



Bridging the gap between science and Indigenous Peoples' knowledge

by Susan Thorne
Contributing Editor

There are about 75 people involved in natural resources that may never be able to use the term "forest management" without thinking twice.

These people, members of the natural resource community from First Nations, government, industry, and universities, all attended the ground-breaking conference, "Linking Indigenous Peoples' Knowledge and Western Science in Natural Resources Management" held March 14-16 at Quaaout Lodge, near Chase, B.C.

Sponsored by the En'owkin Centre, a First Nations cultural education centre, and the Southern Interior Forest Extension and Research Partnership (SIFERP), the conference's goal was to promote the understanding of Indigenous Peoples' Knowledge in natural resource management.

"It was a good learning experience," said **Henry Michel**, conference co-organizer and Aboriginal

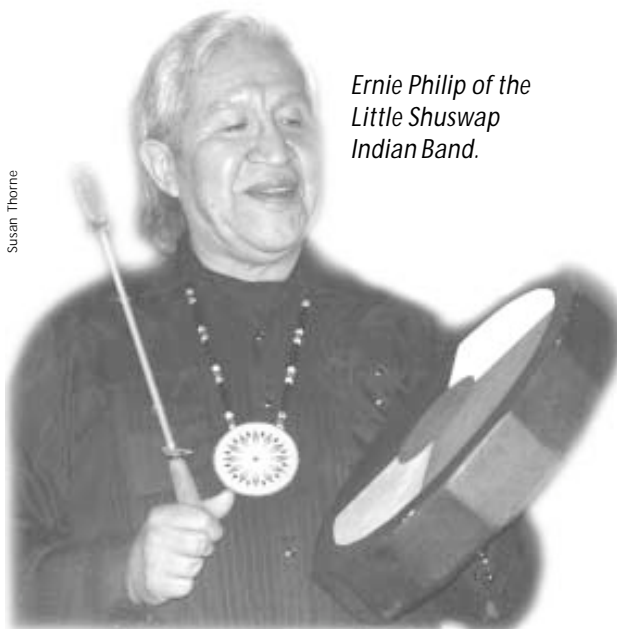
extension specialist with SIFERP. "A lot of groundwork was established by defining some of the terms and concepts of Indigenous Peoples' Knowledge and Western science. And people can now attach names to faces and know where they can get help to find information."

Don Gayton, a conference co-organizer and SIFERP ecosystem management extension specialist, said there was a lot of discussion around the definitions that people working in the natural resource community often take for granted, such as "management."

"People at the conference began to think about the words they use in the natural resources field," said Gayton. "Management is a term that originated in the business community. We have shifted that concept into natural resource management, not realizing it has a lot of cultural baggage attached to it."

In fact, participants discussed substitutes for the word "management."

continued on page 2 . . .



Ernie Philip of the
Little Shuswap
Indian Band.

Susan Thorne

Inside

SIFERP expands to include Coast	2
NRIN launch expected in Spring 2001	3
Building capacity in agroforestry extension	4
Woodlots win awards for innovation	5
Which growth and yield model?	6
Social Science Forum slated for June	7
Monitoring: The foundation of grassland management	8
The future of forest grazing	10
New concept for native grass propagation	11
New <i>Biodiversity Publications Catalogue</i>	12
ILMA profile	13
Conference celebrates 60th anniversary	13
First issue of <i>JEM</i> closed	14
SIFERP staff members	15
Upcoming events	16
<i>JEM</i> theme issue: Call for papers	16



SIFERP expands to include Coast

We believe that there is more common ground than there are differences.
Chris Hollstedt, SIFERP

The Southern Interior Forest Extension and Research Partnership (SIFERP) is looking for a new name.

That's because the steering committee charged with the task of setting up a natural resource management extension service for the Coastal region has decided to join forces with the existing SIFERP operation. This decision was made jointly by the SIFERP Board of Directors and the Coastal Steering Committee in December, 2000.

"Our clients can continue to look for the same quality of service we have provided for the past three years, but with an expanded geographic mandate," says **Chris Hollstedt**, SIFERP's executive director.

While there were concerns about maintaining unique geographic identities, both organizations decided that more could be accomplished with a co-operative effort. "We believe that there is more common ground than there are differences," says Hollstedt.


The expanded mandate means an increased membership base for the Partnership. Already, five new organizations have been added:

Ditidaht First Nation, International Forest Products, Vancouver Forest Region, Royal Roads University, and Malaspina University College.

Seven new members are also being added to the Board of Directors. They include: **David Drakeford** (Malaspina University College), **Ted Nash** (Vancouver Forest Region), **Dean Mills** (Canadian Forest Service), **Jim Rodney** (Forestry Continuing Studies Network), **John Barker** (University of British Columbia), **Annette Van Niejenhuis** (Western Forest Products), and **Ian Robertson** (International Forest Products).

The merger also means an expanded extension team. "Following the same model SIFERP has developed, new extension specialists will be located with delivery partners," says Hollstedt.

Existing SIFERP information management services, such as the newsletter *LINK*, the *British Columbia Journal of Ecosystems and Management (JEM)*, and the Natural Resources Information Network (NRIN) will expand to include the Coast.

"We're really excited about developing synergies and co-operating with our Coastal partners to address natural resource challenges," says Hollstedt. 

IPK speakers

Speakers at the IPK Conference included: **Jeanette Armstrong**, Director of Okanagan Language and Cultural Development, En'owkin Centre, Penticton; **Bill Bourgeois**, Vice President of Lignum Industries, Vancouver; **Dick Cannings**, Naturalist; **Fred Fortier**, Shuswap Nation Fisheries Commission; **Stuart Aird**, Nicola Similkameen Innovative Forestry Society; **Dr. Ken Lertzmann**, Simon Fraser University; and **Lauretta Prince**, Tl'azt'en First Nation.

IPK conference sparks new thinking

... continued from page 1

"We looked at terms such as 'stewardship,' and 'participation' that convey less of a top-down, controlling approach to nature," said Gayton.

The informal atmosphere of the conference sparked many honest and thought-provoking discussions, said Michel.

"This is a sensitive issue," he said. "We wanted to have a small, intimate gathering where there would be a lot of intense interaction. We felt that was essential to accomplish some of the more difficult work to be done in the future."

The conference had three objectives:


- to explore Indigenous Peoples' Knowledge (IPK) and Western science, as equivalent knowledge systems.
- to develop suggested principles for the inclusion of IPK into sustainable natural resource management planning that respects the rights of Aboriginal people to hold and

retain their own knowledge, and follows protocols acceptable to the local communities in regards to intellectual property rights.

- to develop suggested operational principles for managing natural resources through combinations of Indigenous knowledge and Western science.

After the conference, Gayton said he believed that those who attended are now better able to discuss IPK and Western science as two separate, but equal worldviews. He said participants also realized that while integrating the two may eventually happen formally, it will first evolve on a local, personal level.

"Integration will most likely grow out of the experiences of a small group of people working together on a piece of land," said Gayton.

Michel agreed. "Future growth of this issue will probably take some time, but we've started the process by getting the dialogue under way." 



NRIN launch expected in Spring 2001

by Trina Innes
Natural Resources Information Specialist



A world where forestry, natural resource managers, and the public can get access to information with a simple click of a computer mouse will soon be a reality.

The Southern Interior Forest Extension and Research Partnership (SIFERP), with funding from Forest Renewal BC and contributions from a wide variety of partners, is developing an Internet gateway and co-operation network called the Natural Resources Information Network (NRIN). Introduced conceptually in the Spring 2000 issue of *LINK*, NRIN will connect practitioners, professionals, researchers, decision makers, and resource users to credible, current content on ecosystems and their management. NRIN will provide the means to link many natural resources organizations into a provincially recognized network that co-operates to provide a comprehensive on-line source of information on natural resources.

To better understand the system, here's a scenario of how NRIN will help natural resource managers.


Albert, a woodlot owner in Clearwater, is trying to write a forest development plan. His property backs onto a provincial park known for its population of grizzly bears. The local residents are petitioning to eliminate clearcut logging in all areas around the park. Albert wants to make sure his harvesting plans consider the latest research on grizzly bear habitat.

Before NRIN was launched, Albert would have spent a lot of time on the phone. He calls the woodlot forester at the Ministry of Forests (MOF), who would probably recommend that he contact the Ministry of Environment, Lands and Parks' habitat specialist. This specialist

recommends some relevant reports, some of which are available on-line, while others are available from an MOF office in Vancouver. A call to a Vancouver consulting firm, which has done studies on grizzlies, is also recommended. Albert spends many hours chasing down people, reports, and contacts.

With NRIN up and running, gaining access to this kind of information will get easier. Albert accesses NRIN from a computer at his local library, conducts a keyword search on the word "grizzly," and immediately downloads and prints a number of reports on the effects of forest harvesting on grizzly habitat. Another hardcopy report, available only at the MOF library in Victoria, he obtains through inter-library loan. NRIN also provides Albert with a wealth of other information sources and services, including: organizational contact information, a directory of workshops and conferences, names of grizzly bear researchers, and forums for discussing various topics.

The good news for resource managers like Albert is that NRIN has already begun developing its first databases. Developed by SIFERP and the Ministry of Forests-Forest Sciences Program, these databases contain information describing over 500 Forest Renewal BC-funded research projects from more than 80 organizations. Additional information products (e.g., publications, maps, databases, Web pages) relating to these projects will also be described. Some electronic documents will be instantly available.

The key to NRIN's success is a network of participating organizations. As more organizations link their information to the NRIN database, the more comprehensive and useful NRIN becomes. For background information on NRIN, please visit the SIFERP Web page devoted to NRIN: www.siferp.org/nrin 

For further information or to get your organization connected, contact Trina Innes at: **Trina.Innes@siferp.org** or 250-371-3955.



Building capacity in agroforestry extension

by Chris Cunningham, President
Kamloops and District Woodlot Association



Chris Cunningham

I attended an agroforestry conference in Columbia, Missouri from January 8–14, 2001, on behalf of the Southern Interior Forest Extension and Research Partnership (SIFERP). At this conference, I learned about the potential for agroforestry and the five categories of agroforestry practices. I also discussed the possibility of extending agroforestry practices to private provincial land owners with other British Columbia colleagues.

I was joined by six others from the province who have agreed to form a provincial agroforestry extension team to assist in developing a strategy for British Columbia in the coming months.

The team includes: **Richard Hallman**, Agroforestry specialist, B.C. Ministry of Agriculture and Food (MAFF), Creston; **Niels Holbeck**, Forest Land Commission, Nanaimo; **Jill Hatfield**, District Agrologist, MAFF, Courtenay; **Harold Macy**, UBC Research Farm, Oyster River; and **Cindy Prescott** and **Lisa Zabek**, from UBC's Faculty of Forestry.

What is agroforestry? It is a blend of intensive agriculture practices carried on within a forest environment. The five most commonly used practices are:

- Riparian buffers: growing trees, shrubs, and grasses along creeks, streams, rivers, and lakes to enhance or restore the riparian environment
- Shelterbelt: planting trees and shrubs to protect open areas from wind or snow
- Forest farming: intensively cultivating crops in the understorey of forests
- Alley cropping: planting trees and other annual or perennial plants in alternating rows
- Silvopasture: intensively grazing animals within a managed plantation

Agroforestry can offer diversity to both forest land managers and agriculture land managers. Using one or more agroforestry methods, the land manager can produce a short-term cash flow and benefit by increasing the growth (e.g., with natural fertilizer or by growing nitrogen-fixing plants) of the trees in the forest. On pasture land, a long-term, high-value product can be produced along with forage and animals, resulting in little loss of agricultural land.

The key to agroforestry is the intensive management of the land using deliberate planning, development, and management with both agriculture and forestry in mind.

Agroforestry is currently practised in British Columbia. Examples include: grazing sheep and cattle on Christmas tree plantations, as well as intensive grazing management on cutblocks throughout the province; harvesting hay between trees in orchards and nut tree plantations; harvesting salal and ferns for the floral industry on Vancouver Island and the Lower Mainland; and planting shelterbelts in the Peace country.

Landowners with private land (5–500 hectares), forested or cleared or somewhere in between, can practise agroforestry. However, there are currently no tenure arrangements allowing agroforestry practices on Crown land, except in community forests. 🌲

The B.C. Small Woodlands Program has produced an agroforestry guide. To get a copy: phone 1-877-847-1830, or visit www.swp.bc.ca Or contact Shawn Morford at: Shawn.Morford@siferp.org



Woodlots win awards for innovation

Our goal is to get as much productivity out of the forest, but to also make it a good place for wildlife.

**Craig Mann,
woodlot owner**

*by Susan Thorne
Contributing Editor*

Woodlot owners face unique challenges. They often operate as one-family forestry companies, with the same obligations as the larger forest companies. Woodlot owners follow the Forest Practices Code, write forest development plans, build forestry roads, and harvest timber. They also have to replant.

Each year, the Woodlot Product Development Council honours woodlots that show a commitment to innovation in forest stewardship and management, and an involvement in the education of the public about small-scale forestry.

Here are two profiles of woodlot owners—all members of the Kamloops Woodlot Association—who have won this award. Two more will be featured in the next issue.

1999 Winner: Leanna and Craig Mann

A respect for wildlife is one of the main aspects driving the operation of **Leanna and Craig Mann's** woodlot, located at Cicero Creek, east of Barriere.

The couple's relatively new 600-hectare woodlot, awarded in 1998, is a critical habitat area for moose and is also a winter range site for mule deer.

"Our goal is to get as much productivity out of the forest, but to also make it a good place for wildlife," said Craig Mann, a 20-year logging veteran. "We also want to make it a nice recreation area."

Maintaining wildlife habitat on the woodlot involves techniques such as "high-stumping," in which alders are cut at 0.75 to 1 metre high, instead of at ground level. This promotes suckering and provides food for the moose and deer. The Mann's have also built ponds on their property to encourage birds; they also hope to provide nesting sites for hawks. "Little things like that can make a big difference," said Mann.

The Mann's annual harvest is about 1100 cubic metres, made up of 80% fir and 20% pine. As an experienced logger and road builder, Mann does most of the harvesting and road construction work himself. He hires contractors to help with

the re-planting and he works alongside a Registered Professional Forester to prepare development plans.

Owning a woodlot has been a life-long ambition for Mann, who started applying for a woodlot near his 250-hectare property in the early 80s. "You get to manage the forest right beside your property and make sure it looks like you want it to," said Mann.

2000 Winner: Geoff Bodman and family


Jay Springs Ranch is truly a family-run woodlot. Owned by **Geoff and Shirley Bodman**, along with their three children and their families, Woodlot 311 is located at Pinantan Lake.

Geoff's son Dean, who is a silviculture technician and small business logger, does the technical work and harvesting on the woodlot. Geoff's oldest daughter, **Jennifer**, writes the operation plans and handles the other paperwork. Jennifer's husband, **Chris Cunningham**, is the woodlot's "meeting man," acting as president of the Kamloops Woodlot Association and as an executive board member of the Federation of BC Woodlot Associations. Cunningham also helps out with the silviculture work, while Geoff's younger daughter, Jolly, is the bookkeeper.

The family has lived on the property since 1965 and was awarded a woodlot in 1985—one of the first two woodlots licences awarded in the Kamloops Forest District.

Woodlot 311 is a dry belt Interior Douglas-fir forest that ranges from grassland to open Douglas-fir with spruce in the wetter portions. Harvesting techniques include selective logging and cutting small patches in root rot areas. All wood is hand-felled and line-skidded.

"All logged areas are planted within two years," adds Cunningham. "We are also conducting sanitation spacing of 26 hectares, under a Forest Renewal BC enhanced forestry program grant."

The Bodman family believes firmly in the concept of woodlots and has been active in promoting them. "We believe in educating the public about the role of woodlots," said Cunningham. Every year, students from the University College of the Cariboo tour the woodlot to observe woodlot forest practices. Jay Springs Ranch has also been featured in several newspaper articles. 



Which growth and yield model?

by Steve Stearns-Smith
Olympic Resource Management

The number of growth and yield models available in British Columbia has nearly doubled in the last 10 years. This expansion is driven by our desire to improve growth and yield information for areas where we

currently have little or none—and we still have a way to go. These models are just one of many decision-support tools we have available. Tools help improve our management decisions, but only if we take some time and learn to use them wisely.

No one model is best for every situation.

... continued on page 7

Eight commonly used growth and yield models^a in British Columbia.

	MGM	ProgBC	SDMDs	SPS	STIM	TASS	TIPSY	VDYP
Distributor Free unless noted	University of Alberta	Ministry of Forests	Ministry of Forests	www.masonbruce.com For sale	Ministry of Forests	Ministry of Forests, free custom runs	Ministry of Forests	Ministry of Forests
Geography	Boreal	S. ICH, IDF ^b	All BC	All BC	See spp	All BC	All BC	All BC
Tree species (spp)^c	Sw, At, PI, Sb	Most conifers	Same as TIPSY	Most conifers	At, Hwc	Most conifers	Most conifers	Most species
Stand types	Mixedwood	All	Same as TIPSY	Even-aged multi-spp	Even-aged single-spp	Even-aged single-spp	Even-aged single-spp	Even-aged multi-spp
Main input required	Tree list	Tree list	Trees per hectare and height	Tree list	Tree list	Establishment plan	Establishment plan	Inventory label plan
Site productivity input	Site index	Biogeoclimatic Ecosystem Classification	Site index indirectly	Site index	Site index	Site index	Site index	Site index
Silviculture treatments	Planting, thinning	Planting, thinning, partial cuts	Limited	Planting, thinning, fertilizing	Thinning	Planting, thinning, fertilizing, pruning	Planting, thinning, fertilizing, genetics	None
Outputs besides yield tables	Projected tree lists	Projected tree lists	No yield tables as such	Projected tree lists	Projected tree lists	Stand and stock tables, wood quality, visuals	Stand and stock tables, coarse woody debris, lumber, logs, jobs, economics	None
Niche	Boreal mixedwood	Uneven-aged management, partial cutting, and forest health	Rough exploration only	Only private sector model	Unique model type; Spp overlap MGM, TIPSY	Intensive management, spatial questions, wood quality	Managed even-aged single-spp conifer	Natural stands, inventory label projection
Used in timber supply?	Tentative; still tree list issues	Tentative; still tree list issues	Not likely	Some	Not yet	Via TIPSY	Extensively	Extensively

^a Model abbreviations used in this table: **MGM** = Mixedwood Growth Model; **ProgBC** = Prognosis BC (based on a variant of the US Forest Service's Forest Vegetation Simulator); **SDMDs** = Stand density management diagrams (B.C. versions build from TIPSY output); **SPS** = Stand Projection System; **STIM** = Stand and Tree Integrated Model; **TASS** = Tree and Stand Simulator; **TIPSY** = Table Interpolation Program for Stand Yields (yields from TASS); **VDYP** = Variable Density Yield Projection (model).

^b S. ICH = southern Interior Cedar–Hemlock; IDF = Interior Douglas-fir.

^c Tree species abbreviations: Sw = white spruce; At = trembling aspen; PI = lodgepole pine; Sb = black spruce; Hwc = western hemlock.



Social Science Forum cheduled for June

Linkages between social science research and land management are not common.

by Shawn Morford
Socio-economics Specialist

On June 27 and 28, 2001, the Socio-economics Extension Working Group of the Southern Interior Forest Extension and Research Partnership (SIFERP) is hosting a forum in Kelowna called "Forestry as a Social Science: The Role of Social Science in Natural Resource Management in British Columbia." This forum takes place immediately after SIFERP's Annual General Meeting.

Many "people" and "community" issues face land managers, and a number of researchers are involved in social science research work that is applicable to British Columbia. Linkages, however, between social science research and land management are not common.

This forum is designed to help bridge that gap by increasing:

- practitioner awareness about the current research and its applicability to natural resources in the province,
- researcher awareness about the current gaps in knowledge that could be addressed through social science research, and
- opportunities for new research partnerships between researchers and natural resource practitioners.

Who should attend this forum? We encourage natural resource managers from government, industry, First Nations, and communities to attend, as well as researchers conducting, or interested in social science research, and students from around the province. Registration information will be available by May 15 at:

www.siferp.org 

For more information contact Shawn Morford at: **Shawn.Morford@siferp.org** or 250-828-4048.


Use growth and yield models wisely

... continued from page 6

Different models emphasize different aspects of growth and yield. Your choice depends on the specifics of each unique situation. What is the context of your decision: is it inventory, timber supply, or stand silviculture? What species and stand type are you working with: even-aged, single species, or something much more complex? What stand information do you have for model input: an inventory label, a tree list, or an establishment plan? Are you interested in looking at silvicultural treatments: spacing, fertilizing, pruning, partial cutting, or forest health? Is the spatial arrangement of the trees of special importance? What type(s) of model output will you need to support your particular decision: a standard yield table, stand and stock tables, or economic analyses?

The accompanying table (see page 6) describes the eight most prominent growth and yield models used in British Columbia today. A number of other models also exist; however, some do not fit in the operational model

category or are "immigrants" from the United States and have yet to be translated into a metric equivalent and calibrated for use in British Columbia.

The following Web sites are your best sources of information about these models, including free downloads of Ministry of Forests models and the Mixedwood Growth Model (MGM). The Forest Productivity Council of BC is also a good source of information on models, and other growth and yield-related subjects. 

For more information contact: Forest Productivity Council of BC: www.forestproductivity.gov.bc.ca/index.htm

MGM: www.rr.ualberta.ca/research/mgm/MGM.htm

Ministry of Forests distributed models: www.for.gov.bc.ca/research/gymodels/

Stand Projection System: www.masonbruce.com/ or www.drssystemsin.com/



Monitoring: The foundation

**You can't
manage if you
don't monitor.**

by Don Gayton
Ecosystem Management Specialist

The health of a forest stand can be assessed by a cruise, by looking at a map, or even by looking at an aerial photograph. The stand's history can be deduced from tree cores, downed snags, and archival photos. As complex as our forests are, assessing their health, condition, and history is far easier than a comparable assessment of the province's grasslands.

As an example, do we know if the common *Stipa* species in a grassland is *Stipa columbiana* or its relative, *Stipa richardsonii*? Major ecological differences exist between these two grasses, and we also know that these differences affect range operations. Yet no forest cover map or air photo can reveal the existing percentages of these species, and only in rare instances will a grassland cruise give an idea of the relative dominance of the two plants. The only way to document the extent of these and other grasses, and the host of grassland broadleaf plants found with them, is through patient, "hands-and-knees" taxonomy in the field.

The B.C. Forest Service's Range Reference Area (RRA) Program was designed for just that. Range

Reference Areas are long-term monitoring installations designed to identify Crown-owned grassland ecosystems, and to track the effects of livestock and wildlife grazing on these areas. These installations consist of fenced exclosures, combined with permanent vegetation monitoring transects and photopoints. The RRAs are also used to track weed invasion, as well as to monitor the effects of fire and fire suppression.

Determining grassland species composition is a challenge. A typical native grassland community will contain half a dozen dominant species, and 40–60 species altogether. Roughly 1000 graminoid (grasses, rushes, and sedges) species and varieties occur in British Columbia, and most of them look maddeningly alike. The standard method used to estimate the relative dominance of species in a grassland community is by a Daubenmire cover estimate. Originated by Washington State University ecologist Rexford Daubenmire in 1959, this method consists of placing an open, 20 x 50-cm metal frame just above the grass canopy, and visually estimating the percent cover of each species. Litter, bare ground, and lichen cover are also estimated. Normally, a series of 10–25 of these Daubenmire observations are taken at random, along each of several randomly placed transects on a site. The resulting species values are averaged to characterize the plant community. Other commonly used grassland monitoring methods are frequency, line intercept, and point intercept. Each method has its advantages and drawbacks, but all require training in grassland plant identification, and abundant patience.

The first Range Reference Areas in the province were built by Agriculture Canada in the 1930s, and a few of these still remain. With the help of Forest Renewal BC, the RRA program was greatly expanded in 1995. Some 260 exclosures were established, and another 100 existing exclosures were upgraded and remonitored. The geographical breadth of the RRAs is impressive, ranging from Fort St. John to Grasmere, embracing all manner of grasslands, including riparian, desert, and high-elevation types.

The goals of the RRA program are to:

- define Potential Natural Community ("climax") types for range use plans;



Dry grasslands on the east side of Columbia Lake, with Range Reference Area exclosure in the distance.



n of grassland management

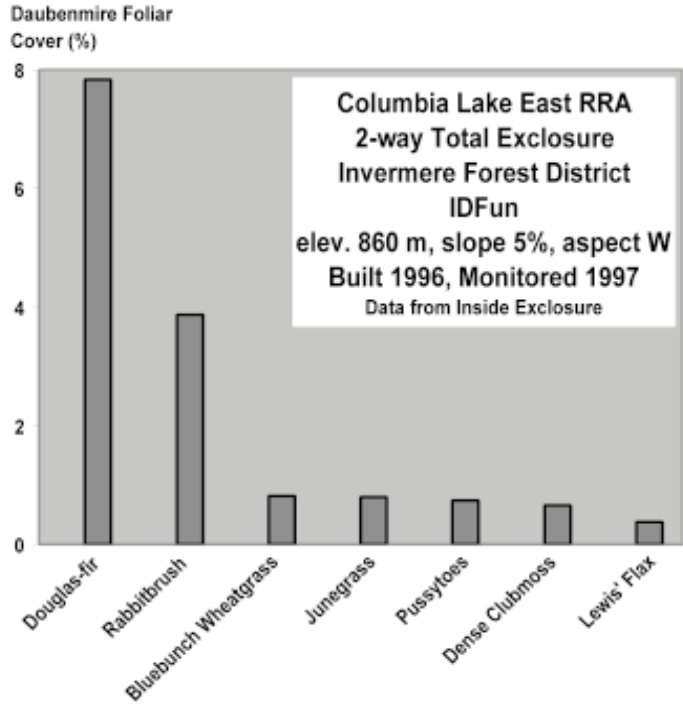
- establish a provincial compilation of Potential Natural Community descriptions; and
- share range inventory information with range program staff, other government agencies, and the public.

Grasslands and biodiversity are closely intertwined. An astonishingly high percentage of British Columbia's red- and blue-listed species use grasslands and adjacent dry forests for part or all of their life cycle. Information generated by the RRA program will be invaluable as we move into the era of federal endangered species legislation.

Now, for the first time, managers and others will have access to a comprehensive, province-wide record of grazed and ungrazed plant communities.

British Columbia's grasslands are a little-known and poorly understood resource. Some areas experienced a species conversion—from native plants to a community dominated by introduced European species—even before we entered the 20th century. In many cases, that shift went unnoticed. More recently, noxious weeds such as sulphur cinquefoil (*Potentilla recta*), which is low-growing and similar to the native cinquefoils, have been able to move in and significantly change grassland ecosystems before users and researchers were able to react to them.

"You can't manage if you don't monitor." This truism is particularly appropriate to grasslands and dry forests, where ecological change is notoriously slow and difficult to detect. Now, for the first time, managers and others will have access to a comprehensive, province-wide record of grazed and ungrazed plant communities. Special attention will be focussed on the "big three" (the agropyrons, fescues, and stipas), which form the backbone of British Columbia's grasslands. The "dirty dozen" of introduced noxious weeds that pose the biggest threat will also be monitored. 🌲



The percent cover of dominant plant species at the Columbia Lake East Range Reference Area.



Looking down the fenceline of the Columbia Lake East Range Reference Area.

Summary data on the RRAs in the Nelson Forest Region are available at: www.for.gov.bc.ca/nelson/research/rra/intro.htm

Summaries from the other Regions are also accessible through this Web site. Detailed RRA vegetation and biophysical data will soon be available from the Ministry of Forests in electronic form.



The future of forest grazing

Recommendations from this workshop could play an important role in the future integration of timber and range resources.

by *Kathie Swift*
Early Stand Establishment Specialist, and
Reg Newman
Ministry of Forests Range Ecologist

On October 3, 2000, a Forest Grazing Workshop hosted by the B.C. Ministry of Forests Research Branch and the Southern Interior Forest Extension and Research Partnership took place in Kamloops. Funding for this workshop was provided by Forest Renewal BC, with Agriculture and Agri-Food Canada supplying the facilities. The intent of this workshop was to:

- bring together those with concerns about the management of cattle in cutblocks
- present the latest scientific information on forest grazing
- outline the implications of various management options on growth and yield
- discuss unresolved cattle/tree conflicts, potential solutions, further extension, and research needs

Morning Session

Michael Pitt, associate professor and research scientist from the University of British Columbia, opened the morning session with a lively introduction, which put forest grazing into context from both a historical and a legislative perspective.

Following Michael's introduction, those involved in the grass-tree-cattle interaction presented their perspectives on the complexities of forest grazing. **Phil Youwe** and **Glenn Heyes**, both Range Officers for local district offices, represented the Ministry of Forests; **Bob Johnson** and **Shane Browne-Clayton** from Riverside Forest Products Ltd, represented the forest industry; **Judy Guichon** represented the ranching community; and **Len Bawtree** represented the B.C. Cattlemen's Association.

Afternoon Session

Research information obtained from the last 10 years of work on the Forest Grazing project, a long-term trial located in the Montane Spruce, very dry, cool, biogeoclimatic subzone, was presented during the afternoon session. **Brian Wikeem** set the stage by outlining some of the history and background of this long-term forest grazing trial. A summary of research results from

Tunkwa and Helmer Lake cutblock trials were presented under the following topics:

- Understanding cattle damage on cutblocks: **Reg Newman**, Ministry of Forests, Research Branch
- Cattle-induced soil compaction in forest plantations—Is it real? **Klaas Broersma**, Agriculture and Agri-Food Canada
- Soil quality changes following harvesting and grazing: **Maja Krzic**, University of British Columbia
- Cattle production and nitrogen cycling in forest grazing systems: **Don Thompson**, Agriculture and Agri-Food Canada
- Impacts of cattle damage on growth and yield: **Reg Newman**, Ministry of Forests, Research Branch

Working Towards a Solution

From the discussions and information presented during the day, a number of themes common to both the forest licensee and the range community were presented as potential building blocks for future co-operative opportunities. These common themes suggest that both the forest and agriculture industries:

- depend on a Crown-owned natural resource,
- are trying to survive as an industry in a constantly changing environment,
- do not want to be over-regulated,
- cannot afford to bear the total financial obligation for all treatment options (e.g., fencing),
- identified the need for better communication within and between groups,
- identified the need to work together to enable each industry to survive, and
- agreed that proper management was the answer.

Clearly many outstanding concerns must be resolved. The next steps will likely involve a group commitment to follow-up on some of the key issues identified during this workshop. Recommendations from this workshop could play an important role in the future integration of the timber and range resources. 🌲

Further information

For a more detailed synopsis of the workshop proceedings, see *Integration of Timber and Range Resources: Where Are We?* This SIFERP file report will be available at the end of May at: www.siferp.org/pubs/filereports/fr00-6.pdf



A new concept for native grass propagation



Catherine Tarasoff

Bluebunch wheatgrass 5 months after planting in styroblocks.

Kenna Cartwright Municipal Park, in Kamloops, B.C., represents a sizeable grassland ecosystem within the urban core of Kamloops. In 1997, the British Columbia Conservation Foundation, the City of Kamloops, and the Friends of Kenna Cartwright Park Society partnered to tackle concerns within the park, including native grass restoration.

For two years, this partnership attempted to obtain native grass seed for restoration purposes. Because no native seed was available, we decided to try propagating bluebunch wheatgrass (*Agropyron spicatum*). This native grass grows through the production of "tillers," or side shoots, arising from the ground surface; these individual tillers together produce the effect of one large "bunchgrass." We believed that a bunchgrass plant could be propagated via individual tillers, but we were faced with two questions:

- What size of root system was needed to ensure winter survival and produce optimal bunchgrass for spring transplanting? and
- What would be the effect of copper-treated styroblocks on plant growth?

Bluebunch wheatgrass was collected and divided in mid-October 2000. The tillers were

planted into two types of tree-planting styroblocks: regular (no treatment) and Copperblock™ (treated with copper oxychloride). While the amount of root mass varied, the size of the above-ground vegetation remained relatively consistent.

Although the experiment is still under way, some obvious benefits and drawbacks to using tillers and styroblocks are worth discussing.

The benefits:

- The plant material is genetically adapted to the site. The bunchgrass is collected from the park and is transplanted to similar locations.
- The root system is well developed and new growth is rapid. New growth on transplanted tillers is observed after 3 or 4 days.
- There is very little mortality and therefore an increased chance of project success.
- Efficient use of space through the use of styroblocks.

The BIG drawback:

- This method is very labour-intensive: collecting bunchgrasses, dividing them into tillers, and then planting them into containers is a very slow and arduous task.

Until native grass seed is economically viable and locally available, grassland restoration options are limited. However, propagating native grasses through tiller division may be an option for some small-scale restoration projects. 🌲

Please contact Catherine Tarasoff at the British Columbia Conservation Foundation for more information: ctarasoff@bccf.com or 250-828-2551 ext. 314.

Fast Fact

Agropyron spicatum is a native grass that grows through the production of "tillers," or side shoots, arising from the ground surface; these individual tillers together produce the effect of one large "bunchgrass."



New Biodiversity Publications Catalogue a "must have"

The new catalogue is an indispensable resource.

Can you recognize an endangered species? Do you know what rare plants are found in grasslands? Do you have the latest information on caribou habitat requirements? If you are involved in land use planning, public education, or want to manage lands to sustain biodiversity, you will find the new **Biodiversity Publications Catalogue** an indispensable resource.

What people are saying . . .

Response from readers of the catalogued publications has been very positive.

- **Biogeoclimatic Zone brochures (e.g., *The Ecology of the Coastal Western Hemlock Zone*)**
"Good colour, good format and very informative. A very useful set of educational tools."

— **Bronwen Beedle**,
Deputy Chief Forester, Ministry of Forests (1997)

- **Conservation Biology Principles for Forested Landscapes**, edited by J. Voller and S. Harrison
"A great leap forward in the evolution of forest biology and management at large spatial scales in the Pacific Northwest . . . the single best book on this topic."

— **David Peterson**
(University of Washington) in
Northwest Science 1999

- **Rare Native Plants of British Columbia**, by G. Douglas, G. Straley, and D. Meidinger
"This is absolutely the best treatment of rare vascular plants yet published for any Canadian province or United States state!"

— **William J. Cody**
(Agriculture and Agri-Foods Canada) in
Canadian Field Naturalist 1999

- **The Lichens of British Columbia** (Part 2) by T. Goward
" . . . an excellent book. It will have an application far outside British Columbia and is unreservedly recommended to anyone interested in identifying lichens anywhere in temperate/boreal regions."

— **Alan Fryday**
(Michigan State University) in
The Bryologist 2000

The *Biodiversity Publications Catalogue* is a "must have" document that describes over 500 brochures, short summaries, books, and in-depth reports providing essential information on how to conserve biodiversity in British Columbia. The first edition was published in 1997, followed by a supplement in 1999. A comprehensive third edition, which includes materials in the first two editions, as well as new publications, is now available from Government Publication Services.

Publications listed include the colourful series of brochures on *Wildlife at Risk*, a book on *Plants of Coastal British Columbia*, and *Backyard Biodiversity and Beyond*, a resource kit for teachers. These publications were designed for the general public, educators, and students who are interested in learning

more about their local environment. Books such as *Rare Freshwater Fish of British Columbia* and *Hoofed Mammals of British Columbia* provide more in-depth information on fish and wildlife species.

Other publications, such as the *Bats and Forests Symposium* proceedings, are technical documents used by professionals to assess the effects of forest, wildlife, and range management practices. A series of Resource Inventory Committee (RIC) publications on the inventory methods used to assess various elements of biodiversity is also featured in the catalogue.

The catalogue is a product of the Ministry of Forests, the Ministry of Environment, Lands and Parks, and the Royal BC Museum. Staff in these agencies have worked together for over 8 years to determine the needs for information about biodiversity and have produced numerous publications.

The third edition of the *Biodiversity Publications Catalogue* can be viewed at:
www.for.gov.bc.ca/hfd/pubs/biodiv

Some of the publications included in the catalogue can be viewed, downloaded, and printed at no cost. Access to the Web site can be made through any Government Agent's Office and at many public libraries.

Biodiversity publications are available directly from:

Government Publication Services
www.publications.gov.bc.ca

Crown Publications
www.crownpub.bc.ca

Royal BC Museum
www.royalbcmuseum.bc.ca/serv_prod/friends/publicat/index_pu.html 🌲

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Partner: Interior Lumber Manufacturers' Association

Making the grade: 60 years of quality assurance

The ILMA continues to fulfill its original quality control mandate.



Formed in 1941 by southern Interior lumber producers, the Interior Lumber Manufacturers' Association continues to fulfill its original quality control mandate. On behalf of its 35 member companies, with production plants in 40 communities in the southern Interior of British Columbia, the ILMA ensures that wood products meet stringent national and international lumber grading standards.

ILMA member companies employ 11,700, including logging contractors, and generate an annual payroll of \$800 million. Almost 30,000 families are directly or indirectly dependent on the economic activity of these companies, which manufacture lumber, pulp, plywood, poles, and other value-added products valued at approximately \$3 billion annually.

The landscape of issues changes constantly for the Interior Lumber Manufacturers' Association, with challenges coming from all directions. ILMA staff are currently linked with forest industry partners and allies in the handling of many significant issues ranging from the Canada-US softwood lumber trade dispute and the federal Species-at-Risk Act, to creative marketing initiatives and constructive wood promotion.

At the provincial level, the ILMA monitors and responds to new regulatory issues, such as the Working Forest consultation paper, and works with government to improve existing regulations, such as the Forest Practices Code.

Specific issues of extreme significance to ILMA members, such as the Kootenay Boundary Land Use Higher Level Plan, receive strategically targeted attention through broad-based alliance building, public information campaigns, and direct lobbying efforts.

ILMA staff also plan and conduct programs to meet ongoing communication challenges, such as:

- raising public and media awareness of the social and economic contribution of the forest industry,

- educating teachers and students about renewable natural resources and informing young people about forestry careers,
- reassuring the public about the high standards of excellence required of forest managers in the province, and
- extolling the positive attributes of wood, the building material of first choice. 🌲

Conference celebrates Diamond Anniversary

Plan to attend the ILMA's "Growing Wood – Building Tomorrow" conference in Kelowna, April 25–27, 2001. This conference, held in conjunction with the lumber organization's Annual General Meeting at the Grand Okanagan Resort, features a panel discussion on "The 21st Century Certification Journey." Speakers and participants at this event include: **Michael Virga** (director of Sustainable Forestry Programs for the American Forestry and Paper Association), **Jim McCarthy** (executive director of Canada's Forest Stewardship Council), **Bruce Larson** (associate dean, University of Washington's College of Forest Resources), **Ron MacDonald** (president and CEO of the Council of Forest Industries), and **Catherine Lalonde** (president of the Canadian Wood Council). Kamloops Crown Attorney and Rubin "Hurricane" Carter supporter, **Lesra Martin**, will inspire with a luncheon address entitled "The Power in Perseverance." Former New Brunswick premier **Frank McKenna** presents the conference's keynote address. 🌲

For more information about this conference, visit the Interior Lumber Manufacturers' Association Web site: [www. ilma.com](http://www.ilma.com)



First issue of JEM "closed"

by Susan Bannerman
Editor, JEM



The Partnership's "JEM of a journal" is rapidly gaining momentum in British Columbia's natural resource community. Readers of the *BC Journal of Ecosystems and Management* appreciate its focus on provincial ecosystem research and extension activities. Authors value the thorough review their manuscripts receive, and the opportunities provided by the journal's on-line format to extend the delivery of their information.

Following the launch of its official Web site in December 1999, JEM saw the closure of its first electronic issue at end of March (www.siferp.org/jem),

with the publication of a print version scheduled for May. Destined for national and provincial libraries and depositories, natural resource agencies, and subscribers who prefer to read a "hard copy," the distribution of the printed journal, with its striking cover design, will ensure that JEM reaches the widest possible audience.

The inaugural issue contains five peer-reviewed articles (four extension notes and a research paper) and two thought-provoking perspective pieces.

In JEM's first article, authors **Kathie Swift**, **Melanie Jones**, and **Shannon Hagerman** extend their research into the effects of cutblock size and distance from standing timber on the diversity of mycorrhizal fungi.

Tony Trofymow, **Doug Goodman**, and **Alan Thomson** share details of the on-line database they designed that allows researchers to gain access to a wide variety of previously unpublished descriptions of ectomycorrhizae.

Brian Harris summarizes 10 years of wild bird observations, documenting their use of "stubs" (mechanically created wildlife trees). He also offers recommendations for future stub management.

Patrick Martin describes a new method to rank areas for fillplanting based on the yield gain expected from the treatment. A field review

concludes that this method makes a useful contribution to the problem of selecting areas for supplemental planting.

In the journal's first research report, **Bernhard Splechtna** presents climate-specific models to accurately estimate the height growth and site index of Pacific silver fir stands growing in coastal southern British Columbia.

Ethnobotanist **Nancy J. Turner** addresses concerns about commercial harvesting of non-timber forest products (NTFPs) that relate to First Peoples in British Columbia in a perspective paper entitled "Doing it Right." She presents some principles of sustainable harvesting of NTFPs that may prove useful in ongoing deliberations about how, or even whether, communities should pursue non-timber forest products as a means for economic development.

In "Water, a First Nations Spiritual and Ecological Perspective," **Michael Blackstock** draws on the Traditional Ecological Knowledge of three highly respected Elders from the southern Interior of British Columbia. The Elders' emphasis on the spiritual importance of water raises interesting questions about Western science's approach to freshwater ecosystem management and study.

Work is well under way on JEM's second issue, which should be closed and printed by the end of the summer. A special theme issue (see page 16) on sustainable forest management is slated for publication in the spring of 2002.

Judging from the positive feedback and the ever-increasing interest in the *BC Journal of Ecosystems and Management*, the journal is well on its way to fulfilling its goal of supporting and improving the sustainable management of the British Columbia's ecosystems. 🌲

For more information about contributing to JEM, visit www.siferp.org/jem or contact Susan Bannerman at: Susan.Bannerman@siferp.org



SIFERP staff members

Partnership welcomes new specialist

SIFERP welcomes our newest extension specialist, **Rob Scherer**, to the team. Rob will deliver the Watershed Management Extension Program in partnership with Okanagan University College and a recently announced \$3.5 million watershed endowment program from Forest Renewal BC.

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- Slocan Forest Products Ltd. (Radium Div.)
- The Land Conservancy of BC
- University College of the Cariboo
- University of British Columbia
- Weyerhaeuser Company Ltd.



Upcoming events

Knowledge Gaps report available

Print copies of *Science, Innovation, and Sustainability: Investing in British Columbia's Knowledge-based Natural Resource Sector* by Chris Hollstedt (SIFERP Series No. 2) are available for \$15 each (plus shipping). To order, please contact Susan Bannerman at: 250-749-4048; or e-mail: Susan.Bannerman@siferp.org

International visual resource management conference: "Looking Beyond the Trees: Visual Stewardship of the Working Forest"
April 17–19, 2001, Best Western Hotel, Kamloops, BC. For more information see: www.fcsn.bc.ca/conferences/conferences.htm

Interior Lumber Manufacturers' Association AGM and conference: "Growing Wood – Building Tomorrow" April 25–27, 2001, Grand Okanagan Resort, Kelowna, BC. For more information see: www.ilma.com

❖ **The Partnership's Annual General Meeting**
June 26–27, 2001, Prestige Inn, Kelowna, BC.
For more information see: www.siferp.org

❖ **Social Science Forum: "Forestry as a Social Science: The Role of Social Science in Natural Resource Management in British Columbia"**
June 27(1 p.m.)–28, 2001, Kelowna, BC.

Canadian Botanical Association Annual Conference
June 22–26. For more information see: www.sci.ouc.bc.ca/biol/cba2001.html

JEM theme issue: Call for papers

The *British Columbia Journal of Ecosystems and Management* invites the submission of manuscripts on the theme of **Sustainable Forest Management**.

For this theme issue, we are especially interested in extension notes and perspective papers that explore the full range of social, economic, and ecological sustainability issues relevant to forest management in British Columbia, including (but not restricted to) the following:

- Definitions of sustainability: criteria and indicators
- Assessments of, and experiences with, the various forest certification systems

- Public forest policy initiatives for achieving sustainability
- Sustainable forestry in practice: case studies and how-to's

Authors are encouraged to contact the Editor before preparing and submitting their manuscripts. Contributions to this special issue will be peer reviewed according to the standard criteria and procedures of the Journal.

Deadline for contributed papers: 1 October 2001
Articles peer reviewed and accepted: 1 March 2002
Tentative publication date: June 2002 🌲

For more information, contact the Editor at: Susan.Bannerman@siferp.org



LINK is published three times a year by the Southern Interior Forest Extension & Research Partnership. This newsletter promotes and encourages the sharing of resource management information among the diverse resource community of southern British Columbia. We invite your submissions, comments, and suggestions.

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