



NORTHERN FORESTRY CENTRE  
EDMONTON, ALBERTA  
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## Forests North of 60

The ubiquitous boreal forest region of Canada found below the 60th parallel also stretches up into Yukon and the Northwest Territories. For over 30 years, staff from the Northern Forestry Centre have visited the N.W.T. on fire or insect and disease-related projects. Now that the Government of the Northwest Territories has assumed control over its forest resource from the federal government, the possibilities of a more comprehensive working relationship are being explored.

In April, members of the Northern Forestry Centre's Management Committee flew to Yellowknife. There they met with the Territories' Forest Minister, Titus Allooooloo, and with the Department of Renewable Resources' Assistant Deputy Minister of Management, Dave Brackett. Needs in areas such as fire management, forest inventory, silviculture and harvest of overmature forests were further discussed with Bob Bailey and Bob Larson, Directors

of Forest Protection and Forest Management, respectively.

The territory also wants to encourage its forest industry, concentrated now primarily in the Fort Smith and Hay River areas. The industry is made up of logging and sawmilling operations directed at the production of fuelwood, lumber and roundwood. The total commercial value of the forest sector in 1984-85 was estimated at \$4.2 million. The largest unexploited resources are in the Liard area, with the potential annual allowable cut estimated at about 20 million board feet per year.

April's meeting was very productive, with more to come in the next few months.

## FOREST MANAGEMENT



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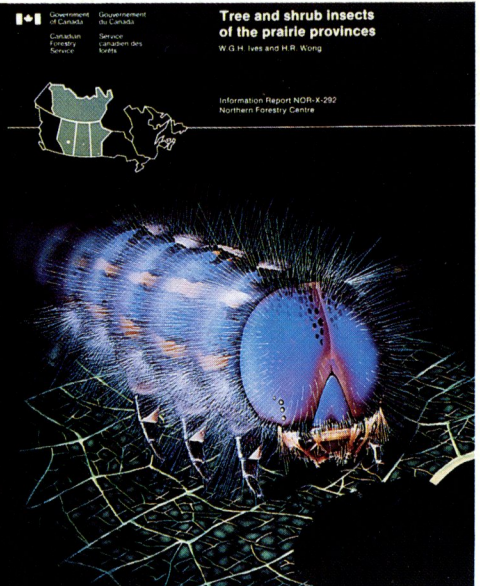
The FORESTRY LEADER, a tabloid describing activities under the Canada-Manitoba Forest Renewal Agreement (FRA), reached 150 000 Winnipeg homes in February. This modest publication let a primarily urban public in on the progress in reforestation that's resulted from the agreement, and what the FRA-sponsored geographic information system in Winnipeg is and does, among other topics. You can still obtain copies from the Manitoba Forestry Branch office at 300, 530 Kenaston Blvd., Winnipeg, Manitoba, R3N 1Z4. Phone (204) 945-8238.

Canada Manitoba

## Major Work Published

Dagger moths, the spruce harlequin, leaf skeletonizers and walking sticks ...

you'll find these and about 600 more in our new publication "Trees and shrub insects of the prairie provinces". This compendium describes insects and mites that feed on and damage trees and shrubs across our region. It also includes about 1100 color photographs to help identify these pests, and the book separates insects attacking hardwoods from those that favor softwoods. This major work showcases the expertise of two of our senior researchers, W.G.H. Ives and Dr. H.R. Wong. Distribution of Information Report NOR-X-292 is limited. Please address your requests in writing to the Scientific Editor, Northern Forestry Centre.



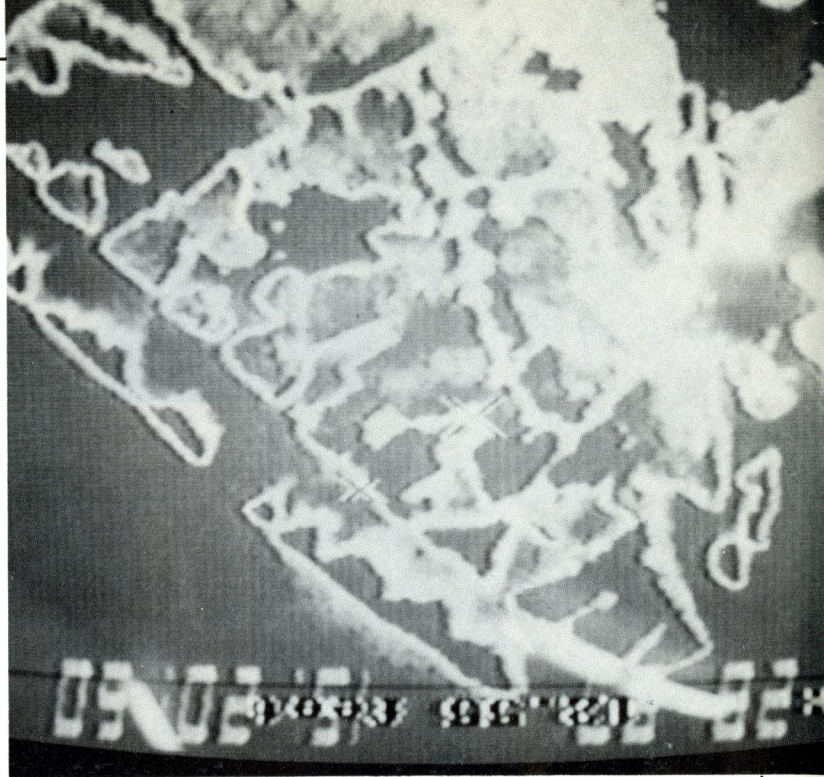


# Hi Tech Hot Spots

Turn on the monitor, sit down and feed the tape into the VCR. Onscreen, a fascinating collage, with grey tones ranging from almost black to near white, shifts and shimmers. The white areas are hot—very hot, the grey ones cool, and what you're seeing are forest fires through the "eyes" of an infrared scanner.

These particular images were obtained last summer from a helicopter hovering almost 2½ kilometres above a prescribed burn in a logged-over area near Timmins, Ontario. Using the scanner in conjunction with a specialized computer on board resulted in almost instant calculations of the rates of spread and intensities of the various fires. Chuck Ogilvie of the Northern Forestry Centre has been working on this infrared scanning project with staff from the Canadian Forestry Service's Petawawa National Forest Institute, and with the United States Forest Service. One of the most intriguing things to show up on the images was a fire whirlwind. This phenomenon acts much like a tornado, tearing out stumps and whipping up intense, searing funnels of air.

This image of a forest fire was produced by an infrared scanner.



Mr. Ogilvie will be heading back to the Timmins area at the end of July to follow up on the work begun last summer. "The potential of this scanner-computer combination for fighting forest fires is tremendous," he notes. "It's an accurate tool that shows exactly where the areas needing the most attention lie. It can instantly calculate how hot certain areas are, where the fire perimeters are headed and how fast they're spreading." Another advantage is that fire crews can fly at night, record fire behavior with the scanner and

use that information to plot the following day's strategies.

What this means for fire control are more precise estimates of all the resources and manpower needed to fight a fire—water bombers, amount of retardant, positioning of suppression crews. Considering the costs of a CL 215 air tanker to fly and drop retardant for an hour—in the neighborhood of \$3,000—the diagnostic potential of a system that pinpoints fire behavior and hot spots is worth evaluating. ☺

The NORTHERN FORESTRY CENTRE, located in Edmonton, Alberta is the western and northern regional establishment of the Canadian Forestry Service. The Northern Forestry Centre coordinates all federal forestry research and development activities throughout Alberta, Saskatchewan, Manitoba and the Northwest Territories. District offices are located in Prince Albert, Saskatchewan and Winnipeg, Manitoba.

DR. STAN NAVRATIL has joined the Northern Forestry Centre's Regeneration and Plantation Management Project. Dr. Navratil was formerly Director of the Alberta Forest Service's Forest Research Branch, and his work at Northern will include a continuation of projects under the Canada-Alberta Forest Resource Development Agreement. These projects relate to the reproduction and control of trembling aspen suckers, as well as aspen ingress on cutovers. Both of these studies form part of the Alberta Agreement's multidiscipline Vegetation Management Project. ☺

## Forestry GIS: The Next Step



... brought together about 350 people at a conference held March 9-11 at Edmonton's Convention Centre. The conference was a highly successful followup to the GIS Workshop staged in Winnipeg in February of 1987. Responding to requests following the Winnipeg symposium, the Edmonton event featured a pre-conference hands-on workshop March 8. Staff from the Land Information Branch of Alberta Forestry, Lands and Wildlife guided

interested participants through GIS features and programs currently available.

Speakers on the first day talked about the relevance of geographic information systems to forest management, and touched on bringing together government and industry in GIS partnerships. The second day: no secrets, with the importance of data sharing and cooperation among users on the agenda. Day 2 also looked at some of the costs and benefits to be expected, and how to select the right system. The third day, presenters wore the boots of field foresters for a while, as they discussed the how-to's of using GIS to make management decisions. The conference wrapped up by probing some ongoing linkups of geographic information systems with artificial intelligence and remote sensing technology.

"Forestry GIS: The Next Step" was jointly funded by the Canada-Alberta Forest Resource Development Agreement and the Alberta Forest Service. ☺





## MIXED(WOOD) Blessings

Like its namesake, the NORTHERN MIXEDWOOD SYMPOSIUM held in Edmonton April 12-13 was a cornucopia of diversity. Session presenters tackled past approaches to managing this difficult cover type, whether hardwoods and softwoods could and should be harvested in a complementary cycle, the evolution of harvesting equipment, and manufacturing and marketing possibilities.

About 250 people attended the two days of sessions at the Chateau Lacombe, with smaller groups taking in tours April 14th. One tour went to Blue Ridge Lumber Ltd. and Millar Western Industries Ltd., both in the Whitecourt area, and to Pelican Spruce Mills Ltd. in Edson. The other tour was city-based, visiting Western Archib, the Alberta Research Council and the Northern Forestry Centre. The symposium was organized by the Canadian Forestry Service under the auspices of the forestry development agreements in Alberta, Saskatchewan and Manitoba. Watch for publication of the proceedings later this year. ☼

### NOTE

The exclusion of certain manufactured products or company names does not necessarily imply disapproval, nor does the mention of other products or company names necessarily imply endorsement by the Canadian Forestry Service.

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# Small Business = Big Business

What do Jasper Millwork Ltd. of Edmonton, Snow Goose Industries of Wildwood and Timberland Toys of Markerville have in common? They're all part of the grab-bag known as Alberta's secondary forest products industry. These are companies that take primary products such as lumber or wood fibre, and turn them into secondary products like furniture or structural components. The manufacturing process gives primary commodities a certain economic lustre they didn't have before, so they become known as "value-added".

The Northern Forestry Centre has published a Technology Transfer Note giving an overview of the secondary forest products industry in Alberta. It describes what industries should be included, as well as the size, scope and location of firms in this group. You'll find out, for example, that this sector is dominated by small business; in fact, 95% of the firms have less

than 100 employees. And in 1986, Alberta's secondary forest products industry injected over a billion dollars into the province's economy.

The Technology Transfer Note is intended as a quick-off-the-mark information sheet on a variety of topics. Please address any requests for this and future Notes to their authors. In this case, ask for "Secondary Forest Products in Alberta, 1986" by R. Bohning and M. Heit, Resource Economics Project, c/o Northern Forestry Centre. ☼

← 15% SCREEN P. 470



### INTERIOR WEST FIRE COUNCIL

<p>Interior West Fire Council 1988 Annual Meeting and Workshop October 24-27, 1988</p>	<p>The Art and Science of Fire Management Kananaskis Country, Alberta Call (403) 435-7210 for information</p>
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## Customary Procedures

"Excuse me, sir. Could I take a look at that load of firewood you've got in the back of your camper?" At Coutts, Chief Mountain and other Canada-U.S. border crossings in Alberta, that kind of question is becoming fairly standard. Customs agents are on the lookout for elm firewood, a potential carrier of Dutch elm disease. The disease, carried into elm trees by bark beetles, plugs up the vessels which carry water and nutrients up and down their length, eventually killing them. So far, Dutch elm disease has not been a big problem in Alberta. Alberta Agriculture, the Canadian Forestry Service, and Agriculture Canada are working together to keep that slate clean.

Dr. Ken Mallett, a forest pathologist at the Northern Forestry Centre, has been working with customs agents to assist them

in identifying elm wood. "The agents are concerned that they may be challenged when they ask someone to leave their firewood at the border," Dr. Mallett says. "I've put together displays with cross-sectional disks of several trees commonly used for firewood and left them with staff at the border crossings. These displays are especially helpful in distinguishing elm and cottonwood, which look similar."

So far, Dr. Mallett says, the customs people have been grateful for the help, although he notes it's unlikely they'll be able to stop anyone determined to keep his firewood. But with an estimated 60 000 elms in Edmonton alone, and with elm a common shelterbelt species across the province, for Ken Mallett the periodic 5-hour drive south to "talk trees" with customs people is a worthwhile trip. ☼

10% PANDONE 364 ↑



# ...and a Partridge

About 100 000 Christmas trees are sold in Saskatchewan every year, representing about \$2 million in sales. Those dollars have traditionally flowed west to growers in B.C. or east to Ontario and Quebec, and the Saskatchewan Christmas Tree Growers Association wants to change that.

The Association, formed last year, now stands at about 30 members keen on promoting local trees. Right now, growing trials of several varieties of Scots pine are underway to see which ones will show the characteristics favored by discerning homeowners. Jim Johnston of the Canadian Forestry Service's district office in Prince Albert has been working with Association members. He has helped the group put together a constitution, and put them in touch with other growers and associations in Canada and the United States. Involvement with the Christmas tree growers is a natural extension of Mr. Johnston's work

# in a Pine Tree

with private woodlot owners under the Canada-Saskatchewan Forest Resource Development Agreement.

The Canadian Forestry Service District Office in Winnipeg is lending a hand to Christmas tree growers in that province, as well. John McQueen, who manages the Manitoba District Office, says they have met with a few growers and offered them meeting space and administrative help.

In the meantime, members of the Saskatchewan group are planning a summer meeting, and exploring formation of a cooperative network involving growers from Alberta, Saskatchewan and Manitoba. Alberta growers are encouraged to contact Mr. Johnston at the Canadian Forestry Service office in Prince Albert, 101 - 15 Street East, Prince Albert, Saskatchewan S6V 1G1. Home-grown is setting the tone for these energetic entrepreneurs. ♡

## All this and Procom - 2

If you're planning a driving holiday, chances are you'll need a good map. But what if the only map you have is old, inaccurate and has large blanks? That's the kind of position the Forest Management Division in the Northwest Territories finds itself in. Of the approximately 91 700 square kilometres of productive forest land in the Territories, only a small part has been recently inventoried. And without accurate inventory information, it's difficult to make decisions about harvesting, reforestation and fire management.

However, the Division now has a team member known as Procom-2, and last January Walt Moore of the Northern Forestry Centre gave the staff there some tips on how to use it. Procom-2 is essentially a beefed-up overhead projector that can be mounted onto a standard office desk. It allows the operator to plot forest cover features apparent on satellite images onto topographical maps. The end results are topographical maps that show, to a knowledgeable interpreter, where such features as clearcuts, burned areas or new growth are located.

The big advantages of the Procom-2 system are that it's easy to use, maps can be updated quickly, and using it is much cheaper than flying over areas to obtain large-scale photos of forests. To cover a land mass the size of the Territories, aerial photography is out of the question. The satellite images, obtained from the Landsat satellite, are fairly inexpensive. Using the myriad of lakes and rivers on the satellite images as reference points to match up with topographical features on maps, the Forest Management Division staff now have a good start on pulling together accurate, up-to-date forest inventory information. ♡

# New Publications

Alexander, M.E.; De Groot, W.J. 1988.  
Fire behavior in jack pine stands  
as related to the Canadian Forest  
Fire Weather Index (FWI)  
System. Poster (with text).

Chrosiewicz, Z. 1988. Forest regeneration  
on burned, planted, and seeded  
clear-cuts in central Saskatchewan.  
Inf. Rep. NOR-X-293.

Delisle, G.P.; Woodard, P.M. 1988.  
Constants for calculating fuel  
loads in Alberta. For. Manage.  
Note 45.

Singh, T., compiler. 1988. Current applied  
climatological research in  
Alberta. Inf. Rep. NOR-X-294.



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