Tom Wright

recollections of a pioneer forester and tree farmer

John Parminter

Tom Wright: recollections of a pioneer forester and tree farmer

by
John Parminter

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Introduction and Acknowledgements

The Forest History Association of B.C. is proud to co-sponsor the publication of Thomas G. Wright's memoirs. I found Tom's life accomplishments to be not only fascinating but his biography has provided valuable insight into the development and growth of British Columbia's forest industry. His observations, insights and research in forest and wildland fire ecology, in particular, were decades ahead of their time. All British Columbians can thank Tom for his vision related to forest economics which lead to the introduction of the pulp and paper industry in north-central B.C.

I will take this opportunity to thank Gerry Burch for organizing and taping interview sessions with Tom. Those interviews provided the basis for this publication. I would like to thank Ralph Schmidt and other members of the FHABC Executive for their input and support as the project progressed. Finally, I would like to thank John Parminter for taking the time to author Tom's story. John accomplished this at the same time that he continues to be responsible for an extremely demanding position in forest research.

Then, if that was not enough, John remains the editor and publisher of the FHABC newsletter.

This publication marks the fourth time that the Forest History Association of B.C. has been involved with the production of a publication about special people who have made unusual and/or outstanding contributions to our province. It is my hope that this practice will continue in the future.

Geoff Bate
President, FHABC

March 2000

As his student, colleague and a long-time admirer of Tom Wright, I am delighted to see this summary of Tom's many achievements.

Tom taught me much about forest history but I still wonder how I should have answered one of his True or False questions: "Jigger Jones was so tough that he used to limb spruce trees with his bare feet." I am not reassured when Tom reminds me with a chuckle that the only reason I passed was because I used to laugh at his jokes.

Tom pioneered work in pruning and kindly reviewed what became my 1954 *Forestry Chronicle* article on the economics of pruning. He was an early advocate of Douglas-fir planted at wide spacings and strengthened his views with sound research into the fire history and development of old-growth Douglas-fir stands.

When he was Dean of Forestry at the University of British Columbia, Tom gave me much help and encouragement. I appreciated his support for acceleration of salvage logging on the UBC Research Forest following Typhoon Frieda in October of 1962. Dean Wright always advanced good arguments for forestry among often sceptical members of the UBC Faculty and Senate. I would have liked to have seen him reminding the Senate about the huge numbers of B.C. trees growing hard each year to create much of the wealth needed to sustain UBC and our province.

When he lived at the southwest corner of 13th Avenue and Tolmie Street in Vancouver, Tom indulged in some urban forestry by planting a double row of Douglas-fir along the boulevard. In 2000, many survive to show the highest yield that I have seen for such a small area.

In addition to his passion for tree farming, Tom had a good eye for other coastal values. He bought a mile of waterfront on the northeast side of Quadra Island. His daughter and son-in-law, both practising physicians in Campbell River, manage a fish farm there now.

One of the highlights of my career came when Tom and Bill Wright showed Ray Williston, members of the 1990 BSF class, myself and others some of their many achievements on the Wright tree farm.

British Columbians are lucky that Tom Wright brought his knowledge of forest economics and sound industrial forestry to our province.

J. Harry G. Smith, Ph.D., RPF
Professor Emeritus of Forest Resources Management,
Faculty of Forestry, UBC

April 2000

I was not fortunate enough to be one of Tom Wright's students, nor have I interacted with him in the context of my own forestry career. We do, however, share interests in fire history, fire ecology and stand dynamics. Having carried out both post-fire regeneration and old-growth stand analysis studies, I can appreciate Tom's advanced interests in and approaches to those subjects.

I recall Tom introducing himself as "Tom Wright, tree farmer" at one of the annual general meetings of the Forest History Association of B.C. It occurred to me that many foresters would like to have been in Tom's shoes – to be able to manage forests at the scale of industrial forestry and, at the same time, at the more intimate level of a family tree farm and woodlot. Unfortunately most of us will never get that chance.

As partial compensation, this is the story of Tom's career. It is based on interviews, Tom's own writings and what has been written about him. It is clear that he is blessed with both interests and inspirations.

It has been an education and a pleasure for me to write this biography. I would like to thank Gerry Burch, Glen Patterson and Ralph Schmidt for conducting the interviews and Tom for providing other materials. He also met with me to clarify some of the finer details.

Thanks also to Geoff Bate, Gerry Burch, Allan Klenman, Ralph Schmidt and Dr. J. Harry G. Smith for their comments and constructive reviews of earlier versions of this work. Jackie Walker assisted with the design of the final publication.

I am indebted to the Association of British Columbia Professional Foresters, Canadian Forest Products Ltd., the Faculty of Forestry at UBC and the Forest History Association of B.C. for their financial sponsorship of this publication.

Finally, I resisted the temptation to convert all measurements to the Metric system and chose instead to leave them in their original format, as written or spoken. I hope that the mixture of Imperial and Metric measures will not distract some readers.

John Parminter, RPF

July 2000

Preface

Thomas George Wright occupies a special place in the history of forestry in British Columbia. It could be argued that his arrival in this province was due to chance, or fate, but his accomplishments are certainly not. His knowledge, foresight and interests resulted in a career marked by innovation. He has several hats in his wardrobe – academic, consultant, company Chief Forester and private woodlot owner/manager – and he has worn each one with enthusiasm, dedication and conviction.

Malcolm Knapp, a long-time member of the Department and Faculty of Forestry at the University of British Columbia (UBC) and first Registrar of the Association of British Columbia Professional Foresters (ABCPF)

> "...believes the first person in British Columbia to actually function as an 'industrial' forester in the modern sense was his UBC colleague Tom Wright, who was employed by Bloedel, Stewart & Welch Ltd. as a consulting forester in the summers of 1941, '42 and '43. Wright is careful to describe an industrial forester as a professional forester 'employed by industry rather than government who prescribes appropriate forest management practices to ensure sustained yield.' These included making forest inventories, devising appropriate fire protection schemes, calculating allowable annual cuts and planning for the reforestation of burnt or cutover lands."[1]

This biography examines Tom Wright's long and varied career and his many accomplishments. It is based on interviews between Tom and Gerry Burch conducted on May 2 and December 3, 1997; a follow-up interview by Gerry Burch, Glen Patterson and Ralph Schmidt on December 23, 1998; published material authored by Tom; articles about him and other works. Unless otherwise noted, the italicized quotes attributed to Tom are from the three interviews mentioned.

Early life and education

Tom Wright was born in 1916 in Warren, Pennsylvania, U.S.A. It was a small town for the region, consisting of 15,000 people. Although the Allegheny National Forest was nearby, forestry didn't account for a major portion of the area's mixed economy.

Tom was the eldest of a family of four children. Because his father died when he was six years old, the children were raised in great poverty. To a large extent, his mother looked after his two sisters and brother while Tom looked after himself. As a youngster, he was obsessed with the outdoors and forests and very active in the Boy Scouts – hiking and camping. His love for the outdoors prompted him to become a forester.

Realizing that he would have to be resourceful in order to get a university education, Tom put himself through Pennsylvania State University by washing dishes in a student boarding house in exchange for room and board and also by marking hundreds of wood technology lab exams. His outdoor work experience began with the Civilian Conservation Corps (CCC). Like every other enrolee, Tom was paid $1 a day.

Each CCC camp provided housing, food and clothing. It was a project of the United States federal government and lasted from 1933 to 1942, providing

employment and work experience to some of the many unemployed young men south of the border. At its peak in 1935, the program had more than 250,000 men in 1,300 camps.[2] By government regulation, each CCC camp had to have a forester on staff. As a result, enrolment in forestry at many universities went up considerably.

Tom's CCC work in Pennsylvania consisted mainly of building dams for fish habitat and cutting *Ribes* (currant) shrubs to control white pine blister rust. He made $100 one summer and managed to save $90 of it to get him through his next year at Penn State.

He obtained his Bachelor's degree in forestry from Penn State in 1937. Tom then spent two summers cruising timber for the U.S. Forest Service in California and Utah. Because he could only get summer employment at that time, he applied to attend graduate school at Duke University in Durham, North Carolina.

Tom hitchhiked everywhere he went, never took a bus, and managed to travel across the United States twice. Once he was stranded in Missouri and as a result was a day late for an important meeting of new graduate students called by Dean Korstian of the School of Forestry at Duke University. This resulted in a summons to see the Dean:

> *"Korstian called me into his office and was quite stern of course. By way of explanation, I said I had hitchhiked from California to Washington and then across to North Carolina. That was why I was late. He just smiled and said 'forget it.'"*

Tom's interest at Duke University was forest economics and, of all the class members, only he chose this as a speciality. There were very few specialists in forest economics in all of North America at that time. After concluding his graduate studies, Wright was granted a Masters degree in forestry in 1939.

Tom Wright at the Meadowview Ranger Station, Cache National Forest, Idaho, 1937.

Appointment to UBC

Meanwhile, the Department of Forestry at UBC came close to hiring a forest economist but the candidate (H.R. Josephson, who was then working for the U.S. Forest Service) turned down the offer at the last minute. News that a forest economist was required at UBC made its way to Duke University. Tom Wright was sent a job offer by telegram and, after accepting it, he immediately departed for B.C. in October of 1939:

> Tom "...was working on the Duke University Forest when Dean Korstian introduced him to Dean Finlayson from UBC. Dean Finlayson shook his hand and Tom promptly forgot about it. However, Dean Finlayson must have been impressed and when he could not attract H.R. Josephson to head the Dept. of Forestry at UBC remembered Tom and made him an offer to lecture in Forest Economics."[3]

Tom has the distinction of being the first Special Lecturer in forest economics at UBC. He also taught forest policy, forest history, mensuration, fire protection and forest surveying. The only other members of the small department were Malcolm Knapp and Dr. Braham Griffith. In fact it was part of the Faculty of Applied Science:

> *"Malcolm was head of the department. He was quiet, modest, self-effacing, decent and highly respected by everyone. He ran that little forestry department with great ability and had the respect of everyone."*

Tom and Braham Griffith shared an office. Faculty meetings took place next door in Malcolm Knapp's office. One secretary was assigned to the fledgling department.

There were very few students at this time (five graduated in 1939, ten in 1940, two in 1941, seven in 1942 and four in 1943) and no research forest (there were plantations on the UBC campus but the Malcolm Knapp Research Forest near Maple Ridge was not started until 1943).

First consulting work

During the summers of 1941, 1942 and 1943 Tom Wright worked as a consulting forester, although that was not his original intention. Because he knew nothing about the forest industry in B.C. when he arrived here from the eastern United States, Tom wanted to learn about logging operations first-hand. So, after the spring term of 1941 concluded he approached Sidney Garfield Smith, the Managing Director of Bloedel, Stewart & Welch, Ltd. – one of the major coastal logging companies of the day – and asked for a job as a chokerman. Bloedel, Stewart & Welch, Ltd. had a reputation for having the most efficient logging operations, with high volume, high production and low cost. What better place to learn?

The reply was "Mr. Wright, come back and see me in a week." Tom thought that was a bit strange as he was only after a chokerman's job. So he returned in a week and learned from Smith that something completely different was in store:

> *"Mr. Wright, I would like you to go out to all our logging operations and tell me what you think our company should do to practice forestry. In particular, the Forest Service made us burn the slash at Franklin River in 1938. We've destroyed the soil, the fires ran up the sides of the hills and destroyed all the*

> *adjacent timber. We've wrecked that area for growing crops of timber in the future. I want a report from you saying that the Forest Service never should have required us to burn that slash."*

Tom Wright then became the first forester to work for a logging company in B.C. in the capacity of a forester rather than a forest engineer. He spent the summer of 1941 examining past and present logging, fire effects and natural regeneration at the Franklin River, Port Alberni and Menzies Bay operations of Bloedel, Stewart & Welch, Ltd., on Vancouver Island.

The pay was $6.00 a day, less $1.25 for room and board. In his words it was "maybe a little more than what a chokerman would make."[4] The Franklin River and Menzies Bay camps were railway shows. Tom clearly liked the accommodations he found there:

> *"I was impressed by the complete good care provided to the loggers in those camps. The bunkhouse usually had a section at each end, with four bunks in each section and a stove in the middle to dry out clothes and provide warmth. The bullcook, as he was called, would come around in the morning before you got out of bed and light the stove. When you were at work they'd provide nice clean sheets and blankets, even make your bed for you. There was all the hot water you needed and the food was out of this world."*

The companies provided such fine accommodations because they wanted to attract and keep the best loggers. Even in those days some of the loggers whimsically called themselves "camp inspectors." They'd work in a camp for a month or

Camp A, Franklin River operations of Bloedel, Stewart & Welch, Ltd. on Alberni Inlet, 1941.

Second Camp B, Franklin River operations of Bloedel, Stewart & Welch, Ltd. at Parsons Creek, 1941.

two, build up a stake, head to town for a while and then it would be back to another camp to repeat the process. While the camps were very comfortable, Tom was there to carefully inspect the woods operations, and for good reasons.

Slashburning was a contentious issue at the time and had been for many years, both in B.C. and in other parts of the Pacific Northwest. On December 10, 1937 an amendment to the *Forest Act* was passed to address the disposal of logging slash in the Vancouver Forest District. It stated that persons carrying on forestry operations were now bound to "...at least once within each calendar year, or as instructed by any officer authorized by the Minister, dispose of the slash and dead standing trees by burning or falling, as the case may be, to the satisfaction of the Chief Forester...."[5]

The Forest Service considered this amendment to be necessary because logging operations in the Vancouver Forest District were creating 40,000 acres of cutover land each year and existing legislation was inadequate to deal with the resulting fire hazard. All too often, areas of slash spawned forest fires which ran wild over the landscape. The new legislation took effect on January 1, 1938, the intent being to reduce the fire hazard on logged lands.

The year 1938 was also significant because of a huge forest fire which swept from north of Campbell River to the outskirts of Courtenay, burning 74,495 acres. The area consisted of 15,690 acres of merchantable timber, 8,300 acres of immature timber, 6,740 acres of land logged between 1917 and 1938 which had not been burned and was not restocked, 30,000 acres of logged and burned, 20 acres of recent burn, 8,605 acres of non-commercial

cover, 80 acres of grazing and pasture land and 5,060 acres of non-productive sites.[6]

A total of 60 million board feet of felled and bucked timber belonging to seven logging companies was lost as well as 14 million board feet of cold-decked timber belonging to three companies. In addition, $74,950 worth of logging equipment belonging to five companies was destroyed and 20 road and logging railway bridges were burned out.

On just this one major wildfire, suppression actions cost the Forest Service $108,003 and nearly the same amount was spent by three logging companies: Comox Logging – $14,723, Elk River Timber – $22,789 and Bloedel, Stewart & Welch, Ltd. – $66,213. The total net stumpage loss from killed merchantable and immature timber was estimated to be $429,160 (although 80% of the timber was thought to be salvageable).[7]

As if that wildfire wasn't enough, the Franklin River slashburns of the fall of 1938 escaped to become huge conflagrations, extending beyond the logged blocks. Bloedel, Stewart & Welch, Ltd. was intimately involved with, and seriously concerned about, both the Franklin River and Campbell River – Courtenay fires. Sidney Garfield Smith's instructions to Tom Wright clearly indicated that opinions differed widely regarding the advisability of burning logging slash.

If the slash was burned there were concerns about adverse impacts on site productivity, soil, plants and animals. Significant erosion often resulted. If the slash wasn't burned it could represent a serious wildfire hazard. At the same time, it was clear that most of the existing and highly

productive old-growth forests had regenerated following historic wildfires.

Tom Wright was charged with examining the issue from a scientific perspective and a lot was at stake. He described the situation at Franklin River thusly:

> *"Huge contiguous skidder settings had been laid out, there were no seed tree blocks in between, and after the fires the whole country looked like the Sahara Desert. The moss had burned off the rocks and great expanses of open rocks were showing up on the sidehills. So I figured, well, I'll go out and see if any seedlings have become established in the past three years. This was 1941. I carried out a seedling tally and, owing to the bounty of nature and some good seed years, nearly the entire area was restocked."*

The second-growth stands around Port Alberni were up to fifty years old and provided insights into the effects of logging methods, utilization levels, seed trees and fire on the extent of natural regeneration. Tom then went to Menzies Bay (near Campbell River) to assess the condition of the Bloedel, Stewart & Welch, Ltd. areas burned by the 1938 wildfire. Once again he found Douglas-fir was restocking the land. Nevertheless, planting was recommended for areas where natural regeneration was likely to be slow.

In the fall of 1941 Tom revisited the Franklin River operations to assist with slashburning. He went to several settings with Roy Olsen, the superintendent, Harold Bronson, the foreman, and some of the loggers. They began the ignition sequence at the top of each setting and worked their

Escaped slashburn of 1938 at Franklin River, 1941.

Valley bottom site near Hawthorn Lake, logged and subsequently burned in 1938. Photo taken in 1941.

way downhill. This was done to prevent the fires from gaining too much momentum and escaping beyond the upper boundaries of the settings, into the adjacent timber.

Wright filed a detailed report with Bloedel, Stewart & Welch, Ltd. in November of 1941. In it he described the stocking survey methodology; the relationships between logging methods, seed trees, aspect, site characteristics and natural regeneration; the advantages and disadvantages of different layouts (continuous clearcuts versus staggered settings) to natural regeneration; the pros and cons of slashburning and planting and the implications of different reforestation policies to industry and government. The 825,000 acres of not satisfactorily restocked land on the South Coast and Vancouver Island, the overcutting of mature timber and declining timber quality were major influences on his recommendations:

> "So long as the objective of getting complete reforestation is attained it doesn't matter how it is accomplished – by seed tree groups, by staggered settings, by planting, or any combination of methods. It matters most that it is decided to work toward the objective. Then there will be an incentive to burn slash carefully, to arrange for seed trees where it is practical and economical, and to take a pride in the kind of results that are attained.
>
> This kind of plan makes available the adaptable and controllable features of planting. Planting can bring three-fourths stocking up to full stocking.

Planting can establish [Douglas-] fir where alder or weeds might otherwise take over. Planting can assume the responsibility for reforestation when efficient logging methods do not provide seed trees.

What about slash burning under this kind of plan? This is a local problem. Where the hazard is not serious and where the prospects of natural reforestation are good, it may not be necessary to burn slash. Ordinary safety precautions demand, however, that most slash areas be burned. Also, many slash areas have poor restocking prospects under modern logging methods. If planting is intended as a policy, it is best that slash be burned to make the land accessible and to reduce the risk to adjacent plantings.

It has been suggested that the decision of whether or not to burn is not as crucial as the kind of burning. If burning is conducted with care and judgment, the advantages should generally out-weigh the disadvantages."[8]

In the spring of 1942 Tom went to Franklin River to personally carry out some of the limited planting. He was provided with a chokerman as an assistant:

> *"I spent three days personally planting seedlings in several areas in an effort to find out what the results would be. I can recall getting on the railway speeder with a bucketful of seedlings and a*

> *mattock. And I remember the strange looks I got from those loggers – looking at this guy with a bucket of seedlings going out into the woods!"*

Later in 1942, Tom started what became known as the "Rocks on Stumps" research project. He felt that a long-term study of the Franklin River fire would reveal much about the effects of slashburning. It had been carried out under very dry conditions – just after possibly the driest summer in 50 or 100 years – the slash loading was heavy and the fire impacts severe. What better opportunity existed to assess the effects of such fires?

The objectives of the study were to carefully analyze the site, soil and regeneration conditions at that time and enable future assessments of the long-term effects of the slashburn on site productivity and timber yield. Accordingly, Tom laid out 38 permanent sample plots on the severely burned south and west aspects of branches 16 and 17 of the logging railway. An assistant established 22 plots on Branch 17A. These areas had produced high volumes of old-growth timber.

The plots had a radius of 11.78 feet, were placed at 100 foot intervals, and each centre was marked by a railway spike buried in the ground. The bearing and distance to a nearby stump were noted and a rock placed on top of each of these reference stumps. This was done on the advice of Charlie Dunham, the Logging Engineer for Bloedel, Stewart & Welch, Ltd. at Franklin River. He said that if you used wooden stakes to mark your plots they would eventually rot and fall over. But "nothing will ever happen to a rock on a stump."

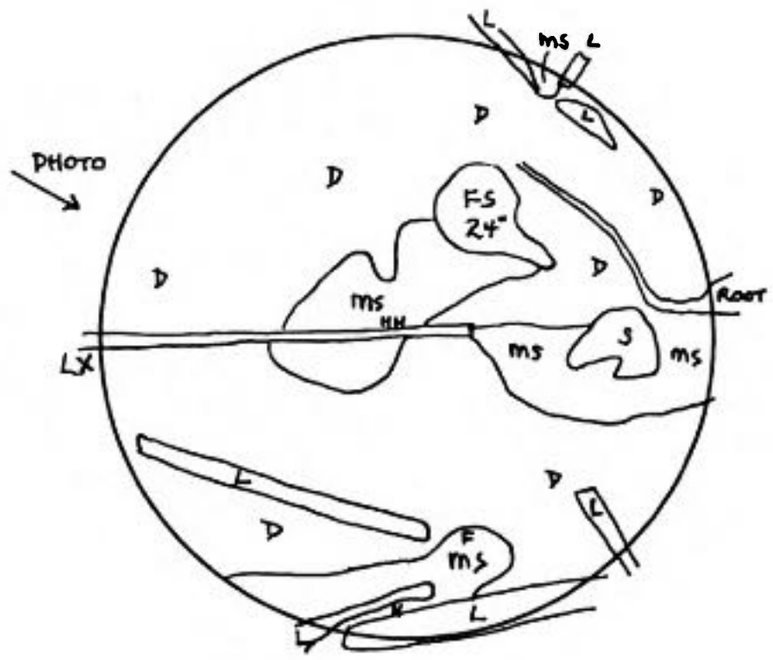
Tom and his assistant worked carefully and diligently. All young trees, surface substrates (organic matter, mineral soil or exposed rock) and logging debris (logs and stumps) present in each plot were mapped. Percent cover estimates were made for surface substrate and logging slash. Photographs were taken of each plot and maps drawn to show the plot cluster details for each installation. They knew the potential long-term value of the work:

> "The short term objective was to describe the area as it was in 1942. The long term objective was to study the plots in future years to assess the changes in the soil, the vegetation and the forest crop. It was a basic ecological study, with the greatest stress placed on the long term objectives of the project, many decades into the future."[9]

Data analysis showed that mineral soil comprised 41% of the substrate, organic matter 24%, exposed rock 20% and stumps and logs 15%. The organic matter was overlying soil which had not been damaged by the slashburn. The exposed mineral soil attracted the greatest number of seedlings, with each 100 square feet supporting 2½ times the number of seedlings on the same area of organic matter. This applied equally to Douglas-fir, western redcedar and western hemlock.

Appearances were deceiving, hence the need for rational scientific inquiry. As Tom said:

> *"Looking up into the area from the Alberni Canal, for example, the exposed granite rocks made it appear that there had been great damage to the land.*



A facsimile of Tom's map for Plot 10 on Branch 17, established May 28, 1942.

D = duff MS = mineral soil

FS = Douglas-fir stump S = stump

LX = log suspended L = log on ground

F = Douglas-fir seedling
H = western hemlock seedling

Notes: Exposure S, Slope 40%
Substrate: mineral soil 30%, moss 40%, duff 30%
Shade cover 2%
Weeds: salal 70%, fireweed 30%
Also bracken fern and huckleberry.

However, there never was any soil on those rocks, only moss which had been burned to expose the underlying rock. As noted in the 'Rocks on Stumps' maps, the stumps were between the rocks, not on top of them, and the surrounding mineral soil was still in place. The exposed rocks covered twenty percent of the area but the edges of the granite boulders gave the impression, from a distance, that a greater area of land had been damaged by the fire."

The charred logs that remained provided adequate shade for the developing seedlings. They preferred shaded to open locations by a factor of 5 or 6 times. The natural regeneration (3,075 seedlings per acre on Branch 15 and 413 per acre on Branch 17) was surprising to Tom, given the great distance to the nearest seed source. This confirmed his beliefs in the regenerative powers of the forest.

In the early 1980s, a graduate student in the Department of Soil Science of the Faculty of Agriculture at UBC, Mike Curran, began a study of the effects of slashburning on tree growth at the Mission Tree Farm, Franklin River and other locations on Vancouver Island and the Lower Mainland. This involved examination of soil and foliar nutrients and the height and diameter growth of the dominant trees on each site.

In 1984, the Chief Forester of MacMillan Bloedel Ltd., Grant Ainscough, came across Tom's original field notebooks in the company's office. He turned them over to Mike Curran who, along with Divisional Forester Jack Dryburgh and Research Ecologist Bill Beese (both of MacMillan Bloedel Ltd.), set about to relocate the original plots.[10]

Mike spoke to Tom before going to Franklin River and said he was going to use a metal detector to find the railway spikes, thereby locating the plot centres. Tom replied "just look for the rocks on the stumps."

After his preliminary fieldwork was completed during the summer of 1985, Mike phoned Tom to report excitedly that, guided by the still-present rocks on the stumps, he had found every plot on branches 16 and 17. When fieldwork resumed during the summer of 1986, Mike relocated all of the plots on Branch 17A.

Following data collection and analysis, Mike Curran presented his findings to the Tenth British Columbia Soil Science Workshop, held at UBC on February 20 and 21, 1986. In his report he said that the original work was "very accurate and precise":

> "Mr. Wright was well ahead of his time; his work could put many of us current researchers to shame today. A number of fundamentals for good (and transferable) research documentation have stood the test of time in his work; we should strive to make these the common denominator in all current research."[11]

and

> "An important message in Mr. Wright's research are the benefits of using micro-plots within each research area (e.g., 23 micro-plots off Branch 16). Micro-plots provide large data sets ... for more sensitive within-site analyses. This minimizes 'noise' caused by variability in growth-determining

> factors, variability that must be accounted for when forest management practices are being monitored for possible site degradation."[12]

In recognition of his pioneering and meticulous research, Tom was invited to the workshop. At its closing he was presented with a small trophy representing a rock and an axe on a stump, by Mike Curran; his original field notebooks by Grant Ainscough; and a bound volume of his original report by Bill Beese. The inscription on the trophy reads:

> "A Rock on a Stump. A Monument to the Research Contribution of Tom Wright, by the 10th B.C. Soil Science Workshop"

Tom Wright in a 135-year-old stand of Douglas-fir and western hemlock, Nitinat Valley, 1941.

More consulting – B.C.'s first industrial sustained yield management plan

In 1942 and 1943 Tom Wright did additional work for Bloedel, Stewart & Welch, Ltd. He prepared a report on the Port Alberni Forest Working Circle, analyzing all the timber cruises and Forest Service inventory reports and calculating the yield capacity. He presented three separate plans for forest management in the working circle, each of which would lead to sustained yield.[13]

The complete report constitutes the first sustained yield management plan prepared for an industrial company in British Columbia. Some features were:

1. A reserve averaging one billion board feet of timber set aside from an initial volume of 18 billion board feet to balance non-salvageable losses due to fire and blowdown. This reserve would be written off against the life of the first growth and another reserve set up in the second growth when the first growth was cut.

2. Reforestation would limit the area of non-stocked land to a maximum of 20,000 of the total of 516,600 acres. A planting schedule was drawn up for each decade until 1980, based on the

assumption that 35 to 40% of harvested areas would require planting.

3. An annual cut of about 200 million board feet based on a growing stock of approximately 7 billion board feet, or 38% of the first growth volume.

4. An estimated average yield of 45,000 board feet per acre, although timber inventories averaged 32,000 board feet per acre. The difference was due to the conservative timber cruise estimates and the fact that the inventory volumes were based on current rather than future utilization standards.

5. Correction of the age class irregularities in the Great Central – Sproat unit of the Working Circle. The Franklin River unit had the opportunity to establish a quite regular distribution of age classes.

Tom calculated that if hemlocks and true firs were included in plywood manufacture and if pulp production increased, employment in the wood products plants of Port Alberni could increase from 2,470 to 3,340 men based on the same annual cut of 200 million board feet. Utilization and employment could also be improved by establishing additional manufacturing facilities such as creosoting plants, box factories, hardwood plants (using red alder), fibreboard plants, sash and door factories and industries using cellulose and tree bark to manufacture plastics, tannins, cork and other products.

The volume cut could also be increased through better utilization. Four settings at Franklin River were scaled and it was discovered that an average of

24,000 board feet per acre was being left behind in pieces larger than 100 board feet. If this material could be used, the cut would increase 20 to 40% over the current 45,000 board feet per acre in first-growth stands. Thinning or partial cutting in second-growth stands on about 150,000 acres would yield from 5,000 to 15,000 board feet per acre over the rotation, increasing the working circle's annual cut by from 10 to 20 million board feet:

> "With thinnings and closer utilization of slash, the allowable cut from the years 1960 to 2020 might be 250 to 300 million feet instead of 200 million feet from the same cutting area. The horizons of increased utilization indeed are great. But the large supply of big logs on the Port Alberni Working Circle will make vigilance necessary to dig deep in the slash as operations proceed. If overhead costs are written off against the large logs, the possibilities of using small material will be increased."[14]

Tom enjoyed knowing the loggers and living in the bunkhouses. He admired their skill in topping spar trees, rigging skylines 2,000 feet up a hillside, building railroad bridges and constructing roads. Above all, he appreciated the warm welcome he received:

> *"The men in the bunkhouses, so many of them with a wife and children back in town, spent their working lives in the bush in the logging camps. At that time, a forester in a logging camp was regarded with curiosity. They were not regarded as a very significant factor in*

the woods. However, Sidney Garfield Smith had written a letter to all his superintendents, telling them 'Mr. Wright is coming and I want you to give him your full co-operation.' So I had a wonderful experience in those camps."

At the time, Tom noted that because Bloedel, Stewart & Welch, Ltd. owned two-thirds of the timber and the H.R. MacMillan Export Company had two-thirds of the manufacturing capacity in the Alberni area, it was natural that they should merge:

"At the time it was a common topic of discussion among the forestry community. Everybody was saying that 'old H.R. is out of timber.' And he was. He had huge mills in Vancouver and New Westminster and sold lumber around the world, but he was short of timber to support his large operations in the future."

Eventually, in October of 1951, the H.R. MacMillan Export Company merged with Bloedel, Stewart & Welch, Ltd. and H.R.'s timber supply problem was solved.

In the army now

Tom Wright had a tough decision to make. Sidney Garfield Smith had offered him the position of Chief Forester of Bloedel, Stewart & Welch, Ltd. but Tom decided to join the service. He left his job at UBC in 1943 and travelled to Fort Lewis, Washington to enlist as a private in the U.S. Army.

He was sent to Camp Claiborne, Louisiana and became a member of the 796th Engineer Forestry Battalion, the first and only one of its kind in the U.S. armed forces.

Tom was assigned to the 2786th Company and served in France, Belgium and Germany, landing at Utah Beach some time after D-Day. His work in Europe kept him in close contact with local foresters from France, Belgium and Germany and he found it to be a rich and valuable experience. The primary responsibility of his army unit was to observe local timber harvesting operations and then obtain and deliver timber to repair damaged bridges. One of those was the bridge at Remagen used by General George S. Patton and his troops on their way to Berlin. Other major uses for lumber were in camp and hospital construction and for shipping crates.

In an article in the August 1945 issue of *The Timberman*, Tom described some of his impressions of European forestry:

"Most of the French and Belgian mills use band saws, and many have hand-driven carriages. The majority of French mills are steam powered, while most of the Belgian mills use electrical power. By taking out a narrow 1/16 inch kerf,* by careful sawing technique, and by utilizing small pieces of lumber, the mills recover the maximum from each log.

Slabbing waste is negligible. Though the daily capacity of the average mill is only 2500 [board] feet, it requires only a small crew and turns out an accurately sawn product which ordinarily does not require planing."[15]

(* kerf is the wood removed by the saw)

He also witnessed the degree to which woods material was put to use:

> "The visitor to Europe's forests is always struck at the outset by the completeness of their utilization. We have all read about using every scrap of wood down to the twigs. But to see this total utilization is to appreciate more than ever how precious is every cubic foot of wood in Europe. It is this strong demand for timber which makes it possible for the Europeans to practice such intensive forest management."[16]

These observations made an impression on Tom and the issue of more complete utilization proved to be of major importance later in his career.

He enjoyed the work in Europe and was thankful that he was exposed to such different forest management practices. But he recognized that the cultural and economic contexts in Europe were quite different from those in North America.

In recognition of his contributions to supplying lumber in the European Theatre of Operations, Tom Wright was awarded the Bronze Star. Even while on duty in Europe, Tom remained keenly interested in what was happening back in B.C. forestry circles. The First Sloan Commission hearings were underway in 1945:

> *"...my wife Virginia used to send me clippings from the newspaper on the First Sloan Commission... and I sat down and wrote a letter to the great H.R. MacMillan, commenting on his testimony before Sloan. He didn't know Sergeant Tom Wright of course but H.R. wrote a two-page letter of reply to Sergeant Tom Wright, U.S. Army in Germany."*

Back to B.C. and UBC

Tom Wright was demobilized in 1946 and returned to B.C. He obtained summer work with the Powell River Company, examining some of the logged western hemlock – amabilis fir types around Alert Bay, Harbledown Island and elsewhere. All were old clearcuts, many had been harvested by A-frames from the beach. He found these areas to be well-stocked with regeneration, thanks to the soil being opened up to the sunlight and the winds which spread the seeds from nearby forests.

Many large even-aged stands in that region resulted from extensive blowdown. Tom found evidence of the storms of 1886 and 1906 and concluded that perhaps every 30, 40 or 50 years an exceptionally strong windstorm fells some old-growth forest to create a new even-aged stand.

In the fall of 1946, Tom returned to UBC as an Associate Professor and resumed teaching, this time forest policy and forest protection. Many returned servicemen chose to enter forestry, raising total enrolment to 351 students in 1947.[17]

In 1998, Ralph Schmidt, a retired Director of the Research Branch of the Forest Service, recalled his impressions of those years:

> "As a student of Tom's from 1946 to 1947, I was aware of the excellent relationship between Tom and his students. He truly was an inspiration to all of us. Tom was always enthusiastic about forestry. He had a twinkle in his eye and a very positive attitude towards the solution of a problem."[18]

In noting the decisions of logging companies to hire foresters, Tom Wright said it was up to the foresters to establish the foundations of industrial sustained yield:

> "Starting as he does with unmanaged properties, the forester faces a difficult task. His information on timber inventory is far from complete. His estimates of growth and yield are sketchy, at best. His knowledge of the correct application of silvicultural techniques is quite imperfect. Fire protection planning and organization have a long way to go. The men in the woods must be educated into accepting forest management as a necessary part of field operations."[19]

At the same time, foresters need to maintain open minds:

> "The forestry profession needs men who are prepared to re-examine the old ideas and think for themselves. Our silvicultural and management conceptions are clouded with vague generalities and platitudes which need

careful re-checking in the field. So many of our ideas are influenced by our rough and ready methods of forestry in the past. Many of our theories have not been tested or proved in practice. Other theories will apply in one place, but not in another. Viewpoints formerly considered theoretical and academic may, upon re-examination, prove to be quite useful."[20]

Chief Forester, Canadian Forest Products Ltd.

Tom Wright spent two years at UBC and then accepted the position of Chief Forester of Canadian Forest Products Ltd. (Canfor) in 1947, a position he held until 1962. The company began on November 12, 1938 when John G. Prentice and L.L.G. "Poldi" Bentley formed Pacific Veneer Company Limited and constructed a veneer plant in New Westminster. Initial production was limited to tropical hardwood veneers for use in furniture manufacture but emphasis soon shifted to birch and Sitka spruce for aircraft veneer and plywood.

The British Ministry of Aircraft Production contracted with Pacific Veneer in order to secure a supply of aircraft components. Birch veneer and plywood were used in Anson and Oxford aircraft, and spruce plywood in the Mosquito fighter-bomber.[21] As demand for this material decreased near the end of World War II, Pacific Veneer switched over to exclusive production of Douglas-fir plywood.

Operating from this base, Prentice and Bentley began acquiring sawmills and logging operations in order to create an integrated company. Eburne Saw Mills Limited was first, followed by Vedder Logging Company Ltd., Consolidated Timber Company Limited and Spring Creek Logging Company Limited in 1943. The addition of Stave Lake Cedar Limited provided a shingle mill and more timberlands.[22]

In 1944 the Beaver Cove Timber Company Limited was purchased from the Puget Sound Pulp and Timber Company, bringing with it large areas of timberland in the Nimpkish Valley on northern Vancouver Island. These timberlands were managed locally by Russell Mills and the manager of all of the company's logging operations was Bill McMahan.

In 1947 the company reorganized under the name Canadian Forest Products Limited, or Canfor. The name was provided by a subsidiary of Beaver Cove Timber Company Limited. Four divisions were formed: Pacific Veneer and Plywood, Eburne Saw Mills, Englewood Logging and Harrison Mills Logging. In the same year the K.B. Fraser Logging Company was purchased and incorporated into the Harrison Mills Division. The Huntting-Merritt Shingle Company Limited was also acquired.

As Chief Forester, Tom was concerned with management of the timberlands of the Englewood Logging and Harrison Mills Logging divisions. One of his first "high level experiences" in this new capacity was a trip to Washington state in 1949 to examine forestry practices there. The participants represented a "Who's Who" in the forest industry and the Forest Service:

H.R. MacMillan
President, H.R. MacMillan Export Company

Charlie Dunham
Chief Forest Engineer,
Bloedel, Stewart & Welch, Ltd.

Larry McMullan
Chief Forester, B.C. Forest Products Ltd.

The Hon. E.T. Kenney
Minister of Lands and Forests

Dr. C.D. Orchard
Deputy Minister and Chief Forester,
B.C. Forest Service

John Stokes
Assistant Forester, Management Division,
B.C. Forest Service

Stan Hepher
Chief Forester, Alaska Pine and Cellulose Co.

Hugh Hodgins
Vice-President, Woods,
Crown Zellerbach (Canada) Ltd.

Bill McMahan
Manager, Logging Operations,
Canadian Forest Products Ltd.

As Tom described it:

> *"It was a co-operative effort of the industry and the government, through the B.C. Loggers Association and the Forest Service, to go down and have a look at what they were doing in forestry practices in the state of Washington. It was a marvellous trip. The fact that H.R. MacMillan personally came along as well as the others and the Minister of Forests, the Honourable E.T. Kenney, and Dick Orchard, the Chief Forester – the two top people in the Forest Service. It was a very constructive and co-operative project.*

So much of the time, as you know, industry and the Ministry of Forests are at odds, fighting about various issues, but in this case they all got together in the woods for a very constructive and worthwhile experience."

This was one of the first such trips taken outside of B.C. to view forest management activities in other countries. Operations on Weyerhaeuser lands, as well as their research facilities at Centralia, Washington and the U.S. Forest Service's Pacific Northwest Forest and Range Experiment Station at Portland, Oregon were important stops on this tour.

The main objectives were to study forest tenure, fire protection measures and reforestation projects – including forest nurseries. However, nearly all operations in Washington and Oregon are on private land and therefore their programs were not directly applicable to B.C. conditions. Nevertheless, many discussions were held on subjects which were later considered by the third Royal Commission on forestry held in B.C., commonly called the Second Sloan Commission.

Old-growth forest research

Not one to lose touch with the forest, Chief Forester Tom Wright maintained his interests in fieldwork and research. In 1947 Henry Hansen, the Supervisor of Falling and Bucking for the Englewood Logging Division, told Tom that the finest stand of Douglas-fir he had ever seen, on the Hoomac Main Line, was then being felled. Fully aware that Henry had been falling since the age of 15 and knew a good stand of timber when he saw it, Wright wanted to understand the history of the stand and the reasons why it was so exceptional.

So they went out to the block, delineated a seven-acre area and measured the length of each felled tree, right to the tip. They wanted to know the age, size, height and volume characteristics of the trees in the stand. Other information was obtained by boring and ageing the trees in adjacent unlogged stands, counting annual rings on stumps where logging had occurred and analyzing timber cruise information. Company forester Glen Patterson and Bill Garrard, a fourth-year forestry student from UBC, did much of that work.

The stand (80% Douglas-fir and 20% western hemlock and western redcedar) turned out to be even-aged, 390 years old. It became established in about 1550 after a large forest fire (estimated at 86,000 acres) swept through the Nimpkish Valley, from the Kilpala River at Nimpkish Lake upriver to

Woss and Schoen lakes, a distance of about 35 miles. They decided to call it the Davie River Stand.

Bill Garrard in front of the 390-year-old Davie River Stand in the Nimpkish Valley, 1947.

The average height of the Douglas-firs was 278 feet and the tallest was 305 feet. Tom sent this and other information to Eric Garman, a researcher with the Forest Service in Victoria. Eric, who kept track of unusual trees and stands in B.C., called back to tell Tom that the 305-foot Douglas-fir was the tallest tree yet reported in the province and that a 243-foot western hemlock was the tallest yet reported for that species. Later research revealed that there were likely seven historical trees taller than 305 feet but that the Davie River tree was certainly among the tallest Douglas-firs of the time.[23]

This stand scaled out at 210,000 board feet per acre, or 2400 cubic metres per hectare. There were 24 Douglas-firs per acre, with an average DBH (diameter at breast height) of 62 inches. The largest was 95 inches across. They concluded that the stand was so productive because it was on a gentle slope and surrounded by higher ground and mountains. Those factors ensured year-round seepage and that lead to such exceptional productivity.

Sometime later, Tom examined a cruise of the Nimpkish Valley that had been carried out by the James D. Lacey Company's Portland, Oregon office in 1908. That firm had cruised timber from California to Alaska and examined private timber holdings in the Nimpkish. Their maps had different colours for light, medium and heavy timber volumes per acre. The only stand coloured purple, perhaps so it would be obvious, was a parcel of forty acres with a volume in excess of 8 million board feet, or 200,000 board feet per acre. It was the only "forty" in the valley with that much volume and, prophetically, it was on the exact location where Tom Wright, Henry Hansen, Glen Patterson and Bill Garrard carried out their study.

After harvesting, the Davie River Stand was slashburned and reforested with Douglas-fir in 1953. "Today it is a beautiful second growth stand, with a rich ground cover of swordfern, so typical of the high growing sites."[24]

In addition to the Davie River fire, others – all considered to have been ignited by lightning after extended summer droughts – created large even-aged stands at Canfor's Englewood Logging Division. These were along the Nimpkish River between Nimpkish and Woss lakes (in about 1820, totalling 17,000 acres); south, east and north of Vernon Lake as well as east and north of Woss Lake (in about 1685, totalling 34,000 acres) and from the upper Oktwanch River northwest to the Davie River (in about 1400, partially reburned by subsequent fires).[25]

Also in 1947, Tom flew into Muchalat Lake with Kjell Toftdahl to examine forest conditions. They walked north up the Oktwanch River to the divide with the Nimpkish, then down the Nimpkish to Maquilla Creek, the Davie River and finally Woss Camp. The trip took them two weeks and they travelled through intact old-growth stands, partly following an old trail along the Oktwanch and Nimpkish riverbanks that had been used for centuries by First Nations peoples crossing from the West to the East coasts of Vancouver Island.

The trees in the Oktwanch were larger than those in the Davie River stand. By boring a small old Douglas-fir near the treeline, Tom determined that it was 540 years old. Several years later, when logging commenced in the area, he was able to confirm that it was an even-aged stand, dating from the very early 1400s.

In the Maquilla Creek drainage, a Douglas-fir stand proved to be even-aged as well, dating from the late 1600s. Charcoal was found to confirm that the stand was of fire origin.

Tom Wright in a 270-year-old stand – primarily Douglas-fir – in the Maquilla Creek drainage of the upper Nimpkish Valley, 1947.

These large fires all took place during periods of extreme fire danger, corresponding with extended drought. In Wright's opinion this illustrated the resiliency of the coastal forests:

> *"The argument is frequently put forward that the branches, twigs and rotten logs and vegetative matter must be left on the ground to enrich the soil to support the growth of future timber crops. Yet our fine old-growth stands which became established following severe forest fires tested the soil for centuries and produced superior stands of timber. If the soil had been damaged by the fires it would not have produced such great yields."*

The Davie River stand had the maximum yield. The number of trees had dropped from 100 per acre in a 120-year old stand at Kaipit Creek to 20 per acre at age 390 in the Davie, giving it the tallest trees and the greatest volume per acre. Between the ages of 250 and 390, 80% of the trees were eliminated due to competition for growing space. However, the culmination of Mean Annual Increment occurred between 80 and 100 years.

This suggested to Tom that some Douglas-fir stands could be grown with extended rotations by carrying out commercial thinnings and partial cutting, which maintain a good crown cover. The yield and quality of the stand would be increased, while maintaining the aesthetic values of beautiful old forests.

In front of a large Douglas-fir in the Nimpkish Valley (L to R: unknown, Tom Wright, Glen Patterson), early 1950s.

The Second Sloan Commission

On January 7, 1955 the Hon. Gordon McG. Sloan was appointed Royal Commissioner and charged with examining what had transpired in forest management during the preceding decade, when he concluded the second Royal Commission on forestry. The terms of reference were identical to those of his 1945 commission: the extent of the forest resources and their conservation, management and protection; sustained yield management; reforestation; research; social factors; recreation, range and wildlife; soil conservation; water supplies; forest finance and revenues; timber rights and tenures and forest law.

Tom Wright wrote the majority of the Canfor brief for the Second Sloan Commission and it was submitted in support of the company's application for a Forest Management Licence in the Nimpkish Valley. (Forest Management Licences became known as Tree Farm Licences in 1958.)

An interesting aspect of this sequence of events is that H.R. MacMillan presented his company's brief to the Royal Commission on November 3, 1955 – a few weeks before Canfor presented theirs. H.R. was of the opinion that no more Forest Management Licences should be issued in the "Eastern Division" of the Vancouver Forest District (the eastern half of Vancouver Island, the mainland coast and the islands in between) in particular and for the entire Vancouver Forest District in general.[26] Rather, the

large integrated companies should obtain a portion of their sawlog and pulpwood needs from the open market and, to MacMillan's mind, this would permit the continued existence of small independent logging companies and mills.

The positions of each company were contrary. After the presentation by H.R. MacMillan, Tom Wright was called into the offices of Poldi Bentley and John Prentice, along with Bill McMahan, and told to rewrite the Canfor brief. To avoid the distractions of the office, Tom worked on the revisions at home. He and Bill McMahan printed it on a Sunday at the Pacific Veneer Company office and then it was assembled and presented to the Sloan Commission on December 14, 1955.

The Canfor brief was revised specifically to directly challenge H.R. MacMillan's stance that no more Forest Management Licences should be issued to large companies. Canfor's recommendation was that

> "the management license policy should be judiciously extended on the Coast, so that ultimately there will be an approximate balance between the areas managed by the Crown and the areas managed by private enterprise."[27]

Keith Shaw, head of the Timber Division for MacMillan & Bloedel Limited, approached Tom after the Canfor presentation to Chief Justice Sloan and asked for two copies of the brief – one for himself and one for H.R. MacMillan, who was out of town. Tom provided them gladly and soon afterwards received a note from H.R., sent from the Savoy Hotel in London, England:

> "Thanks for sending me a copy of your excellent brief. It will in my opinion be the best and most informative professional brief submitted. I can see your knowledge and enthusiasm in it.
>
> Yours sincerely,
>
> H.R. MacMillan"[28]

In spite of the differing recommendations, H.R. complimented Tom on the substance of the brief. Tom was impressed that H.R. recognized that he had authored the brief. It had, after all, been read to Chief Justice Sloan by Poldi Bentley, the Vice-President of Canfor, and Tom's name hadn't been mentioned.

Following 18 months of hearings held throughout the province, the Commissioner's report was completed in 1956, submitted to the Lieutenant-Governor in Council in July of 1957 and published in September of that year. The principles of sustained yield forest management were upheld and the report mainly dealt with improvements to forest management as opposed to major changes. Revisions to the Forest Management Licence legislation restricted their term to 21 years, with renewal subject to renegotiation. The stumpage calculation was changed to an appraisal with allowance for forestry costs.

Industrial concerns

Speaking to a joint meeting of the Canadian Institute of Forestry and the Society of American Foresters in Montreal in November of 1952, Tom Wright described recent developments in the pulp and paper industry in B.C. Such operations were still strictly coastal but production nearly doubled between 1945 and 1951, creating a demand for additional raw material. It was obtained from mill waste, pulp logs and small wood from cleaner logging, re-logging (salvage), pre-logging (removing small pulpwood prior to conventional clearcutting) and second-growth stands.[29]

The large coastal sawmills were making further refinements in order to manufacture pulp chips from mill waste. Without barking facilities, 0.25 units (50 cubic feet) of pulp chips could be obtained per thousand board feet by selecting clean wood (ends, trimmings and bark-free slabs). With whole-log debarking, from 0.6 to 1.0 unit (120 to 200 cubic feet) could be produced, depending on the species. Smaller sawmills had begun to sell their waste wood to the larger mills and plywood plants had also installed chipping machinery. Tom concluded that this bode well for the industry:

> "Any realistic survey of British Columbia's huge standing timber resources and great timber growing capacity can only conclude that our

> forest economy is capable of much greater expansion. The pulp and paper industry is particularly suited to this expansion because of its capacity to promote full timber utilization and because of the marvellous way it lends itself to integration with the manufacture of lumber, plywood and other forest products."[30]

Canfor had recently joined the pulp industry by acquiring a controlling interest in the Howe Sound Pulp Company Limited in 1951. They operated a mill at Port Mellon, on the west side of Howe Sound, just northwest of Vancouver, and produced unbleached kraft pulp. Canfor's motivation was to have a manufacturing outlet for its own waste wood.[31]

Even as Canfor continued to expand, Tom Wright saw a definite role for the small forest land owner:

> "It is in the interests of the country to encourage timber growing on small ownerships to the maximum degree possible. With a stable, diversified market for logs and a steady demand for pulpwood, the small owner can practice the most intensive forestry in the community. So long as the pulp industry depends on 'farmer wood' for a proportion of its raw material, it should participate in programs of co-operation and demonstration which will encourage the small owner to manage his property in the most profitable manner, on a long term basis."[32]

The role of the small operator was on Tom's mind because seven months earlier his four blocks of Crown granted land on the Sechelt Peninsula had been designated as B.C.'s first Taxation Tree Farm, a tenure designed to enable forest management on small private land holdings. While Tom could see the big picture from the perspective of a Chief Forester of a large coastal company, he had not lost sight of the potential for forest management on a smaller scale.

Also, Tom had his eyes on the potential of Canada's spruce forests, which occupy the sub-boreal and boreal zones. Speaking to the annual general meeting of the Canadian Institute of Forestry in Prince George on October 9, 1959, Tom outlined three steps that would lead to maximum wood production: acceleration of the harvest of mature and overmature forests, intensification of forest protection efforts and maintaining complete restocking and full production on every piece of ground.

Nor should these be solely the concern of the provincial forest service:

> "The responsibility for setting high standards of forest practice should not be left entirely with the government. The timber operator who occupies the land, builds the roads and carries out the harvesting should take the same pride in leaving the land in good condition that he takes in running an efficient operation. One way for the operator to insure the maximum allowable cut in his district is to grow so much timber that the Forest Service will have to boost the budget."[33]

Prince George gets a new life

Tom Wright's interests also included the smaller volumed but much more extensive stands of the central Interior. In those days there were hundreds of sawmills around Prince George, mostly bushmills, and the standard practice was to bring the logs directly to the sawmills, produce rough lumber and then take that to Prince George for finishing at "Planer Row" – a collection of planer mills along River Road.

In 1956 Tom examined the output of the forest industry around Prince George and concluded that just 25% of the timber volume logged was actually converted into lumber. The rest was wasted, burned or used to fire the mill boilers.[34] The Prince George Board of Trade heard of this study and paid Larry deGrace, President of Industrial Forestry Service Ltd. (a Prince George consulting firm), the sum of $200 to investigate further. Filing his report in 1960, deGrace stated that just 35% of the waste wood produced by the sawmills and planer mills in the area would meet the raw material requirements of a 1,200 ton-per-day kraft pulp mill.

After he received a copy of deGrace's report, the Minister of Lands, Forests and Water Resources, Ray Williston, told the legislature that pulp mills would be established in the Interior and fed by the wood currently going to waste. Most coastal pulp enterprises still used whole logs for some of their

wood supply and burned much of the waste in their boilers:

> "This is the way it is done, the coastal pulp people told Williston; it is ridiculous to think of building a pulp mill, let alone a whole pulp industry, on sawmill waste. A delegation of them visited him privately one night, trying to persuade him to drop the idea before he embarrassed himself. But as the next decade proved, they were wrong and Williston was right."[35]

Additional feasibility studies were carried out to determine if a pulp mill could be established in the Prince George area, with its fine stands of spruce and lodgepole pine. The well-developed sawmilling industry in the area was correctly concerned that the appearance of a big pulp mill would mean the disappearance of some of their timber. Allowable annual cuts were fully allocated and the sawmills protected their individual quotas.

Tom spent many months in the area, studying the issue with Larry deGrace. They formulated an approach that involved classifying stands as either pulpwood or sawlogs, depending on age, size and volume characteristics. For the most part, the small lodgepole pine and younger spruce stands were pulpwood and the older spruce stands were saw timber. The Forest Service accepted this approach.

Wright and deGrace also suggested that if new enterprises such as pulp mills became established, they should only be permitted to bid on pulpwood stands, not on sawlog stands. This would protect the sawmill quotas, which Tom noted were tightly defended by their holders:

> *"Naturally their concern was, here comes a $50 million pulp mill and they might decide to bid against my sawmill quota. You had every privilege of bidding for the quota if you wished to, but on the quota system they all agreed with one another to divide it up and not to bid against each other. Each had his own quota."*

Noranda Mines Ltd. became interested in what was transpiring and hired Ian Mahood, a forestry consultant, to look into the wood supply issue. His proposed solution was a Pulpwood Harvesting Area (PHA), within which pulp companies would be allowed to log stands below sawlog specifications if local sawmills were unable to supply sufficient raw material from their waste. Pulpwood stumpage would be reduced, pulp companies would not be allowed to bid against sawmill companies for timber sales, sawlogs harvested within a PHA would be sold to the sawmills and in return they would have to sell their residues to the PHA holder.[36] This approach was accepted and an amendment to the *Forest Act* in March of 1961 gave the Minister authority to designate PHAs over Public Sustained Yield Units in the Interior and grant options for pulpwood harvest.[37]

In May of 1962, Canfor announced plans for a pulp mill at Prince George that would have a initial daily production of 500 tons of fully bleached kraft pulp. The company's detailed proposal was submitted to the government the next month, over the signature of John Liersch, a Vice-President of Canfor.[38] The enterprise depended on Canfor's ability to obtain raw material as pulp chips from nearby sawmills with barking and chipping equipment, slabs and edgings from other sawmills, usable logging waste (estimated at 800 cubic feet per acre suitable

for pulping) from timber sales and from the direct harvest of pulpwood stands adjacent to Prince George and in nine identified Public Sustained Yield Units.

A public hearing was held in Prince George on June 6, 1962 – chaired by the Hon. Ray Williston. Liersch presented Canfor's proposal and fielded questions from the audience, which consisted of individuals from the forest products industry, the Forest Service, consulting firms and the city of Prince George. Reaction was generally very favourable and the Minister concluded the session by stating that the government's decision would be forthcoming as soon as possible.[39]

Canfor's application was approved and they were awarded Pulpwood Harvesting Area Agreement (PHAA) No. 1 on November 22, 1962. It covered 8,000,000 acres. The Big Valley, Carp, Crooked River, Naver, Nechako, Parsnip, Stuart Lake, Westlake and Willow River public sustained yield units were included, as were pulpwood stands in the Prince George Special Sale Area. The latter, surrounding Prince George, was created by Order in Council No. 2811 and covered a previously unregulated portion of the Prince George Forest District. Henceforth, replacement sawlog timber sales within the special sale area would be issued only to established licensees.[40]

Canfor agreed to use as much sawmill waste as possible and were given exclusive rights to purchase wood chips from other firms in the PHA. The pulp mill was called Prince George Pulp Company and owned by Canfor Investments, the parent firm of Canadian Forest Products Ltd. A logging company, complete with sawmill and veneer manufacturing facilities, was formed by Canfor Investments in 1965

under the name Takla Holdings Limited. This arrangement permitted the trading of harvested sawlogs for pulpwood between Prince George Pulp Company and Takla.[41]

The Prince George Pulp Company mill cost $84 million to construct and opened in April of 1966, just over three months behind schedule. While it was being built, Noranda Mines Ltd. and the Mead Corporation were granted a similar PHAA in 1964 and began construction of their Northwood pulp mill at Prince George. Canfor then joined forces with Feldmeuhle AG of Germany, obtained another PHAA in the region in 1965, and the two firms built their Intercontinental Pulp facility – Prince George's third pulp mill of the decade. It cost $60 million to build and went into production in May of 1968.[42]

As to the source of raw materials for their pulp mills, Tom recalled:

> *"Of course it turned out, happily for everyone, that Canfor never required any of the pulpwood stands because the area sawmills installed barkers and chippers and delivered all their chips to Canfor's pulp mill. So Canfor ended up buying pulp chips instead of pulp logs to run the mill. It turned out to really benefit both the sawmill and the pulp mill."*

The city of Prince George, the surrounding region and the forest industry there were radically transformed in just a few years thanks to the efforts of Tom Wright, John Liersch, Larry deGrace, Ian Mahood, Ray Williston and John Stokes (Assistant Chief Forester and Forester-in-Charge of the Planning Branch, B.C. Forest Service). Stokes was

the main Forest Service negotiator during the process which culminated in the agreement with Canfor.

Williston later reminisced that Tom Wright's arrival in his office with the news that the Prince George sawmill industry's efficiency was just 25% marked a major turning point on the road to close utilization:

> "That meeting made the most powerful impression on me of anything that happened while I was Minister."[43]

Ray Williston was the Superintendent of Schools in Prince George before he went into politics. Tom holds him in high regard:

> "[Williston] *...was highly intelligent and highly practical and he was also involved in talking to both sides – sawmill operators and the large pulp companies. At the same time they all recognized the sawmills knew nothing about the pulp industry and naturally they had a concern* [about timber supply]. *...It involved a lot of hard work and negotiation by the sawmill operators and Canfor, with Ray Williston more or less in the middle."*

and noted that Williston went on to help establish other large pulp mills in the Interior:

> *"He worked very hard and could see if there was a conflict between two or three major companies and some local people. He had the pragmatic ability to see the right path to follow between all*

those groups.... I think it's probably correct to say that no provincial government person contributed more to opening up the whole Interior of the province, to the industry moving from the Coast to the Interior and then the whole industry going ahead."

Meanwhile, on the south coast, Canfor's Englewood Logging Division had expanded with the granting of Tree Farm Licence No. 37 in 1960. Employing 525 men, that division was producing 140 million board feet of logs per year and operating a 65-mile long railroad transportation network. At the same time, the Harrison Mills Logging Division was employing 190 men and producing 41 million board feet of logs per year. The Spring Creek Logging Company Ltd. was employing 75 men and producing 18 million board feet of logs annually from the north end of Harrison Lake.[44] All of that was in addition to the company's wood products and pulp manufacturing facilities on the south Coast and in Alberta.

When Canfor acquired Northwood in 1999 for $635 million it became the owner of all three pulp mills in Prince George – a testament to Tom's vision for forest management in the central Interior. This acquisition made Canfor the leading Canadian producer of softwood lumber and kraft market pulp.

ABCPF Council President

Tom Wright is Registered Professional Forester number 49. He was a member of the Association of British Columbia Professional Foresters (ABCPF) – then known as the Association of British Columbia Foresters – councils in 1951 and from 1959 to 1963, serving as President of the Fourteenth Council in 1961. The other officers of that council were John Stokes (Past President), Eric Robinson (Vice-President) and Malcolm Knapp (Registrar). Larry deGrace, Harry Forse, Robert Malcolm, Geoffrey Marples and Walter Tuttle were members. The Board of Examiners consisted of Larry Milner (Chairman), Alf Bamford, Braham Griffith, Norm McRae and Glen Patterson.

In addressing the annual meeting of the ABCPF, in Kamloops on January 26, 1962, Tom noted that it was the first such meeting to be held outside of Vancouver or Victoria. This was all the more fitting as the forest industry was becoming more and more important in the Interior.

Wright reiterated that the duty of the association "...is to protect the public by upholding the standards of the forestry profession in this Province."

Association of British Columbia Foresters

FOURTEENTH COUNCIL

1961

In addition to serving the public interest,

> "The individual interests of the members may also be served, but only incidentally and only if all of the members of the Association perform their professional tasks to such a standard that the profession as a whole achieves a high public image."[45]

After stating that there was one registered forester for every 380,000 acres of forest land in British Columbia, Tom said it was not surprising that the profession has some problems related to protection, utilization, silviculture and management. Nevertheless:

> "...the foresters of British Columbia are a particularly resourceful and practical group of men who are accustomed to balancing the hard realities of economics against the ultimate goals of intensive management.
>
> The Association has been in existence only for a period of a fifth of a rotation, yet its members already have initiated dramatic new approaches in logging practices, fire control, pest control work, survey techniques, and reforestation, to name only a few of the areas of accomplishment."[46]

In light of the importance of forestry to the province and the need for more members, the Fourteenth Council recommended that a recruitment committee be set up to promote registration of eligible candidates. There were only 375 registered

foresters in those days, compared to 1,757 professional engineers, 1,060 chartered accountants and 1,100 Law Society members.

Tom's closing words clearly indicated his feelings for his life's work:

> "Gentlemen, there is no finer profession than this one which has to do with trees. Let us continue to pull together to build and strengthen the profession of forestry."[47]

Back to UBC as Dean of Forestry

In 1962 Tom Wright left Canfor to assume the position of Professor and Dean of the Faculty of Forestry at UBC. He had been invited back but his departure from Canfor was not based on any dissatisfaction with his job there:

> *"It was a tough decision. I was very happy with Canfor, but it was a high compliment to be invited back to UBC and I always enjoyed working with the students and faculty in a university environment."*

No longer a department, forestry now had faculty status thanks in part to the efforts of Lowell Besley, Head of the Department of Forestry from 1948 to 1950 and then first Dean of the Faculty of Forestry from 1950 to 1953.

The President of UBC, John B. Macdonald, announced the appointment, saying:

> "The Board of Governors feels that it has found in Wright a person whose guidance and leadership will lead to more intimate ties with an active industry, and the expansion of graduate and research work, which will be to the benefit of both parties."[48]

In his history of the UBC Faculty of Forestry, Dr. J. Harry G. Smith included these comments about Wright's appointment as Dean:

> "Tom believes he was invited to become Dean in part because George Allen 'put in a strong plug' for him, to Dean Myers' search committee. They worked together well, had a happy time teaching together and shared common professional interests in improving reforestation and fire control. Tom also got along very well with Lowell Besley who had taught him Forest Mensuration at Pennsylvania State University during the Depression."[49]

Tom took part in a forum at the annual meeting of the Woodlands Section of the Canadian Pulp and Paper Association in Montreal from March 19 to 21, 1963. The Deans of the forestry faculties at Laval University, the University of New Brunswick and the University of Toronto were also present. After stating that forestry graduates required a background in silvics, harvesting, manufacturing and basic sciences; an appreciation for the humanities; and skills in self-expression, communication and leadership, Tom provided an insight into the character of some of those in the profession:

> "The application of these arts against a tremendous variety of forest and economic conditions calls for patience, resourcefulness and imagination. Finally, the forester must possess a genuine love for the bush, perhaps to the point of being somewhat of an odd ball in the eyes of his saner

> compatriots. Who other than a forester would fend with black flies and mosquitoes, or crawl like a snake through the weeds, or spend endless hours in the open with the rain running down the back of his neck? Who else would argue silviculture into the small hours as if it really mattered whether spruce was harvested in strips or blocks or under a selection system? What other professional man will go off with his wife and children and live at a lonely crossroads where there is nothing but the trees, the sawmill and the big sky? Let's face it, this man *is* a bit of an odd ball. We need more men like him in the profession."[50]

On a more serious note, he ended his speech by stating the goal of the UBC Faculty of Forestry:

> "It is our aim to inculcate a spirit of imagination, of adventure, of boldness and of vision in the foresters of the future. In the words of Dr. John B. Macdonald, President of the University of British Columbia, our basic objective is excellence."[51]

Tom had this to say about the students and graduates of the Faculty of Forestry in 1963:

> "They have built a fine reputation for the profession at the University, in the forest services and in the forest industries. ...Exciting challenges lie ahead of foresters. The full development of vast timber resources

> will demand knowledge, skill and hard work from our professional men. Above all, bold imagination and a spirit of adventure will be required. ...Ours is still a young profession which must hammer out standards of forest practice and utilization in a region which supports a tremendous variety of timber stands growing under a wide range of climatic and site conditions. We will have many arguments and make many mistakes, yet steady progress will be made if problems are approached with energy, honesty and objectivity."[52]

and in 1964:

> "It is fitting that our graduates should remain here in a forestry province and that they play such a vital role in the primary industry of the Region. ...Foresters like all professional men, are strongly motivated by a sense of service to the community. They must develop the vision and understanding which will enable them to relate their work to the work of others in their organization and in their profession. They take pride in excellence of accomplishment and in maintaining a high standard of integrity in their dealings with their associates and the public. ...The forester must be prepared to accept bold new ideas and be willing to 'throw the book away,' if necessary, to initiate new approaches to old problems."[53]

Speaking once more to the annual meeting of the Woodlands Section of the Canadian Pulp and Paper Association, held in Montreal from March 17 to 19, 1964, Dean Wright outlined the economics of reforestation and the economic and social benefits that come from a program of prompt planting following harvesting. While economic considerations are important, foresters should undertake reforestation regardless of what such analyses might show:

> "During the past decade we have witnessed an exciting advance of reforestation practice on the Coast of British Columbia to a point where several companies are voluntarily carrying out exceptionally high standards of reforestation. The practice of planting trees immediately after logging has become commonplace. The benefits of accelerated reforestation, more effective spacing of trees, control of species composition and increased yield are so attractive that foresters are no longer waiting for Nature to restock the land but instead are moving in with their planting tools almost before the slash fires have cooled down."[54]

At UBC, Tom Wright once again saw H.R. MacMillan in action. H.R. used to come out to UBC at the invitation of the Forest Club and speak to the students at lunch hour. Most of the forest companies sent a Superintendent or Vice-President and the top brass rarely found the time. But MacMillan did, on several occasions. Tom described one of them:

"I remember him standing up before a group of 40 or 50 students, holding forth and telling them in a strong voice about anything to do with forestry. I recall one story, about the problems of running a company in the forest industry. And he said 'You are surrounded by enemies: you've got the blankety-blank labour unions, you've got the blankety-blank government regulations, you've got the blankety-blank suppliers, you've got the blankety-blank competitors' and so on. And he walked back and forth across the platform, holding forth.

The question period came and a student stood up and said: 'Mr. MacMillan, you've described the terrible problems of running a business. Why then are you building a new pulp mill in Nanaimo?' H.R. loved that question. With a great big smile he turned to the student and said, 'Young man, you've got to go forward, not backwards.'"

Tom was impressed that H.R. used to come to the Forest Club noon hour talks even when he wasn't the speaker. MacMillan would sit in the back row, take in the presentation and then go back about his business.

Return to Canadian Forest Products Ltd.

Tom Wright was Dean of the Faculty of Forestry for two years and loved every minute of it. Yet, he moved back to Canfor as their General Manager of Coast Logging and Forestry after receiving an offer he couldn't refuse in 1964:

"L.L.G. Bentley called me one day at the university and said 'Can you buy me a cup of coffee?' To which I agreed, of course, and he came up to the campus. We went to the Faculty Club. He said 'Tom, we can't get along without you. Please come back and join Canfor.' So I said okay. And it was just that simple."

Dr. J. Harry G. Smith summed up Dean Wright's tenure:

"During his short time as Dean of UBC Forestry, Tom Wright brought valuable practical industrial perspectives to his job. His experience as an industrial forester for fourteen years had convinced him that a high priority must be given to education for engineering and fire control. He had a very high regard for the outstanding performance of UBC Forestry's Forest Engineers, viewed suspension of Forest

> Engineering as a mistake, and only after very careful review agreed that the new Forest Harvesting program could meet most of his objectives. About fire control he asked often 'Why plant trees if you are going to burn them all up?'"[55]

Tom stayed with Canfor until 1972, during which time he enjoyed the challenge of combining logging operations with the objectives of practising forest management. Other foresters such as Glen Patterson, Roy Jewesson and Ken Thomas played large roles in meeting the challenge, along with the many capable loggers and administrative staff at the various operations.

Tom Wright was a leader in initiating forestry practices in the Nimpkish area, even before Canfor obtained their Tree Farm Licence there in 1960. Considerable research was carried out on pruning, thinning, fertilization, growth and yield and planting of exotic species. In Canfor's other operations, in central B.C. and northwestern Alberta, research was done on the feasibility of different types of wood conversion mills.

After leaving Canfor, Tom worked as a consultant and devoted more and more time and effort to managing his tree farm on the Sechelt Peninsula.

Private tree farmer

Early during his first career at Canfor, Tom Wright started Taxation Tree Farm No. 1, soon after the enabling legislation was passed in 1951. He acquired the first parcel of land that year and three others were purchased in 1952, when official status was obtained for the management unit.

The scattered parcels, between Port Mellon and Sechelt, had been burned or cut over around the turn of the century. By the early 1950s these lands were covered with second growth and considered unsuitable for real estate development. They were low-priced properties with limited potential, at least to most people.

Tom told a realtor that he was "looking for land that nobody else wants, with trees on it."[56] The realtor knew of a piece of land that had been on the market for years, generating little interest. But Tom was interested:

> "So I went into Gibsons and rented a fishboat and a fisherman took me up. When I got there, I could see why nobody would touch it. There were rock bluffs all around, right down to the water. But when I scrambled up to a bench on top there was beautiful second growth timber."[57]

That property was the beginning of the Witherby Tree Farm.

On his weekends away from work, Tom scouted out and examined dozens of such properties that were for sale. When he found one with an acceptable price and forest cover suitable for long-term forest management, he bought it. His private holdings were assembled more or less at random but he didn't need to worry about competition as no one else was interested in such scrubby second growth in those days. He explains his motivations thusly:

> *"My obsession was to own land with trees on it. I would just pick up parcels of land when I could find them and then find the means to pay for them. A working person can buy an annuity or a life insurance policy for his or her old age, but I'd decided to buy trees. It was just my philosophy – I figured it would be a sound investment."*
>
> *"I just made a formal application* [to Victoria] *and to my astonishment they approved it as Tree Farm No. 1* [in April of 1952]."

Tom soon went to his banker to arrange a loan. The banker asked how long it would be until some income was received from the land. Tom replied that it would be at least 10 but more likely 30 or 40 years. The banker asked what price could be expected for the logs. Tom had to admit that he didn't know. The banker asked what road building and other operations would cost. Tom had to say yet again that he didn't know:

> "I can still hear his hollow laughter echoing through the bank."[58]

Mortgaging the family home and furniture got the tree farm operations underway and development of management plans and logging activities commenced almost immediately.

Most of the forestry operations have taken place on the Witherby Tree Farm but also included is Woodlot Licence No. 10, held since 1986. The Witherby Tree Farm is named for Percival Witherby, who pre-empted the largest property (Lot 1637) in 1892, and consists of four parcels of private forest land between the west side of Howe Sound and Sechelt. The area totals 189.7 hectares. Originally certified as Taxation Tree Farm No. 1, it is now called Managed Forest Unit No. 1. The allowable annual cut is currently 1457 cubic metres.

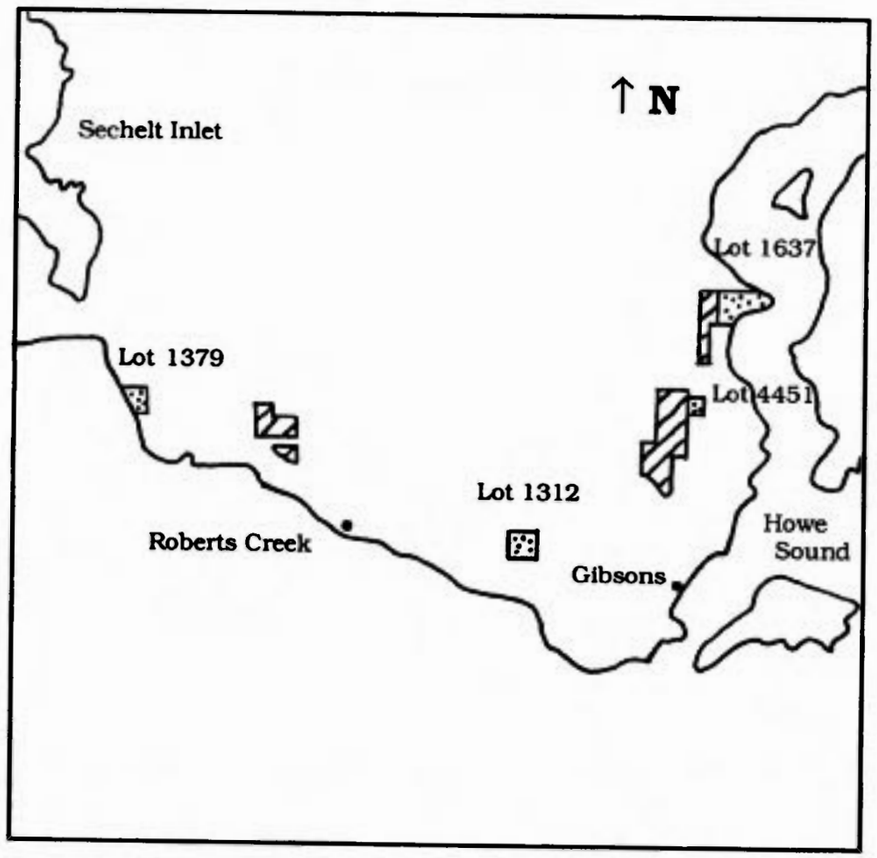
The original logging began in 1889 and continued into the early 1900s. The first loggers skidded the logs to tidewater with teams of oxen and horses and most of the logged area was burned soon afterwards. Lot 1312 was not logged, rather its old-growth forest was swept by a forest fire in 1908. Even though all of the trees were killed, the surrounding forest provided seed and the burn regenerated to an even-aged Douglas-fir stand. Due to the great distance from the seed source, restocking was light and a good proportion of the resulting trees are now of large size.

About 85% of the logged and/or burned land on the other lots regenerated naturally, primarily to Douglas-fir. Western hemlock and western redcedar are more prominent in the stands which receive more rainfall (lots 4451 and 1637) on the west side of

Howe Sound. Red alder and maples occupied the remaining 15% of the area, on higher site land.

Road construction began in 1957 and the present network consists of 5.1 km of main road, 5.7 km of access road and 6.3 km of skid roads, making the entire area accessible. This access provides flexibility to the logging plan – enabling thinnings, market timing and salvage of timber losses.

Tom Wright in front of a western redcedar stump, complete with springboard notches, on the Witherby Tree Farm, 1958.



Witherby Tree Farm

Woodlot Licence No. 10

Location of the Witherby Tree Farm and Woodlot Licence No. 10 properties.

Between 1957 and 1995, 19 commercial thinnings were carried out on 63.0 hectares. Commercial thinning is one of the main harvesting activities and has produced pilings, poles, logs for log homes and pulpwood. One stand has been thinned three times. Thinnings account for about 17% of total log volume production. Thinning is primarily "from below," whereby trees in the lower crown classes are removed and the taller codominant and dominant trees left largely untouched. This technique is used to maintain a good level of growing stock and achieve good spacing of the final crop trees.

In 1962 a thinning was undertaken primarily because of demand for "Japanese piling," sold on the log export market. There was previously no interest in these small Douglas-fir logs. The buyer's specifications called for a minimum 11.5 cm top diameter (inside bark), a maximum butt of 25.0 cm and a maximum length of 18 metres. It was therefore possible to use small trees as well as the tops of larger trees. In the latter case they also produced a sawlog butt log for separate handling and processing. Intermediate-sized trees were also harvested for standard pilings.

Subsequent thinnings were done in conjunction with an "Ecologizer" small-log sawmill in 1979, then for "chip-and-saw" logs in 1980, for saw logs and chip-and-saw logs in 1983 and log house logs in 1986. Between 1988 and 1992, thinning operations were reduced somewhat due to the need to concentrate on the salvage of blowdown elsewhere on the unit.

During the same 1957 to 1995 period, 32 clearcut harvests were done on 61.0 hectares. Products have been either sawlogs or chip-and-saw logs. When all logs, large and small, are harvested there are efficiencies in falling, bucking, skidding, sorting and piling. Stumps are kept very low to increase the volume and grade and make skidding easier. Even though small logs may be a break-even proposition, the profit comes from the large logs. Their value can be about 50% greater than the logging costs.[59] The average size of the clearcuts on the tree farm is now between 1.0 and 1.5 hectares.

View of Lot 1312, Witherby Tree Farm, 1991.

The first shelterwood type treatment occurred in 1963 when a 61-year old Douglas-fir and western hemlock stand on Lot 1637 was commercially thinned. This 4.3-hectare stand was clearcut in 1977 at age 75 years. The crown openings created in 1963 enabled western hemlock to become established under the canopy. Following the clearcut harvest, Douglas-fir seedlings were planted on the skid roads and in openings. Brush competition was limited by prompt reforestation and the new stand is well-stocked.

Similar cuts were subsequently carried out on 8.2 hectares, between 1985 and 1988. All cutblocks have been restocked by planting and natural regeneration. Site preparation and brush control treatments have been carried out as required.

Tom employed another silvicultural treatment that he calls "growing stock management" on Lot 4451, in a mixed stand which arose after the original old-growth forest was clearcut around 1890. This was a high site and there were scattered Douglas-fir, western redcedars, bigleaf maples and red alders. In 1962, 1964 and 1969 the conifers and the higher quality hardwoods were harvested, leaving the lower-quality hardwoods to occupy the site. Those trees grew rapidly and overtopped a fairly well-stocked understorey of western hemlock and western redcedar. In 1986 the hardwoods were felled, flattened and left to decay. The released coniferous understorey responded effectively and the trees put on greatly accelerated growth. An alternative would have been to clearcut, burn or scarify the site and replant but this would have been expensive and destructive to the coniferous understorey. Once again, creative thinking found an effective yet ecologically-appropriate treatment.

Two reservoirs were dug on Lot 1312. They provide a water supply for fire suppression, should that become necessary, and for the tree farm's nursery. Since 1987 the nursery has produced "giant seedlings." Originally, large wildlings were dug up and replanted on brushy sites. This process was successful enough to show potential. To avoid damaging the root systems, the switch was made to growing giant seedlings in the nursery. They are grown in one-gallon pots and fed a good diet of fertilizer. The objective is to provide large Douglas-fir and western redcedar seedlings for high sites and those subject to brush competition. This avoids the high costs of scarification and subsequent brush control. This is just one example of Tom's ability to deal creatively with the inevitable problems:

> "I figured, if you can't beat the brush you should walk in and join it. These were super high sites and I was planting with wide spacing, about seven by seven metres. I've never seen seedlings grow so big!"[60]

Giant Douglas-fir seedlings have also been used to rehabilitate landings, which were first scarified with a D-7 tractor.

Tom Wright with two of his giant seedlings, 1988.

Tom believes in very long rotations, allowing the trees to better express their potential. At the same time, he advocates finding markets for the smaller material removed during thinnings. Speaking in 1988 he said:

> "We should develop some good, strong, profitable markets for these trees – 59 percent of the trees on my site are small. We have a prodigious opportunity there. Up to now, the little trees have been forgotten."[61]

Christmas tree production started in 1957, on the hydro right-of-way on Lot 1312. Initially it was a series of disaster stories, "like having a bear by the tail," but things have managed to come around. The first Christmas trees planted were red pine from Ontario but they didn't do well. Presently, the primary species is Douglas-fir, along with some Scots pine, Norway spruce, noble fir, grand fir and Colorado blue spruce.

The Christmas trees must be sheared annually and brush controlled in all of those plantations. The inventory is 40,000 trees at all stages of development and up to 2,500 can be harvested in any given year. Some are obtained from thinnings in the other plantations. Most of the Christmas trees go to local markets on the Sunshine Coast and the rest are sent to Greater Vancouver.

Firewood has been obtained from hardwood conversion projects, low grade logs and landing cleanups. In 1979 a 2.1-hectare stand of red alder was harvested for sawlogs and firewood. The largest and best quality red alder logs were exported to Northwest Hardwoods, a mill in Centralia, Washington.

Woodlot Licence No. 10 consists of 388 hectares of Crown forest land in five parcels. Two of them adjoin portions of the Witherby Tree Farm (lots 1637 and 4451) and the other three are between Roberts Creek and Sechelt. The first working plan was approved in 1986. Between 1986 and 1992, 4.3 km of main road were built or upgraded and a new bridge was built.

Thirteen blocks were clearcut between 1986 and 1995, totalling 37.0 hectares. The average clearcut size on the woodlot is now 4.0 hectares. During the same time period 23.1 hectares were planted and 8.0 hectares were commercially thinned. The allowable annual cut of the woodlot licence is 3300 cubic metres.

Since retirement from Canfor in 1972, Tom has spent a lot of time on the tree farm and woodlot. His son Bill is the full-time manager of operations, looking after the management plans, including protection and harvesting. Bill had a career in banking before he became manager of the Sunshine Coast properties in 1984.

The Wrights use two or three local contractors to carry out the felling, yarding and hauling. Their approach has been to develop good working relationships with several firms and enter into contracts with them as the work comes up. This affords employment opportunities to the small logging and road building companies in the community.

The experience has shown Tom that

> "...a great opportunity now exists to further increase the harvest by utilizing the huge volumes of small wood in our

> extensive second growth stands. We can follow the lead of the sawmilling industry of the interior which has attained world-wide competitive efficiency while utilizing logs of an average size comparable to, and often smaller than, the small logs derived from the Witherby Tree Farm thinnings."[62]

He feels that small owners need encouragement to manage their forests effectively but recognition must be given to constantly changing conditions. It may not be possible or practical to produce a regular crop of timber each year, but it could be balanced out over 5 or 10 years. In the interim every hectare must be kept productive and the aesthetics of the property maintained. The small owner should have a contract to manage his land based on the Ministry of Forests' requirements.

Tom Wright in a logged and planted opening on the Witherby Tree Farm, 1974.

Appointments and awards

During the last Royal Commission on forestry in B.C., which was headed by Dr. Peter Pearse and took place from 1974 to 1976, Tom Wright acted as a forest advisor, along with Ken Reid of the Forest Service. They travelled with the commission to the major forestry communities in the province.

Tom received the ABCPF's Distinguished Forester Award for 1986 in recognition of his significant contributions to forestry in B.C. The 1987 annual report of the association said he:

> "...is credited with carrying out the first basic regeneration surveys undertaken by a private forestry company in B.C. and with being the first industrial silvicultural forester in the province. His active participation in the ABCPF, University of B.C., CIF, CFA, Western Forestry and Conservation [Association] and COFI* have earned him the enduring respect of his peers."[63]

(* Council of Forest Industries of British Columbia)

Tom was also made an Honorary Member of the Canadian Institute of Forestry, of which he is a long-time and active member. In fact, he has certificates marking 50 years of membership in both the Canadian Institute of Forestry and the Society of American Foresters. He was also appointed to the Executive of the Canadian Forestry Association.

In November of 1998 the B.C. – Yukon Provincial Council of Scouts Canada made Tom an Honorary Member as well as a National Honorary Member in recognition of his "great interest and support to Scouting."[64] His accomplishments in Scouting included being an Eagle Scout when a young lad, serving as President of the B.C. organization, enlisting the support of forest companies and government officials, being instrumental in a fund-raising campaign that resulted in $500,000 in donations and purchasing property between Gibsons and Sechelt for a summer camp.

It is fitting that both Scouting and forestry organizations have bestowed honours on Tom as these have been the cornerstones of his outdoor pursuits and career.

In retrospect

When looking back, Tom Wright feels that each aspect of his professional career was equally enjoyable. Each phase presented its own challenges, learning opportunities and possibilities for success.

Every forester has had his or her share of hard work, long days in the bush and assaults by the elements, not to mention biting insects. But that goes with the territory. Tom's love for the outdoors grew into an interest in forestry and, like most of his colleagues, he was lucky enough to be paid to do things that he enjoyed.

Now content to live in Vancouver with his wife, Virginia, Tom maintains his interest in forestry. He is often in touch with his son, Bill, regarding management of the tree farm and woodlot licence on the Sunshine Coast. Tom considers himself fortunate to have his son in charge because continuity in ownership and management is important for small forest tenures.

British Columbians, whether foresters or not, should be thankful that Tom Wright imparted his knowledge to more than one generation of foresters. His contributions have had a lasting impact on forest management in this province.

Epilogue – opinions and issues

During the course of the interviews, Tom Wright expressed his opinions and views on a number of important forestry issues. While they could not be worked into the preceding timeline, these opinions and views are included as an epilogue.

The forest land base

A shift in silvicultural systems towards partial cutting, protection of streamsides, recreation reserves and other protected areas have reduced the forest land base and the volumes available for harvest. While there are many sound arguments in favour of these actions, the result is a reduced allowable cut in some locations.

In some cases, taking the forest land base away for other purposes, which may be idealistically and often practically desirable, may not be as valuable as maintaining the working forest:

> *"I believe we foresters have not done a good enough job to explain that the working forest in many cases is just as beautiful, just as rich and diversified as a forest set aside not to be touched. We have a great challenge to demonstrate that in many cases walking through a working forest over a road that a logger*

> *built opens up a whole vista of new wildlife, new vegetation and new scenic values. I believe that we need to do a better job of explaining that the working forest can represent the ultimate development of a forest for its highest overall uses, of scenic values as well as economic values, while economically supporting local schools, roads and hospitals; and of course achieving maximum allowable cut and reducing falldown."*

Tom believes that the most important economic effect is to produce bigger payrolls, more stumpage returns and more funds available for maintaining society's infrastructure. The forest industry needs to stress the economic values of the working forest to local communities.

The falldown effect

Tom disagrees with many analyses of the falldown effect because they often fail to recognize the basic economics of harvesting timber. The forest industry has steadily moved into poorer and more isolated stands of timber, often at high elevations where the volumes aren't as high as on the good growing sites at low elevations.

The question revolves around how much timber is out there and how much of that volume is in the operating area. If the estimates for low volume and high elevation stands are calculated using a proper stumpage appraisal with respect to log value and logging costs then the higher volume and higher grade stands should have a large stumpage value.

Because 95% of the timber in B.C. is owned by the Crown, the stumpage value is a very important calculation. It puts low volume and low value stands on the same footing as high volume stands in the sense that the low volume, high cost stand has the higher costs deducted from the lower selling price. With an effective appraisal system the low volume stands can be developed on the same financial basis as the high volume stands.

There has been a tendency to put the so-called scrub timber, the low volume stands, into a category that's not included in the forest inventory. But if you look ahead a decade or two, or a generation, the continued increase in log prices means that harvesting could move into all of these stands. With proper stumpage appraisal the timber will be there:

> *"I believe that the falldown does not recognize that not only the lower grade, poorer stands will ultimately be logged but also the logging residues, the logging wastes, of all the stands, both high and low grade, will be utilized to a greater degree and with an increase in timber volume above the original estimates which did not include the possibility of utilizing the lower grade, smaller trees. And so the falldown arguments, in my view, in many cases, fail to recognize that the inventories on which the allowable cuts are based have commonly been too conservative."*

If the inventories for the stands to be logged over the next 30, 40 or 50 years are complete and utilization is increased, the volume of timber contributing to the allowable annual cut can be maintained or increased instead of decreased.

The other stated aspect of the falldown effect is that the volume of the second-growth stands may be less than that of the original old-growth forests. But the total inventory of the second-growth stands will, in many cases, be much larger, or equal to, the old-growth stands that preceded them. The old growth was often very old and defective and past the point of maximum volume growth per unit area. In cases such as that, the volumes of the fully-stocked even-aged second growth could be greater.

Many of the falldown calculations fail to take into account the productive capacity of these second-growth stands. The allowable annual cut calculations, going back 20, 30 or 40 years have frequently turned out to be extremely conservative because they did not recognize this factor.

Timber flow

There is a great deal of discussion about community forestry. And there is concern that some timber from B.C. has been taken into Alberta, as if the movement of logs in a particular direction is somehow undesirable. Log movement should be based entirely on economics and not upon calculations of growth and yield and allowable cut within local areas. This is contrary to the common arguments made today that forestry should be oriented to the local communities:

> *"For a long time, logs were moved south down the Coast by Davis rafts and then by barges – huge volumes of logs came into Howe Sound, supporting mills in the Lower Mainland instead of, say, at Prince Rupert or on the North Coast. This is an economic argument and a forestry argument, but the men on the*

barges are also earning their wages. The North Coast loggers are earning their wages, as are the mill workers in the Lower Mainland. In addition, you generally achieve higher levels of economic utilization of the forest in the highly developed areas where logging production is high."

The logs must move in response to the best economic situations for the producer and the purchaser.

Selective logging

Tom believes that the history of logging on the Coast, and to a large degree in the Interior, shows that by clearcutting we open up the soil to the sunlight and thereby obtain both good regeneration and subsequent stand growth. Therefore selective logging should not be favoured.

An important aspect, of course, is that a species such as Douglas-fir is intolerant of shade:

"You walk through a nice old-growth forest and see a rotten windfall and you will sometimes see little western hemlock seedlings growing like grass, but there are no Douglas-fir seedlings because it will not grow in its own shade, it requires the sunlight. So opening up the soil to the sunlight provides the opportunity. The western hemlock, western redcedar and grand fir will also grow effectively in the open sunlight as very significant parts of the volume of fine old-growth stands. Moving into an old-growth stand and removing part of the volume by selective

logging can really result in highgrading the stand of its finest trees. There is a tendency to log to achieve the best financial result."

This sort of operation also leaves gaps in the canopy of the remaining old-growth stand and unoccupied spaces in the soil where trees used to be. Until the crowns and root systems of the remaining trees expand to occupy those vacancies the stand will not produce more wood volume. This reduces yield compared to what would be obtained from a fully-stocked even-aged stand.

Tom believes that selective logging can also invite blowdown and diseases to affect the residual stand, increasing losses. These losses may not occur to the same degree in an even-aged stand that has been commercially thinned.

It also depends on the use of the word "selective." Tom strongly favours partial cuts in even-aged stands. Commercial thinning, particularly from below, to remove the trees that will be lost to competition over the next 10, 20 or 30 years will salvage that mortality and increase volume yields.

Artificial versus natural regeneration

In Tom's view, both can be very effective. Natural regeneration is highly desirable and it should have priority to the extent that it fits in with the overall logging plan. When trees establish naturally you get excellent survival and a good stand with the genetic and biological diversity of the forest that was there before.

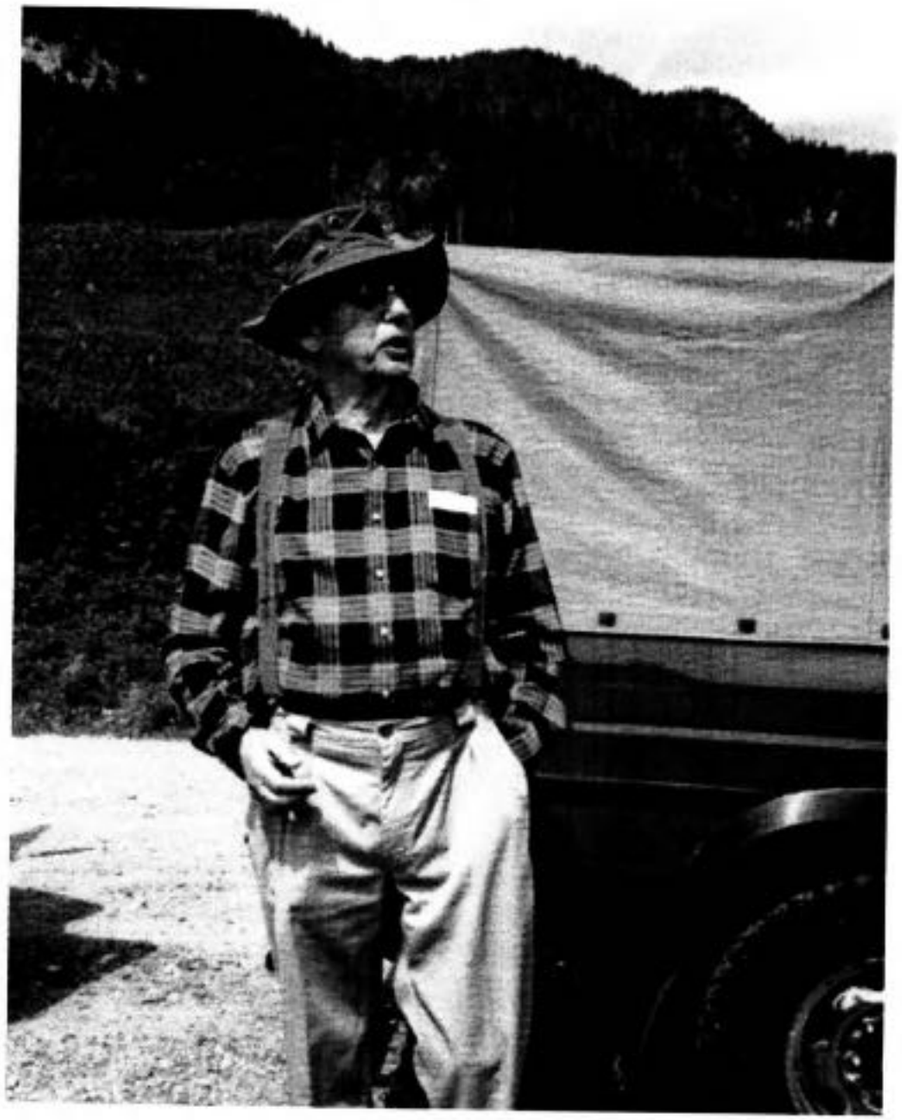
Artificial regeneration, on the other hand, is subject to some risks when the seedlings are planted improperly or fail to survive the planting shock. However, the planted forest can be as effective and desirable as a natural stand – if established properly.

Planting is more costly than natural regeneration but it permits wide flexibility in logging methods, setting layout and road location. The entire plan of logging development can be primarily directed towards achieving low-cost and efficient production along with high utilization of the forest.

Where larger clearcuts reduce the extent of natural regeneration, complete flexibility exists to plant the gaps that are not stocked or not sufficiently stocked:

> *"The point I made in my report to Bloedel, Stewart & Welch was to carry out your logging to achieve efficiency of yarding, loading, road construction and so forth, but observe the logged land closely and where it is not restocking promptly, the objective should be to restock that land promptly. So where regeneration is not occurring because of distance from seed supply or in some cases because of sudden exposure or other factors, or the existence of heavy ground brush and so forth, move in quickly and plant."*

It's not possible to say that natural regeneration is better than artificial regeneration, or vice versa. Both are required. If natural regeneration fails then fill in the area by planting. If full restocking can be achieved through natural regeneration then planting will not be required.



Tom Wright describing forest management on the Witherby Tree Farm, 1980s.

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Thomas George Wright occupies a special place in the history of forestry in British Columbia. It could be argued that his arrival in this province was due to chance, or fate, but his accomplishments are certainly not. His knowledge, foresight and interests resulted in a career marked by innovation. He has several hats in his wardrobe – academic, consultant, company Chief Forester and private woodlot owner/manager – and he has worn each one with enthusiasm, dedication and conviction. This is the story of his pioneering career in the forests of British Columbia.

About the Author

John Parminter grew up on 10 acres of second-growth forest in North Vancouver and this influenced his choice of forestry as a profession. He obtained a BSF degree in 1975 and an MF degree in 1979, both from the University of B.C. After 13 years as a fire ecologist with the Protection Branch of the Ministry of Forests, he transferred to the Research Branch in 1993. A founding member of the Forest History Association of B.C., he has edited their newsletter since 1982.

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