

branchlines

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Forestry
University of British Columbia

dean's message



Over the past 3 years, BranchLines has tended to focus on the many and diverse research projects being undertaken by faculty members, research assistants and graduate students in the Faculty of Forestry. In this edition, we still have a couple of such articles, but we also describe one of the experiences that we offer to our undergraduate students, seen through their eyes. We also have a couple of articles describing what some might consider to be our most important work: inspiring young people to take up an interest in trees and forests.

In an article about forest soils, graduate student Jacynthe Masse describes how she has been inspiring youth to take a closer look at forest soils. Her enthusiasm for the subject comes through in her description of why and how she is teaching youth on campus to take a greater interest in soils. A better understanding of the soil will hopefully induce a greater respect amongst participants for soil, and I would not be surprised to learn that some of the youth had been inspired to work with soils in the future.

Ashley Dobko, a 4th year undergraduate, and Professor Lori Daniels from the Department of Forest and Conservation Sciences have adopted a slightly different approach. CSI – which they point out really stands for Cedar Science Investigations – is involving Aboriginal youth from the Musqueam and Haida Nations in a study of past cultural modifications made to cedar trees. Participants core trees and then examine the tree-rings to determine the exact dates that the trees were modified. In one case, 5 separate modifications are recorded in the tree-rings of a single tree.

Joanna Lee and Laura Third, 2 undergraduates from our Natural Resources Conservation program, describe some of the experiences they had while participating in our first ever Conservation and Forestry Field School in India. This was enabled by our growing association with forestry and conservation bodies in India, particularly the Wildlife Institute of India and the Indian Forest Service. As you can read, both students were inspired by what they saw, by the new perspectives that they gained, and by the new environments that they experienced.

The article by graduate student Kyle Hilsendager, describing some of the conflicts between tourism and forestry, reminded me of a road sign I saw in the Otway Ranges of Victoria, Australia. Revenues from tourism continue to increase,

whereas those from forestry have been falling, and the road sign, which suggests that the sharing of resources is possible, indicates that both sides may have to reach compromise. However, as Kyle points out, that compromise will not be reached if the activities of one side preclude those of the other. We have tended to assume that this compromise can be reached for every forest area, but in future we may have to come to grips with the fact that some forest uses are simply incompatible.



John L Innes
Professor and Dean

forestrynews

Two professors recognized by First Nations community



Two UBC Forestry professors were honoured by Keyoh holders at a “Dené ilhuna hooz leh” event in Fort St James, BC on July 1.

Professors John Nelson and Gary Bull were recognized for partnering with the Maiyoo Keyoh Society to deliver a course on sustainable forest management. In the course, students work with the First Nation community to develop forest management plans.

The event included drumming performances, and a feast of some traditional foods.

“Everything was perfect! From the half dry beaver meat and beaver tail, to the bear and moose meat and nose, from the drumming to the dancing and singing.” Said Jim Munroe in a post after the recognition event in Fort Saint James.

“The students learn what it means to deal with a different value system, a different history and different traditions,” says Gary Bull. “The Keyoh holders have embraced our students and the experience has been truly transformative for them. In return, the students apply the knowledge they have acquired in their undergraduate degree to a piece of forest land that is deeply treasured by a First Nations community.”

John Nelson and Gary Bull were honoured at a Dené ilhuna hooz leh, which means bringing people together.

It is the first celebration of its kind that the Keyohs have held in 40 to 50 years. The honoured guests were gifted with drums and moccasins.

“In the past, when a person wanted to show their gratitude for what someone had done for him or his family, he would ‘bring people together’ to share his appreciation,” says Ken Sam, spokesman for the Daiya-Mattess Keyoh. “We appreciate what UBC has done for us and would like both John and Gary to be present at our family’s function to be honoured for their important roles in the overall development of our family lands.”

For the past 6 years, groups of students from John and Gary’s Forestry 424 class have visited different Keyohs and developed plans for community forestry projects. Travel to the communities by the students has been made possible through the on-going support of a private BC-based foundation. The students gain a better understanding of local community values and how to apply knowledge about Aboriginal rights and title. This prepares them for their future careers as foresters and working with Aboriginal communities.

“Working with the Keyoh holders has changed the way I think about forests and forest management. The stories, history, attachment and commitment to the land are special and they have a profound and lasting effect on us,” says John Nelson. “We are very proud of how our students handle themselves in this environment, showing respect, listening, communicating and delivering high quality work for the Keyoh holders.”

The Maiyoo Keyoh Society approached UBC’s Faculty of Forestry in 2007 looking for help to develop high-level plans to protect local forest habitat, wildlife and cultural resources. Keyoh means territory that a group of people or extended family has ownership and land rights to. Dakelh (Carrier) law recognizes the heads of extended families as Keyoh holders who are responsible for watching their territories. Students have worked with a number of Keyohs in the Fort St James region over the past 6 years.

What will we use our forests for?

With the world now aiming to achieve zero forest loss and degradation by 2020, while at the same time facing increasing consumer demands and scarcity of resources, the market for novel or improved traditional forest products is growing, yet the availability of forests is shrinking. The economic value of the goods and services that could be derived from forests is being greatly underutilized. Given the world's population growth and urbanization, economic downturns, environmental pressure and climate change, forests and bioproducts derived from them offer a long-term solution for local communities and society at large. The forests of the future have to be more productive, resilient to disease and pests, and adaptable to climate change. Future demands will increasingly be met from plantation forests that maintain conservation and biodiversity standards and respect local communities' needs and livelihoods.

In 2011, The International Union of Forest Research Organizations established an interdisciplinary Task Force, chaired by Dean John Innes, to examine these critical issues. On August 27 – 29, 2013, the Task Force gathered more than 120 policy makers, researchers, industry leaders and NGOs at the IUFRO Resources for the Future conference, hosted by the University of British Columbia, Canada. The conference examined current research and findings on 4 major themes: the implications of globalization for the world's forests, the role of plantations in future wood supply, new and advanced bioproducts and building systems, and the role of forest ecosystem services in future forest management. The conference was supported by IUFRO, Natural Resources Canada, the Commonwealth Forestry Association, Council of Forest Industries, British Columbia Ministry of Forests, Lands and Natural Resource Operations, Forest Innovation Investment, Government of Alberta and Genome British Columbia.

Forest ecosystems provide multiple benefits (clean water, carbon regulation, soil fertility, waste decomposition, timber, food and fibre) and are a critical part of the spiritual and cultural bases of a society. Today the majority of forest clearance occurs in tropical countries, whereas the area of temperate and boreal forests is increasing. Forest quality changes, however, have not been accounted for. As shown by **Sven Wunder** (CIFOR, Brazil) and **David Brand** (New Forests, Australia), a number of attempts to introduce payments for the ecosystem services provided by forests are beginning to show signs of success. This is leading to growing recognition that forest degradation can be very important, whether through inappropriate selective logging or a failure to

look after the regeneration (or re-planting) that occurs following harvesting. If they are to fulfill their expected functions, we need to ensure that these degraded forests will become resilient and healthy.

With competing demands for forests, forest lands and products, indigenous communities and other communities living in forests are increasingly recognized by governments as "deciders" on the fate of forests. **Alexandre Corriveau-Bourque** (Rights and Resources Initiative, Washington, DC) described how there is currently a trend for investors to rapidly accumulate rights to land as a hedge against projected scarcities, current scarcities, and to influence resource markets. Failing to recognize local aspirations, land claims, and legal rights will lead to the destruction of local livelihoods, increased conflict and competition for remaining land, and accelerated destruction of the world's remaining forest carbon stocks.

Today, half the world's population falls within the middle class, and experts anticipate further growth in this group. As a result, consumption is increasing, and will lead to long-term resource scarcity. The end-customers' needs and standards for forests products (looking through the entire supply chain) have changed considerably over the past few years. **Luis Silva** (WWF, Portugal) explained how important it will be to have forestry and farming practices that produce more with less land, water and pollution, while retaining resilience and adaptability. He showed how WWF is working with plantation companies in Brazil to try to achieve this objective. However, **Caroline Mohammed** (University of Tasmania, Australia) drew attention to the large numbers of increasingly mobile pests and diseases that could threaten such efforts. Despite these potential threats, plantations offer huge potential, and we are getting increasing productivity from them, as demonstrated by **Peter Volker** (Forestry, Tasmania). **Finn Tvede Jacobsen** (African Plantations for Sustainable Development, Ghana) showed how such plantations could be integrated into the livelihoods of rural populations in disadvantaged areas.

The sector represents a unique opportunity to meet future needs with a wide range of land-use options and bio-products, including energy, chemicals and materials. However, to meet the needs of a broader set of stakeholders, a shift to a wider array of forest services (eg, recreation, carbon offsets, water management, community forest, etc) is needed. According to **Rob de Fegeley** (Institute of Foresters, Australia), forest cover and related services could expand through mosaics of new plantations, natural forest restoration and responsible farming. Plantations developed through effective



The IUFRO Resources for the Future conference, hosted by the University of British Columbia, Canada

stakeholder participation, while maintaining ecosystem integrity and protecting high conservation values, will be our powerhouse to increase production. **Jane Lister** (UBC, Canada) also stressed the importance of customer acceptance of forest products, emphasizing how customer preferences can change relatively quickly.

The emerging green economy is creating a space for forest products to substitute fossil-fuel based products, but **Don Roberts** (Nawitka Saptial Advisors, Canada) argued that the movement to the bio-economy has not yet catalyzed the transformative changes required to reinvigorate parts of the forest products sector. The need for industry transformation was also stressed by **David Cohen** (UBC Forestry). Forest bio-products cannot skip the rules and challenges that any innovation has to face to be commercially successful – **Jean Hamel** (FPInnovations, Canada) showed how such innovations must be economically viable and respond to customer and market needs. According to **Gert-Jan Nabuurs** (Alterra, Netherlands), Europe has already started down this road, but some policies aimed at ensuring a greener economy are storing up potential problems for the future (such as wood supply shortfalls).

Globally, could we ever run short of wood, the product that we are all so keen to see being used? There is the potential for supplies to be constrained – through government-imposed limitations on harvesting, because of the need to protect community livelihoods, because of the effects of pests and disease, and because of a range of other factors. The market will allocate forest resources accordingly, and **Russ Taylor** (International Wood Markets Group, Canada) showed how higher pricing may put our products into a more sustainable rate

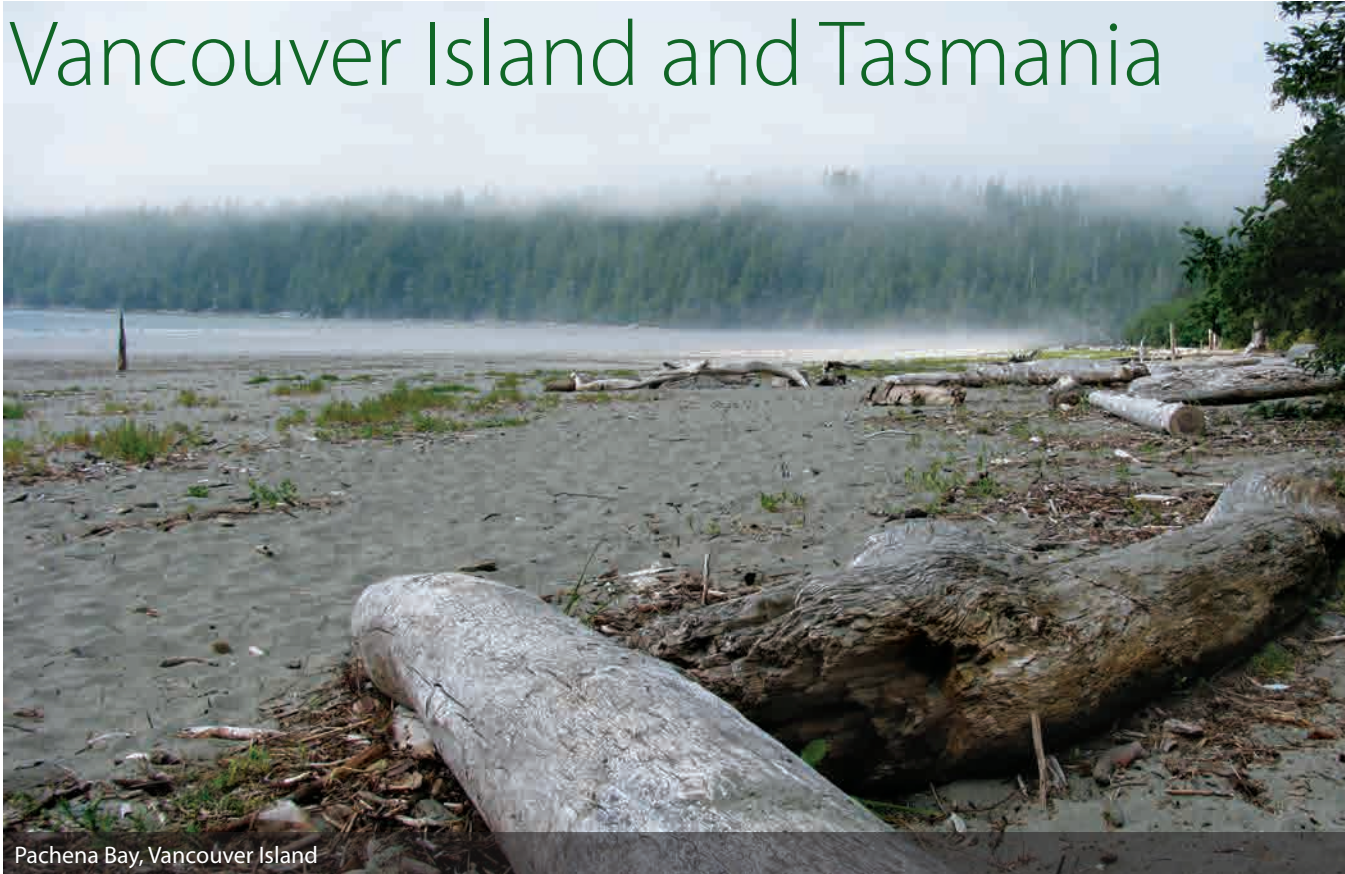
of return for the future. However, if the price is too high, then forest products will be substituted for other products. **Coosje Hoogendoorn** (INBAR, China) emphasized that bamboo and rattan are increasingly important and that technological innovation has enabled bamboo to substitute for a number of traditional wood products. The use of wood will need to be supported by sound science, and **Shawn Mansfield** (UBC Forestry) showed how some recent advances in forest biotechnology are helping increase stand quality and productivity.

We continue to advocate for the greater use of wood in buildings, substituting unsustainable products such as concrete and steel, with wood. **Erol Karacabeyli** (FPInnovations, Canada) showed how building regulations need to be modified in order to do this, especially for tall wooden buildings, and architect **Benton Johnson** (Skidmore, Owings and Merrill LP, USA) went on to describe just what might be possible.

The defining characteristics of our world today are the intensity of interconnections and the speed of change. According to **Mike May** (FuturaGene, Brazil) green growth will be driven by a combination of novel partnerships with inter- and non-governmental organizations, science and technology innovations and skills deployed by the private sector. There is clearly a place in our future for forests and the goods and services they produce. However, the world is changing very quickly and the academic community needs to adapt faster and recognize the big picture: forests really are a source of sustainable materials, and because of this, the forest sector is set to continue to grow for as long as we care about our future.

Tourist perceptions of forest practises:

Vancouver Island and Tasmania



Pachena Bay, Vancouver Island

In many places the forest industry has been the target of criticism from environmental groups, politicians and the media. This opposition generally relates to a range of issues associated with the industry that include the harvesting of old growth or ecologically significant forests, threats posed to wildlife, visual impacts and the sustainability of harvesting practices. Even though much of the criticism originates locally, issues relating to forest management can also receive negative attention nationally and internationally. For example, British Columbia's Clayoquot Land Use Decision sparked large-scale protests which led to the arrest of over 800 demonstrators. This high profile conflict received global attention resulting in condemnation from a range of critics that included international and local media, inter-

national politicians and celebrities. Conflicts in Tasmanian forests have also received international attention with demonstrations being held at Australian embassies in the United States, Canada, Japan and UK to protest against the harvesting of old growth. This type of attention can lead to negative perceptions, which may ultimately impact upon the forest industry.

Not only do these conflicts have the potential to affect forestry, they could also negatively impact other sectors that profit from forested landscapes, such as tourism. This is particularly true for regions that promote natural landscapes and outdoor activities to attract business to local communities. Countries that use these types of images to promote tourism include Canada, Australia and New Zealand. This can be seen in marketing campaigns

such as 'Supernatural British Columbia', '100% Pure NZ' and 'Pure Tasmania'. Because these destinations use natural landscapes to attract visitors, it is likely that they are particularly vulnerable to the negative perceptions that are often associated with forest industry impacts. Therefore, decision makers should consider potential implications of natural resource developments in high value tourism regions due to the increasing importance of the nature-based tourism industry in many economies.

To help address this issue PhD candidate Kyle Hilsendager (supervised by Drs Howie Harshaw and Rob Kozak) travelled to various tourist sites in Vancouver Island and Tasmania, Australia to learn about visitor perceptions of forest industry impacts. These 2 destinations were chosen for analysis because of their

many similarities, but also their differences. Forestry and tourism both play important roles in shaping the economies of British Columbia and Tasmania. Both regions also market a variety of natural features and outdoor activities to attract visitors. However, many differences exist in the way that these 2 industries are managed. It is these differences that were most important for providing insight into management strategies that could be used to address similar conflicts in other regions.

To help understand the type of impact that forestry can have on tourism image in destinations that market the natural environment, a number of self-administered questionnaires were distributed to visitors at tourist attractions in each of the 2 regions. Sites were chosen according to the types of recreational activities available to visitors. My purpose was to learn about any differences that may exist between different tourist user groups. User groups targeted include multi-day back country hikers, national park visitor centre guests and sport fishermen. Interviews were also conducted with tourism and forestry professionals from both Tasmania and Vancouver Island to help reveal ways in which these 2 industries could be managed to minimize potential conflicts.

Results from both Vancouver Island and Tasmania suggest that forestry impacts have the potential to negatively impact visitor perceptions in destinations that market natural landscapes. However, this seems partly dependent upon the type of forestry impact observed, as differences were noted between harvested areas, tree plantations, logging trucks and saw/pulp mills. A large proportion of respondents indicated that exposure to harvested areas, logging trucks and saw/pulp mills negatively impacted upon their perceptions of each destination. However, tree plantations were shown to be acceptable to visitors in both Tasmania and Vancouver Island. Results from the various sample groups were then compared to learn

whether or not any variations exist in the way that different tourist user groups are affected by exposure to forestry impacts. My findings provided limited evidence to support this. However, it is possible that a larger sample of sport fishers in both case study regions might have produced more significant differences between sample groups.

Interview results provided insights into the ways that conflict is currently being managed between the tourism and forest industries in both study regions. Ideas were raised about ways in which conflicts could be further reduced. It seems clear that the management of visual impacts associated with forestry is critical in areas where tourism relies heavily on the maintenance of natural landscapes. This requires close consultations between forest companies and tourism industry stakeholders. The establishment of legislated requirements that ensure effective consultation between forestry companies and tourism can help to achieve this. These requirements should be accompanied by formal agreements between tourism and forest industry organizations to facilitate the consultation process further. Important elements of these agreements include

recognition that both industries are important for the development of a region's economy, identification of the most critical issues associated with the 2 industries, as well as a commitment and plan to ensure ongoing effective communication and consultation.

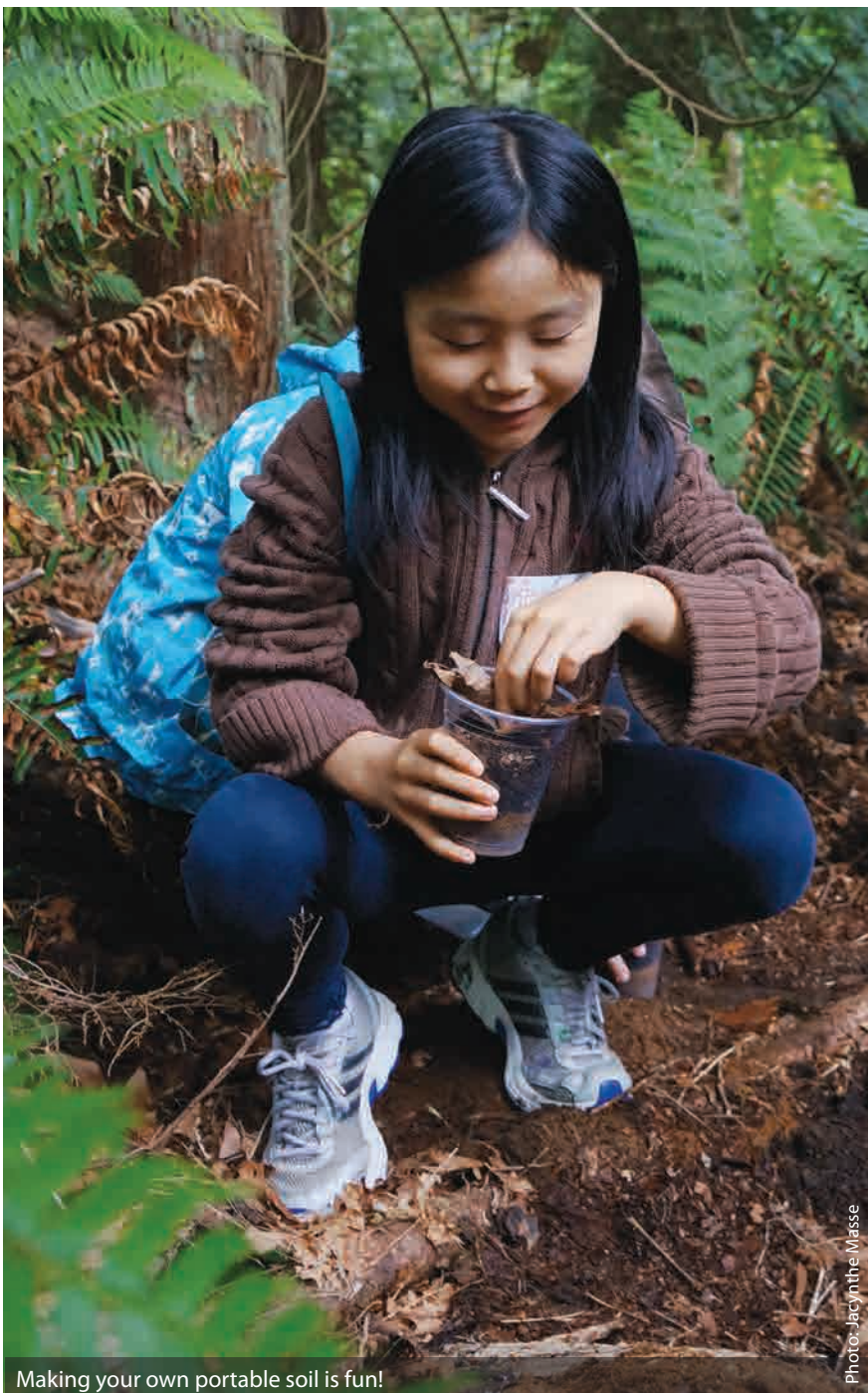
It is not uncommon for nature-based tourism destinations to rely upon the same resources as the forest industry. However, the fundamental differences in desires for forest use between these 2 industries can lead to conflict situations. In jurisdictions that rely heavily on both industries it is in the best interest of governments to ensure that the actions of one industry do not threaten the existence of the other. Therefore, it is desirable to manage these 2 industries in a way that minimizes the potential for natural resource use conflicts. For natural resource managers addressing conflicts between nature-based tourism and forestry, consideration of the principles discussed in this research could help provide solutions that maximize benefits for both industries.

Kyle Hilsenadager can be reached at kyle.hilsenadager@alumni.ubc.ca. More detailed results of his research can be found at www.hd-research.ca/tourism.



Arve River at Tahune Airwalk (Forestry Tasmania tourism site)

Planting the seeds of knowledge in soil



Making your own portable soil is fun!

Photo: Jacynthe Masse

When you think about soil, what comes to mind? Maybe you imagine dirt, mud, fertilizer, a garden? But is there something more to this brownish coloured substrate beneath our feet?

Of course there is! Once your eyes are opened to the wonders that lie beneath our feet, you see a rich, complex and vital ecosystem at the confluence of the biosphere, the hydrosphere and the atmosphere. And that's what members of the Belowground Ecosystem Group (BEG), from UBC's Department of Forest and Conservation Sciences, wanted children living on campus to discover. In collaboration with the educational team at UBC's Botanical Garden, BEG students developed a set of soil-discovery activities designed specifically for children from 5 to 12 years old. And it was a success! Read on for an account of the "subterranean life" activity that was held at the UBC Botanical Garden on June 22, 2013 and supervised by BEG graduate student Jacynthe Masse.

Why children on campus and why soils?

The idea for a soil-discovery activity for children living on campus had 3 main motivations. First and foremost, we wanted to give something back to the UBC community. UBC has numerous conferences, meetings and other opportunities for graduate students to exchange ideas, and we wanted to contribute

“...in a single
teaspoon of soil,
there are more
microorganisms than
there are humans on
this planet!”

to this dynamic scientific culture. Secondly, we wanted to raise awareness of the importance of soils for human society. Historically, soil has been thought of solely as a medium for crops. However, recent environmental research has revealed that there is more to soil than just dirt. Of course, a good soil is essential for crop and forest productivity, but more broadly we know now that the majority of forest carbon is captured and trapped in the soils - making them an important tool for climate change mitigation. Moreover, soil is a rich and complex ecosystem; in a single teaspoon of soil, there are more microorganisms than there are humans on this planet! Yet, the great majority of this biodiversity hasn't been studied. Soils and soil science can play a central part in understanding and resolving many global issues such as food security and climate change, provided that people and future scientists recognize soil's relevance to these issues. Our 3rd motivation for developing the subterranean life activity is that soils are simply awesome and we want everyone to know more about them!

The activities

In collaboration with the educational team at the UBC Botanical Garden, our BEG group developed 2 hands-on activities for children attending a Nature Club activity at the Garden. The first activity consisted of a station, in the forested part of the Garden, where children could see a soil profile (more specifically, a podzol) and learn about the formation of the soil from the last glaciation to present day. After this introduction to the various and colourful soil horizons and how they were created, we gave them a transparent plastic cup and invited



Soil's new friends!

Photo: Jacynthe Masse



Children and parents learning about ice ages, soil formation processes and soil profiles during the subterranean life activity, June 22nd, 2013

Photo: Jacynthe Masse

them to create their own portable soil with all the resources they could find around them.

The second station, still in the forested area of the UBC Botanical Garden, taught the children a genuine scientific method still used by soil-biodiversity researchers today: the hand sorting method. Basically, this method consists of taking a known volume of soil and searching through it, with your hands, looking for any soil animals. Children (and the researchers) really enjoyed this activity. Not only is this exercise fun, but it also highlights the endless biodiversity of life in soil. This activity transformed the children's perceptions of soil and encouraged them to see it as a living and dynamic environment.

The feedback

We requested feedback as part of this program and the responses were very encouraging. Parents

loved the activities and found them very useful for their children and the children appreciated learning about soils and their inhabitants. They also loved their portable soil project and looking for animals in the soil. The most important feedback for activity supervisor Jacynthe was seeing the children's faces light up as they learned about the soil's age, inhabitants and importance. Perhaps her best reward was when a young participant told her "soils are so cool and ...soft". So, soils passed from dirt to cool!

At the end of the day, children, parents, volunteers and researchers were all happy and soils have some new allies.

Jacynthe Masse is a doctoral student in the Department of Forest and Conservation Sciences. She can be reached at jacynthe.masse@alumni.ubc.ca.



Western spruce budworm

Trees – historians of past insect outbreaks

Insect outbreaks are a major disturbance influencing forest dynamics in many ecosystems. Reconstruction of insect outbreak history is fundamental to forest management. While the action of cambium feeders on trees leads to the formation of scars or tree death, that of defoliators is observable via growth suppression in tree rings. The occurrence of past insect attacks can thus be inferred from tree-ring signatures. However, this research approach necessitates accurate dating of events, as well as correct attribution of the causal disturbance agent. For example, fire may leave scars on trees that can be seen on cross-sectional disks where

insect scars are already present, thus making them difficult to distinguish. Furthermore, insect-induced reductions in radial growth may not be clearly visible on samples, and the radial growth response to defoliation often bears a lag of 1 or more years.

As part of her post-doctoral research in the UBC Tree-Ring Lab, Dr Estelle Arbella is tackling these issues directly by using a multi-proxy approach to improve tree-ring reconstructions of insect outbreaks. She will study radial variations of tree-ring width, wood anatomy, wood density, and wood chemistry. While dendrochronologists (people who study tree-rings) have long

relied on tree-ring width variations to track the signals induced by climate, geomorphic and ecological processes, the potential of other proxies remains under-exploited and multiple proxies are rarely used in combination. The core of Estelle's research lies in the use of multiple wood traits to provide answers to dendroecological questions.

Two native insects and their respective host tree species from British Columbia are the focus of this study: the mountain pine beetle (*Dendroctonus ponderosae*), a cambium feeder on lodgepole pine (*Pinus contorta*), and the western spruce budworm (*Choristoneura occidentalis*), a defoliator of

Douglas-fir (*Pseudotsuga menziesii*). Estelle believes that insect outbreak disturbance in the form of bark beetle or defoliation events may result in abrupt structural differences between the wood formed prior to and after the insect attack. Based on pioneering tree-ring research on insect outbreaks, there are great prospects that the variations of wood traits can prove useful for differentiating mountain pine beetle scars from fire scars and for identifying western spruce budworm defoliation events, possibly with higher temporal resolution.

The study of multiple wood traits (proxies) will help Estelle gain an understanding of the influence of insect outbreak disturbance on wood formation and tree physiological processes, a prerequisite for improving the detection and dating of events in tree-ring series.

Estelle's work focuses on the practical use of wood traits in tree-ring research. During her doctoral and post-doctoral research at the University of Berne, Switzerland, Estelle conducted microscopic analyses on tree samples to determine and quantify changes in wood anatomy induced by injury to the tree stem. She investigated fine-scale wood anatomical attributes of broad-leaved and coniferous trees wounded by natural processes such as debris flows, spring floods, snow avalanches, and wildfires. It appeared that the repercussions of

wounding on wood anatomy were obvious in a very short time after injury, suggesting that altered wood traits embedded within tree rings can serve as proxy records of past events with at least annual resolution. However, the interdisciplinary nature of her work, being at a cross-road between forest sciences and wood sciences, calls for innovation and collaboration.

Estelle will be conducting her

“The anticipated findings of this project are of great interest to the international research community”

research in the Tree-Ring Lab at UBC, led by Dr Lori Daniels. Her project integrates with Lori's ongoing research on disturbance regimes in the coniferous forests of British Columbia and capitalizes on >900 increment cores and >350 partial or full cross-sectional disks with insect and fire scars that have been collected by Lori and her students. One of the specific objectives of the project is to determine if mountain pine beetle caused the scars on lodgepole pine trees in the 1930-40s in Kootenay National Park. More importantly, numerous col-

laborations are planned with other experts in the Faculty of Forestry, both in the Department of Forest and Conservation Sciences and the Department of Wood Science.

The anticipated findings of this project are of great interest to the international research community. As a consequence of global warming, trees are likely to be increasingly disturbed by insect outbreaks. That fact underscores the importance of research that provides background information on the historical occurrence of insect disturbances. It is very important to develop and perfect further dendrochronological methods for accurately dating historic disturbance events, determining their frequency and spatial extent, and informing ecosystem-based forest management. Moreover, this project answers the tree-ring research community's plea for fundamental research on tree response to environmental factors as well as for methodological improvement of existing approaches. It is also in line with many national and international research projects that use tree rings to study forest dynamics and investigate the effects of natural disturbances on trees, forests and landscapes.

Dr Estelle Arbellay is a post-doctoral researcher in the Department of Forest and Conservation Sciences. She can be reached at arbellay@mail.ubc.ca.





CSI: Cedar Science Investigations

How do you know how old you are?*

How do you know old a tree is?

How long ago did this “snag” die?

Children answer these questions during hands-on workshops called “CSI: Cedar Science Investigations”. These workshops are part of an outreach project led by 4th year Natural Resources Conservation student Ashley Dobko and Associate Professor Lori Daniels from the Department of Forest and Conservation Sciences and UBC Tree Ring Lab. The workshops are designed to teach children and youth the principles of dendrochronology (tree-ring science) and demonstrate the links among science, history and culture.

In coastal British Columbia, large, old western redcedar trees provide a wide range of ecological functions and are an integral part of coastal First Nations’ culture. Redcedar bark is commonly removed from tree trunks and woven into baskets, hats and clothing. The surviving tree forms a permanent scar that can be dated to determine the year of past cultural modifications.

During the workshops with Musqueam youth and at schools in Haida Gwaii, participants have learned to:

- use increment borers to core their favourite trees
- prepare their samples using power tools during a field trip to the Centre for Advanced Wood Processing at UBC’s Faculty of Forestry
- use microscopes to date tree rings using the “dot method” and apply their math skills to calculate tree age
- understand how scars form in trees and determine when redcedars were culturally modified

We have also traced the history of dead trees by “crossdating” their tree-rings. For cores from living trees, calendar years are assigned to rings in sequence from the bark to the pith – the ring closest to the bark is the year the tree was cored. For dead trees, rings are crossdated by matching their ring-width patterns to samples from living trees of the same species growing nearby. By pattern matching, we can discover the year when snags and logs died.

Collectively, 20 youth from the Musqueam Band and 170 from Haida Gwaii have dated 15,000 tree rings on culturally modified redcedars from their communities.



What did they discover?

- western redcedar trees are much easier to core than western hemlock trees
- the biggest redcedars and western hemlocks in Musqueam Park are more than 160 years old and even the small trees can be more than 50 years old
- local redcedars were culturally modified in the 1960s by stripping the bark
- the “eagle tree”, a large redcedar with a dead top that grew along the bluffs of the Fraser River, was about 200 years old when it blew down in 2011
- the top of the “eagle tree” died in the late 1890s – it had been an ideal perch for eagles for more than 100 years
- culturally modified cedars salvaged from a site cut near Naden Harbour on Haida Gwaii were up to 450 years old and single trees had been modified up to 5 times

- many redcedars from Naden Harbour were modified in the 1700 and 1800s and had historical and archaeological value

We thank the teachers and staff at Queen Charlotte Secondary School, George Mercer Dawson Secondary School and Chief Matthews Elementary School, Terry Point, Vivian Campbell and Ryanne James who lead the Musqueam Youth Programs, and our 190 new research assistants for collaborating with us. CSI was funded by an NSERC Aboriginal Ambassador’s Award to Ashley.

For further information, contact Dr Lori Daniels, Department of Forest and Conservation Sciences, at lori.daniels@ubc.ca.

*** Answers: Count the candles on your birthday cake. Count the rings in the tree. Crossdate the rings to match the patterns and determine when it was last alive.**



Dock Islands, Gulf Islands National Park Reserve

Tending our natural gardens: Conserving Garry oak meadows

In *A Sand County Almanac*, Aldo Leopold said “a thing is right when it tends to preserve the integrity, stability and beauty of the biotic community. It is wrong when it tends otherwise.” This land ethic dominates the conservation community and guides those tasked with managing threatened ecosystems.

While Leopold’s axiom is clearly stated, it can be incredibly challenging to quantify ecosystem “integrity, stability, and beauty,” let alone use such data to understand the impacts of various human activities. These challenges can vary widely depending on ecological and cultural contexts, and while these broad concepts are best defined on a case-by-case basis (as land use pressures intensify), it is becoming increasingly important for decision makers around the world to have a complete picture of ecosystem health at the regional scale.

Land conservation is notoriously reactionary and opportunistic, but practitioners ultimately seek to develop proactive, strategic conservation strategies. Ideally, preserved land units have high biodiversity and are unlikely to face degradation in the future, and perhaps are connected to other ecosystem fragments by corridors to facilitate genetic exchange. This type of planning is difficult to begin if no one knows what is actually on the ground, but with advances in geographic information systems and ecological modeling we now have the tools to create more informative maps of ecosystems at meaningful spatial scales.

Strategic conservation planning is most crucial for our rarest ecosystems, especially those that exist in close proximity to human development, like British Columbia’s Garry oak meadows. These rainshadow ecosystems burst

with colourful displays of native wildflowers each spring including common camas (*Camassia quamash*), white fawn lily (*Erythronium oregonum*) and small-flowered blue-eyed Mary (*Collinsia parviflora*). These natural gardens enchanted Europeans when they first arrived on Southeastern Vancouver Island, and historically were tended by Coastal First Nations who harvested camas bulbs and other native root vegetables, using controlled burning to prevent Douglas-fir encroachment.

With the growth of Victoria and other southern Vancouver Island and Gulf Island communities, only 5% of historical Garry oak meadows remain. This estimated 200 hectares of remnant habitat is home to 55 species listed under Canada's Species At Risk Act and contains the highest diversity of vascular plants in coastal British Columbia. The threats to this ecosystem are numerous, and include habitat fragmentation and degradation by human development, invasive species, grazing by overabundant deer and Canada geese, and the loss of First Nations-mediated fire regimes.

Angela Boag, an MSc candidate in Dr Peter Arcese's lab (<http://arcese.forestry.ubc.ca/research/>) in the Department of Forest and Conservation Sciences, is mapping the richness and abundance of native and invasive species in Garry oak meadows to gain a better understanding of how they are impacted by human activities, and provide a regional picture of ecosystem integrity for use in conservation planning.

Two previous PhD students in the Arcese Lab also studied these plant communities and their combined data provides species richness and percent cover information for over 600, 1 m² quadrats at over 100 locations across the region of interest. Angela used ArcGIS to extract geoclimatic and land use data for each of the quadrats, such as average annual temperature range, precipitation, slope, elevation, proximity to urban areas and agriculture, and road density around each site. She then used modeling strategies appropriate for spatially correlated data to determine which variables most strongly predict sites with high native species richness and abundance compared to those that are highly invaded by nonnative species, thus having "low ecological integrity" in this context.

Angela developed both geoclimatic-only and human



Quadrat representing high ecological integrity, located on a small islet in the Gulf Islands (high native richness and cover)

land use-only models to compare how well traditional geoclimatic envelope-based models describe ecosystem integrity compared with anthropogenic threats. She then combined these into a global model that is potentially more powerful for predicting native and non-native species distributions.

A key part of modeling species or ecosystem distributions is validation; this is rarely done on the ground because of the time and expense associated with field work, so statistical methods are often used. Angela hopes that this distribution map will be useful for conservation planners in the region, and therefore on-the-ground validation was a vital part of the project. She visited 66 sites from March-June 2013 to sample species richness and abundance in order to determine how well they were predicted by the models. While analysis is still taking place, it appears that prediction is possible, especially for sites at the upper and lower extremes of ecological integrity. The healthiest Garry oak meadows were found in places inaccessible to humans, including several sites on private property that could become candidates for protection. As expected, the sites most invaded by exotic grasses and with the lowest diversity of native plants were found in city parks in the heart of urban Victoria and Nanaimo.

Moving forward, Angela is going to reconstruct her predictive models using the other modeling strategies available to compare their performance. She also hopes to quantify the many sources of error that are inherent in such large and complex spatial modeling exercises in order to reduce such errors from the outset and improve model performance.

Angela Boag is analyzing her data this fall and hopes to make her results available in Spring 2014. She can be reached at angela.boag@alumni.ubc.ca.



Quadrat filled with invasive grasses in Moss Rock Park, downtown Victoria, representing low ecological integrity

“These natural gardens enchanted Europeans when they first arrived on Southeastern Vancouver Island, and historically were tended by Coastal First Nations...”

Adventure, education, mangoes and monkeys

Conservation and Forestry Field School in India

By Joanna Lee and Laura Third

Joanna Lee and Laura Third are students in the Faculty of Forestry's undergraduate program in Natural Resources Conservation. They spent part of their summer attending a newly launched field school in India. The month-long intensive forestry and conservation field course was organized by Dr Suzie Lavalée (Department of Forest and Conservation Sciences) as part of the program in Natural Resources Conservation. The course was established through a well-formed partnership between the Faculty of Forestry and colleagues in India, including the Wildlife Institute of

India. Every year, researchers from the Indian Forest Service visit UBC and tour BC's forests. They helped Suzie Lavalée set up an itinerary and connect with institutions across North and South India.

Joanna: I've always hoped that my undergraduate degree would take me far away from Canadian comforts to explore a foreign and exquisite country, although I never had a set destination or timeframe in mind. In November 2012 I heard Dr Suzie Lavalée's pitch to run an international forestry and conservation field school in India the following June, and within a day or two I was running to her office to talk travel. After urging Laura to join in on the adventure and 6 short months spent giddy with excitement and nerves, the

2 of us and 3 other UBC students gathered at Vancouver International Airport to board a 20 hour flight to Delhi, India.

Laura: Take 5 eager, travel-hungry students. Add a foreign country. Combine with a 6 credit course, field work, and an incredible array of wonderful people – and you'll get the best time of your life. India was the first country Joanna and I had travelled to outside of North America – and we were ready for the adventure. There's something alluring about India that cannot simply be summed up by its delicious and aromatic cuisine or the exotic culture. It was the chaos of humanity surviving alongside an immensely diverse landscape that proved to be exceptionally mind boggling to my own Canadian perspective. As I



The class at the Taj Mahal, Agra, India



Joanna Lee making an aarti offering at Haridwar, Uttarakhand, India

strived to make sense of this paradox, each day presented to us a new and exciting experience – from walking in the tracks of tigers and elephants, to visiting the highly regarded and beautiful Forest Research Institute, to wild tuk-tuk rides to Buddhist temples and colorful marketplaces. All of us agree, however, that with the help of translation some of our most heartfelt and valuable memories stemmed from being able to communicate with local village peoples affected by forestry practices.

Joanna: We spent the first 2 weeks of our trip at the Wildlife Institute of India in Dehradun, Uttarakhand, and

the last 2 in the southernmost state of Kerala. I don't think any of us were prepared for the diversity we would find within this vast country – where culture, language, food, attire and climate can change so drastically as you cross the landscape.

Compared to the blistering heat of Uttarakhand, southern India was balmy and lush, with rolling hills of thick rainforest and healthy plantations of tea, spices and rubber. At Periyar we learned from the Munnar people about eco-tourism, conservation and how their lives have changed over the years of running the reserve. The time we spent interacting with tribal peoples, researchers, officials and students was not restricted to our field of study, as conversation often drifted from conservation and forestry to family, religion and goals in our respective countries. There is really something to be said for how much more you can learn from immersing yourself into a lifestyle and culture, rather than studying it from halfway across the world.

Laura: We left India with a new inspiration for community forestry, and we all gained valuable knowledge: a completely new perspective on forest management, site monitoring, and conservation planning strategies. If you're an undergraduate in the UBC Faculty of Forestry, we already know you like the outdoors. We will also then safely assume you hold some affection for exploration and adventure. If you've been looking for the perfect way to travel halfway around the world and live to tell the whole, wonderfully educational tale – then traveling to India for this conservation field school is an incredible option for students interested in conservation and forestry.

Cover photo – Students climbing the buttresses of a banyan tree in Periyar Tiger Reserve, Kerala, India.

For further information about this course, visit <http://cons453.forestry.ubc.ca/> or contact Dr Suzie Lavallee at suzie.lavallee@ubc.ca.



Black Langor monkey in a banyan tree, Rajaji National Park, Uttarakhand, India

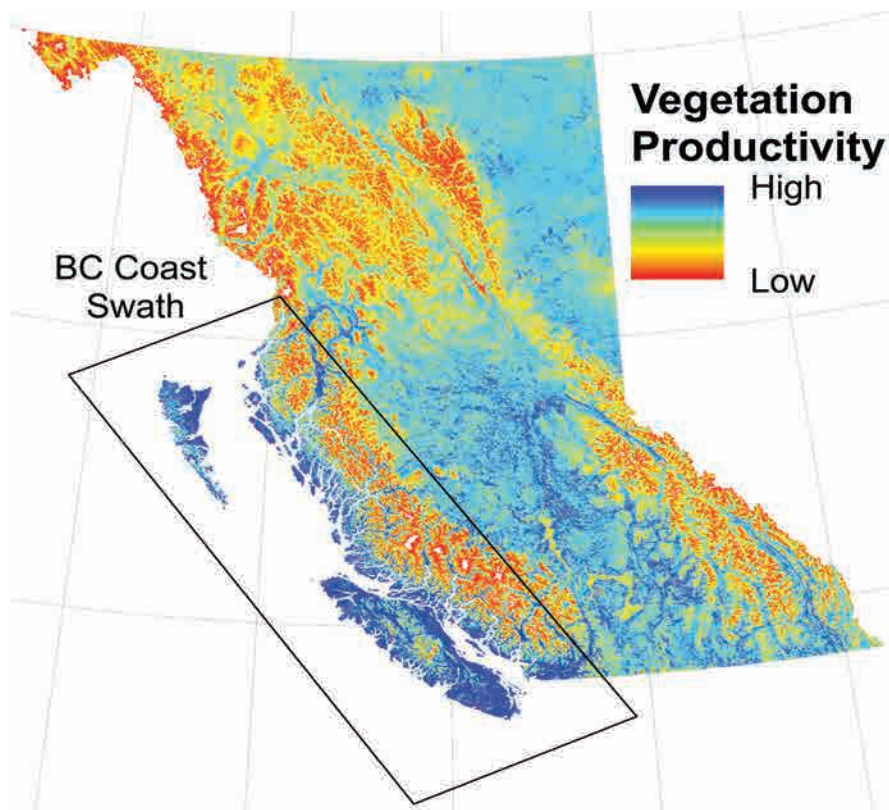
Studying coastal birds in hard to reach places



Horned grebe

The BC coast represents some of the most intact temperate coastal ecosystems in North America. It is also spatially expansive, over 25,000 km in length, comprising more than 10% of Canada's total coastline. This size, coupled with the remoteness of sections of the coast, makes monitoring BC's coastal ecosystems challenging, and studies examining animal communities along the entire coast are few. BC's avian coastal communities are no exception, with little information being available to managers regarding bird species distributions at the full coastal scale. To begin to assess coastal birds along the BC coast, a simple question needs to be answered, what species occur where?

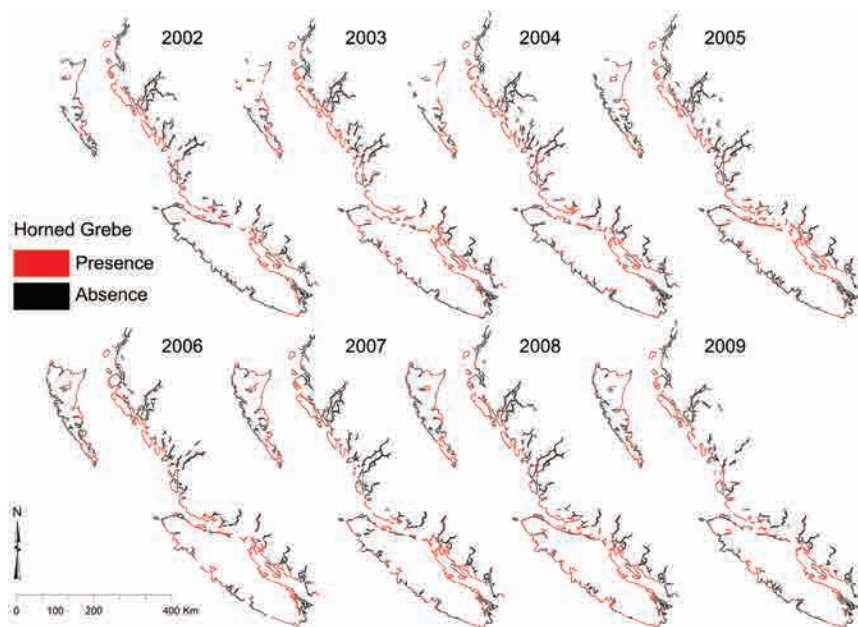
Greg Rickbeil has been asking that question as part of his MSc with his supervisor Dr Nicholas Coops and colleagues. Greg applied species distribution models to estimate coastal bird presence or absence, which are becoming common in situations where *in situ* data regarding



Terra and Aqua satellites are used to estimate terrestrial vegetation productivity

species occurrence are not available. Distribution models are correlative in nature, using presence/absence

information at known sites along with environmental data to build predictive models that estimate a



species' probability of occurrence at un-sampled locations. However, for this to occur, environmental conditions need to be estimated at all un-sampled locations. Remote sensing is an attractive option in situations such as these, owing to its ability to provide environmental estimates across a landscape in a highly repeatable manner. Remote sensing has the ability to provide information on a wide suite of environmental conditions, ranging from terrestrial productivity, to oceanic sea surface temperature, to anthropogenic effects such as proximity to humans.

Estimating a group of species as diverse as coastal birds presents a challenge in terms of environmental variable selection. With species ranging from open ocean piscivores (fish-eating) such as grebes and alcids, to terrestrial omnivores such as corvids, or generalist carnivores such as eagles, the habitat requirements of different coastal species are highly variable. As such, environmental correlates were selected to represent broad environmental conditions experienced by each species at each sample location. The MODIS sensor on board NASA's Terra and Aqua satellites was used to estimate terrestrial vegetation productivity (shown in the figure on the previous page) as well as oceanic conditions such as sea surface temperature, chlorophyll-a concentrations and water turbidity. Landsat 5 and 7 data were used to assess dominant landcover, while distance

to human activities was calculated using the NOAA "city lights" data set and the 2008 Canadian road network file. Lastly, atmospheric conditions were estimated using the ClimateNWA tool developed by UBC Forestry's Dr Tongli Wang and co-authors. These data were combined with information obtained from Bird Studies Canada's Coastal Waterbird Survey, which describes coastal bird presence/absence and abundance at over 300 locations along the BC coast from 1999 to present. This process resulted in 60 estimated species distributions by winter across an 8 year study period (2002 to 2009; see the example horned grebe distribution maps shown above).

The first step in using these model outputs is to assess their reliability. Data splitting for model building and validation is commonly used to assess model fit, and here, 57 out of 60 models exceed industry standards in terms of fit. Model variability was assessed to explore how transferable these models are in terms of space, and model variability was shown to increase non-linearly as distance from surveys sites increased. Insectivores, a group made up of exclusively shorebird species, were shown to be most effectively modeled when compared with piscivores and carnivores, while all other feeding groups were found to be modeled equally well. The final products of this exercise are now being used in planning exer-

cises with Environment Canada to assess the coverage of our current protected areas, and then identify new locations for conservation that maximize protection for species that may not be well represented in the current system. Additionally, due to the repeat sampling of remotely sensed data, the approach can assess temporal change in occupied habitat that may allow trend assessments to occur in areas that are too challenging to sample physically. Lastly, due to the binary nature of the output data, common conservation indices such as species richness and site uniqueness can be calculated and used for conservation planning purposes.

This research was funded by the BC Innovations Council, NSERC, and Environment Canada. The study was conducted by Greg Rickbeil (PhD student in the Department of Forest Resources Management), along with co-authors Dr Nicholas Coops (Forest Resources Management), Dr Mark Drever (Canadian Wildlife Service), and Dr Trisalyn Nelson (University of Victoria). The authors wish to acknowledge the hundreds of volunteers working thousands of hours on the Coastal Waterbird Survey, without which this study would not have been possible. For further information on this study, contact Greg Rickbeil at grickbeil@gmail.com or Dr Nicholas Coops at nicholas.coops@ubc.ca.



Great blue heron

development & alumni news



Like many young people, **Bob Kennedy** graduated with a Bachelor's degree and a need to hit the road. Growing up in Syracuse, New York, he attended the New York State College of Forestry on the campus of Syracuse University. "I knew I wanted to do graduate work, and the Pacific Northwest seemed interesting," he says. Thousands of kilometres of pavement, 170 miles of gravel road and 3 flat tires later, Bob arrived at UBC in 1953.

With both the journey and the destination in mind, Bob and his wife Averil have established a scholarship to increase awareness of forestry and the forest industry in the Canadian context. The Robert and Averil Kennedy Forestry Graduate Scholarship is open to students with an undergraduate degree from the State University of New York College of Environmental Sciences and Forestry (SUNY-ESF), the largest such college in the United States.

Dean Emeritus creates award for masters students

"The program at SUNY-ESF is large and comprehensive, and offers students a wide range of opportunities," he says. "I want students to also experience the way we do things here (at UBC) – how we are different and also how we are the same – and experience a different environment without leaving North America."

Bob's career is familiar to many Forestry alumni who learned wood anatomy and properties, wood chemistry, timber mechanics or microtechnique from him between 1955 and 1961, or who knew him as Dean of the Faculty from 1983-1991.

"When I came here as a graduate student, there were just 6 of us: 4 Masters and 2 PhDs," he says. "We had all our desks in one large room." After graduating, Bob was invited to teach, then encouraged to pursue a PhD, which he did at Yale University. "My wife and I left for New Haven right after we were married, on our wedding day! She thought it would be an adventure," he says.

In 1962 Bob went to the University of Toronto as an Assistant Professor of Wood Science, a position that lasted 5 years and was professionally fulfilling. But the pull of the west coast was irresistible, and in 1966 he returned to Vancouver to work at the Western Forest Products Laboratory (predecessor of FP Innovations)

where he eventually became the Director.

He returned to teaching in Forestry in 1979. "I didn't feel rusty at all," he says. "I was so impressed by the advances in technology that allowed students to learn so much more in a term." He was appointed Dean in 1983, a position he held until his retirement in 1991.

Today Bob is an active gardener, tennis player and grandfather. He is also, by his own admission, a "professional reunion-goer". SUNY-ESF is still close to his heart, as he is attending the 60th reunion of his graduating class in early October. This time, however, he will be handing out brochures and putting up posters promoting graduate studies at UBC Forestry...and his and Averil's award. "I want other students to have the same enjoyable experience I've had," he says. "There's so much to learn here!"

The Faculty is grateful to Bob and Averil for their support, and welcome them into our donor alumni group.

If you have an idea for supporting students, research or teaching in the Faculty, please contact Emma Tully at emma.tully@ubc.ca or phone 604.822.8716 for more information.

A forestry partnership

A family tradition passed down through generations inspired an idea, and from there a successful partnership was born.

Sean Macalister met Jeff Ferguson in 2005. They quickly became friends and both were enrolled in the Bachelor of Science Forestry program at the University of British Columbia. They soon discovered that they worked well together and had similar visions and aspirations. While taking a business course with Dr Robert Kozak (Department of Wood Science); they partnered on an assignment that involved creating a business plan. Their business idea outlined a need for a greener alternative to traditional cut Christmas trees and suggested that a living Christmas tree is the eco-conscious solution. The business plan assignment was well received and EVERGROW Christmas Trees Co. was established in November of 2009.

Every Christmas, the Macalister family would buy a live tree from a local garden centre, enjoy its beauty throughout the holidays and after plant the tree in their backyard; many of these trees are still thriving today. This childhood tradition was a special memory of Sean's that later became a vision for this future endeavor. "Knowing these trees didn't die, they were able to live on, is a very special thing". Sean liked the idea of families who display live trees in their homes for Christmas, but wanted to produce a greener option by providing living trees.

The vision to create EVERGROW Christmas Trees Co. was underway. Sean and Jeff had everything set up within 2 months' and when they opened their doors the success was immediate! They sold out of their stock in the first year and caught media waves across Canada and internationally. They were pleasantly



overwhelmed with the attention they received, responding to news crews as far away as Germany and France.

EVERGROW is based in Burnaby, BC, and serves Vancouver and the surrounding area. Beyond the busy Christmas season, they work to maintain and care for the trees at a nursery in the Fraser Valley growing 150-200 trees per year. After Christmas they plant the trees so they can continue to live a healthy life and to be used again the following year. The knowledge Sean and Jeff gained through their education at the Faculty of Forestry has been critical to their success and many of the seasonal staff employed are UBC Forestry students. EVERGROW has cultivated an exceptionally loyal customer base as the company flourishes into its 5th year in business. Some of their trees were featured at the 2010 Olympics in Vancouver, BC and in the movie Christmas Story 2.

As far as offering any advice to young alumni or current Forestry students interested in starting a

business; Sean notes the many pros and cons involved in running your own company, how it takes a lot of hard work, time and dedication, and can be a rewarding yet exhausting experience. "It takes a certain individual to start a business; you have to give it your all". He speaks about the excitement of never knowing exactly how things are going to turn out, if your business will be successful, what the future holds. Sean also mentions that having a business partner for him was key. They already knew they worked well together from their time at UBC, and it gave them extra motivation and support while in transition. Utilizing each other's skillset, bouncing ideas off one another, teamwork was what it was all about. "Running your own company is so much fun, an amazing challenge and very rewarding".

Jeff has relocated to Revelstoke, BC so Sean is now running EVERGROW solely, however they are still in contact and Jeff works occasionally with EVERGROW.

Recent alumni events

Since the past issue of *Branchlines*, the Alumni Office at the Faculty of Forestry hosted a range of events. We started off welcoming the Class of 2013 graduates into the alumni fold. Russ Clinton, BSF'67 and former Senior VP of Corporate Development at West Fraser Timber, attended the ceremony as a representative of the Forestry alumni community to present alumni pins. The new alumni, their families and friends, faculty and staff then gathered at a lunch reception in the Forest Sciences Centre Atrium, where the Dean and Mr Clinton shared words of advice. Several alumni have shared "Words of Wisdom" on our Forestry Alumni Website. To add yours, please contact Janna Kellett at janna.kellett@ubc.ca or 604.827.3082.

UBC celebrated Alumni Weekend on May 25th. The Faculty of Forestry hosted several events, including Dr Hosny El-Lakany's thought provoking discussion on the world's forests and PhD candidates Natalie Sopinka and Graham Raby's sessions entitled "Salmon, eggs and fry, oh my!". If you were unable to join this year's event, we hope to see you at next year's.

Here are a few more events that took place:

Williams Lake Alumni and Friends BBQ & Tour



Dr John Richardson addressing the Williams Lake tour

On August 27th, alumni, friends, staff and students met at the Gavin Lake camp in the Alex Fraser

Research Forest, just outside of Williams Lake, for a tour and barbeque. A welcome by Dr John Richardson,

Head of the Department of Forest and Conservation Sciences at UBC Forestry, was followed by presentations by students Vince Luu and Samantha Smolen on their experiences as interns at the forest, and a discussion panel moderated by Forest Manager Ken Day, MF'98. Panel members Janelle Hale, BSF'11, from West Fraser Mills, Steve Kozuki, BSF'94, from BC Timber Sales, Ty Johnston, Forestry consultant, and Francis Johnson, from Alkali Resource Management Ltd, spoke about work/life balance within their areas of forestry.



Class of '83

Class of 1983 Reunion

On August 17th, the Class of 1983 hosted their reunion, complete with "Coconut Party" décor. Over 30 classmates and guests gathered on the UBC campus for a fun day of activities, including a nostalgic slide show lunch, dinner, evening at Mahony's Irish Pub and an after-party at Gage Towers. Special guests included Emeritus Professors John Worrall and Tony Kozak.

Alumni and Friends Gathering in Nelson

Students from the Master of Sustainable Forest Management program were in Nelson in late August participating in a field camp. On August 30th, they presented their reflections to alumni and guests and answered questions on forest management challenges in the Kootenay area. After the presentations, alumni, friends and students joined Associate Dean Cindy Prescott for a reception at the Touchstones Nelson, Museum of Art and History.

Planning a reunion for 2014? For classes celebrating milestone reunions (such as the classes of 1954, 1964, 1974, 1984, 1994 and 2004) please contact Janna Kellett, the Faculty of Forestry Alumni Relations Officer, at janna.kellett@ubc.ca or 604.827.3082. We're here to assist you with resources, including pulling class lists, providing reunion pins, planning tips and suggestions.

Alumni in action

One of the common questions raised by alumni is "What happened to my classmates after graduation"? Our students wonder "What can I do with my degree?" To answer both of these questions, this column features stories from our alumni, highlighting the various career paths our graduates have followed.

Ric Slaco, BSF 1979

What year did you graduate and from which program?

I received my Bachelor of Science in Forestry (Forest Management Major) in 1979.

Where did you grow up?

Vancouver

When did you know you wanted to go into Forestry and what drove you in that direction?

At an early age I had a strong interest in nature and building things. My older brother was a commercial fisherman, and while visiting him in Kyuquot, on the west coast of Vancouver Island, I realized I wanted to do something related to the natural bounty we have in BC. Fishing for a living was not my calling, because of seasickness, but trees and lumber looked pretty interesting to me.

What brought you to UBC's Faculty of Forestry?

While attending John Oliver High School, some UBC Forestry students (I remember Bob Cavill, BSF'72, was one of them) gave a Career Day presentation. I was impressed with what they had to say about the school and forestry and it seemed like the right path for me.

What was your first job after graduation and/or your first Forestry job?

I was hired by BC Forest Products Limited in their Resource Planning Group as a Special Projects Forester. My specialty at that time was forest soils. It was during that time I worked on a forest ecology project with Dr Karel Klinka (PhD'76 and UBC Forestry Professor Emeritus) and helped develop the first tree species selection guide book. It was new thinking at that time, and it really expanded my perspective about forest ecosystems.



What are you doing now and how did you end up there?

I am the Vice President and Chief Forester at Interfor. I have worked in the forest industry for 34 years, and have held various roles in resource planning, operations and now at the corporate level. My tenure at Interfor started in 1992 when they bought the coastal assets of Fletcher Challenge, where I was working, and asked me to move from Campbell River to Vancouver. I like new challenges and Interfor has been a great company to work for in that respect. The company is focused on building value and has changed dramatically over the years, becoming a leading global supplier of softwood lumber. Most recently I have also taken on a temporary part-time role as Interim President of the BC Lumber Trade Council. It has been a great learning experience and I expect there will be more changes ahead.

What is your fondest memory of your time at UBC?

There was great camaraderie within our forestry class, both in learning and having fun. I spent most of my time with the class of '78 until I took a year out to work and travel to Costa Rica. I have a lot of good memories of people from school and summer jobs. The most unique summer job experience was working for Dr Tim Ballard (UBC Forestry/Land and Food Systems Emeritus Professor) doing a soil and vegetation survey of Klahanie National Park in the Yukon. The best summer job memory was meeting my future wife while I was working on a forest site productivity study on Vancouver Island.

If you weren't working where you are now, what profession would you most like to try?

I am fascinated by marketing, and it would probably be something to do with wood or bio products, as they have such a compelling story for why they are good for people and the environment.



What is the toughest business or professional decision you've had to make?

Early in my career, during the 80s, while working for a different company, I believed that a development plan in an already heavily logged watershed was not professionally sound. I had to explain to my employer why I would not approve the site prescription. It really wasn't a tough decision because it was the right thing to do, but I was uncertain what might happen next as I was not aware of anyone doing that before. My most taxing challenge, however, was dealing with the environmental issues during the "war in the woods". I knew that decisions made during this period would have profound impact on peoples' lives, and would result in world leading sustainable forestry practices.

What are you most proud of looking back at your career so far?

I believe that I have strived to add value to everything I do! My core values of personal integrity, treating people with respect and a strong desire to get things done has given me a sense of accomplishment for the various challenges that have come my way.

What does being a UBC Forestry alumnus mean to you?

It represents a sense of community among people with similar values.

Do you have any advice for students currently in Forestry or recent graduates just entering into the work force?

I think that the forest sector in BC has an opportunity to become the world's supplier of choice for climate friendly forest products and services. Forestry and forest products can do so many good things for people, and in my view is a sector worth pursuing with a grand vision for greatness.

Newsletter production

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Forestry Alumni Survey

In September an Alumni Survey will be going out to all UBC Forestry alumni with email addresses in our records. We would like to hear from you – what would you like to see in the Alumni E-Newsletter and on the website? What events would you like to participate in? Have you hosted a class reunion with the Faculty? If yes, we'd like to hear how it went, if not, then we'd like to know why.

This is your opportunity to help us ensure that the Alumni Relations Office's services and resources are targeting you and other alumni to the best of its ability. We would especially like to hear from alumni outside of the Lower Mainland about how we can best support and engage with you.

If you do not receive the survey, we may not have a current email address for you. If so, or if you don't have an email address but would like to let us know your feedback, please contact Janna Kellett at janna.kellett@ubc.ca or 604.827.3082.

Alumni Reception at Society of American Foresters 2013 National Convention

On October 24th, from 6:30-8:30pm, UBC Forestry will be hosting an Alumni Reception at the SAF National Convention in North Charleston, South Carolina. For more information, or to RSVP, please contact janna.kellett@ubc.ca or 604.827.3082.

Electronic versus paper?

BranchLines is currently mailed to over 4,000 forestry alumni, interested groups and individuals. We also post an electronic version of each issue on our Faculty website www.forestry.ubc.ca/branchlines/.

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