crown rangeland, which less than a decade ago was thought to have been a disgrace.

The East Kootenay itself encompasses the Rocky Mountain Trench where it holds the Columbia River flowing north and the Kootenay River flowing south. A semi-arid country (annual precipitation 37.5 cm, 40 per cent of it snow), its 26,000 square kilometres swoop from 3,600 metres at the peaks of the Rocky and Purcell Mountains down to an average 900 metres elevation in the Trench.

The area's economic base includes coal and hard-rock mining, lumbering, hunting, tourism and of course, ranching. But every time one industry moves an arm, another industry gets an elbow in the ribs. For lumber and pulp mills to keep operating, trees are allowed to grow where none grew before; then there is less rangeland for both wild and domestic animals (and only 10 per cent of the East Kootenay is useful for livestock range in the first place). Mining companies explore; their roads draw all-terrain vehicles into delicate areas where soil disturbance can become permanent destruction. Endangered species get some habitat protection, and logging, mining and perhaps even grazing is forbidden. A developer builds a condominium with a wilderness atmosphere, but blocks a traditional game trail; the wilderness shrinks. Given this intense competition for the East Kootenay resource base, some planning mechanism has to allow all resource users to have their say. And that's why Coordinated Resource Management Planning found its way to the East Kootenay in 1975.

One of the leaders of a 1974 tour to Oregon to see examples of the process at work was current range officer Jack King of the Ministry of Forests Nelson Region. (King would later be honoured for his work in coordinated planning by the International Society for Range Management.) On that tour were ranchers, guides, and government people from the Ministry of Forests, Fish and Wildlife Branch, and the Ministry of Agriculture. Suitably

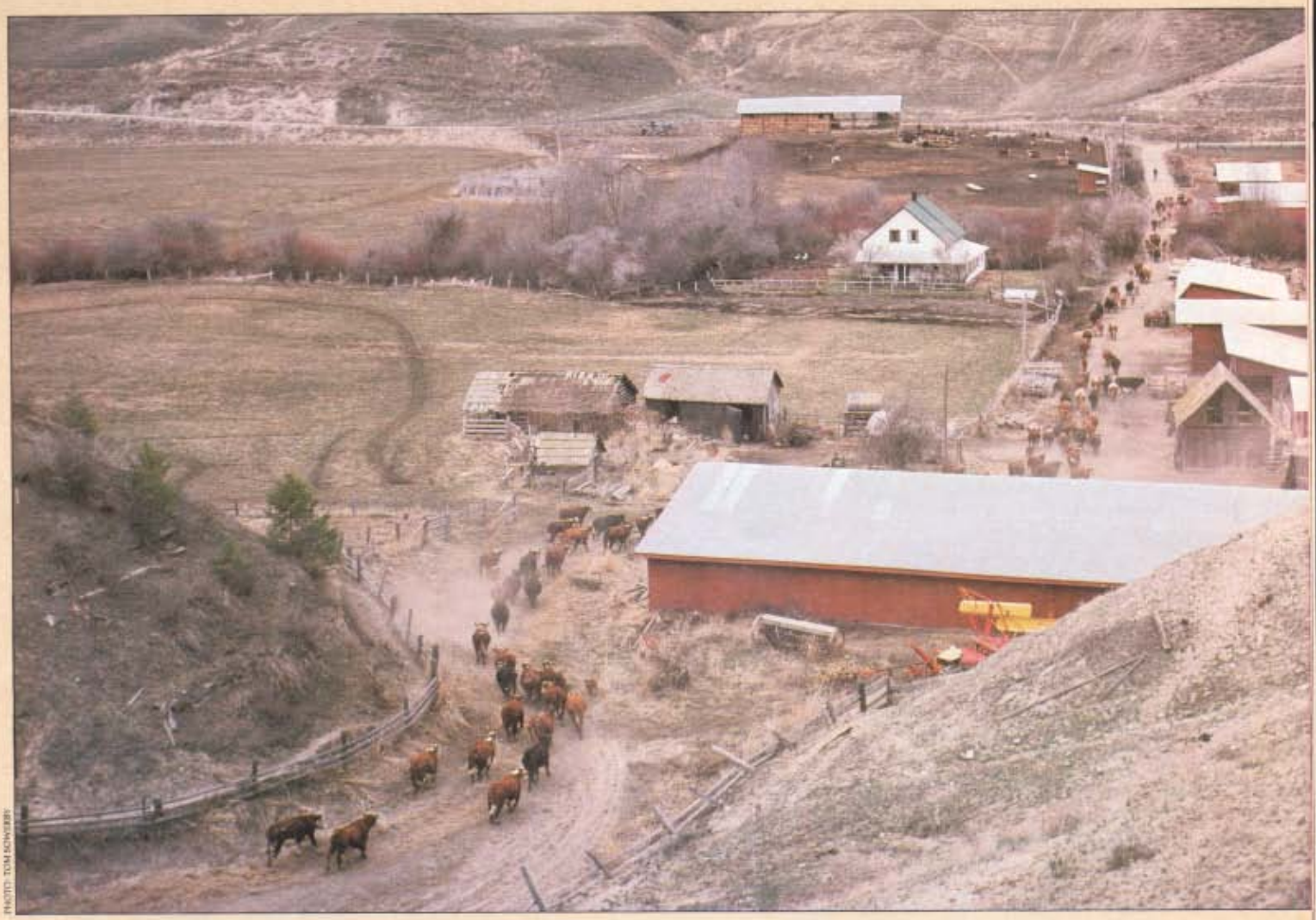


PHOTO: TOM SOWERBY

PHOTO: TOM SOWERBY

The Harpur Ranch near Rock Creek is just one of hundreds of ranches throughout B.C. participating in Coordinated Resource Management Planning, a program that had its origins in the East Kootenay and now has expanded to 71 other areas in the province. The Harpur's "double-diamond" brand is placed on every calf before the cattle are taken out to graze for the summer on Crown rangeland managed by the Ministry of Forests.

impressed with what they saw, the group orchestrated the hiring in 1975 of Bill Anderson, Oregon range specialist, as Interim Director of the Ministry of Forests' Grazing Division.

Anderson spent at least half of his 12-month appointment working in the East Kootenay, talking to everybody about practical ways of planning management of the range. Rather than having separate resource agencies virtually competing with each other to administer the same land base, Anderson convinced the deputy ministers of B.C.'s resource ministries to sign a memorandum of agreement to cooperate in the multiple-use management of Crown land. Then he established the foundation for the first three coordinated plans and, most importantly, found a source of funds for these programs — ARDA, the Agricultural and Rural Development Agreement (1970-1975) between the federal and B.C. governments. ARDA was convinced to commit $1.3 million to coordinated planning and range improvement in the East Kootenay, with Canada and B.C. each putting up 45 per cent of the costs; the individual ranchers would cover the balance of 10 per cent.

ARDA money financed the three 1975 plans and 12 more in 1976. "One a month; we finally had to slow down," remarks John MacLeod, Ministry of Forests Range Agrologist for the East Kootenay. He had to sit in at all the planning meetings and supervise the plans as they went into operation — on top of his other duties. MacLeod, who spent 10 years on a family ranch operation near Trail before joining the Ministry's Range Management Branch, sees both range management and cattle ranching as long-term and inter-related economic endeavours: "We are looking to higher livestock carrying capacities on the range once we restore the vigor of the plants. Five years — 10 years — it depends on the level of management."

But in January of 1975 MacLeod's job was to maintain the existing levels of cattle grazing on Crown land. Some of these levels were based on decisions made as far back as the 1940s, decisions which had resulted in a level of overgrazing and overstocking in some areas described as "abominable" by one range manager. By the 1960s the Ministry of Forests had begun corrective action to reduce stock levels and improve grass conditions on the range, but progress had been slow. Once coordinated resource planning allowed government agencies and range users to cooperate, not compete, over range development, improvements in range management came more rapidly. In fact, coordinated planning let John MacLeod meet his goal of not decreasing the number of animal unit months (AUMs) of grazing on Crown land. Some ranchers actually have had minor increases.

The 1975 ARDA commitment to range management was extended to 1977, then stretched to $3.5 million by 1980. The 1978-82 funding comes under an ARDA Subsidiary Agreement (ARDSA). Overall, ARDSA allows for the establishment of 220 additional Coordinated Resource Management Plans across the province by 1982, at an estimated cost of $22 million.

Bob Mills, an Assistant Forest Ranger in Cranbrook when Anderson was introducing his coordinated planning concept, became the first East Kootenay region ARDA coordinator. "That's when my troubles began," chuckles Mills, who grew up on a Lethbridge farm and was involved in range work since he was hired by the Ministry of Forests in 1952. He had the first ARDA crews in the field in the winter of 1975-76, clearing brush and pinepoles useless for anything but fences. His crews worked all that year, building fences, digging waterholes and "brushing out" unproductive corners.

In range management the main object is to move cattle from one pasture to another to prevent overgrazing in one spot. But that also means building fences, providing water, and doing whatever else needs doing to keep the grazing cows contained in the desired locations.

"We pretty well had a free hand then," says Bob Mills, pointing out that by 1980 more stringent rules apply to the funding of projects, while costs have tripled. Mills will take any project that a planning group wants done and write it up to go to Victoria for a cost-benefit analysis. Practically no application in all of B.C. has been denied by ARDA, although it may have been turned back for reworking.

Provincial ARDA Coordinator Jack Steele describes what has been done so far as two-phased. The first phase is the establishment of structures — fences, cattleguards, waterholes — to

Around the Table

Coordinated Resource Management Planning is based on traditional range unit boundaries, although more than one unit may be included in a single plan. All users of those range units — ranchers, guides, loggers, trappers, representatives from all government departments — meet to fill out a "needs" page. They then recognize and record all restrictions on the area, such as particular ministry policies or historical commitments, before setting out a management plan. This plan will include the action that any manager or user will undertake in the coming year. The Ministry of Forests, for example, may agree to do some tree spacing to allow better timber and grass growth; ranchers may combine forces to build mutually beneficial fences on private lands; ranchers also sometimes contribute labour to build government-funded structures. But most range improvement structures have been built totally with ARDA monies for the common good of all range users.

All Coordinated Resource Management Planning participants meet for an annual review every spring. The overall objective of each plan is to meet as many user needs as possible without impairing rangeland productivity.

Coordinated Resource Management Planning programs are funded and administered through a federal-provincial Agricultural and Rural Development Agreement (ARDA) and a subsequent ARDA subsidiary agreement (ARDSA). These programs include Crown rangeland improvement projects such as the building of fences (right) to help control cattle grazing patterns.

PHOTO: PATRICK MORROW

PHOTO: PATRICK MORROW

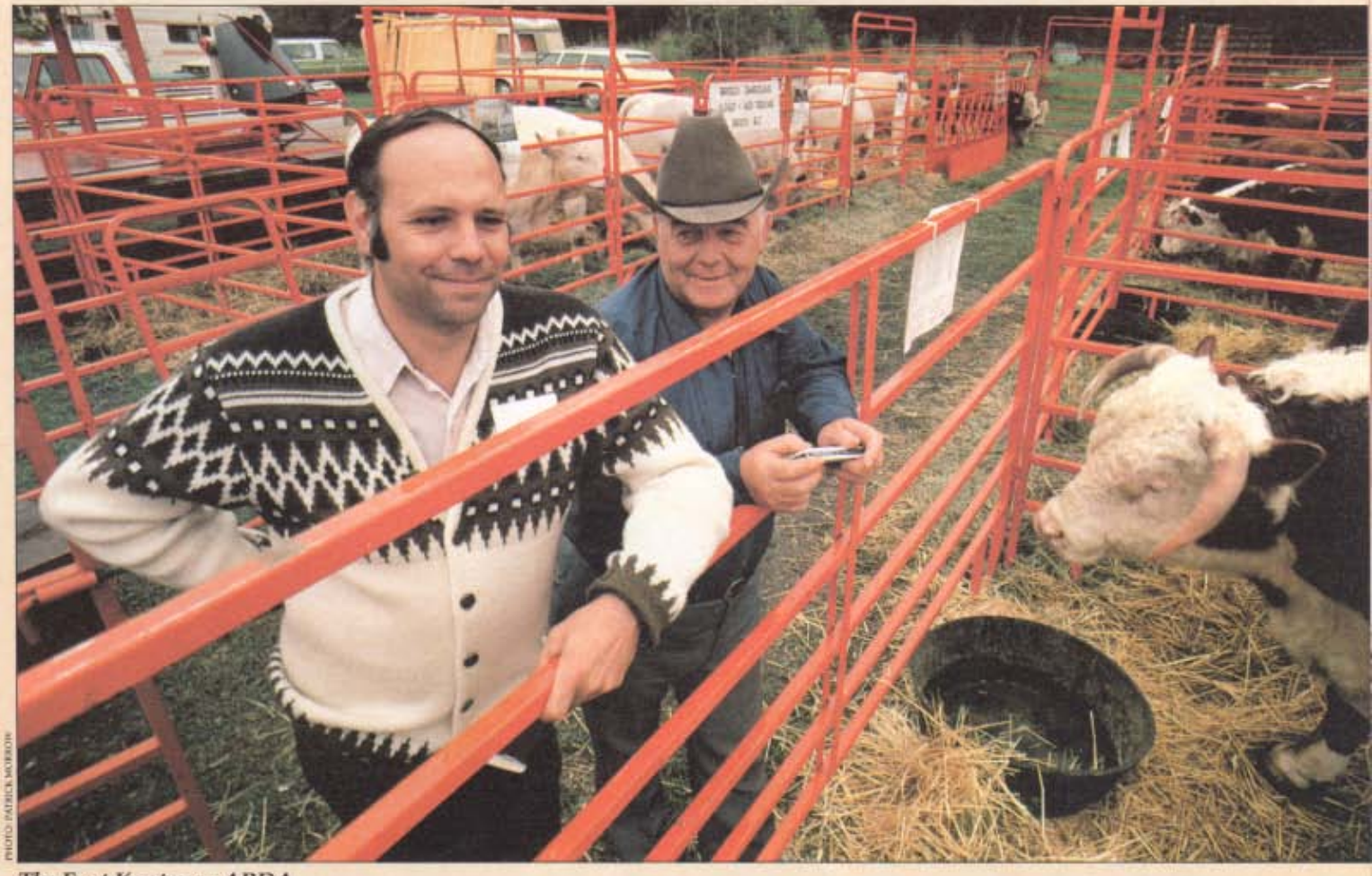


PHOTO: PATRICK MORROW

The East Kootenay ARDA programs are overseen by Bob Mills (above with hat), who works in close cooperation with Nelson Ministry of Forests range officer Jack King (above foreground). Meetings involving cattlemen and government representatives (top right) are central to the planning of any range management program.

On the Table

ARDA's interest in funding multiple-use range projects arose initially out of a Ministry of Agriculture study of B.C.'s food supply. The study found, in short, that B.C. was far from being self-sufficient in food, particularly in the production of beef. Here, B.C. met only 20 per cent of its needs, although it had millions of hectares of range and adequate slaughtering facilities. One problem was that too many calves, rather than being raised to slaughter-finish in B.C., were being exported. The government wanted to promote ways of keeping these cattle in the province. Commenting on beef production, B.C. ARDA coordinator Jack Steele says, "We were in a downward trend, and we had to run hard just to stand still. But we have been showing a progressive increase over the past several years." Range improvement has made a significant contribution to B.C.'s improving cattle picture. Since the beginnings of Coordinated Resource Management Planning in the East Kootenay, this planning approach has now spread to 71 other areas around the province. It seems to be the only way to go.

provide for better grazing distribution and fuller utilization of the range. Phase two involves land treatments — burning, reseeding poor sites, thinning trees, seeding forest clearcuts. And what has all this done for the East Kootenay, where all but two range units are now within Coordinated Resource Management Plans?

It *has* changed the grazing pattern, with more rangeland being grazed at safe — not extreme — levels. With the fences that ARDA has built, cattle can be kept up where the pine grass grows in the season when it is nutritious. Water holes and salt licks also draw cattle to places they would never go before. Of course, the ranchers have to move the cattle several times a year, and before coordinated planning, "We hadn't been riding," says Verd Casselman, a former director of the B.C. Cattlemen's Association and an East Kootenay Livestock Association (EKLA) Rancher of the Year who helped found coordinated planning. He and Andy MacDonald, another former EKLA Rancher of the Year, both note that riding to herd cattle is one of the onerous tasks that has come with pasture rotation. However, Phyllis Gibb of Invermere tells herself, as she is riding through the wet trees on a cold day, that "city people will pay $10 an hour for a horse to ride in a place like this. I tell myself I must be having fun."

"Without doubt, the grass is improving in the whole area, but there's no great increase in meat production. We wanted both, but it looks like we'll only get the first," says Casselman. Albert Cooper of Invermere, a hunting guide who now runs only horses on the range, is far more enthusiastic. He calls coordinated planning "one of the better things that the government has done. Critical winter range has not been eaten down to the ground, so that there's grass left for wildlife, too. If they ever scrap it (the process), we would go back 20 years."

Fritz Maurer of Windermere, also active in various ranching organizations, says he is "fairly optimistic. On the whole, I think it will work out. Without it, we would have had a decrease in allowable livestock range use." And Bob Marcer of Jaffray comments, "I think eventually, if we stick with it, we will gain."

Two recent surveys have shown that most ranchers are satisfied with coordinated resource planning in the East Kootenay. One questionnaire, circulated by regional ARDA coordinator Bob Mills in 1978 and returned by 50 participating ranchers, indicated that more than 80 per cent felt that adequate communication and cooperation was offered by ARDA, the Ministry of Forests' ranger staff and Range Management Branch, and the Fish and Wildlife Branch of the Ministry of Environment.

A second rancher questionnaire was sent around in 1979 by the East Kootenay Livestock Association. The majority of respondents saw the coordinated planning process as beneficial, but the survey did bring out a list of grievances. Problems included those of herding cattle several times a year, the usual problems of cattle escaping into trespass, and the perennial complaint of the rancher: Why grow grass if you don't use it?

In fact, under-utilization of the improved range resource seems to be the rancher's biggest complaint. One rancher goes so far as to comment: "Unless the cattle are shoulder to shoulder, they will not overgraze our range now."

"It's that kind of thinking that got us into the mess in the first place," replies Ministry of Forests range officer King, who describes that kind of grazing as "mining the resource. Our mandate is to manage the range for its owners, not just its users. We try to guide ourselves by ecologically sound principles. With the soil of the East Kootenay, we cannot afford to make an irreparable mistake."

EKLA president Hansen warns against ranchers and range managers adopting polarized positions on the topic, but feels strongly that more refined range management could allow greater numbers of cattle to be grazed. However, Ministry of Forests Range Agrologist MacLeod points out that some ranchers forget that the Ministry has to manage rangeland to sustain wildlife as well as cattle.

So after five years, the East Kootenay range people are at an awkward stage: the rangeland is not yet in good enough shape to please the managers; the ranchers feel it could graze a greater number of cattle now. Considering that, and the fact that as a pilot project the East Kootenay ARDA operation made mistakes avoided in later programs in other regions, the degree of enthusiasm still shown by both users and managers promises a good future for the giving and taking of advice on range management.

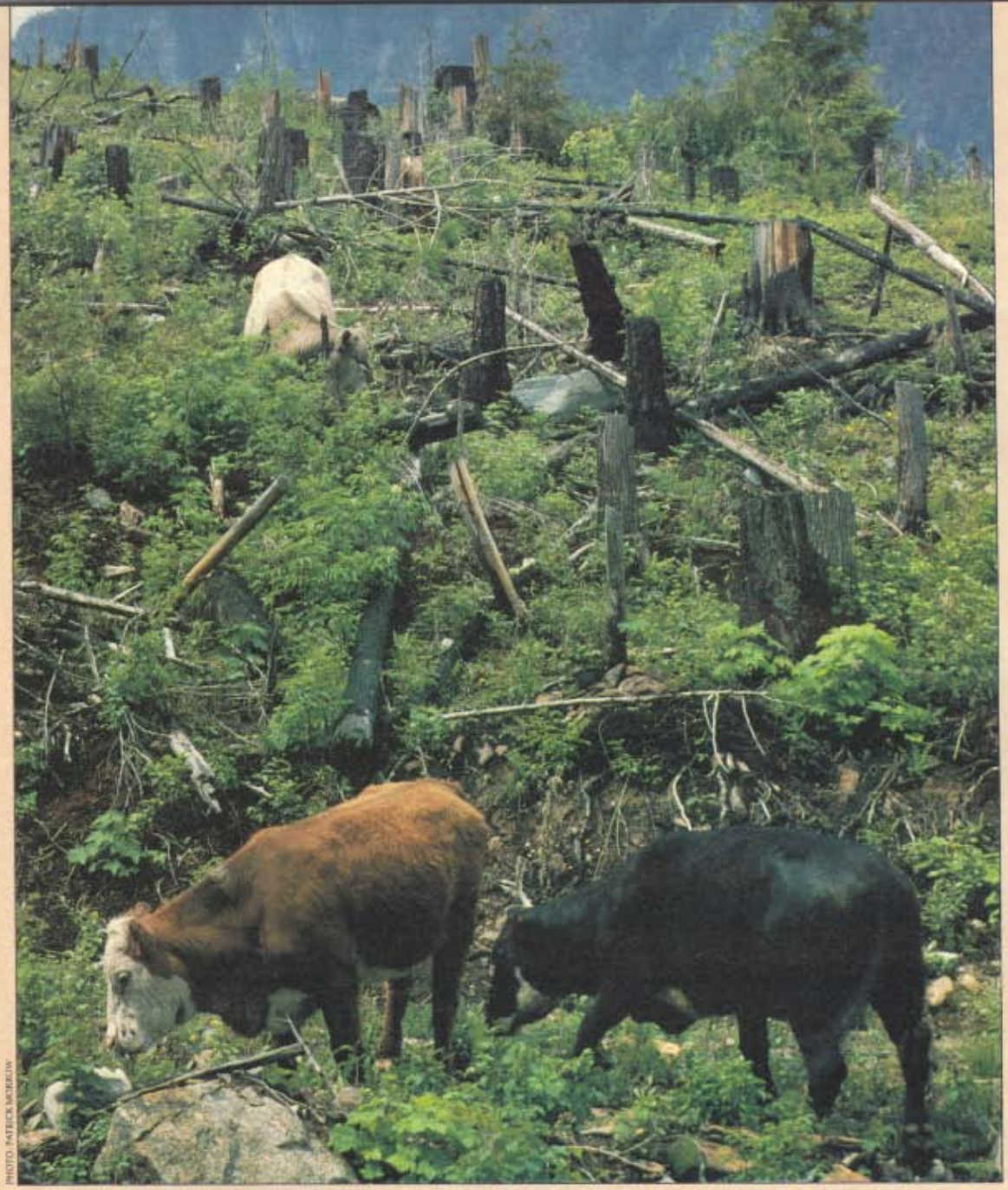


PHOTO: PATRICK MORROW

In a perfect example of coordinated planning, cattle are put out to graze in a regenerating clearcut along the St. Mary River near Kimberley. The area has also been seeded for erosion control. Most East Kootenay cattlemen, including Fritz Maurer (right) of Windermere, appreciate the range improvements brought about by Coordinated Resource Management Planning. East Kootenay Livestock Association president Maurice Hansen (far right), who is just as likely to herd his cattle with a motorcycle as he is with a horse, stresses the need for all range users and managers to maintain a cooperative approach to range management.

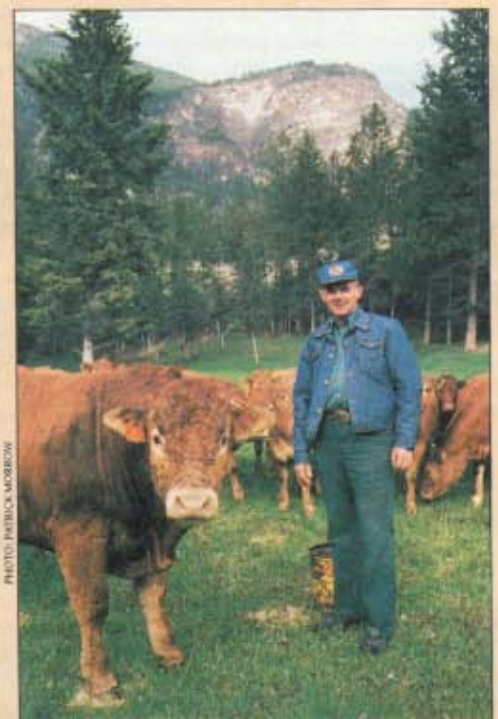


PHOTO: PATRICK MORROW

PHOTO: PATRICK MORROW

People

PHOTO: DOUG COWELL

Rick Bockner

by **Doug Cowell**

Rick Bockner is a man into whose life the themes of craftsmanship, wood and forests are intimately woven. He's planted trees and harvested them, bought wood and sold it; he's been a carpenter and a contractor, a craftsman and an artist.

"British Columbia birch is a really nice wood. It's white birch, not the yellow birch they have in Ontario, and when it's quarter-sawn and dried properly it's great."

Thirty-one-year-old Rick Bockner moves across his newly-built studio-cabin to a big workbench along one wall. He bends down to sort through a selection of wood samples and comes up with a piece of birch. Quickly, he clamps it in a vise and with a few quick strokes of a plane lays bare a fresh surface. "I've built tables with birch and turned it on a lathe. It's a pretty wood, and easy to come by.

"Five years ago, here in Argenta, I saw people cutting three-foot diameter birch for firewood. I decided that birch was too good to burn, so a couple of friends and I got access to some, and every fall for three years we went birch cutting. We waited until there was about a foot of snow on the ground. By then the sap was down, so the wood was drier and it was easier to skid."

They had it milled locally, built a drying shed and carefully piled 18,000 feet of wood. "Some of it was useless because it wasn't properly dried, and some was beautiful because it was. Birch is not a terribly stable wood until it's dry; so you need to quarter-saw it and pile it really carefully."

Bockner's interest in working with hardwoods crystallized in 1975 when, along with friend and tree planter Dirk Brinkman, he set up a hardwood import business called Arkwoods. The company grew slowly, the owners feeling their way, learning about hardwoods. In time they began importing hardwood flooring and started laying floors, making more work for themselves.

"I think there could be a business for someone cutting flooring in B.C.," suggests Bockner. "There's lots of birch around, and if you cut it edge-grain and dry it properly it would work great. And it would be using something that's not being used now.

"I'd like to see fir sawn edge-grain and used for flooring too. Cut that way, fir distorts very little in drying, whereas a board sawn flat will tend to

cup one way or the other. There are lots of floors made out of it in old buildings. It's cheaper than hardwood and it's available."

As he talks in turn about each of the B.C. hardwoods, Bockner digs out a sample from under his work bench. "Then there's western maple," he says holding out a blond-coloured board with a fascinating grain pattern. "This pattern is called curly maple, but it also develops a figuring called birds-eye maple. Our western maple is softer than eastern maples, but it's very good for furniture and musical instruments. I've got a friend who builds mandolins and uses western maple for the sides and backs.

"None of the B.C. hardwoods have the reputation for being high-class wood; but they're here, they're inexpensive and they're beautiful. You just have to get used to them. It would take a bit of a compaign to develop a market for them but they're very similar to a lot of other woods that have a strong market.

"Then there's yew wood," Bockner continues. "It's the darkest of the B.C. woods, and the most exotic to my mind. You see a yew log and it looks like African or South American wood. It's got shaggy bark and it's twisty and has beautiful knot formations."

Yew isn't a large tree and it's not available in commercial quantities, but a few years ago Dirk Brinkman found some while tree planting on the coast. He salvaged a pickup-load of yew logs from partially-burned slash.

"We traded some of it back east for African and South American wood. This ebony was traded for it," Bockner says, picking up an almost black, extremely heavy board from his treasury of wood. "Traditional bowmakers use yew, and anybody who has turned it on a lathe loves it.

"Michael Dunn, a Vancouver guitar maker who studied in Spain, made a beautiful Elizabethan guitar using yew wood. It's in the Museum of Man in Ottawa now. He glued up the back out of long wedges of alternating yellow cedar and yew wood into a sunburst design. It was quite incredible."

Rick Bockner is at least as comfortable talking about guitars as he is discussing B.C. hardwoods — his first career was as a musician. "I began playing guitar when I was just big enough to hold one," he remembers. "I was seven or eight I guess. I got serious about it when I was eleven."

For three years in the late 1960s Bockner played in the west coast band,

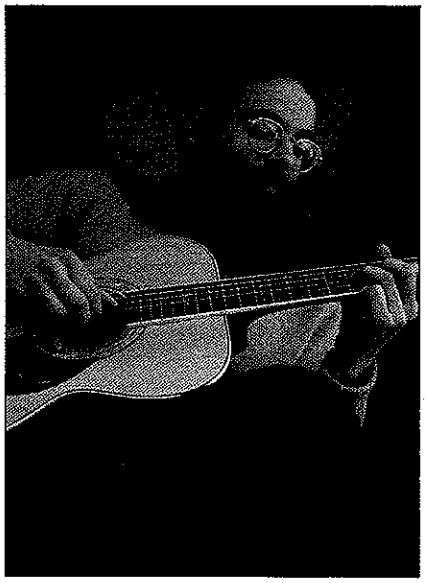


PHOTO: DOUG COWELL

Mad River, operating out of San Francisco. They recorded two albums with Capitol Records and were on the road much of the time. But he decided the particular lifestyle was not for him and moved back to British Columbia. It was no surprise to any of his friends when he took up building instruments; Bockner's love for music and his deep involvement with wood and craftsmanship seem to have destined him for it. His first effort was the dulcimer he made under the guidance of his friend John Kragen.

"The top of that dulcimer was B.C. yellow cedar. It's an incredibly nice wood to carve, and very fragrant. Anybody who is into carving will drool over a piece of yellow cedar. The grain on that piece was so fine!"

Guitars, though, were another problem. Neither Bockner nor Kragen had ever built one. However, for years Bockner had gone tree planting every spring, and the tree planting grapevine eventually caused an experienced guitar maker to show up at his door looking for a place to build instruments. They teamed up, and Bockner's first guitar was such a complete success (with a beautifully laminated neck, a B.C. Engleman spruce top and a sweet tone) that Sheri Ulrich, well-known Vancouver musician, tried to buy it from him.

As he became more involved with instrument building and with B.C. specialty woods, Bockner also became interested in instrument wood, called tone wood. Spruce and cedar are the two most popular tone woods in B.C., while German spruce is acknowledged around the world as being the best wood for guitar tops. Some friends of Bockner's once ordered a batch of tops from Germany and sent one for cellular identification to The Forestry Research Laboratory in Madison, Wisconsin. It turned out to be Engleman Spruce from British Columbia! Comments Bockner: "That just points up the potential for actually using B.C. instrument-quality woods as instrument woods, instead of turning them into toilet paper. The Germans apparently feel there's no difference between Engleman Spruce and what they've traditionally harvested in Germany.

"When you're looking for instrument wood you take a different view from foresters or loggers. Logging happens too fast. You can't ask a logger to get down on his hands and knees and check the colour and grain of every log that comes past. I've found a few people who are looking out for wood for me; people who are logging their own land or doing salvage, not production logging."

Bockner's involvement in instrument wood and instrument making meant he had less time for the hardwood side of Arkwood, so last summer he and Brinkman decided to shut down the company; Brinkman took what hardwoods were left and Bockner took the instrument wood. "We'd been operating Arkwoods for five years, working part-time, and I'd been doing all my other things: playing music, building instruments, planting trees. I could have set up in town and dealt wood in larger volume, but the other things were important too."

Recently Bockner bought land in Argenta, which is located near the northern tip of Kootenay Lake. Besides selling instrument wood he's setting up what he calls an impromptu school.

"I won't necessarily be the teacher, but I'll organize it and get the teachers and students together. I'll provide the facility and the wood and I'll get to learn a lot about instrument building, furniture making, boat building; whatever is happening at the time. I'm also building a big woodshed. I'll store white pine, cedar, edge-grain fir; whatever comes along.

"I've been tree planting for years and that feels good. Because if you're going to use wood you've got to replace it. I want a more holistic approach to wood; that means growing it, making beautiful things with it, learning more about it and passing on that knowledge."

LETTERS

Cauliflower Lobstick

With reference to the photograph of the cauliflower tree shown in Collections in the Spring 1980 issue of your magazine, this is indeed a unique formation.

During my fur trading days in James Bay, Ontario, I used to see trees such as the cauliflower tree but these were man made landmarks. The west coast of James Bay contains miles of muskeg and spruce belts running inland. The Cree Indians would trim the highest tree at the edge of the belt in this fashion to mark the entrance of a dog-sled trail. Such trees were called lobsticks. On the open muskegs any trail soon vanished under drifting snow and the lobsticks were valuable trail markers. I might mention these trails were used only in the winter trapping season.

J.A. Rodgers
Penticton, B.C.

No Cross Words

I have been an avid reader of ForesTalk since its inception. The articles are interesting, informative and clearly written. I also make use of numerous facts in my teaching of biology in Nanaimo (e.g. how the Douglas fir got its name). However, I was most disappointed in not finding the ForesTalk Crossword in your Summer 1980 issue. I have found this a pleasant, informative exercise. Please spare no effort to continue the Crossword in future editions.

Mark R. Bigler
Nanaimo, B.C.

The ForesTalk Crossword was discontinued following a readership survey which indicated that readers had little interest in the word puzzle. It could be reintroduced if enough Crossword fans speak up.

Jammers, Rutters and Crazy Wheels

Your article on Toke Meeker in the Spring 1980 issue of ForesTalk reminded me of my first experience making shingles on a homestead at Willow River, B.C. in 1915. These were made with a plane pulled by a team of horses. I sat on the plane and drove the team. The block of the plane was a fir hand-hewn timber fitted with two walking plow handles. The blade was a 14-inch axe blade fitted in the block the same as a hand plane. We used poplar logs squared on the top to a 4-inch or 5-inch face, then sawn every 16 inches so, when the plane was pulled through the log, the shakes came out cut to length. This device made shakes for several stables and hay sheds between Willow River and Hansard.

I have attempted to interest the Provincial government, through the Fort Steele Museum, to make an effort to reproduce some of this old equipment, especially that which was used in the horse logging era. There was a vast assortment of this equipment which was mostly made in the camps in the 1910s and 1920s: sleighs, jammers, snowplows, rutters and tanks for ice roads, crazy wheels for letting loads down hills and many other items used in both summer and winter short-log shows. In my opinion it is a shame that the present generation and those to come have no idea of logging in the past, other than what they see in our present show places which depict either oxen or steam.

J.T. Harvie
Nelson, B.C.

Letters to the editor provide an opportunity for our readers to discuss topics arising out of ForesTalk. Letters for publication must carry the sender's name and address. Views published are not necessarily endorsed editorially. ForesTalk reserves the right to edit for publication.

What do ForesTalk readers think of the magazine?

Following the publication of last year's fall issue of ForesTalk, an independent readership survey was conducted to determine just what our readers thought about the magazine. The results were encouraging, to say the least.

Some 2,000 questionnaires were sent out at random to readers on our mailing list. Close to fifty per cent of these were returned, and here's what our readers had to say.

Who reads ForesTalk? The survey indicates that ForesTalk's appeal is universal. Men read it, women read it; as many 70-year-olds as 20-year-olds read it. People from Fort Nelson to Osoyoos read it. It's potential readership seems to be the adult population of the province.

What do people like about ForesTalk? Its graphics, its naturalistic viewpoint, and its informational articles. Overall, readers wanted to have more of what is already there: more pictures, more general resource articles, more information on Ministry of Forests activities, more serious, issue-oriented material. In fact, the most common opinion expressed by people answering the questionnaire was, "Keep up the good work."

What do people dislike about ForesTalk? Almost nothing. There was a general indifference towards the ForesTalk Crossword run in the past, but other than that readers found very little to criticize.

Following the survey report, ForesTalk discontinued the crossword and has been trying to provide more of the kind of material our readers say they want. Future issues will attempt to improve on our past record.

If you have any views or comments about ForesTalk you would like to share with us, please drop a line to the editor. And if you want to add your name to our mailing list, or add the name of a friend or relative, let us know.

ForesTalk, Ministry of Forests, Information Services Branch, 1450 Government Street, Victoria, B.C., V8W 3E7.

FOREST HABITAT *by* **Enid K. Lemon**

Deer

About 25 million years ago the ancestors of North American deer were no larger than cats, had no antlers and lived in the Oligocene forests of the old world. Over the millions of years enormous glaciers advanced and receded over portions of the earth, eventually exposing a land bridge connecting Asia to Alaska. The deer apparently used this route — now the Bering Strait — to migrate to North America.

These ancient ancestors of today's deer had five toes on each foot, an adaptation to living mostly in forested areas. Later, when much of these areas gave way to grasslands and savannah, the animals needed to be fleeter of foot. Through evolution the first toe, which would correspond to our thumb, disappeared completely. The second and fifth toes shrank in size, moved to the rear and now are the dewclaws. The third and fourth toenails slowly enlarged, hardened and evolved into the deer's cloven hoof.

There are two species of modern American deer: whitetail, which has approximately 30 subspecies; and mule deer, which has 11 distinct subspecies. B.C. is home to four kinds of deer.

The whitetail *(Odocoileus virginianus)*, is most abundant in the southeastern portion of the province, inhabiting the lowland of the Columbia, Kootenay and Kettle Rivers. Its most conspicuous distinguishing mark is its "flag" —

PHOTO: TIM FITZHARRIS

Whitetail deer

the upturned tail revealing its white underside and buttocks as it dashes for cover. The whitetail deer is a "stay at home" creature. If the habitat is good, about forty acres will be home base. If the habitat is poor, it may have to roam over three hundred acres to get sufficient food.

B.C.'s largest deer is the mule deer *(Odocoileus hemionus)*, which has the widest distribution of any deer in British Columbia, occurring as far north as the Liard River, throughout the interior of the province and as far west as the coastal mountains. Its smaller mule deer cousin, the Columbian blacktail or coast deer *(Odocoileus hemionus columbianus)*, is found on Vancouver Island, on the islands in the Strait of Georgia, and along a fairly narrow strip of the mainland from the U.S. border to Rivers Inlet. The Sitka deer *(Odocoileus hemionus sitkensis)*, the smallest mule deer, is found on the northern coast of British Columbia and the Queen Charlotte Islands.

The large ears of mule deer are extremely sensitive to every sound, and are the obvious source of the animal's common name. The bouncing gait of the mule deer is in contrast to the flowing gallop of the whitetail. When not in a hurry the mule deer has a sedate walk, but when harried its stiff-legged bouncing action has led to its other common name, "jumping deer."

Deer are essentially browsers rather than grazers, although mule deer in the summer seem to graze more often than the whitetails. Significantly, deer appear to have the ability to choose the browse with the highest nutritional value. Deer (as well as some other herbivores) lack a gall bladder, and it is thought that this is the reason that they can eat the leaves of the rhododendron, which are poisonous to sheep and cattle. Their favourite foods are evergreen and deciduous twigs, plus numerous shrubs, herbs and grasses; all of which the deer eat in great quantity to survive the critical winter months.

In spring and summer, deer eat voraciously to make up for the hard winter, and the bucks have the burden of growing a new set of antlers. Horns on cattle are fed by an internal supply of blood vessels and nerves, but antlers are nourished by the external covering, referred to as "velvet" tissue. As the days get

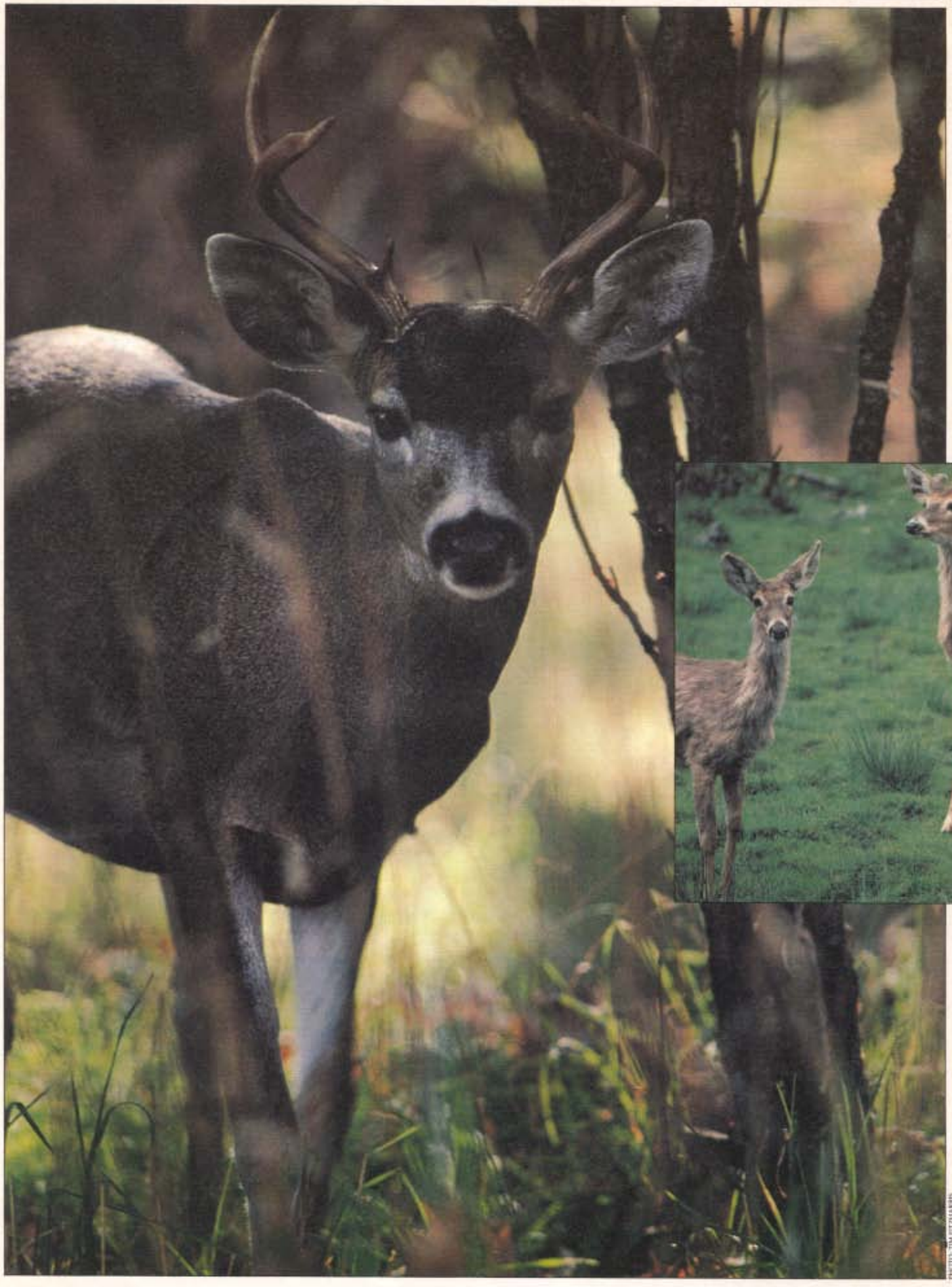


PHOTO: TIM FITZHARRIS

shorter in late summer the velvet dries and begins to fall off, aided by the buck rubbing its antlers against small trees or brush. In September the buck's neck is noticeably swollen, the result of both hormonal changes in preparation for mating and any sparring with competing males. The antlers are finally shed each January.

The does, who have been carrying young since the previous October or November, give birth in late May or early June. Twin fawns are frequent, although a single birth is common when a doe is giving birth for the first time. While the new arrival is trying to stand on its long and wobbly legs, it is thoroughly licked by the mother's rough tongue. As soon as possible the doe will walk the fawn away from its birth place, thus reducing the danger of an attack by a predator.

PHOTO: TIM FITZHARRIS

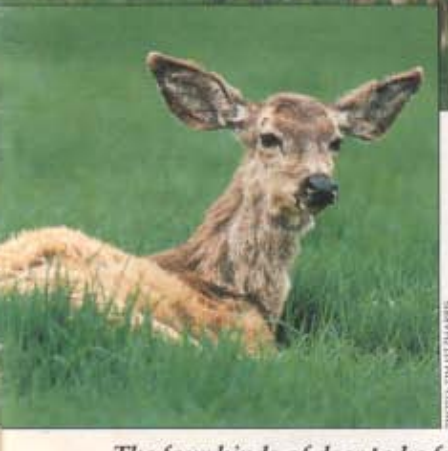


PHOTO: TIM FITZHARRIS

The four kinds of deer to be found in B.C. are: the coast deer or Columbian blacktail (left), the whitetail deer (centre), the mule deer (above and top) and the Sitka deer (far right).

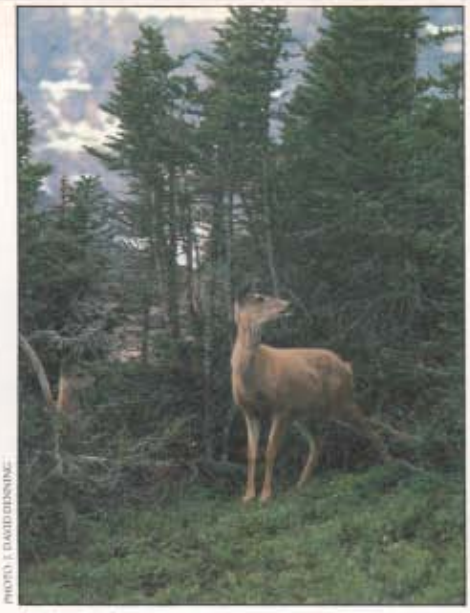


PHOTO: J. DAVID DENNIS

If the family is disturbed the fawn remains in hiding, perfectly still, its legs tucked under its body and head outstretched. With its camouflage of a spotted silky coat it is practically invisible. For its first week of life a fawn is odourless, and a predator may come quite close without detecting it. If there are twins, the mother beds them down separately during the day, returning to nurse them every few hours. In about three weeks a fawn can run along with its mother and start nibbling any succulent vegetation.

Besides food and water, deer require camouflage-cover and an avenue of escape if they are to survive. While logging practices have disrupted such deer habitat in many parts of B.C., logging and deer can coexist if the mix is properly managed. In any region where there are deep snowfalls, for example, deer require unlogged mature timber for their winter range.

In the Queen Charlotte Islands, where there are no natural deer predators, the Sitka deer introduced into that isolated archipelago early in the century have today overrun that habitat. Severe overbrowsing has resulted in a radical change in the island vegetation, and there has been a marked decrease in a number of shrubs, including salal and salmonberry. Most significantly, the deer continue to browse so heavily on red cedar seedlings in logged-over areas that few new red cedars can survive to maturity. Red cedar not only is a valuable commercial tree species, it has inestimable value in the Haida Indian culture for its use in totem poles, longhouses and canoes. There is no easy solution to the deer overpopulation problem, and the introduction to the Queen Charlottes of natural deer predators such as cougars or wolves likely would create more problems than it would solve.

Deer were used by all the B.C. interior Indian tribes, not only for food, but also for the hides to make into shirts, leggings, moccasins, dresses and other clothing. Often these items were decorated with painted designs or coloured porcupine quills.

Deer were caught by nets, snares or deer traps. The traps were narrow

PHOTO: DOUG COWELL

pits six to seven feet deep, over which was spread a cover made of branches lashed together and suspended on a roller. When the animal stepped on the cover, it pivoted and the deer fell into the pit. The cover then returned to its closed position.

There is no doubt that deer also played a very important role in the opening up of Canada by European settlers. Deer were not only a source of meat, but the tallow became soap and candles, and the hides were made into clothing. Even windows were covered with the skins, glass being unobtainable. The antlers were used for the handles of knives, forks and daggers, and deer hair came in very useful for stuffing saddles.

Today, the deer is appreciated more for itself than for its usefulness. Its graceful movements, bright eyes, alert ears and fascinating habits are a delight to anyone fortunate enough to come into contact with this animal so perfectly attuned to its forest surroundings.

FIFTY YEARS AND 200 MILLION SEEDLINGS LATER

Although the property was still known as "Green Timbers," by 1930 there was nothing left of the once fine stand of trees except slash and stumps. Travellers on the Fraser Highway south of New Westminster passed right by this 266-hectare eyesore, no doubt wishing that someone would clean up the site. Just such a rehabilitation program got underway in March of that year when the Forest Branch of the Department of Lands became the property's new owners. The plan was to build a nursery to provide seedlings for the province's fledgling reforestation projects.

In its first years of operation Green Timbers Nursery —the oldest operational nursery in B.C. — shipped out an average of 76 thousand seedlings annually. But following the devastating 1938 Sayward fire on Vancouver Island and the urgent need to replant that scarred land, Green Timbers' rate of production soared to nearly four million new trees each year. Today, on a reduced land base of almost 59 hectares, Green Timbers turns out 14 million of the approximately 100 million young trees produced each year by all Ministry of Forests nurseries to reforest logging sites.

Province of British Columbia
Ministry of Forests
HONOURABLE TOM WATERLAND, MINISTER

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