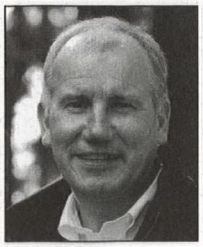
FACULTY OF FORESTRY • **NEWSLETTER** • THE UNIVERSITY OF BRITISH COLUMBIA

Branch LINES

Volume 12 No. 1 March, 2001

From the Dean's Desk



Over the past year or so UBC has used two "foundation" documents, "Trek 2000: A Version for the 21st Century" and the "Academic Plan" as the main planning documents to help us move forward in enhancing the quality of UBC. The Academic Plan recognizes that, while we do many things very well and are world leaders in a number of areas, there is still room for improvement. The Academic Plan provides guidelines for faculty and staff in the building of academic plans for their own units. These unit plans will influence, among other things, hiring decisions, program development, and infrastructure support. Allocation of university resources will be made on the basis of the core academic goal of planning: to promote and improve the quality of our academic units in teaching, research and scholarship. During the past three months our faculty, staff and students have been heavily involved in the development of the Faculty of Forestry Unit Plan. To try and focus these deliberations, two major committees dealing with "operational" and "vision" issues were struck, while five "issue specific" committees which focused on recruitment, learning technologies, fundraising, coop-extension and communications developed recommendations for us to consider. As an outcome, our draft vision statement is: *"the Faculty of Forestry at UBC is a world leader in the creation, synthesis and transfer of knowledge necessary for the sustainable use, management and conservation of forests. By providing students with an outstanding and distinctive education and by conducting leading research, we contribute to the continued development of a society that is environmentally sensitive, socially responsible and internationally competitive and, above all, knowledge-based".*

Over the next few months we will be looking at various operational and structural options that will best fit us to try and fulfill this vision statement. We want to gain further input from our major clients, the students, while soliciting advice from the external community that we serve. Each of the "issue-specific" committees has been very catalytic in providing a focus on the types of issues that need to be addressed. For example, under recruiting, what can we do to attract and retain the highest calibre students in our programs? How viable is a "course-based", non-thesis Masters program and could it attract good Arts, Science and Applied Science undergraduates into Forestry? In a related area, the committee charged with developing a strategy for coop-extension recommended building on our current successes. Our wood products processing program has demonstrated how beneficial coop programs can be in helping student recruitment, providing the students with excellent work experience and significantly improving our links with the forestry communities. The challenge issued by the coop-extension committee was to try and develop co-operative educational programs for each of our five undergraduate programs within one to two years. A considerable amount of work will need to be done to fulfill this goal with one of our major objectives being to assess the placement opportunities for students in each of these areas!

In the area of learning technologies, Dr. Rob Kozak and his committee members developed a detailed student survey which showed that the students wanted more practical experience in the form of field trips, field work, industry exposure, co-op placements, etc., while appreciating a variety of teaching styles/methods between and within classes (balance between group work and individual work, theory and hands-on applications, instruction and presentations, lecturing and participation). Although distance (web/computer-based) education should be an essential component of our teaching portfolio it was suggested that it might be best used in the development of professional programs or used as part of our post graduate education course development in partnership with "sister" institutions both nationally and internationally.

Within the "operational" committee, special emphasis was placed on the development of our plans for community outreach and to identify how our international activities might be enhanced. It was recommended that we make better use of our research forests, our special links with associations such as the Association of British Columbia Professional Foresters and our advisory councils such as the First Nations Council of Advisors, the National Education Initiative board and our Forestry Advisory Council as a way of better defining our "community" responsibilities. We already have a successful international component to our programs with Forestry showing one of the highest percentage of undergraduate student exchanges on campus. We want to build on the Faculty's international reputation and strengthen established links while creating new ones by using mechanisms such as distance education.

These are only a few of the many recommendations and proposed strategies that are being built into the development of the Faculty of Forestry Unit Plan. A first draft will be developed by the end of April 2001, which will be presented to our Faculty Advisory Council in early May. I encourage you to contact me and share your ideas of what should be the priorities and essential components of the Faculty of Forestry Unit Plan.

You can reach me in person, by letter, fax (604) 822–8645, phone (604) 822–2467, or email saddler@interchg.ubc.ca.

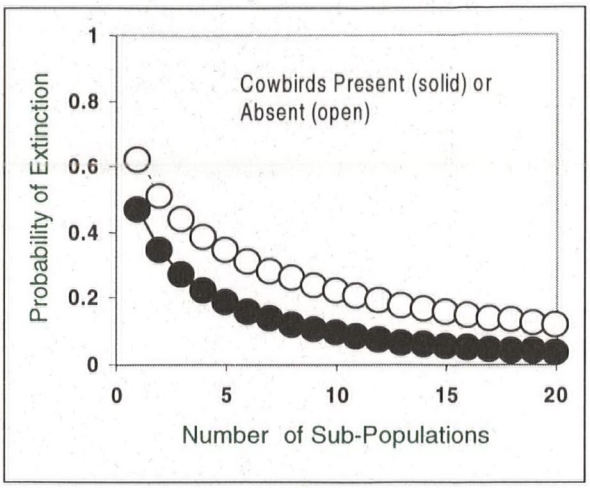
Jack Saddler

RESEARCH HIGHLIGHT

Population viability assessment in land use plans

LAND use planning exercises often develop alternative designs with regard to the size and arrangement of areas to be developed versus reserved for conservation, and these alternatives are often constrasted with respect to their predicted effects on social, economic and conservation values. However, recent events suggest that a sharper focus on alternate plans as they affect 'species at risk' is inevitable. The U.S. Endangered Species Act has created over 400 'Habitat Conservation Plans', and the likely adoption of related legislation in Canada has already led to the formation of 'recovery teams' to increase the abundance of rare species. A further outcome of these events in Canada will almost certainly involve the modification of land use plans to ameliorate extinction risk. A concern, then, is how to assess the effects of competing plans on rare species?

For over a decade comparisons of policy alternatives have been done via simulation modeling to predict population trends of species under alternate policies. For threatened species, 'Population Viability Analysis' is used to estimate extinction risk and 'Cummulative Effects Assessment' to estimate the added impact of a proposed policy or development. Where much data is available for particular species, PVA can be used to estimate the magnitude of particular risks, such as the invasion of B.C. by the brown-headed cowbird, a brood parasite and nest predator of small-bodied birds (see figure). However, I recently assessed the reliability of PVA with 29 years of data from island populations of song sparrows in coastal B.C. to show that process and sampling error in model parameters led to extremely wide confidence intervals on predictions. The practical effect of this error was to limit severely the ability to discriminate statistically between model results. This is disconcerting because the sparrows I studied comprise among the best known vertebrate populations in the world.



Predicted risk of extinction within 100 years for a song sparrow metapopulation in the presence and absence of parasitism by cowbirds.

Hence, the question remains, how do we assess reliably the response of species at risk, whose dynamics are rarely well known, to alternate land use plans? The short answer to this question is that 'we don't'; at least not over the short-term. Indeed, we must assume that there exists considerable uncertainty in virtually all predictions of species responses to alternate land uses. Given this uncertainty, land use policies must be regarded as hypotheses that require monitoring and comparison among alternatives. Adaptive Management, the planned comparison of alternate policies, is a B.C. concept described initially by Carl Walters and Buzz Holling at UBC. To approach land use planning for species at risk within an adaptive management framework requires that plans accommodate a range of reasonable approaches, perhaps as defined via PVA. To fail in this means that we commit ourselves to learning by trial and error, which, in the context of endangered species legislation, has proved very expensive.

For additional information, please contact Dr. Peter Arcese at (604) 822–3607, fax (604) 822–9102 or email arcese@interchg.ubc.ca. ❑

DEPARTMENT NEWS

Dr. Cindy Prescott has been promoted to associate professor (with grant tenure) effective July 1, 2001.

Dr. Kathy Martin has been appointed chair of the Scientific Advisory Group for research related to the recovery of the Vancouver Island marmot, established by Environment Canada.

Dr. Yousry El-Kassaby has been invited to participate in the Fifteenth Session of the FAO Committee on Forestry (March 12 to 16, 2001, in Rome).

Dr. John Richardson spoke at the winter meeting of the Coastal Silviculture Committee, and was the keynote speaker at the Canadian Society of Environmental Biologists in February.

Dr. Brett K. Sandercock, a Killam Postdoctoral Fellow working with Dr. Kathy Martin, has accepted a faculty position as assistant professor of Avian Ecology at Kansas State University.

Dr. Hamish Kimmins has been appointed as the new director of International Forestry Programs for the Faculty of Forestry, effective January 1, 2001.

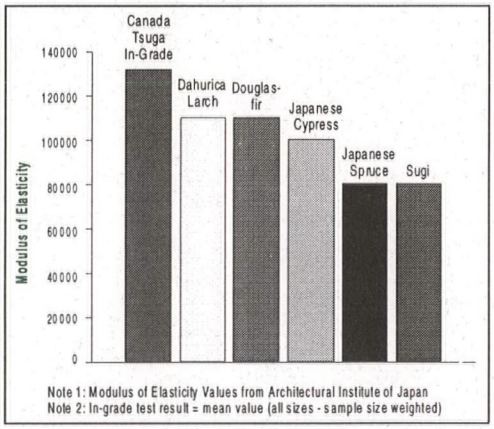
Dr. Kimmins chaired the Saskatchewan Forest Impacts Monitoring Science Advisory Board in Saskatoon in December and presented a draft Monitoring Framework to Industry in January. On February 13 and 14 he gave an invited keynote address at an international symposium on Mechanisms of Growth, Competition and Stress Defense in Plants at the University of Munich. Hamish's address was entitled: "FORECASTing and FORCEEing the possible forest futures. The role of hybrid simulation modelling in the design of sustainable forestry." ❑

RESEARCH HIGHLIGHT

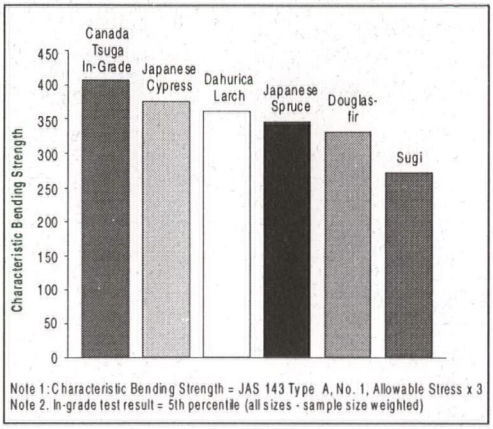
Japanese building codes impact B.C. coastal mills

THE Japanese government implemented major changes in the building regulations governing construction of traditional post and beam (P&B) housing in 2000. The demand for improved building codes and regulations can be traced to the Great Hanshin (Kobe) earthquake in 1995. The new building codes are intended to improve quality and encourage innovation in the P&B housing sector. New consumer protection legislation was introduced including a new mandatory 10-year Housing Warranty Program and a new voluntary Housing Performance Labeling System.

These new regulations are driving a trend toward increased use of dry structural lumber and engineered wood products such as glued-laminated timber.



Modulus of elasticity for species used in Japan high grade (Architectural Inst. of Japan).



Characteristic bending strength for species used in Japan. JAS 143 No. 1 grade, Type A (DRAFT).

Decreases in demand for green hemlock products, traditionally supplied by B.C. coastal mills, have forced many temporary and permanent mill closures and serious economic disruption in many forestry dependent communities. The Coast Forest and Lumber Association has launched a major marketing and technology development effort to overcome market perceptions about the quality of B.C. hemlock products.

A new Coast Applied Research Program (CARP) was created to develop technology needed to support innovative marketing of B.C. coastal hemlock for P&B housing. The CARP will develop drying technologies for B.C. coastal hemlock lumber products and provide technical information needed by code authorities, architects and builders to improve the competitive position of hemlock in P&B housing applications. This effort is lead by an industry steering committee supported by representatives from the industry, consulting firms, Forintek and UBC.

UBC has contributed to stability research (Dr. Avramidis) as well as code and standard efforts. Another recent UBC study has shown that the engineering properties of B.C. coastal hemlock are superior to the properties currently recognized in the Japanese building standards. In fact, B.C. coastal hemlock has the highest strength and elastic properties of any major species available for use in traditional Japanese P&B construction (see figures).

The B.C. coastal industry is expanding the production of kiln-dried, stable hemlock products for P&B housing construction. The challenge is to develop solutions that meet builders requirements cost effectively.

Finally, a major codes and standards initiative is underway to reposition B.C. hemlock by providing builders and architects with the technical information needed to meet requirements of the new consumer protection legislation. While the challenges in the Japanese P&B housing market will remain very significant over the next few years, the Coast industry has demonstrated that coordinated market research, product branding and technology development efforts are being successful in changing perceptions of builders and architects about B.C. coastal hemlock products.

For additional information, please contact Dr. David Barrett at (604) 822–5852, fax (604) 822–9104 or email dbarrett@interchg.ubc.ca. ❑

DEPARTMENT NEWS

Dr. John Ruddick has been appointed interim department head effective December 2000. John attended the 5th Int'l Symposium on Wood Protection and the Environment in Cannes, France. The symposium focused on the impact of environmental legislation including the Biocides Directive on current and future wood protecting chemicals in Europe. Output from this process will shape the direction of pesticide regulation in Canada.

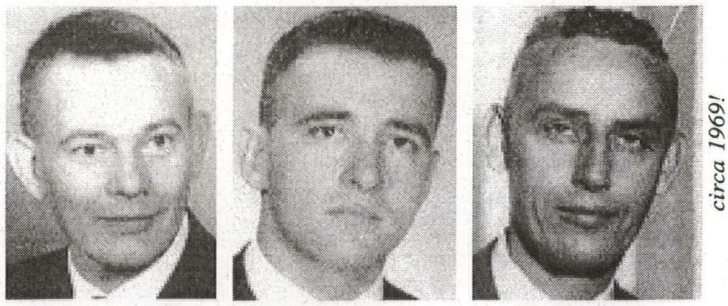
Dr. David Cohen has been appointed interim director of the Centre for Advanced Wood Processing.

In December, Dr. Cohen presented a paper on "The new building regulations in Japan: Creating opportunities for high-tech wood products" at the 6th Int'l Timber Construction Conference in Garmisch Partenkirchen, Germany. He was also the keynote speaker at the Forest Renewal BC Partner's Meeting on January 19, 2001 and presented a paper entitled, "Impact of technology on global forests and wood use." On January 31, 2001, he presented a paper entitled: "Technology, globalization and B.C." at the Western Silvicultural Contractor's Association.

Dr. Cohen with Dr. Chris Gaston from Forintek published: "Trends and Changes in Japanese Building Regulations" available from Canadian Mortgage and Housing Corporation. ❑

RESEARCH HIGHLIGHT

Taper equation research



Tony Kozak | Don Munro | Harry Smith

circa 1969!

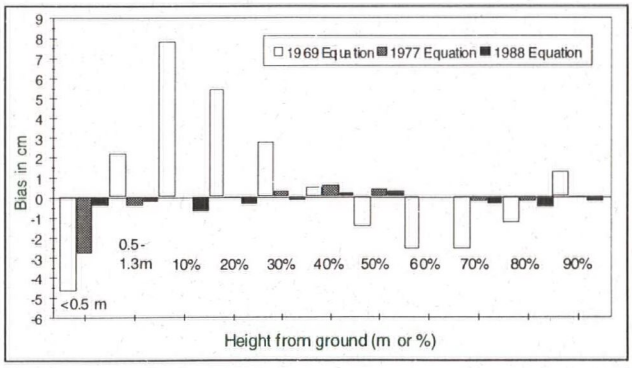
FOR more than three decades, the volume of most trees cruised in B.C. has been calculated using a "taper equation" developed at UBC. Unlike volume equations, which only estimate total stem volume, taper equations provide estimates of (i) inside-bark diameter at any point; (ii) total stem volume; (iii) merchantable volume and merchantable height to any top diameter and from any stump height; and (iv) individual log volumes. As I tidy my desk in preparation for retirement, I reflect on how it all began.

In 1956, because of the demand for better volume estimating systems, Harry Smith started work on taper equations in the Faculty of Forestry. Monty Newnham (one of the first of Harry's numerous graduate students) continued with this work. When I joined the Faculty in 1965, Harry and Don Munro, who were both working in this area, invited me to collaborate. I was honoured by their invitation, and as I learned more about the topic, I became more and more fascinated by the challenges presented. What I did not realise at the time was that this research topic would become a life-time passion.

Harry, Don and I published our equation in the Forestry Chronicle in 1969. Although this taper function produced somewhat biased estimates of inside bark diameters at several places along the stem, it found its way into most of the forest inventory computer programs in B.C., Alberta, and several European countries.

With the help of Julien Demaerschalk (another graduate student under Harry Smith), we developed the "whole bole system" in an attempt to reduce the bias inherent in our 1969 equation. In this taper estimating system, two functions are linked together at the inflection point such that their first derivatives are equal at the point of intersection. Although not all of the bias was eliminated with this system, the prediction was almost perfect along most parts of the stem. However, the dual equations were very difficult to fit. This taper estimating system was published in 1977 in the Canadian Journal of Forest Research (CJFR), and immediately adopted for practical applications by the B.C. Ministry of Forests.

In 1977, Dean Gardner appointed me to associate dean of the Faculty, which left me very little time for research. However, I was inspired by Monty Newnham's work on "variable form" taper functions in the 80s. Based on his idea, I developed a new approach with one continuous function describing the shape of the bole, and a "changing exponent" from ground to top to compensate for the neiloid, paraboloid, and conic forms of the stem. This research was published by the CJFR in 1988 and adopted by the B.C. Ministry of Forests in 1989. These taper functions are also used in Alberta, Saskatchewan and in several places in the United States, Europe and Asia. Several modified versions of the 1988 variable-exponent taper equation have since appeared in the literature, including my own 1994 and 1995 versions which have not yet been adopted for practical applications.



Average biases of estimating inside board diameters of 603 coastal Douglas-fir (FIZ ABC) trees using the three equations.

Although each equation from 1969, 1977 and 1988 has produced obviously improved estimations (see figure), I still believe that small improvements can be made. Hopefully my retirement in June will give me the time to continue my passion and keep this research going.

For further information, please contact Dr. A. Kozak at (604) 822–3545; fax (604) 822–9106 or email kozak@interchg.ubc.ca. ❑

DEPARTMENT NEWS

Dr. Jonathan Fannin is on sabbatical leave with the FAO, in Rome, where he is contributing to a manual for the planning, design, construction and maintenance of forest roads in mountainous terrain.

Dr. Gary Bull has been appointed to the Sustainable Development Indicators Initiative Steering Committee, National Roundtable on Environment and Economy as a forest specialist. He is also a participant in the Forest Trends organized meeting in Rio de Janeiro, Brazil, March 2001, on environmental markets. Gary has also been appointed to the Blue Ribbon Advisory Panel of Climate Partners Inc.

This past year Dr. David Tindall was awarded an instructional technology grant from the Faculty of Arts to develop web-based teaching resources. He developed and taught a new course on "Gender, Technology and the Natural Environment."

Forests and Landscapes: Linking Ecology, Sustainability and Aesthetics, a book edited by Stephen Sheppard and Howard Harshaw has just been published as #6 in the IUFRO Research Series. The book presents a range of views on the underlying theories, research needs, and practical approaches for managing the combination of ecological and aesthetic values. The book contains a number of chapters by our faculty, and will be available through the UBC bookstore.

Dr. Peter Murtha has been promoted to the grade of Associate Fellow in the Canadian Aeronautics and Space Institute.

Dr. Peter Marshall was re-elected to ABCPF council for an additional 2-year term. ❑

New appointment

Sheila Biggers has joined the Faculty of Forestry as our new development officer. Sheila comes to the Faculty with nine years experience managing, marketing and fund-raising in the Third Sector. During her career, Sheila has been responsible for marketing, managing and raising funds for a number of organizations including the Downtown Oakville Business Association, the Canadian Red Cross Society and the UBC Faculty of Commerce. Sheila's foundation for her career was established with her B.A. in Sociology and Consumer Studies from the University of Guelph.

Sheila is actively involved with the community, assisting with implementing development programs in small non-profit organizations. Currently, Sheila is working with Take a Hike, an adventure-based learning program for at-risk-youth. Sheila is also a co-coordinator of the Association of Fundraising Professionals First Course, a course designed for volunteers considering establishing development programs in their organizations.

As the development officer for the Faculty, Sheila plans to work closely with Dean Saddler, faculty and staff to build on the strong development program in the Faculty by focusing on developing strategic relationships and procuring major gifts for priority projects.

Sheila is replacing Cheryl Griffioen who has left the Faculty of Forestry to take up a full-time position in the Faculty of Pharmaceutical Sciences.

Sheila can be reached at (604) 822–8716 or email sbiggers@interchg.ubc.ca.

Centre for Forest Gene Conservation established

Gene conservation is the maintenance of genetic diversity found in natural populations to provide raw material for the adaptation of species to future environmental conditions, and genetic resources for the use of future generations. The Centre for Forest Gene Conservation (CFGC) has been established in the Department of Forest Sciences with funding from Forest Renewal BC, in conjunction with the Forest Genetics Council of BC. The CFGC will bring together expertise on forest genetics and conservation to explore issues in gene conservation, develop conservation strategies, evaluate needed versus current levels of protection of genetic diversity, and carry out fundamental research on genetic diversity in native species. The Centre will also advise the Forest Genetics Council on specific matters relating to the conservation of genetic diversity in British Columbia's forests.

For more information, contact Dr. Sally Aitken, CFGC Director, at (604) 822–6020 or aitken@interchg.ubc.ca.

Conservation Volunteers Program update

The Conservation Volunteers Program is a student organization in our Natural Resources Conservation Program that works to place undergraduate student volunteers with conservation-related projects in the Lower Mainland. Students learn valuable skills in the area of conservation, and through their volunteer experience, build their resumes for future employment opportunities. We would like to thank the following sponsors who donated funds to the Conservation Volunteers Program for the year 2000:

- BC Hydro Community Outreach Program
- VanCity Community Partnership Grant Program
- Mountain Equipment Co-op Environment Fund
- Faculty of Forestry, UBC.

For more information, please contact James Clark, Conservation Volunteers Program Coordinator at (604) 822–8510 or email consjobs@interchg.ubc.ca.

Tony Kozak's "bash"

On **June 30, 2001**, Dr. Tony Kozak will retire after 36 years as a faculty member in the Department of Forest Resources Management. For many of these years, Tony has taught biometrics and computer programming to students in the forestry program. Tony also served as associate dean for 23 years, as acting department head for 2½ years and as acting dean on many occasions (between Gardner and Kennedy, between Kennedy and Binkley and for 2 months between Binkley and Saddler).

We are planning a "Retirement Bash (Roast)" for Tony on the evening of **Saturday, June 9, 2001**. The event will be held at Green College on the University campus. The evening will include a three-course meal and some form of "entertainment", yet to be determined. Tickets for the evening (we anticipate a cost of approximately $55 a head) must be reserved by June 15, 2001.

For further information or to reserve a spot, call Bonni at (604) 822–3482 or email frmrecep@interchg.ubc.ca. If you have any specific "ideas" for the evening please contact Val LeMay at (604) 822–4770 or Sue Watts at (604) 822–6316.

Growth spurt in Forestry scholarships

New endowments in support of a $1,500 undergraduate scholarship and two new prizes totaling $500 for graduating students have been made available thanks to a $33,350 donation from the Association of British Columbia Professional Foresters.

The undergraduate scholarship will be awarded to a student entering the second year of the Forest Resources Management Program.

A $300 prize will go to an undergraduate forestry student who has penned the best graduating thesis.

A $200 prize will be awarded for the best essay by a graduating student in the Faculty.

For further information, please contact Sheila Biggers at (604) 822–8716 or email sbiggers@interchg.ubc.ca.

FOREST NEWS
from the Malcolm Knapp Research Forest

Forestry and eco-tourism *CAN* co-exist

The call of the Loon and the whine of power saws – in many ways, both sounds symbolize the balancing act between our environment and economy. While the forest industry remains the largest sector of our economy, the tourism industry is now the second largest and fastest growing sector. Eco-tourism – the provision of outdoor, educational, and ecologically-based tourist experiences – is the fastest growing area of the tourism industry. This is hardly surprising given the province's natural beauty, scenic landscapes, and biological diversity.

Aerial view of Loon Lake Camp.

But how can we best make headway in the eco-tourism industry? Should dependence on one industry simply be replaced by dependence on another? Obviously, diversification, rather than attrition, is essential to a stable and healthy economy.

After more than 100 years of large scale timber exploitation in this province, and despite considerable negative attention focused on our forest industry, we remain one of the most sought after wilderness tourism destinations in the world. In fact, the tremendous opportunity for growth in eco-tourism has been, in part, created by an infrastructure made possible by resource extraction: roads, railways, airports, utilities and communities are all in place to foster expansion and diversification.

Is it possible that the eco-tourism and forest industries can both benefit? Would visitors come here to see our forests *and* our forest management practices? Would visitors be more inclined to buy not only B.C. wines and fruits, but also B.C. forest products after returning home? For this "balance" to occur, the growing and harvesting of trees must add value to the wealth of possible uses of our forests.

Since 1949, we have operated the Loon Lake Camp at the Malcolm Knapp Research Forest in Maple Ridge for just this purpose. Right now we are planning a major redevelopment of the Loon Lake Outdoor Education Center as an eco-tourism resort that will be operating within a working forest. To bring this exciting project to fruition, we need sponsors and partners.

If you are interested or have any questions, please contact Paul Lawson, Manager of the Malcolm Knapp Research Forest, at (604) 463–8148, fax (604) 463–2712 or email plawson@interchg.ubc.ca.

Upcoming international conference...

The Nature and Culture of Forests: Implications of Diversity for Sustainability, Trade and Certification — May 8-12, 2001

A conference organized by the Institute for European Studies, University of British Columbia, with support from the Swedish Embassy in Canada, Natural Resources Canada and the Faculty of Forestry at UBC.

This international conference will be held on the University Campus and has an outstanding group of international speakers lined up. Organizers are considering a 2-day field trip before the conference (May 8-9) to the rainforests of Clayoquot Sound on Vancouver Island.

For further information visit the web site www.ies.ubc.ca/events/forest.html or email the Institute for European Studies at ies@interchg.ubc.ca.

Upcoming lecture...

Science in Service to Society: The Role of Research

Peter Farnum, vice-president of forestry & raw materials technology and Christine Dean, director of western timberlands research, Weyerhaeuser Company, USA, will be speaking on **Thursday, March 22 at 12:30 PM** in Room 1005, Forest Sciences Centre, 2424 Main Mall, UBC Campus.

Everyone welcome!

Recent event...

Burgess-Lane lecture

The Burgess-Lane lectureship was established in 1974 by Mrs. Dorothy Burgess and Mrs. Evelyn Lane for the purpose of disseminating scientific information and achievement among forestry students, professional foresters, scientists and the public.

This year's lecture was given on Feb. 7 by Dr. Bob Leicester of CSIRO in Australia. The lecture was held in conjunction with a Faculty research evening and attracted well over 100 interested individuals.

Free copies of Dr. Leicester's talk ***"Engineered Performance of Timber Construction"*** are available electronically at the Faculty's web site www.forestry.ubc.ca or can be obtained by writing to the address below.

Newsletter Production

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