

Annual Meeting of the BCCAT Forestry & Sustainable Resources
Management Committee

MEETING AGENDA 2021

BRITISH COLUMBIA COUNCIL on ADMISSIONS AND TRANSFERS (BCCAT)

British Columbia Institute of Technology,
Burnaby, British Columbia

Tuesday June 1 (09:00-16:00) and Wednesday June 2 (09:00-12:00), 2021

Zoom Link: <https://bcit.zoom.us/j/62604705828?pwd=TUd3YmtnSHRZOUplLaTBPdW4vaVFwdz09>

Committee Member Name	Institution Name	Emails
Roy Rea	UNBC	Roy.Rea@unbc.ca
Helene Marcoux	BCIT	hmarcoux@bcit.ca
Steve Finn	BCIT	steve_finn@bcit.ca
Ed Morice	CNC	morrice@cnc.bc.ca
Heath Schneider	NAIT	HEATHS@nait.ca
Peter Marshall	UBC	peter.marshall@ubc.ca
Jason Pon	BCIT	jpon4@bcit.ca
Tom Wilms	NVIT	twillms@nvit.ca
John Karakatsoulis	TRU	jkarakatsoulis@tru.ca
Marc Mayhew	NAIT	MMAYHEW@nait.ca
Alex Tait	BCIT	atait4@bcit.ca
Wayne Horvath	BCIT	wayne_horvath@bcit.ca
Stacy Cuzzocrea	VIU	stacy.cuzzocrea@viu.ca
Brendan Wilson	Selkirk	bwilson@selkirk.ca
Carol Andrews	Selkirk	candrews@selkirk.ca
Stacey Auld	BCIT	stacey_auld@bcit.ca
Jonathan Smyth	BCIT	Jonathan_Smyth@bcit.ca
Coleen MacLean-Marlow	North Island College	Coleen.MacLean@nic.bc.ca
Andrea Erwin	College of New Caledonia	erwina1@cnc.bc.ca
Guests		
Chi Cejalvo	ABC FP	ccejalvo@abcfp.ca
Casey Macaulay	ABC FP	cmacaulay@abcfp.ca
Wayne Hand	BCIT, Dean of Construction and the Environment	wayne_hand@bcit.ca
Brett Favaro	BCIT, Associate Dean	bfavaro@bcit.ca
Eric Saczuk	BCIT, Geomatics	Eric_Saczuk@bcit.ca
Carla Rhyant	AAFMP/FPRC	carlar@aafmp.ca
Rick Chester	BCIT, retired Faculty	rickchester57@gmail.com
Anna Tikina	BCCAT	atikina@bccat.ca
Traci Van Spengen	MFLNRORD	Traci.VanSpengen@gov.bc.ca
Karen Sorensen	FNFC	karen@forestrycouncil.ca

Agenda	Minutes
<p>0900: Welcome and Call to Order - Roy Rea, Chair (year 3)</p>	
<p>0905: Introductions/Acknowledgements</p> <ul style="list-style-type: none"> ● Indigenous Welcome – Steve’s guest ● Institutional Greeting – Steve Finn (our host) ● Round of Introductions Including New Members/Guests: 	<p>Wayne Hand, BCIT Dean, School of Construction and the Environment – 55,000 students, big portion (over half are part-time students), 6 different schools aligned with different sectors, there are 5 campuses, main campus is in Burnaby. Programs are unique, many are within the trades, but also diplomas, degrees and graduate level studies. Invites the committee to come visit the</p> <p>Brett Favaro, BCIT Associate Dean, Natural Resources and the Environment – newer associate dean (less than one year), originally from Memorial University (Newfoundland)</p> <p>Round of introductions – new and old members (see list of attendance)</p> <p>Lots of comments from the group about missing in-person camaraderie historically part of articulation meetings.</p> <p>Roy discussed the possibility of BCIT hosting the next meeting. Steve F said he was not committing at this point.</p>
<p>0930: Approval of Agenda and Any Additional Items</p>	<p>Amendment proposed by Roy to add the “meeting closure” to the end of the agenda</p> <p>Motion to approve: Ed Morice Seconded by: Steve Finn Motion passed unanimously.</p>
<p>09:45: Approval of Previous Minutes of the Articulation Committee meeting of 2019 / Business Arising from Previous Minutes</p>	<p>Motion to approve: Helene Marcoux Seconded by: Steve Finn Motion passed unanimously.</p> <p>Previous meeting minute (2019) action items reviewed.</p> <p>Action #1 - Moodle Site – will be discussed later at 11:30 am during BCCAT</p> <p>Action #2 – proposed motion to adopt the matrix (Rick Chester) – this will be addressed later on at 11 am</p>
<p>1000: Welcome to BCIT – Steve Finn</p>	<p>Discussed location of the campus and history about the campus (north/south). There is a small forest on campus. Around 50,000 students. BCIT is going through a major infrastructure investment/development stage, including new Health Science Centre and Student Residence. FNAM is within the Renewable Resources Department, which includes FWR and Ecological Restoration. Some</p>

	<p>Faculty teach across programs. BCIT forestry program started in 1964. Program has gone through some changes over the years. Diploma is 127 credits (1 credit = 15 hours). Woodlot 0007 is in Maple Ridge, only 285 ha. Used for teaching/learning and sandwiched between lots of different licenses, park, Hydro ROW, regional park, private land. Showed videos of wetland construction, 360R videos, plant ID videos, fire project (Skagit Valley), drone imagery of campus & use of RGB imagery to build 3D.</p>
<p>1030: Coffee Break</p>	<p>Motion to resume at 11:00: Helene Marcoux Seconded by: Stacey Auld & Ed Morice Motion passed unanimously.</p>
<p>1045: Nominations/Elections to replace Chair (Roy Rea) and BCCAT Liaison (Peter Marshall)</p>	<p>Resumed at 11:00 am.</p> <p>BCCAT Liaison – nomination/election</p> <ul style="list-style-type: none"> ● Peter explained his role as BCCAT liaison – usually a meeting with other articulation committees to discuss things systems wide and opened his eyes to all the other areas at UBC (for instance) that articulate. The role isn't too onerous. It can be a complementary role to other admin/program management duties for folks working in that capacity within their program. ● Anna Tikina (BCCAT) introduced herself to the group. She works with articulation committees and helps support them in discussions about transfer agreements, etc. She provided a link explaining the role of the liaison and how committees should operate: https://www.bccat.ca/pubs/Resources/Companion2018.pdf. It's nice for this person to stay in the role for more than one year, but it doesn't have to be a commitment for 10 years. System liaison also attends JAM (joint annual meeting). <p>John Karakatsoulis volunteered to take on this role for 3 years (not 10 years). Motion for John K to be the new BCCAT liaison proposed by: Ed Morice Seconded by: Carol Andrews Motion passed unanimously.</p> <ul style="list-style-type: none"> ● Steve F indicated that the guidelines say that the liaison are not allowed to vote: https://www.bccat.ca/pubs/Resources/Companion2018.pdf Anna indicated that this is just a guideline. Peter M indicated that each school has one vote – so down the road, the liaison would need to bring another member from their department so they could vote (but not this year). <p>Chair - election</p> <ul style="list-style-type: none"> ● Roy explained the Keeping a running list of everyone on the list. Roy went to the JAM meetings as well (annual BCCAT meeting). Chair sets meeting dates, sends reminders about the meeting

Spreadsheet 2 – This table has keywords and phrases – that could be included in school reports and also used to form working groups (with instructors with similar background). RFT Academic Working Group has been using the ABCFP self-assessment spreadsheet similar to spreadsheet 1 to review the academic portion of the certification process for a number of years. Rick has been involved with this and finds that the process is really onerous (lots of course outlines, etc.) – he has found that looking at this spreadsheet is more efficient.

Spreadsheet 3 – Course outline template. It’s uncomfortable when assessors feel there is not enough information in a course outline to make their assessments. Course outlines vary widely between programs (and sometimes within one program). Rick is proposing to have a consistent course outline format and proposes some examples. From an assessor’s perspective, having a course description, prereqs, goals, obj, how much in the field/lecture, how marks are distributed, schedule, equipment required by students. How can we standardize information? Perhaps through an articulation process we could have the linkages between Spreadsheet 1 and 2, using Spreadsheet 3. He is proposing that spreadsheet 3 would create a pathway towards this standardization.

Spreadsheet 3
Course Outline Template
Proposal

The screenshot shows a detailed spreadsheet for a course. Key sections include:

- Program:** Forest and Sustainable Resource Management
- Course Name:** Engineering Resource Roads and Trails
- Course Number:** FNRM 2103
- Credits:** 3
- Prerequisites:** FNRM 1008
- Evaluation Criteria:** A table with columns for 'Criteria' and 'Comments', listing items like 'Fieldwork', 'Assignments', 'Projects', 'Participation', and 'Examinations'.
- Distribution of Course Hours (Overview):** A table showing 'Lecture Time' (12, 30%), 'Lab Time' (60, 30%), 'Field Time' (25, 42%), 'Examination Time' (4, 8%), and 'Other' (6, 8%).
- List of Equipment:** A list including 'Lumber', 'Fuel/line', 'High-cut saw', 'Brom Cad Block', 'Chainsaw', 'Compass', 'Field Notebook', 'Pocket Spectroscope', 'Blue Flag', and 'Field Dior'.

This is an example of a Course Outline worksheet used for ABCFP program recognition and CTAB accreditation purposes. One possibility is to encourage programs to submit this type of worksheet for the program recognition process so more information would be available for assessments.

Rick asks:
Is there agreement for all institutions to complete spreadsheet 1 & 2?
Should we be promoting these processes to BCCAT?
Is there a way to broaden across the country (with technicians vs. technologist, for example)?

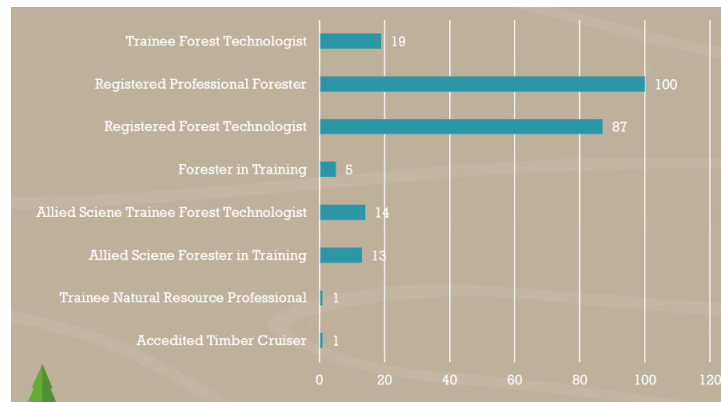
Roy suggests that we discuss Rick’s questions later this afternoon, perhaps during the discussion period?

	<p>We will restart at 1:00 pm with Casey & BCCAT</p> <p>Motion to recess for lunch: Jonathan S Seconded by: Stacey C. Motion passed unanimously.</p>
<p>1130: Institutional Reports, BCCAT, ABCFP</p>	<p>Start Time: 1:00 pm</p> <p>Anna Tikina (BCCAT) – Anna provided this link (https://www.bccat.ca/Media/NEWBCCAT/pubs/Resources/ACUpdate202104.pdf) to the spring updates from BCCAT. BCCAT usually holds JAM in November and typically all the presentations from JAM are available online. The next JAM is going to be in November 2021 (online) – perhaps spread over two days. By being online, the registration in November 2020 was nearly twice as normal.</p> <p>BCCAT also has a COVID-19 update, including policy changes or also guidelines on alternative grading / delivery methods. BCCAT expects that all committees will meet online this year. Anna says there will be no COVID-19 impacts on transfer agreements. There will be a transition to Moodle. Moodle is a place for committees to host materials (e.g. the matrices). BCCAT is working on assisting committees with new tools to help with the review of transfer agreements (some of which have not been reviewed in 10 years). If any changes have happened to programs (or courses), make sure you articulate to ensure the transfer agreements are still valid. Not all institutions have joined the Course to Course transfer tools which are part of the BC Transfer Guide. Anna walked us through the BC Transfer Guide (online). There is a new report on Micro-credentials on the BCCAT website: (https://www.bccat.ca/pubs/Reports/MicroCredentials2020.pdf)</p> <p>Ed M asked about the utility of using Moodle and asked about its utility (he also lost the password and has had a challenging time recovering it). Anna T explained that it's more of a repository of School Reports and possibly other committee files (like the matrices). Ed sees utility in the Moodle, especially for committee record keeping and when passing along the torch to other chairs. Ed M is willing to reinvigorate the use of the Moodle (by contacting: Anabella Chun, achun@bccat.ca) – but he also is asking who would be responsible down the road. Roy sees value but explains that he's a bit more "old school". Tom W (NVIT) would be willing to take the lead on setting up the Moodle.</p> <p>Motion to have Tom W set-up a Moodle for the committee: Roy R Seconded by: Helene Marcoux Motion passed unanimously.</p> <p>Casey Macaulay & Chi Cejalvo (ABCFP) – ABCFP Status Report Casey wanted to recognize Rick Chester for all his work and contributions to the ABCFP and this committee.</p> <p>Casey explained new 5 year Strategic Plan – 4 key goals:</p> <ul style="list-style-type: none">● Competent forest professionals● Accountable forest professionals

- Effective regulation and good forest stewardships
- Effective governance, admin, comm and engagement

Registration Type (active)	2020	2021 *to date
Registered Professional Foresters	2,675	2,643
Registered Forest Technologists	1,246	1,228
Trainees (incl. allied):		
Forester in Training	454	441
Trainee Forest Technologist	292	274

Indigenous registrants' stats



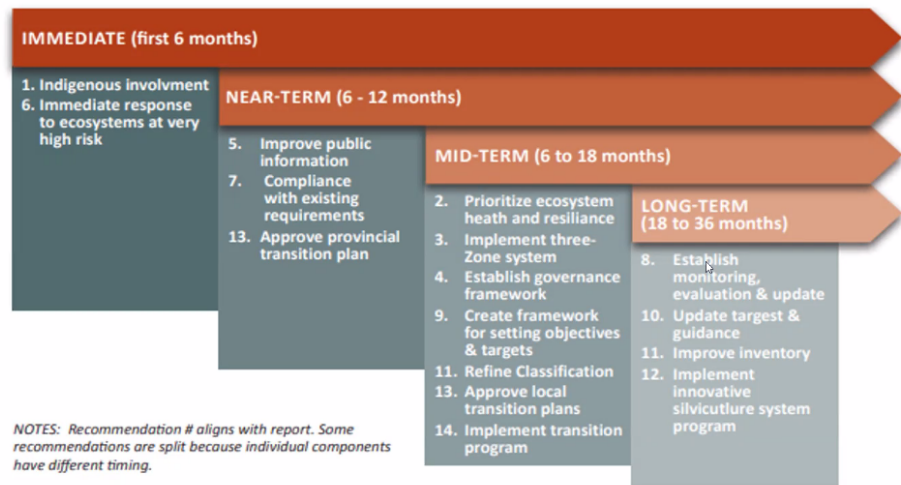
Registrants by gender = 4292 male; 1199 female; 2 other; however, looking at the age ranges, the greatest proportion of females are in the younger age groups (e.g. less than 40 years old)

The Professional Governance Act (PGA) has had a major impact on the ABCFP. ABCFP is now a regulator and not an association (e.g. no longer “members” instead “registrants”). The ABCFP no longer plays a role of advocacy. There is less focus on membership benefits. For instance, can the ABCFP still run conferences? The PGA requires an increased number of lay members, which must be part of councils and decisions. There needs to be increased engagement with other regulators, e.g. overlapping areas of practice, like RPF and PEng. The new terms being used are “reserved practice” (exclusive to ABCFP) and “regulated practice” (may be practiced by others). There is also increased focus on compliance activities, duty to report. PGA also established the office of the superintendent – now they reside under the Attorney General’s Office, which creates independence from historic relationships with other Ministries (e.g. FLNRORD).

Current Projects – Bridging Training. ABCFP has received funding to improve accessibility of Allied Science and International Trainees. This is a partnership with UBC and TRU (through distance education). This is funded by the Ministry

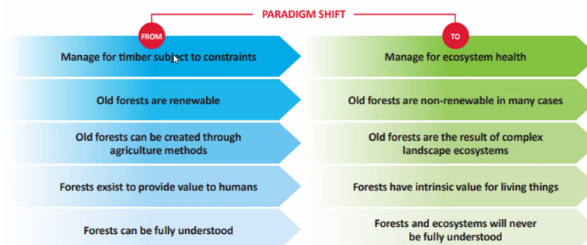
	<p>of Municipal Affairs Uptake. UBC and TRU have each developed 3 courses (6 total) for online delivery.</p> <p>Current Projects - Forest technology – National Standards Project – to develop the national standards. Forest technology is in BC, AB SK. CTAB/TAC has only been used in BC. Casey’s vision is to develop standards that we then could push back up to accreditation bodies so they can refine their approach. There is different language (technology vs technician) in different jurisdictions. The plan is to get a draft of standards out this year. One question is WHO should be doing the accreditation – should it be TAC or the same national standards board as with RPFs. The aim is to improve mobility across jurisdictions.</p>
<p>1200: 1-hour Lunch Break</p>	<p>This was done earlier</p>
<p>1300: Institutional Reports (continued)</p>	
<p>1400: Old Growth Management in BC - Traci Van Spengen (MFLNRORD)</p>	<p>Traci is in the Omineca Regional Specialist, old growth values lead</p> <p>Provided definitions and condition summary overview of old growth.</p> <p>Traci discussed coarse-scale approaches to management and that provincial old-growth management tools/targets/policy vary throughout the province. The goal used to be no impact to timber supply areas. The goal is to not have an excess of OG than is allowed under the target. Assessment units of targets under Provincial and Regional OG Orders are determined using NDTs (Natural Disturbance Types) and the targets establishment under these. Spatial OGMAs may not be old. Landscape Unit Planning Guide and the Biodiversity Guidebook came out in the 1990s with the FPC – but there’s a whole generation of foresters that aren’t aware of these guidebooks.</p> <p>Social side of what we know: The Old Growth Panel Report (Sept 2020). They found emerging themes and developed recommendations. Some of the big findings: we’re asking too much of forests, the public has lost trust, strong feeling that forests are well managed (leave it to the professionals), we cannot maintain the status quo, and we ignored recommendations on OG from 1993 – they have not been implemented.</p> <p>Recommendations from the report:</p>

Old Growth Panel Report: Timelines and Bold Action



Traci spoke about the recent FPB report on PG TSA OG Management.

Paradigm shift is needed. Here is what was recommended by the report.



1500: Discussion Period

Q&A: Discussion around what type of training should we be focusing / what type of gaps of knowledge/skills can post-secondary fill? Traci identified some ideas such as: forest mensuration, habitat supply modelling (e.g. how to use VRI to find indicators of OG), expertise in partial harvesting/alternatives to clear-cut methods and forest restoration.

Q&A: Ed brought up that the “foresters” voice hasn’t been very vocal more recently in the media on the issue of OG. ABCFP (Casey) has now said that advocacy is no longer their role. Ed is wondering if there will be more requirements under the PGA for more post-graduation training. Should OG be additional training that wouldn’t be part of the initial requirements to practice. Ed is concerned that we can’t add more to our core courses.

Chi says the advocacy piece of the ABCFP is now on the shoulders of the professionals and not on the ABCFP. The regulatory team of ABCFP are no longer solely forest professionals. John K asked if the Forest Professional

	<p>magazine was going to change. Chi says no, because it is the place for professionals to express key topics, issues and opinions.</p> <p>Brendan W is asking whether a national committee will take over the accreditation for all the technology programs (out west). Rick says some technician programs in Ontario have over 200 contact hours. So how do we consolidate this? Peter M says the eastern provinces have less of an interest to nationalize, but the possible exception of Nova Scotia.</p> <p>Carla says out east they do things very different. So to have a discussion nationally has been helpful – this is important for labor mobility.</p> <p>Rick explained that COVID slowed down the process – some of the work over Zoom was really challenging. Lately, there has been progress with a new facilitator involved in the process.</p> <p>John K says that the wording (technician/technologist) makes things complicated to have discussions. Carla added that these words are regulated in Alberta. Carla asked that we define technician/technologist & forester. The government of Alberta is totally restructuring how these professions are being regulated – having definitions is critical.</p>
<p>1530: Institutional / School Reports (continued)</p>	<p>Marc and Heath mentioned that in Alberta NAIT is the only technology diploma in Alberta (and the benchmark). They would like to see an accreditation process that isn't TAC (which is quite onerous).</p> <p>Rick asked that everyone go over the program comparison spreadsheet which shows the number of hours per program (across Canada) per semester. This information could help shed light on how different or similar programs are.</p>
<p>1600: Adjourn for the day</p>	<p>Motion to end for the day: Jonathan S Seconded: Colleen Motion passed unanimously.</p>

June 2nd, 2021

Attendees

Ed Morrice
Helene
Rick Chester
Roy Rea
Steve Finn
Helene Marcoux
Jonathan Smyth
Peter Marshall
Carla Rhyant (AAFMP)
Wayne Horvath
Jason Pon
Brett Favaro
Casey Macaulay
John Karakatsoulis
Tom Willms
Heath Schneider
Marc Mayhew
Carol Andrews
Stacy Cuzzocrea
Chi ABCFP
Andrea Erwin
Karen Sorensen
Coleen MacLean
Conrad?
Samantha Dadd
Janine
Sydney ABCFP

Agenda	Minutes
0900: Welcome Back – Roy Rea	Quasi Action Item - Carla (AAFMP/FPRC) FPRC definitions for technician/technologist/forest Have NOC codes updated (National Occupation Code) Work on having provincial ones updated as well Request FPRC forward https://www.canada.ca/en/immigration-refugees-citizenship/services/immigrate-canada/express-entry/eligibility/find-national-occupation-code.html Casey Macaulay What information about registrants is useful to this group? Database has limitations Gender split information? How many transition to RFT? Does ABCFP track which institution registrants went to? May be possible to mine this data. Could be useful to the group.

Carol mentioned it would be interesting to see how many grads have registered from her school.

Casey – accreditation leads to more registration. Enrolment is over 50% non-accredited. So they have to go through an individual accreditation process.

Chi – 54 month for non-accredited registrants, so much longer than accredited registrants.

Carla – 5-10% coming from non-accredited programs. In Alberta, there is only so much info that can be collected. Some employers are hesitant to hire non-registered employees. Some companies can't find people, but also many grads that haven't registered.

Action Item – Casey and Chi

**See which data is available to share with our group
Survey of trainees?**

Which institutions registrants come from?

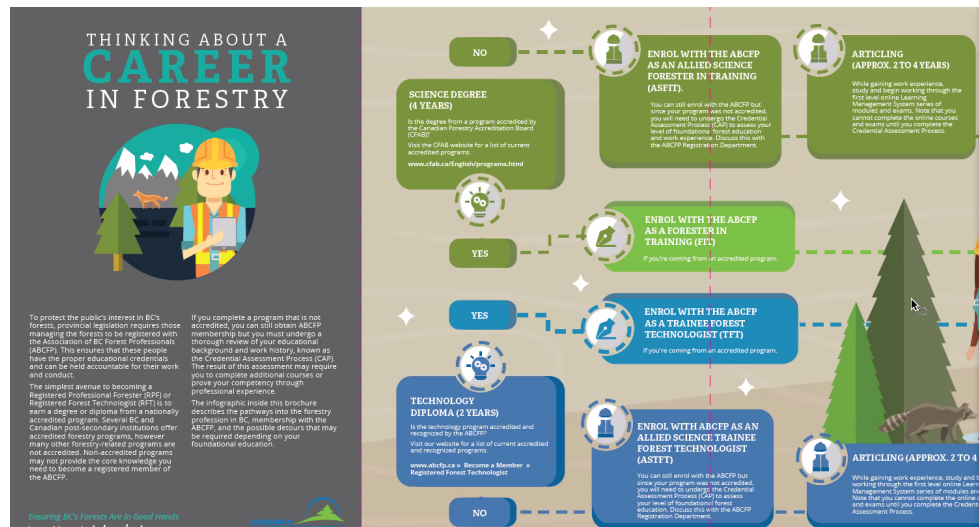
Refine data, see what's available, provide at each of these meetings each year.

Carol – What is holding back registrants? Lack of employment, fees, long process?

Action Item

**Ed – update grad tracking sheet, through Moodle
Provide reports to the group each year**

Casey showed brochure: - more steps involved for non-accredited
Gap in the student advising about forestry careers in general, and accreditation process.



0930: An Introduction to the BC First Nations Forestry Council – Karen Sorensen

Karen Sorensen – Workforce Development Manager

The BC First Nations Forestry Council Mandate: 6 goals of the BC First Nations Forest Strategy



The 7 strategy areas of the Workforce Strategy



Workforce strategy launched in 2018 – fill 2200 FN jobs over next 10 years

Indigenous Forestry Scholarship Program (IFSP)

Study and work – Covers tuition, living expenses & work term during summer

Many students come from small communities with strong family ties

IFSP launched in 2012, 98 Indigenous students have participated since then. 25 students in 2020.

Highlight Students - Chandell (BCIT student), and Garrett

Forestry Council screens and interviews candidates for eligibility
Deadline is April 30th.

Reserve seats in our programs for Indigenous students?

Student Supports – ISETP (Indigenous Skills and Employment Training Program), Forestry Council, Education Mentor (students have someone to talk to during school), Work placement mentor (ensure access to growing career)

Students go through a panel interview, like a potential employee would.

[Pause for questions:

John K asked about the interview process.

Give students exposure and practice. Placed at BCTS or Wildfire, even if “failed” interview, but given another chance. When they go to get another job they have interview practice. Clarified that the interview is for the job component, not the educational scholarship itself.

Steve Finn (BCIT) polled the group about how many schools reserve seats for FN. Ed Morrice (CNC) responded that they hold 2 seats. VUI (Stacey C) holds 4 seats, rest go to waitlist students. North Island College holds seats.

Casey indicated interest in integrating ladder pathways with the IFSP. Karen agreed. Co-op programs, covering professional exams, etc.

Short programs have high success rates where they can get employment quickly (eg. BC Wildfire training)

End questions]

Indigenous Mentorship in Forestry

Purpose – research role of mentorship and career advancement for FN in forestry in BC

Outcomes – survey employers, supervisors, create strategy to address barriers to participation and advancement of Indigenous peoples in BC forestry and best practices for mentorship.

Surveys for industry, educators, students - What programs are out there, what’s working, what’s not working, what do students feel would work best for them.

	<p>BC First Nations Forestry Conference June 16-18 Central Hub – get everyone together and share information. All students and industry partners, educational institutions for info, opportunities to offer, discussion about what forestry is, different career streams.</p>
<p>1015: Discussion Period</p>	<p>Action Item – Andrea Erwin: Add Karen Sorenson to the yearly mailing list so she can attend these meetings each year.</p> <p>Ed Morrice – Not taking advantage of these programs. But they are more focused on health and other priorities. People don't see forest technology when they see "forestry". They just see logging. Communities want employment. One group has lower educational requirements than typical intake. Other group has the educational requirements. To reach the right group is tricky. Karen suggested reaching out in a more formal way. Understand the community and jobs in those particular communities to see what opportunities and partners are available. Suggested short 6 week certification that can come into the communities to provide training for students to get jobs right away. Ed would like to see another pathway for laddering into more education.</p> <p>Carol – Take learning to the community is extremely important. Certification to lead to further education. Guardianship programs blend with formal education? Karen responds she will connect the right people (Cory?)</p> <p>Colleen – Pilot program (since 2018) delivering material was successful. Campbell River, open to all Indigenous students was less successful. High school credentials were an issue. Bridging in place to support math and other courses. Karen – capacity is limited as a non-profit organization. Only 25 students per year. Always extra students for the scholarship programs but not enough funding.</p> <p>Tom Willms – lack of funding is a shame, how to provide more? Is there something this group can do? Karen responds FNFC would love to grow, open to ideas of new partnerships.</p> <p>Roy Rea – inquired about how students meet eligibility requirements regarding First Nation status. Registered with ISET? (indigenous Skills Education Training)</p> <p>Helene (BCIT) – What are the barriers? Going into communities? How to recruit? Big Info sessions could be intimidating.</p>

BCCAT: Forestry and Sustainable Resources Management Committee

	<p>Tom – NVIT was FN college from Day 1. Reserving FN seats is not required, 80% of their students are FN. Best may be case by case on an individual student level.</p> <p>Rick Chester – Find ways to advance existing FN forestry workers into more professional designations (RFT).</p>
1030: Coffee Break	
1100: Matrix Discussion	Brief discussion, see item below.
1110: Presentation of Institutional/School Reports	See all full reports attached below
UNBC – Roy Rea	<p>Forest ecology and mgmt. – numbers down 102 from 113. Grads down 9 from 12.</p> <p>Minors – 13. Natural resource planning and operations most important</p> <p>March 2021 CFAB team gave preliminary indication that things look good.</p>
TRU - John K	<p>Program is not accredited with ABCFP</p> <p>Full as of today, 60 students accepted (max)</p> <p>Graduating 44 students</p> <p>Research chair in fire ecology and mgmt</p>
UBC - Peter Marshall	<p>1/3 go to work, 1/3 graduate work, 1/3 will go internationally</p> <p>New Dean</p> <p>New hires that are RPF eligible</p> <p>New course based Masters in Urban Forestry</p> <p>Hoping to offer Bachelor in Indigenous Forest Land Stewardship (would like it to be accredited with ABCFP)</p>
Selkirk - Carol Andrews	<p>Thanks to students being adaptable to hybrid model</p> <p>Increased outdoor learning opportunities</p> <p>Work-integrated learning – integrate academic studies and workplace opportunities</p> <p>Program is full for Sept 2021 (with waiting list)</p>
NVIT – Tom Willms	<p>Major improvements in online programming</p> <p>E-Learning course for all faculty to improve online learning</p> <p>NVIT is accredited in 2019 CTAB</p> <p>Graduated 19 students this spring, out of 24 that started.</p> <p>Delivered hybrid model until November, then online only</p> <p>Prescribed burn with local FN</p> <p>Launched co-op program, take course and 2 terms of work</p> <p>Student employment is high</p> <p>No major changed to faculty</p>
VIU - Stacey C	<p>2 year Forest Resource Technology Diploma</p> <p>24 students graduated this year</p> <p>Lots of students on waitlist</p>

BCCAT: Forestry and Sustainable Resources Management Committee

	<p>EDI (Equity, Diversity, and Inclusivity) – 3 workshops, make time in program for delivery</p> <p>Mental health forums – much need for it this year</p> <p>All students attended ABCFP AGM</p> <p>CIF mentorship program – worked very well</p> <p>1st year students won forestry national quiz bowl</p> <p>Implement coastal field trip for FN</p> <p>Currently going through TAC accreditation</p>
North Island College - Coleen	<p>Certificate 4 months - closely linked to BC Forest Safety Council</p> <p>Plant ID, intro to Cruising, Silv, Engineering</p> <p>Resource road training, drone surveys</p> <p>Diploma program, started in February, 17 completed first term</p> <p>All students are employed</p> <p>Prior learning credits recognizing work experience. Students coming back after working for industry. Can get 2-6 courses credited.</p>
CNC - Andrea Erwin	<p>Nat Resource Forestry Program</p> <p>TAC Accreditation this year – happy with outcome and program</p> <p>Credited for 5 years</p> <p>Ed Morrice retiring this year</p>
Steve Finn - BCIT	<p>Capacity 34 students, taking 35 for Indigenous scholarship applicant</p> <p>30 students on waitlist</p> <p>Brett Favaro new AD</p> <p>Hat Tip to Helene for taking initiative on preparing Covid Safety Plans</p> <p>FNAM program is different than most at BCIT with heavy field time component</p> <p>Students were good at observing Covid protocols, no student to student transmission</p> <p>Starting BCIT program review</p> <p>Rick Chester and Jace Standish retired</p>
NATE - Marc Mayhew	<p>Graduated 42 students</p> <p>180 applications, enrolled 54 new students</p> <p>45 students from 1st year will make it to 2nd year</p> <p>85-90% student employment</p> <p>Renewal plan for forestry camp infrastructure</p> <p>1st years get 4-5 weeks of camp field experience</p> <p>Entire fall term was online. December harvesting lab was able to proceed.</p> <p>2nd years still got field skills labs</p>
Any Other Business	<p>Action Item – Rick Chester</p> <p>Create sub-committee for Matrix work, finding funding.</p> <p>Discussion of funding from BCCAT for Rick Chester to continue with his Matrix. He is happy to continue even without set funding as a service to students.</p>
Next meeting:	<p>Location: NVIT</p> <p>Date: 2022 (Exact date TBD)</p> <p>TRU (John K) potential host 2023</p>

BCCAT: Forestry and Sustainable Resources Management Committee

Thanks Roy!	Thanks to Roy for being chair for the past 3 years!
1200: Adjournment	Motion to adjourn meeting: Steve Finn Seconded by: Jonathan Smyth Motion passed unanimously.



OLD GROWTH FOREST: **Importance, Perspectives and Paradigms in** **the** **Provincial and Regional Context**

Traci Van Spengen P.Ag
Omineca Regional Specialist, Old Growth and
Biodiversity
Provincial CE Old Growth Values Lead

Presentation Outline

- Old Growth Forest (why, what, how)
- Provincial Context
 - Legislation, policy, diversity of management
- State of the Knowledge
- Concluding thoughts



Photo Credit: Traci Van Spengen, Mackenzie Natural Resource District, SBS wk2

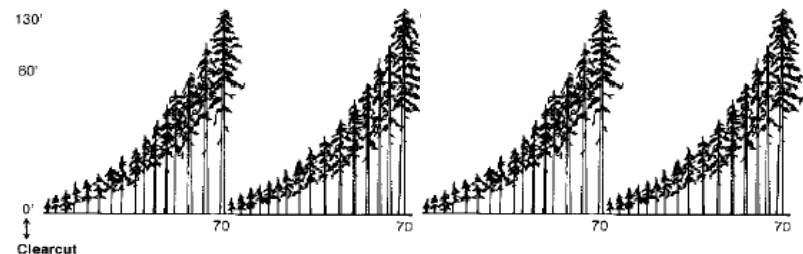
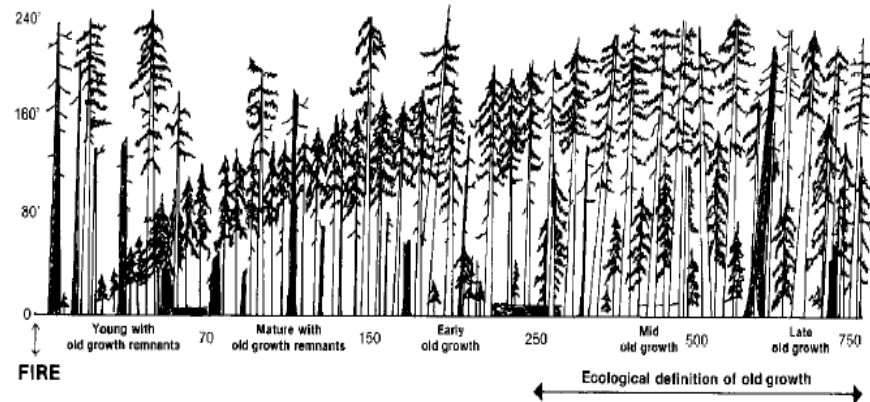
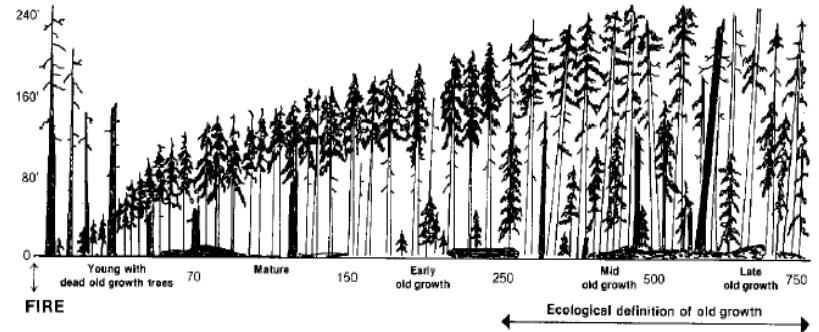
Why is Old Growth Forest important: So much more than an old tree or one large tree.....

1) It is habitat: Old-growth forests provide **unique** structures, and ecological functions not available in other seral stages.

2) It is non-renewable: Old-growth forests are **not easily replaced** as takes 2-3 human lifespans (140 to 250 years) to develop and another 2-3 times for a very old and ancient forests to develop (500-1000 years)

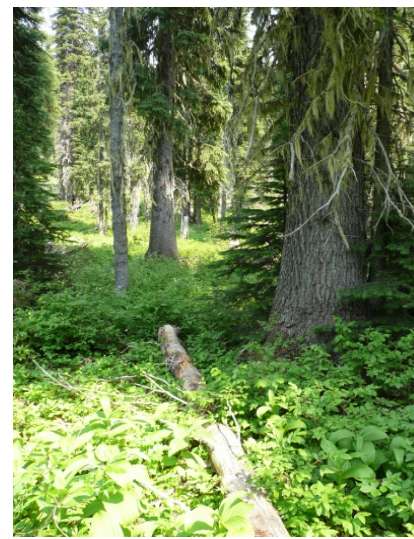
3) It is natural: **Primary forest** that is different than managed forest (structure, function, seral species)

4) Intrinsic value: **important to the public and First Nations**, whether for biological, spiritual, aesthetic or other values.



Why Old Growth Forests are ecologically valuable

- Old-growth forests have the structural complexity and variability (large trees, snags, CWD, decay)
- Without intervention, recovery of natural CWD characteristics will not occur within the rotation age of managed stands (Chisholm, 2021 Masters Defense Thesis)
- Old-growth forests in British Columbia provide **critical habitats** for:
 - over 400 species of vascular, non-vascular plants and animals (Goward and Arsenault 2000, Price et al. 2017)
 - species at risk (e.g., spotted owl, marbled murrelet, mountain caribou, goshawk, smokers-lung lichen, bull trout, moose, fisher)
- Old-growth forests can also sequester substantial amounts of carbon
 - particularly in standing dead and downed wood (Smithwick et al. 2002; Gray et al. 2016)
- Old-growth forests serve as refugia as the climate changes (Meddens et al 2018, Thom et al. 2019, Pojar 2020)
- The values in Old-growth forest are ecosystem-specific



NDT 1 – ESSF, wet site



NDT 2 – ICH mesic



NDT 3 – SBSmc3



NDT 4 - IDF

Photo Credits: Deb MacKillop: K/B Regional Ecologist

What is Old-Growth Forest: Definitions

- Unmanaged ecosystem with limited anthropogenic influence or disturbance
- Old trees: > 140 years Interior Plateau, > 250 years coastal, interior wet belt, high elevation
- Large diameter live trees
- Large diameter snags and CWD in various habitat stages and decay classes (D. Keisker, 2000)
- Vertical and horizontal heterogeneity: (multi-layer, multi-age gap dynamics)
- Hummocky micro-topography
- Core Habitat condition to support unique plant species (e.g., lichens)
- Established “climax” plant communities – shade tolerant species, mature plant community dominant
- Overstorey trees established beneath an existing canopy
- Variable processes lead to different expressions of old forest (insect, fire return)



Photo Credits Dave Daust, Traci Van Spengen

“Ancient Forests”

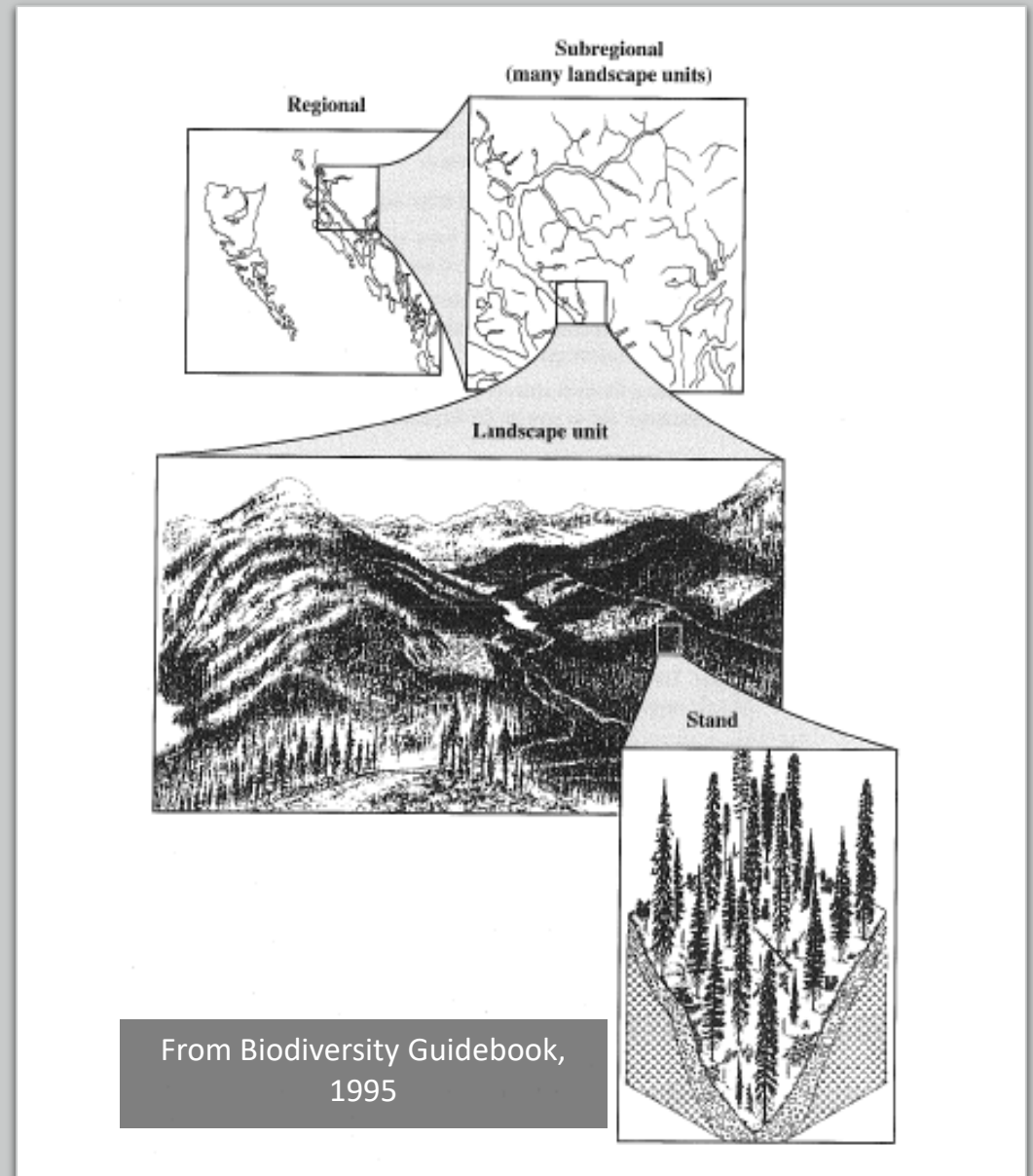
- Very Old Forests (LMH 25, 2010 Structural Stage 7b)
 - > 250 years in NDT3
 - > 400 years in NDT1,2,4
- Antique Forests: are older than the oldest trees in the stand (e.g., Goward and Arsenault 2000)



Photo Credits Deb MacKillop, Traci Van Spengen

Landscape Considerations of Old-Growth Forest

- Patch size
- Interior forest habitat
- Elevational Connectivity
- Slope position (steep, valley bottom, mid-slope benches)
- Ecosystem representation of all ranges
- Default: Capture rare and at-risk ecosystems at stand level



Provincial Management of Old-Growth Forests



Photos: Traci Van Spengen (ICH vk2, SBS wk2)

17 years of Provincial Old-Growth Forest Management : Diverse and Very Different

- Provincial Non-spatial Old Growth Order (2004) is default legislation
- Rescinded and replaced with Regionally or District specific Orders
- These Regional Orders vary in how old forest is managed:
 - (spatial vs non-spatial),
 - legal or not legal,
 - assessment units (Landscape/BEC/NDT or NDU/mBEC's/NRV or combo of both,
 - definition of age,
 - legal target of old growth,
 - Implementation of Orders (e.g. amendment policy)
- Goal: to not impact timber supply – negotiated outcome at every level:
 - Old growth targets (1/3 drawdown)
 - Rules based approach (low productivity stands, non-contributing, co-location with
 - Avoid more than the target of old growth forest (excess)



Complex Provincial Situation

PNOGO Legal Targets

Table 1. Natural Disturbance Type One

Biogeoclimatic Zone	Age of Old Forest	Percent Old Forest Retention in Low Biodiversity Emphasis	Percent Old Forest Retention in Intermediate Biodiversity Emphasis	Percent Old Forest Retention in High Biodiversity Emphasis
CWH ^a	>250yrs	>13	>13	>19
ICH	>250yrs	>13	>13	>19
ESSF	>250yrs	>19	>19	>28
MH	>250yrs	>19	>19	>28

Table 2. Natural Disturbance Type Two

Biogeoclimatic Zone	Age of Old Forest	Percent Old Forest Retention in Low Biodiversity Emphasis	Percent Old Forest Retention in Intermediate Biodiversity Emphasis	Percent Old Forest Retention in High Biodiversity Emphasis
CWH	>250yrs	>9	>9	>13
CDF	>250yrs	>9	>9	>13
ICH	>250yrs	>9	>9	>13
SBS	>250yrs	>9	>9	>13
ESSF	>250yrs	>9	>9	>13
SWB	>250yrs	>9	>9	>13

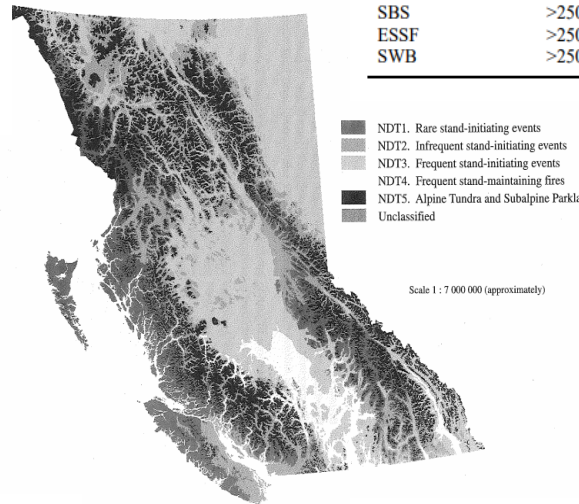


Table 4. Natural Disturbance Type Four

Biogeoclimatic Zone	Age of Old Forest	Percent Old Forest Retention in Low Biodiversity Emphasis	Percent Old Forest Retention in Intermediate Biodiversity Emphasis	Percent Old Forest Retention in High Biodiversity Emphasis
ICH	>250 yrs	>13	>13	>19
IDF	>250 yrs	>13	>13	>19
PP	>250 yrs	>13	>13	>19

Table 3. Natural Disturbance Type Three

Biogeoclimatic Zone	Age of Old Forest	Percent Old Forest Retention in Low Biodiversity Emphasis	Percent Old Forest Retention in Intermediate Biodiversity Emphasis	Percent Old Forest Retention in High Biodiversity Emphasis
BWBS ^b	>100yrs	>13	>13	>19
SBPS	>140yrs	>7	>7	>10
BWBS ^c	>140yrs	>11	>11	>16
SBS	>140yrs	>11	>11	>16
MS	>140yrs	>14	>14	>21
ESSF	>140yrs	>14	>14	>21
ICH	>140yrs	>14	>14	>21
CWH ^d	>140yrs	>11	>11	>16

Spatial OGMA's may not be old...

OGMA:



Not OGMA:



Photos: Deb MacKillop



Go back to the principles of Policy (LUPG and BDG)

Rules Approach BUT let's remember:

- OGMA's are not intended to meet *all* biodiversity values, just those biodiversity values related to ***old growth forests...***

- OGMA's should be delineated to **maximize** their **value** to old-growth **biodiversity conservation**.
- Where sufficient Old forest is not available, **recruitment** areas should be selected to achieve old-growth seral values in the **shortest timeframe**.
- Recommendation to manage for redundancy on the landscape (mature and old growth targets) with non-spatial legal orders
- The goals of the biodiversity strategy are to protect the **“best” old growth**

State of the Knowledge

- What we know
 - Social
 - Ecological
- What are we doing
(Provincially, Regionally)
- Where is the uncertainty
- What needs to be done



Photos: Traci Van Spengen (ICH vk2)

What we know (Social): Old Growth Panel Report September 2020

- Overwhelming response that was not anticipated
- Consistently emerging themes
- Recommendations based on priority
- Priority in Minister Conroy Mandate Letter from the Premier:
 - Implement the recommendation of the Old Growth Strategic Review to protect more old growth.



November 26, 2020

Honourable Katrine Conroy
Minister of Forests, Lands, Natural Resource
Operations and Rural Development
Parliament Buildings
Victoria, British Columbia V8V 1X4

Dear Minister Conroy:

Implement the recommendations of the Old Growth Strategic Review in collaboration with Indigenous leaders, labour, industry, and environmental groups to protect more old-growth stands – in addition to the 353,000 hectares protected in September 2020.

Sincerely,

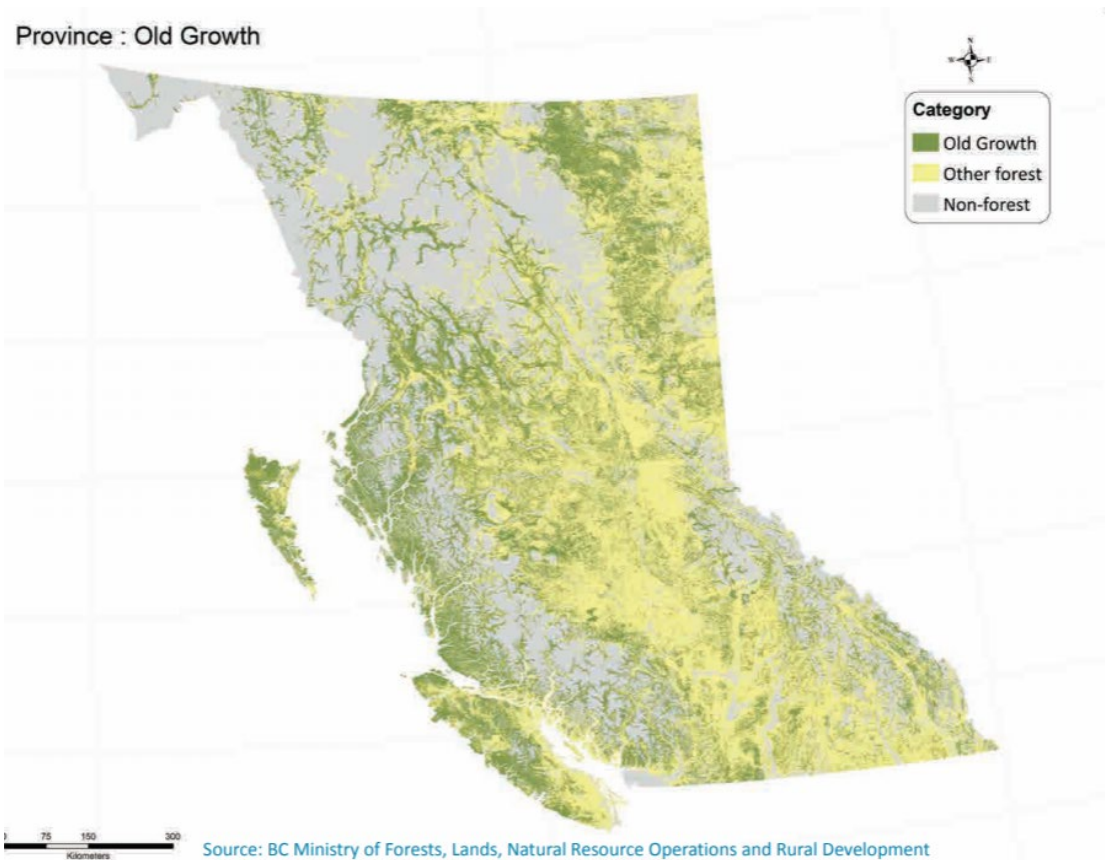
A handwritten signature in blue ink that reads "John J. Horgan".

John Horgan
Premier

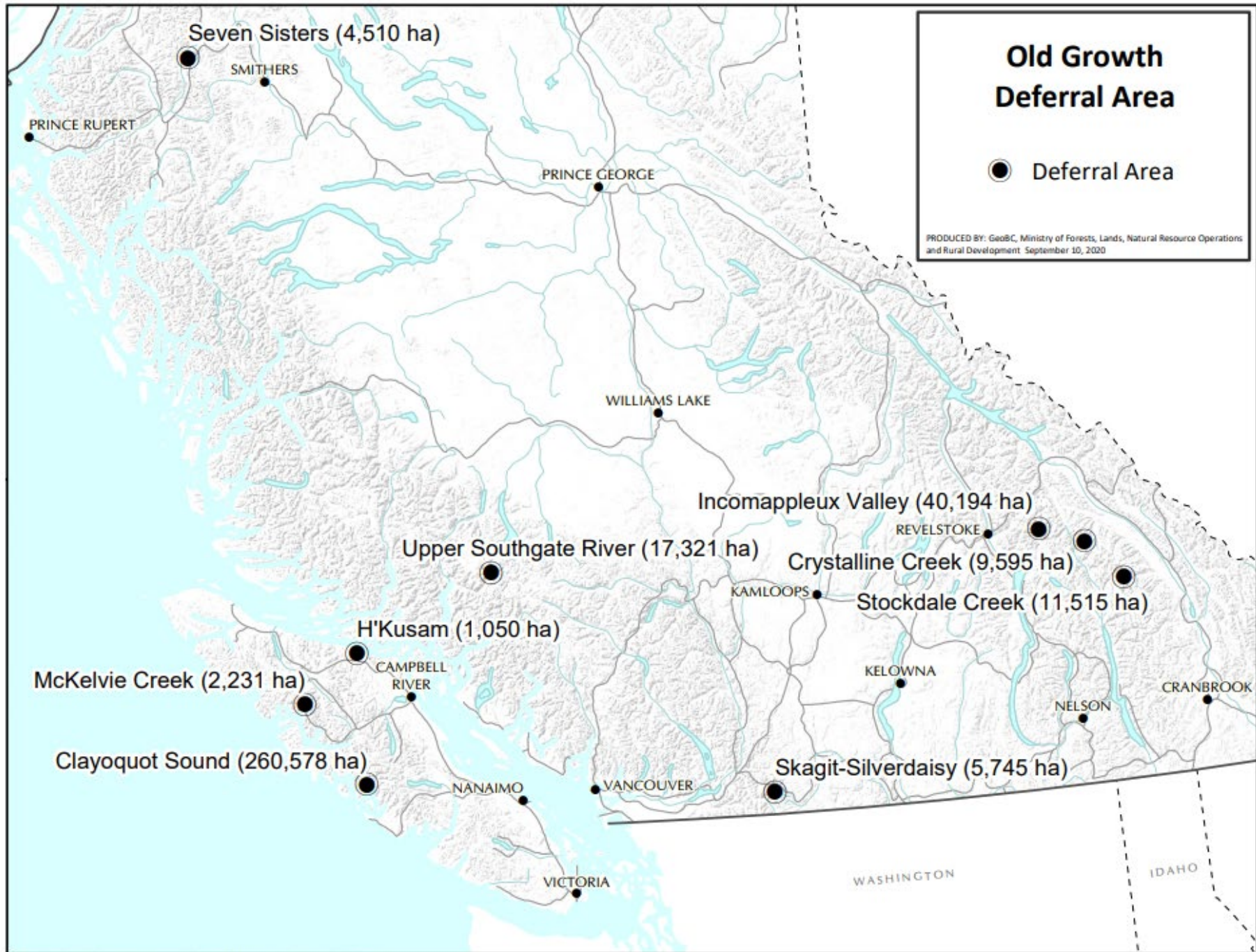


Key Messages

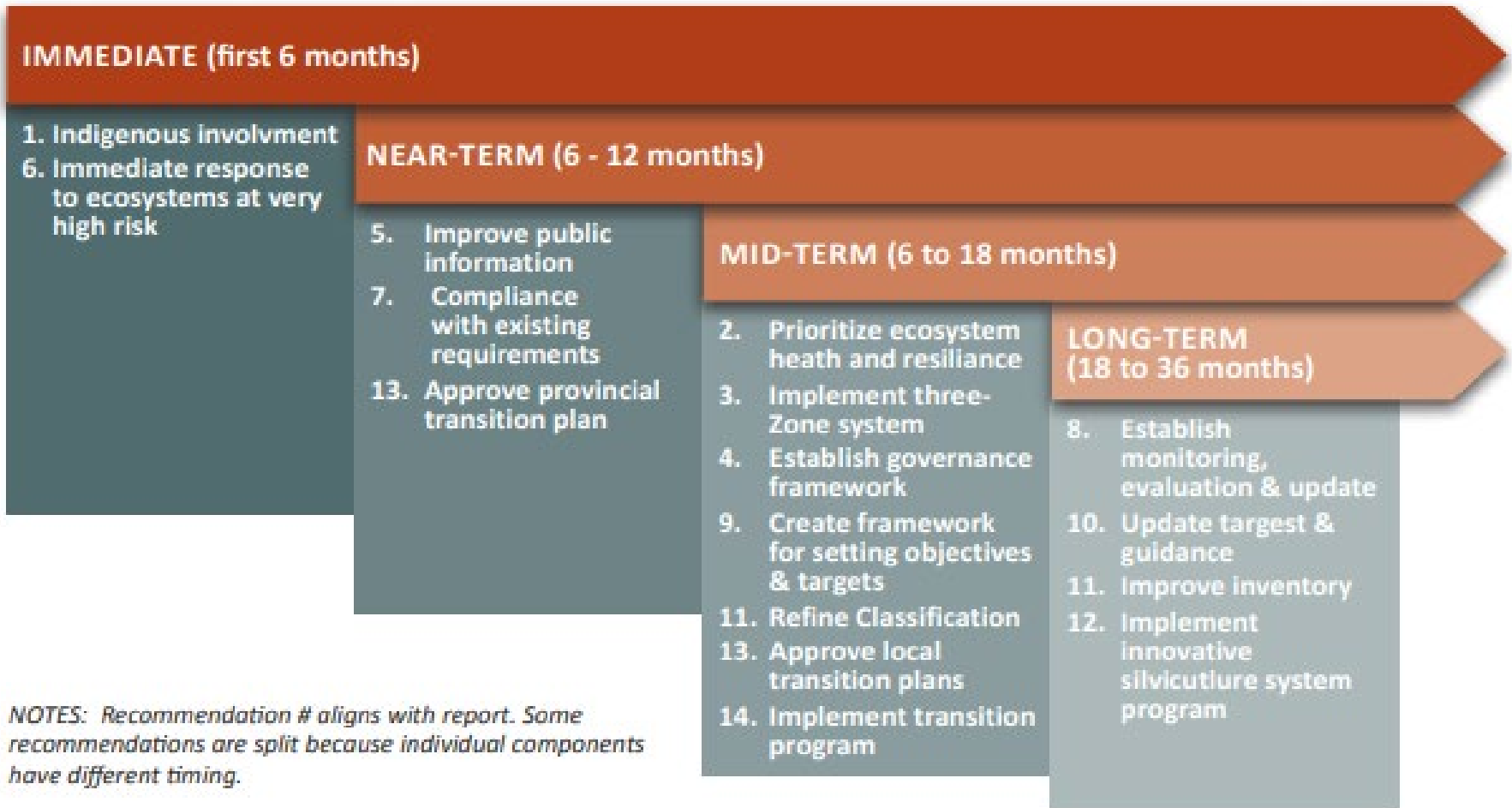
Province : Old Growth



- Asking too much for forests – habitat supply, timber supply, FN, social needs
- Negative effects of forest harvesting- loss of public trust
- Sense of urgency – immediate threats to OG ecosystems and loss of biodiversity
- Forests are well managed – leave to professionals
- No trust in the information provided on OG regardless of the source
- We cannot maintain status quo
- We ignored what was required to be implemented 3 decades ago, (LRMP, LUP, OG Strategy, FPB/AG Reports)



Old Growth Panel Report: Timelines and Bold Action





Forest Practices Board

Management of Biodiversity in the Prince George Timber Supply Area

Complaint Investigation #18042

FPB/IRC/235
December 2020

Investigation Findings for PG TSA:

- Licensees in compliance
- Several concerns with biodiversity management (data, age definition)
- Old Forest Biodiversity is at high risk
- Management of old forest required use of qualified professionals (scope of practise)

Recommendations to Government:

1. Promptly spatialize old growth where the immediate risks to old forest are the greatest
2. Update the Order

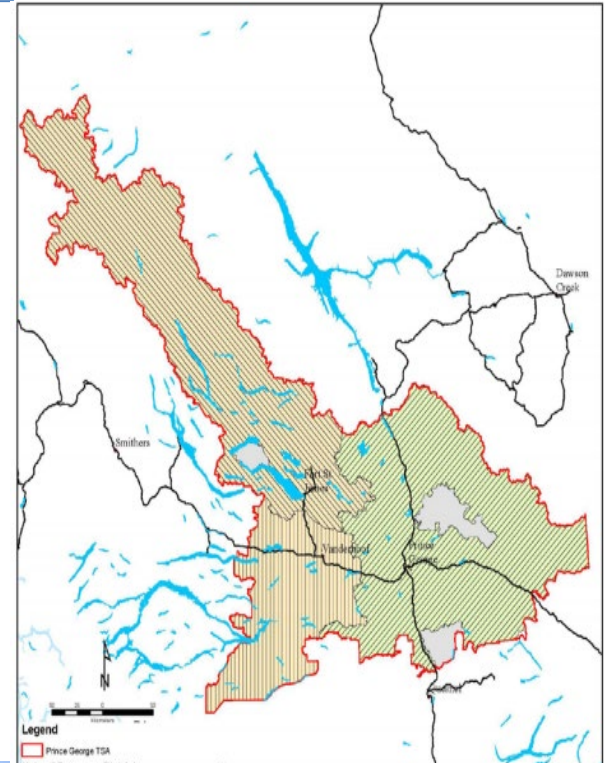


Photo Credit: Dr. Jeannie Roberts

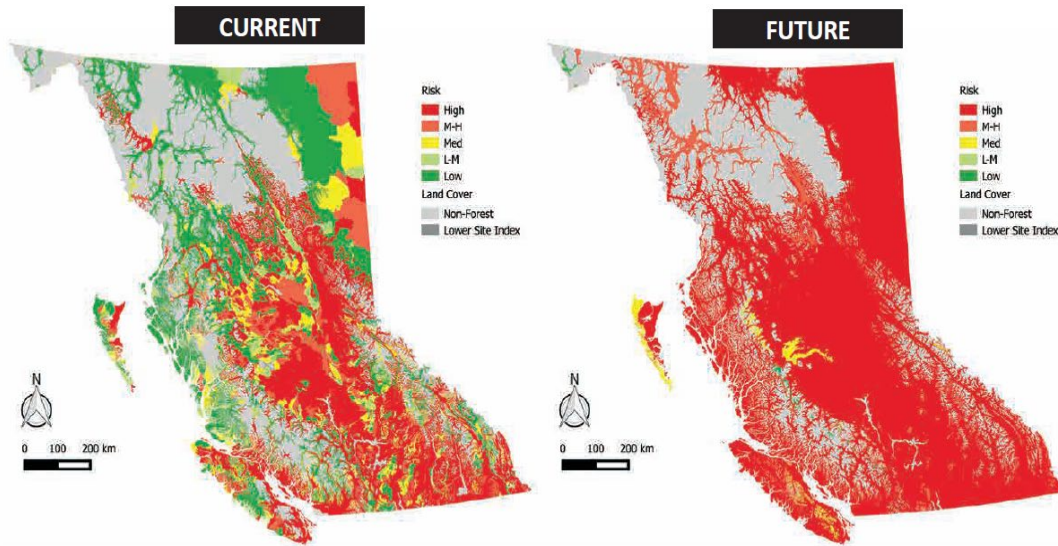


Photo Credit: Traci Van Spengen

Independent
sources
echoing
internal
FLNRO
reporting
and
messaging:
“There is a
problem”

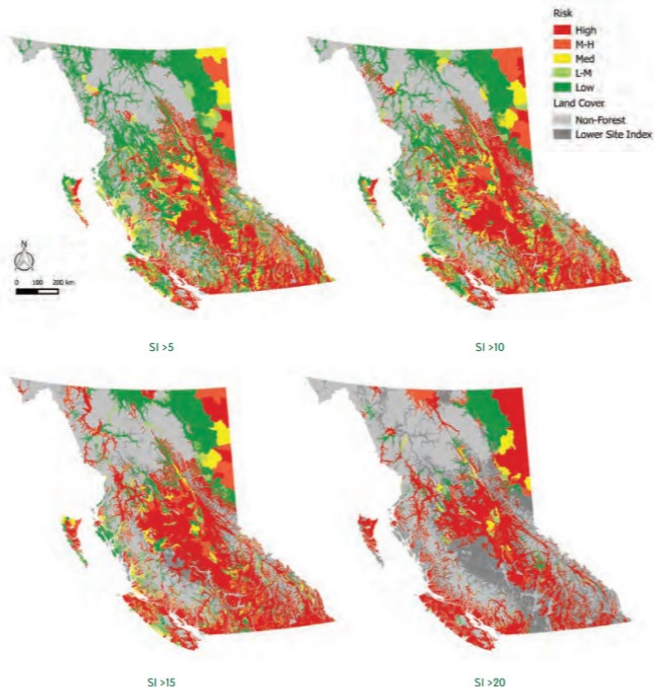
- First Nations expressing deep concern and immediate involvement with future decisions regarding old-growth forest.
- Media attention: Toronto Star, Prince George Citizen, Narwhal, Tyhee, Weather Network
- Criticism and questions from ENGOs: a stakeholder voice that has not been present or silent in the Province since 1990's
- Evidence of Cumulative Impacts (e.g. Anzac River) from concentrated industrial development (pipeline, forest harvesting, road development)
- Increase of FOI requests in FLNRORD
- Numerous peer reviewed publications stating importance of old growth forest providing refugia and resilience in mitigating impacts from climate change.
- Recommended Old Growth Deferrals : continuation of Price et. al work

What we know: Ecologically



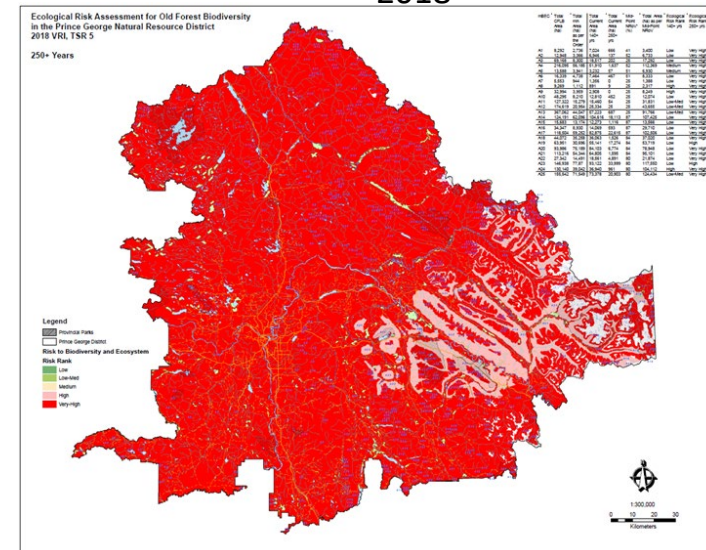
“More troubling is the future projection where almost all of the province will be at high risk once our current management approach harvests all available old forest . This is consistent with what we heard from several provincial staff (OGSR, 2020)

Source: Price, K., R.F. Holt and D. Daust. 2020. BC's Old Growth Forest: A Last Stand for Biodiversity



“About 400,000 ha of remaining old growth forest have Site Index >20m (representing 1% of BC total forest of 50million ha)”(Price et al. 2020, 2021)

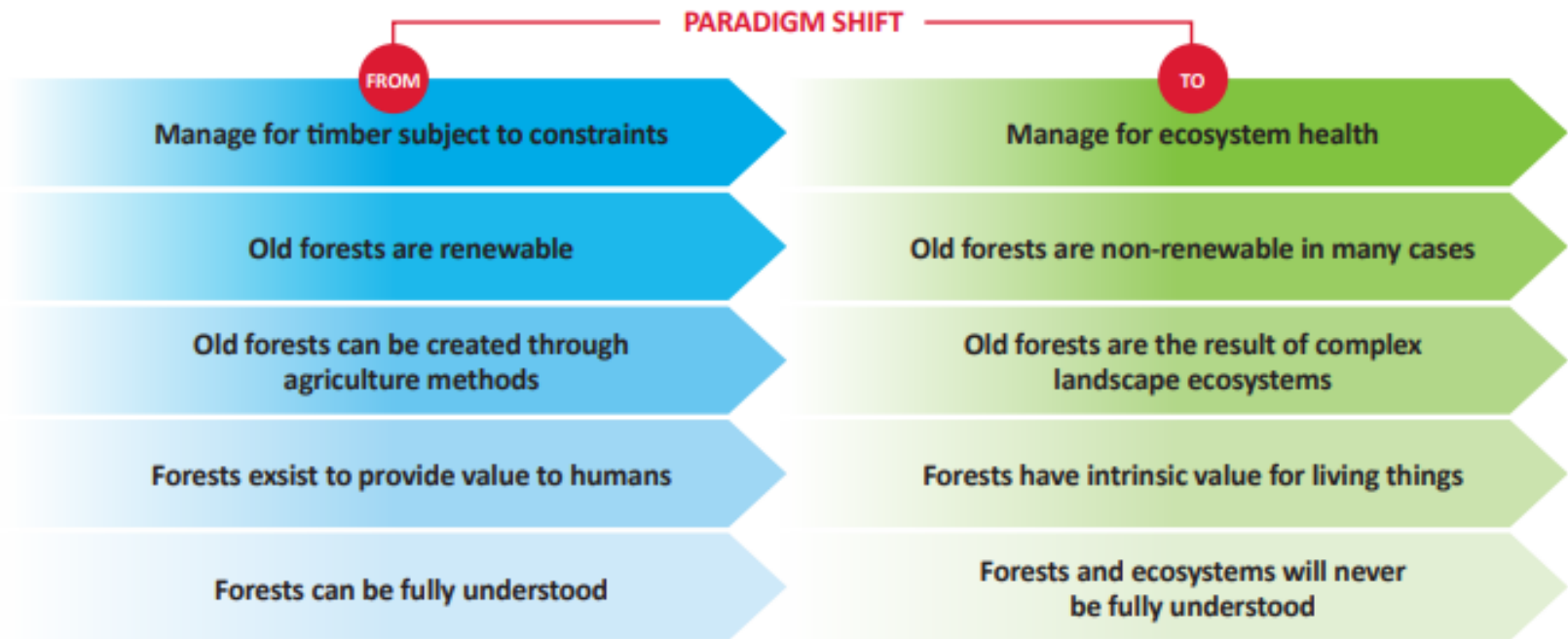
FLNRO: PG NRD Ecological Risk Assessment, 2018



Uncertainty

- Paradigm Shift
- Observed Trends
- Perception and Expectations
- Voluntary compliance

Paradigm Shift

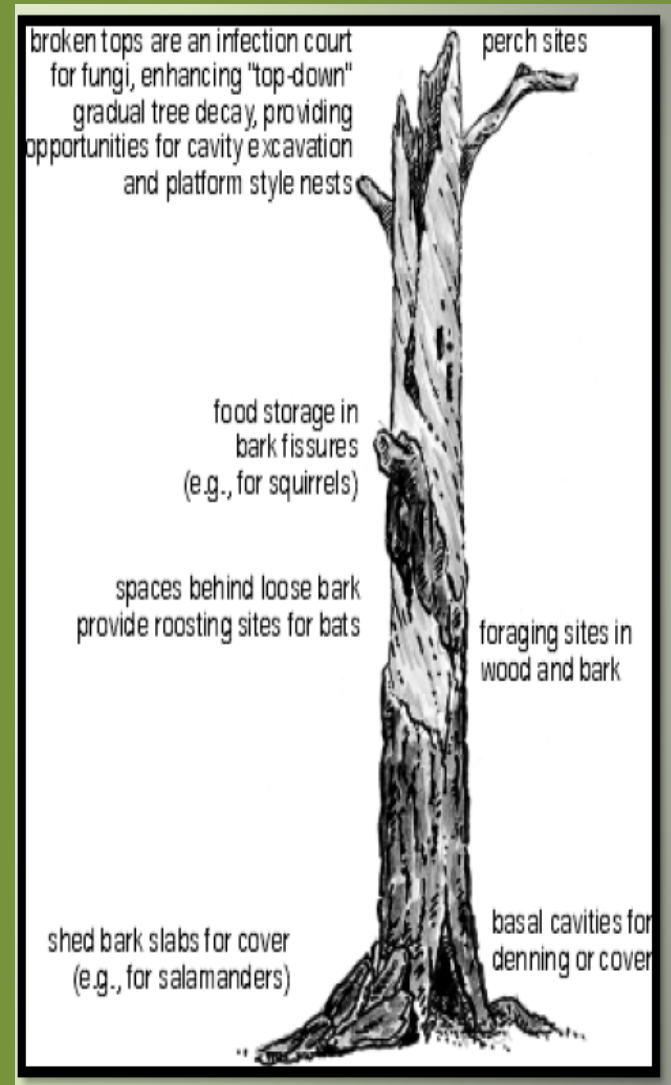


Observed Trends

- Intent of Provincial Old Growth Order meant well based on the political influence of the day
 - Implementation of Orders has eroded intent
 - No redundancy in system to account for disturbance (human and natural)
 - FN involvement
- Antiquated legislation, policy and government/industry spin to accommodate today's challenges
- Absence of data standards and methods for biodiversity (CFLB, VRI vintage)
- Old Growth deficits set a precedence:
 - Thresholds reached → recruitment strategies approved to enable liquidation of old growth
- Aspatial monitoring of old growth forest provides operational flexibility and reporting of surpluses, BUT one cutblock away from deficit
- Effectiveness of remaining old growth forests: ecological extremes, isolated, small, fragmented patches
- Operational reality vs harvest flow modelling with AAC
- Legislative changes appear to be stalled
- Can a very traditional and industry proud of its history adapt? Can communities adapt? Can professional Adapt?

Perception and Expectations

- Forest Health: contradiction and competing objectives for old growth forest:
 - insects and pathogens play an important ecological function
 - Impacted timber does not necessarily represent a degradation in ecosystem value or function. It provides recruitment of critical structure
- Old Growth Forest is a fire hazard and targeted for risk reduction (Abbott and Chapman Report, 2017)
- Continuous supply for harvesting—look at all the green trees
- Modernised Land Use Planning will address concerns in a timely manner



WP50, Keisker, 2000

Voluntary Compliance

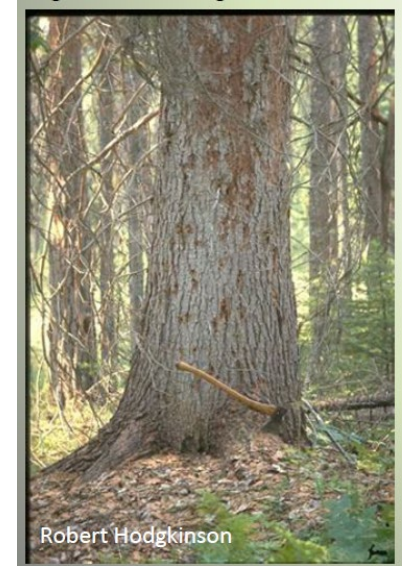
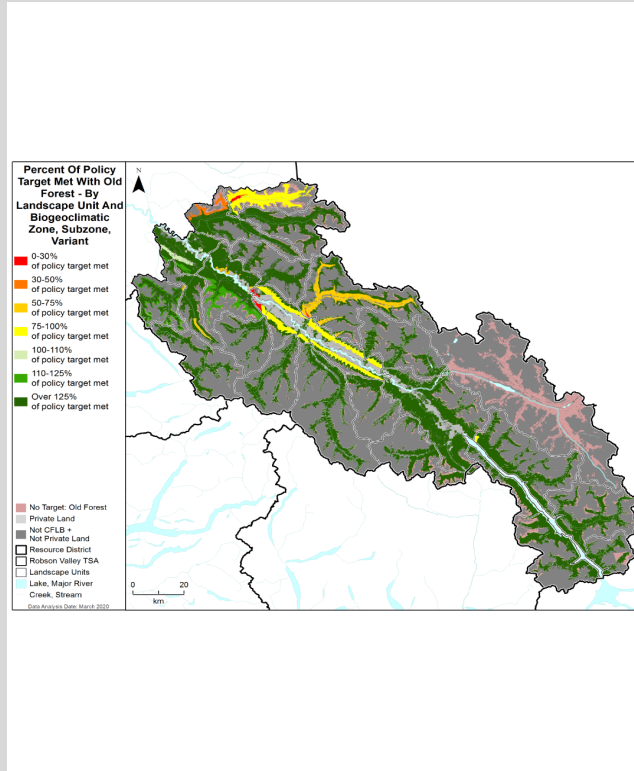
Rely on Professional Reliance
to adhere to non-legal
guidance, BMP, advice,
temporary measures



Use of Qualified
Professionals in ecological
rational for old-growth
forests

Work is being done

- Provincial Current Condition Reporting for Old Growth Forests and Biodiversity
- Development of Provincial Guidance for defining old growth and ancient forest in the field
- Provincial OGWG
- G2G partnerships to address risks to biodiversity and old growth forests
- Response to Forest Practices Board
- Spruce Beetle Ecosystem Monitoring (Bruce Rogers, Omieca Regional Ecologist)



OLD GROWTH VISUAL STAND ASSESSMENT FIELD FORM										Date	Surveyor
Region/District		Project ID		Observation No.		Lat		Lon			
General Location(Landform/Landscape Context Notes)											
Iteration	Slope	Aspect	Meso/Micro-slope Pos.		Successional Status	Structural Stage	Average Stand Age	Total % Tree Mortality from 1 st Disturbance	Leading Tree Species		
RSMR Type Code	Soil Disturbance Present					Substrate Present		Old Growth Structure and Composition			
	C	E	F	G	S	Stagnant water	Shaded	Wetland	Observation of Perturbations/Disturbance Indicators		
Abundance of Old Growth Habitat Structure Characteristics											
N. Compositional Classes (80% of Old Tree Vets Trees Grouped by Species)											
Fragrance/odor or Continuity of Ecological Continuity (Frug. Contin.)											
Abund. of large size CWD in Early/Late Decay Class (N. F. C. M)											
Abund. of Large Logs in Early/Late Decay Class (N. F. C. M)											
Slag (0.20 cm diam)											
Slag (0.20 cm diam)											
Animal sign/light rags (Strong, browsing, soil, covering, nesting)											
Habitational Capacity/Comments: To what extent does the surveyed area meet the ecological structure and function of an old growth forest stand? (growth/mortality/level)											
Ranking											

Current-Condition-Report-for-Old-Growth-Forest-in-the-Robson-Valley-Timber-Supply-Area---2019-Analysis

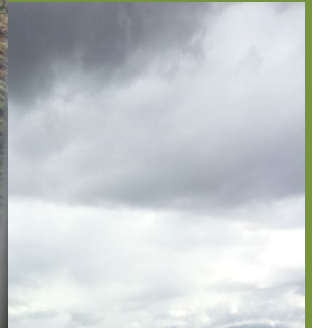
What is needed: Sense of Urgency

- Change harvesting practises and behavior for:
 - Ecological Resilience
 - Critical Habitat
 - Mid and Long Term Timber Supply

Opportunities Exist:

- Improve Quality and Design of WLTR, Riparian (not all co-located in an external reserve)
- Leave More Natural Residual Structure (mid-term timber supply)
- Partial Harvesting Methods – we have to do more than clear cutting with “habitat quotas”

- Legislation Change
- Continuance of social voice demanding changes



Concluding Thoughts

State of the Knowledge

-Science is clear
-Social voices are clear
-First Nations are clear
-Industry is clear

+

-Uncertainty
-Perceptions
-Paradigms for Old
Growth Biodiversity
and Timber Supply

=

Decision:
Trade-off?
Sustainable?
Balanced?
Timely?



Thank you

Traci Van Spengen P.Ag

**Omineca Regional Specialist,
Old Growth and Biodiversity
and Provincial CE Old Growth
Values Lead**

Traci.Vanspengen@gov.bc.ca

Traci's Fun Facts

Our Own Paradigm Shift: Old is more than an “old tree or small fragmented/isolated polygon”

Old Forest is a non-renewable resource and at risk

Old forest is habitat value not a timber supply constraint

VRI is suitable until something better

Young natural vs managed natural is very different. These legacies matter (lifeboat, refugia)

Forest Health: Disease and pathogens create the complex structure for OG habitat

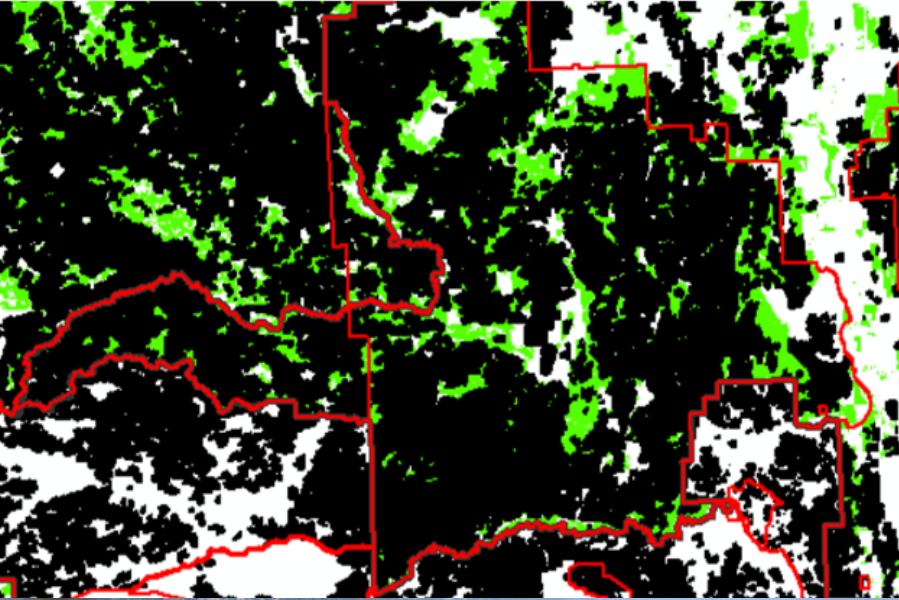
Need to consider the “suite of biodiversity” vs isolated value

Last Opportunity: Urgency and “No easy decisions left to be made”

It is a collective problem: we all have a role

Functionally Effective?

Fragmented, small, isolated

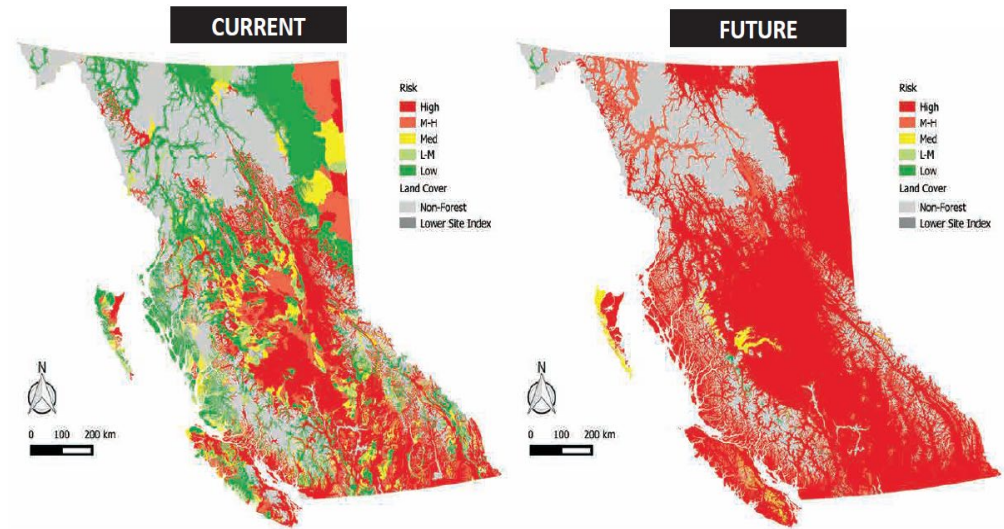


Large, intact, interior Forest



Ecological Risk

- >70% of old growth forest remaining = risk of species loss , ecosystem services being compromised, and resilience loss is low
- <30% of old growth forest the risk is high = threshold crossed ability to recover is jeopardized
- 30-70% is the area of uncertainty based on ecological variability BUT opportunities to redirect the trend.



Source: Price, K., R.F. Holt and D. Daust. 2020. BC's Old Growth Forest: A Last Stand for Biodiversity

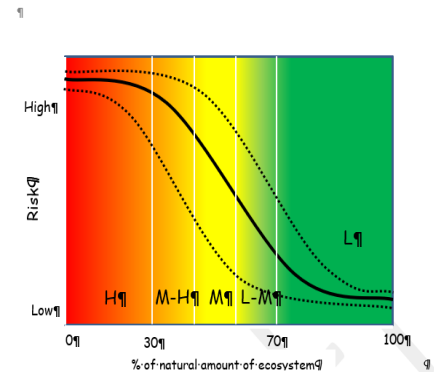


Figure 6. Risk-to-ecological function, biodiversity and resilience based on the amount of an ecosystem remaining relative to natural amounts. Colours show risk classes used on subsequent maps.



FORESTRY AND SUSTAINABLE RESOURCES MANAGEMENT

INSTITUTIONAL REPORT

BRITISH COLUMBIA COUNCIL on ADMISSIONS AND TRANSFERS (BCCAT)

JUNE 1,2 2021

SELKIRK COLLEGE, CASTLEGAR

CAROL ANDREWS candrews@selkirk.ca

1. Institutional Update

General

- Selkirk College is home to 60-plus nationally recognized programs serving more than 2,800 full-time learners per year in certificate, diploma, bachelor degree, co-operative education and continuing education programs. Our student to faculty ratio is 15:1. With eight campus locations in six different West Kootenay and Boundary communities, Selkirk College offers outcomes for in-demand employment, credit transfer to a multitude of universities for degree completion and enhanced training to further career opportunities.
- Selkirk College is also home to the Regional Innovation Chair in Rural Economic Development, the Selkirk Geospatial Research Centre, Applied Research & Innovation Centre and the Mir Centre for Peace. Selkirk College offers unique educational pathways that immerse learners in relevant outcomes.
- The School of Environment and Geomatics (SEG) is home to three nationally accredited programs: Forestry Technology, Recreation Fish & Wildlife Technology, and Integrated Environmental Planning Technology. The School also delivers an Advanced Diploma (ADGIS) and a Bachelor Degree (BGIS) in Geographic Information Systems, and now an online Geomatics Certificate.
- SEG is home to the Selkirk Geospatial Research Centre (SGRC). Founded through an Institutional Canada Foundation for Innovation (CFI) grant, the SGRC is a leading-edge research centre specializing in geospatial technologies aimed at solving critical issues pertaining to environmental and socio-economic problems. Both faculty and students carry out the research in this facility.
- SEG strives to provide the most comprehensive and flexible mix of environmental science training in Canada. Students complete a common first year curriculum that leads to all three

technical diploma specializations in second year. Following this, students have a choice of pursuing advanced training in GIS.

- **Budgets/Facilities**

- Like most post-secondary institutions, Selkirk College did an excellent job of adjusting to the constantly changing Covid protocols, And like many of the smaller institutions in the province, we are now carrying a substantial debt, due in large part to the heavy reliance on International student tuition, and a dramatic reduction of domestic students attending the College.
- There has been little in the way of upgrading of facilities and plans for new residences and upgraded classrooms has been put on temporary hold.

- **Students/Enrollment**

Program	Fall 2015	Fall 2016	Fall 2017	Fall 2018	Fall 2019	Fall 2020	Fall 2021
GIS year 3	18	21	17	24	17	22	23
ADGIS	14	19	15	16	8	17	17
Accepted	11	17	14	15	8	17	14
Conditionally accepted	3	2	1	1			3
BGIS 3	4	2	2	8	9	5	6
Accepted	3	2	2	4	9	4	3
Conditionally accepted	1			4		1	3
FOR	29	36	44	45	32	28	43
Accepted	17	18	23	16	32	23	23
Conditionally accepted	12	10	6	14		5	8
Waitlist - Accepted		8	15	15			12
IEP	17	19	26	20	17	18	23
Accepted	13	13	17	14	16	15	10
Conditionally accepted	4	4	5	6	1	3	10
Waitlist - Accepted		2	4				3
RFW	26	33	31	39	36	30	47
Accepted	20	18	21	16	33	23	22
Conditionally accepted	6	8	7	9		7	8
Waitlist - Accepted		7	3	14	3		17
Grand Total	94	111	120	136	111	103	142

- **Staffing**
 - a. There have been several staffing changes in the School of Environment and Geomatics in the past year: Tim Thurston and Lui Marinelli, both long time RFW instructors have retired. Jen Pasco, our Equipment Room attendant is on an extended leave, and Brendan Wilson, who held the position of SEG Chair for the past 9 years, is stepping down. Rena Vandembos will be our new Chair (first female Chair in our School's history). Rena has been at the College for many years and has taught our fishery courses and more recently, GIS.
 - b. Two of the four main Forestry instructors will be retiring next year; Jesper Nielsen and Carol Andrews.
 - c. A few new (younger) instructors have come on board: Mandy Flanagan RFT, is teaching part time in the Forestry Program. Audrey Ehman is our Botany instructor in first year.
 - d. Angus Graeme, President of Selkirk College, has announced that he will be retiring in 2022. The search for a new President is underway.

- **Instruction/Open Education Resources**
 - a. The Fall semester had its challenges but most instructors simply took instruction outside. The Forestry Faculty created a plan that saw more sections with fewer people in each. Each section met at the lab site, where a "tailgate" lecture (lawn chairs and laptops) preceded the scheduled lab. The plus side to the plan was that the student to instructor ratio was about 7:1 and so more time with each student in the field was appreciated by everyone. The down side was that students had fewer opportunities to get to know classmates in other sections, and many of our scheduled field trips had to be canceled.

2. Program/Course Update

- Curriculum Developments: The Forestry Technology program is interested in continuing the increased time learning in an outdoor setting. Instructors will still schedule classroom times when needed but moving to more field based learning is a priority.
- Transfer Credit Applications or Alterations
 - i. Please see attached table.
- Issues: We will be looking to recruit new Forestry instructors in the very near future.
- Research/Projects: Selkirk College's Applied Research & Innovation Centre (ARIC) is in its 3rd year of a [Natural Science & Engineering Research Council of Canada](#) (NSERC). One of only 10 post-secondary institutions across Canada to receive an Innovation Enhancement Grant, the funding will support research designed to advance the region's Forestry sector. Several SEG instructors, including Forestry faculty, are working with researchers in various capacities.

3. Other Items of Interest :

- a. Selkirk College is the licensee for Woodlot 400. The College also owns 275 hectares of land between Castlegar and Nelson; the Skattebo Education Forest. The main Castlegar campus sits at the confluence of the Columbia and Kootenay Rivers, on 75 hectares of land, that is home to trails, wildlife, forests, and grasslands. Our students have easy access to various lab sites, which makes for an authentic experiential education.

ATTACHMENT;

SELKIRK COLLEGE/SCHOOL OF ENVIRONMENT AND GEOMATICS; CURRENT TRANSFER AGREEMENTS

Receiving institution	Program	Total Program Length	Credit for SEG Diploma	Notes
BCIT, Vancouver, B.C.	Bachelor of Science in Ecological Restoration	4 years	Block Transfer of 2 years. Graduates enter third year	Recent CAB ¹ approved
Griffiths University, Brisbane, Australia	Various	3-4 years	1 to 1.5 years agreement recently updated	No recent transfers, CAB status unknown
Royal Roads University, Victoria, B.C.	Bachelor of Environmental Science (post diploma)	4 years	Block Transfer 1.5 years. FOR need 2 chem and calculus courses	quick route to BSc, but Not CAB approved
Selkirk College	Advanced Diploma in GIS	12 months/ 2 years	Meet entrance requirements	Route to FOR planning work
Selkirk College	Bachelor of GIS	4 years	2 years	Commonly taken, CAB pending, RPF through the AFIT process possible
Selkirk College	IEP or RFW Diploma	2 years	1 year	
Selkirk College	Geomatics in the workplace online certificate	6 months part time	Required prerequisite	Drone and LiDAR data management
University of Idaho, USA	Bachelor of Science in Forest Resources	4 years	Up to 1.5 years. Students have received up to 60 credits of 128 depending on GPA	No recent transfers route for RPF ² Will have to pay international fees
Lakehead University, Thunder Bay, ON.	Bachelor of Science in Forestry	4 years	2 years, they appear to cater to college transfers	No recent transfers, but new rules. Certified by CFAB ³ , so eligible to gain RPF in BC
Thompson Rivers University, Kamloops, BC	Bachelor of Natural Resource Science	4 years	Informal, 2 years, but depends on schedule, and high school prereqs	CAB approved, but UNBC a better route for RPF

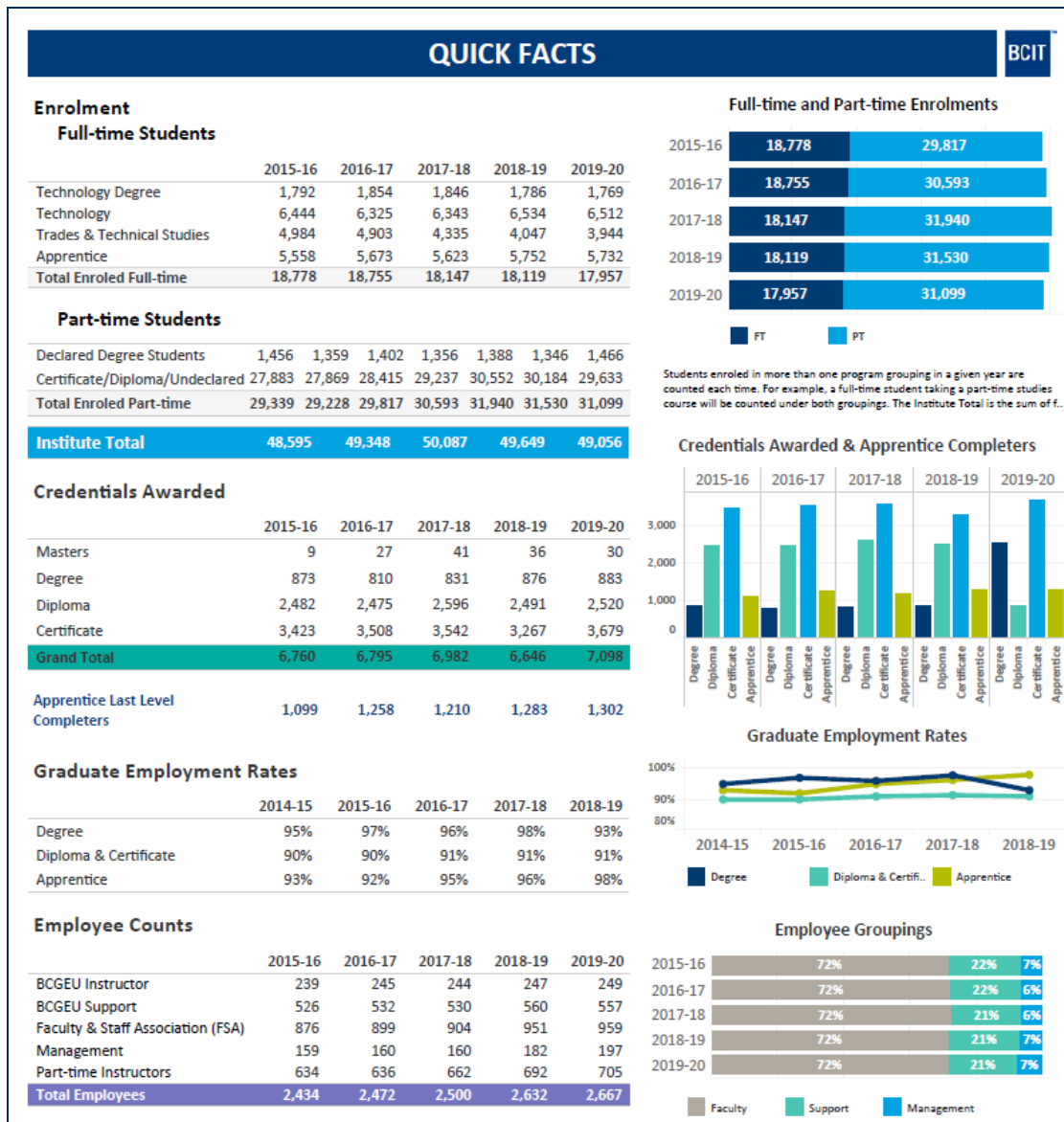
Receiving institution	Program	Total Program Length	Credit for SEG Diploma	Notes
University of Northern B.C. Prince George, B.C.	Bachelor of Science: (Natural Resource Management) Major in Forestry	4 years	Transfer agreement 1 to 1.5 years, largely due to scheduling issues, but recently renewed agreement may help	route for RPF
University of British Columbia, Vancouver	Bachelor of Science in Forestry - Forest Operations Major	4 years	Up to 2 years. New discussions indicate up to 60 credits depending on GPA. May need to present prerequisites from high school.	Recent transfers Route to RPF
University of Alberta, Edmonton	Bachelor of Science in Forestry or Forest Business Management	4 years	Up to 1.5 years. Students have received up to 50 credits of 128 depending on GPA	No recent transfers

BCIT June 2021

Forest and Natural Areas Management (FNAM) Program

Annual Report to the Forestry and Sustainable Resources Management Articulation Committee

- 1. Introductory Overview
 - 1.1. Institutional Snapshot



1.2. Program offerings overview

The Forest and Natural Areas Management (FNAM) program is housed within the School of Construction and the Environment (SOCE). We are one program within the Renewable Resources Department. This department consists of the following programs:

- Ecological Restoration (Master of Science) (joint with SFU)
- Ecological Restoration (Bachelor of Science)
- Fish, Wildlife and Recreation (Diploma)
- Forest and Natural Areas Management (Diploma)
- Renewable Resources part-time studies courses
 - Micro-credential in partnership with VIU
 - Essentials of Natural Resource and Environmental Protection (MENREP)
 - Several Forestry PTS courses are currently underdevelopment and / or have been delivered in the past few months

2. Enrollment/Graduation Summary Table for 2020/21 Academic Year

Technical Programs

Institution: BCIT		Academic Year		
Program Name:		2019/20	2020/21	2021/22 projected
RFT registerable	Capacity 1st year	34	34	34
	Capacity 2nd year	34	34	34
	Applicants (as of this report date)	81 Full and closed as of Feb 22nd	79 Full and Closed as of June 12th 2020	73 Full and closed as of March 5th 2021
	<i>1st year enrollments</i>			
	full time	34	34	35
	part time	1		
	<i>2nd year enrollments</i>			
	full time	30	30	32
	part time	1	2	2
	Graduates	31	30	34

3. Program Activities

3.1. Program Highlights

- 3.1.1. The Associate Dean portfolio that included out program was split into two positions and a new AD was hired, Bret Favaro, who started in mid-2020.
- 3.1.2. After spring break, March 2020, we had two days to switch our classes to fully online delivery for the rest of that term
- 3.1.3. Starting in May of 2020, the department led by Helene, spent many hours on developing safety plans for the fall. Many iterations / safety plan templates were used.

- 3.1.4. Starting in September 2020, we were able to deliver our program in a hybrid model, using Zoom and lots of field work with COVID safety protocols in place.
 - 3.1.5. We did have several students who had to isolate due to COVID exposure or a positive test, due to external exposure via family members or friends.
 - 3.2. Significant Curricular Changes – No changes anticipated but we are in the early stages of a BCIT program review as per BCIT policy.
 - 3.3. Faculty Changes
 - 3.3.1. Rick Chester and Jace Standish retired after decades of teaching in the program. Stacey Auld recently announced her resignation as she leaves for a fantastic opportunity in Winnipeg.
 - 4. Accreditation
 - 4.1. Since our last meeting, the FNAM program received CTAB accreditation in March 2020.
 - 5. International Education/Exchanges
 - 5.1. As in past years, the FNAM program has 4 dedicated seats for international students. Due to COVID we did not have any international students enter the program in September 2020. Program has accepted 4 international students for this coming year. TBD if entry is allowed.
 - 6. Students
 - 6.1. Recruiting
 - 6.1.1. Other than the occasional institute Big Info sessions, we have not done any recruiting sessions for a few years, as the demand for the program exceeds our capacity. Word of mouth from past grads and industry is a big driver for demand.
 - 6.2. Student Placement
 - 6.2.1. As in past years, recruitment has been strong particularly in the traditional industry areas. The major companies, consultants and government all ask to come in earlier and earlier to promote and recruit.



2021

BC's Aboriginal Public Post-Secondary Institute

Nicola Valley Institute of Technology



Environmental Resources Technology Program Guide

Contents

Environmental Resources Technology Program.....	3
Program Delivery Location	3
Department Head	3
Faculty.....	3
Programs.....	3
Career Opportunities:	3
Accreditations.....	4
Canadian Technology Accreditation Board.....	4
Association of BC Forest Professionals – Registered Forest Technologist (R.F.T.)	4
College of Applied Biology – Registered Biology Technologist (R.B. Tech.).....	4
Technical Agrologist (T. Ag.) – BC Institute of Agrologists	4
Program Admission Requirements	4
Course and Program Transferability.....	5
Environmental Resources Technician Certificate	5
Certificate Completion Plan	5
Environmental Resources Technology Diploma	6
Diploma Completion Plan	6
Course Descriptions – Certificate	7
Course Descriptions – Diploma.....	10

Environmental Resources Technology Program

Program Delivery Location

Merritt

Department Head

Tom Willms

Faculty

Full Time

Ellen Simmons
Darrell Eustache
Tom Willms

Part Time

Shawn Larson
Tracy Thomas
Don Parno
Richard Chavez
Jennifer Morrison
Harry Spahan

Programs

The Environmental Resources Technician Certificate
The Environmental Resources Technologist Diploma

The Environmental Resources Technology Program (ENRT) will prepare graduates to successfully participate in a broad range of exciting careers within the natural resource sector, such as forestry, fish and wildlife technology, rangeland management and environmental assessment. Students of the ENRT Program will experience the extensive and diverse forests, grasslands and aquatic ecosystems in the Nicola Valley. The program delivery is designed to provide students perspectives in both Indigenous Knowledge and Western science. Graduates of the program will have the knowledge base to prepare them to be employable in many different career paths.

Career Opportunities:

- Band/Tribal Organizations;
- Provincial and Federal Governments;
- Forest, Mining, Oil and Gas, and Renewable Energy sectors;
- Rangeland Management;
- Private Consulting; and
- Non-Government Environmental Organizations.

Accreditations

Canadian Technology Accreditation Board



The ENRT program is a Canadian Technology Accreditation Board nationally accredited program at the technologist level.

National program accreditation involves an independent team of certified professionals performing an extensive audit, which provides graduates and employers confidence that the program meets the educational standards of Canada's engineering technology and applied science professions. Graduating from a nationally accredited program creates an expedited path to becoming a certified professional with provincial certifying bodies in Canada.

Association of BC Forest Professionals – Registered Forest Technologist (R.F.T.)

Students graduating from this program meet the A.B.C.F.P.'s core competency standards for registration in their Trainee Forest Technologist program and can become R.F.T.s.

College of Applied Biology – Registered Biology Technologist (R.B. Tech.)

Students graduating from this program meet the academic standards for entry into the College as a Trainee (R.B.Tech.)

Technical Agrologist (T. Ag.) – BC Institute of Agrologists

Students graduating from this program meet the academic standards for registration as T.Ag.s.

Program Admission Requirements

Grade 12 graduation, or equivalent, including a 'C' grade minimum in:

- Foundations of Math 11 or MATH 057;
- Technical and Professional Communication 12, or English 12, or English 12 First Peoples, or English 060; and
- Biology 11 or Biology 050.

The Department Head may, in exceptional circumstances, admit applicants who are lacking certain program admission requirements, provided they can demonstrate the skills required to succeed in the program.

NVIT is committed to ensuring education is accessible to all people. Students who do not meet program requirements should contact the Department Head or an NVIT Academic Planner regarding upgrading opportunities.

Course and Program Transferability

Individual course transfer information may be found at www.bctransferguide.ca.

For more information, contact Tom Willms, 250-378-3328 or twillms@nvit.bc.ca

Environmental Resources Technician Certificate

The Environmental Resources Technician Certificate is granted after the completion of 54 credits earned in Year One of the program. A minimum 2.00 cumulative GPA is required to earn the Environmental Resources Technician Certificate.

Certificate Completion Plan

Year One, Fall

ENRT 110	Introduction to Natural Resources	3
ENRT 141	Aboriginal People and the Land	5
ENRT 150	Silvics and Dendrology	5
ENRT 155	Soil Science	5
ENRT 160	Field Surveys I	5
MATH 140	Technical Mathematics	3
Total Credits		26

Year One, Spring

COMM 140	Technical Writing	3
COMP 140	Geographic Information Systems	5
ENRT 145	Fire Ecology	5
ENRT 165	Field Surveys II	5
ENRT 170	Principles of Ecology	5
SCIE 140	Ethnoscience	5
Total Credits		28

Environmental Resources Technology Diploma

The Environmental Resources Technology Diploma is earned with the completion of all courses listed under the Diploma Completion Plan. The Environmental Resources Technology Diploma is awarded to those students who successfully complete Year One and Year Two of the Program (111 credits) with an overall GPA of 2.00.

Diploma Competition Plan

Year Two, Fall

COMM 145	Public Relations and Communications	3
ENRT 250	Silviculture	5
ENRT 255	Timber Development I	5
ENRT 260	Forest Surveys	5
ENRT 270	Fisheries Ecology	5
ENRT 271	Grasslands Ecology	5
Total Credits		28

Year Two, Spring

ENRT 240	Environmental Planning	5
ENRT 245	Watershed Hydrology	3
ENRT 257	Timber Development II	5
ENRT 266	Environmental Assessment Surveys	3
ENRT 272	Forest Health	5
ENRT 273	Wildlife Ecology	5
ENRT 298	Capstone Project	3
Total Credits		29

Course Descriptions – Certificate

COMM 140	<p>Technical Writing</p> <p>This course will provide students with the skills necessary to write technical papers as clearly, accurately, and succinctly as possible. Students will learn how to take accurate field notes, to differentiate between primary and secondary source information, and learn how to research and read technical papers. A major component of the course will focus on writing a research and review paper.</p>	3 Credits
COMP 140	<p>Geographic Information Systems</p> <p>In this course, students will develop an understanding of the terms and principles of geographic information systems (GIS). Students will learn to create and enter database structures and reports, as well as apply GIS techniques for such functions as creating views, tables, charts and printing maps. Students will also incorporate the use of global positioning systems data with GIS.</p>	5 Credits
ENRT 110	<p>Introduction to Natural Resources</p> <p>The goal of this course is to provide students with an overview of the natural resources sector as well as current ecology and management issues. It serves as an introductory core course in the Environment Resources Technology Program, but it is tailored for all students with an interest in natural resources. The lectures and field labs in the course provide a general overview of how scientific inquiry and knowledge can be integrated with First Nations, economic and cultural values to provide a basis for understanding the natural resource sector. The subject areas will include: forestry, wildland recreation, wildlife, mining, fisheries, rangeland, hydrology, and First Nations traditional ecological knowledge.</p>	3 Credits
ENRT 141	<p>Aboriginal People and the Land</p> <p>Resource developments that occur throughout BC encompass First Nations Traditional Territories. With landmark cases such as <i>Calder</i>, <i>Sparrow</i> and <i>Delgamuukw</i>, Aboriginal people are asserting their right to be included in decisions made about resource development. Environmental Resource Technologists working within Traditional Territories need to understand that any decisions they may make regarding resource development could infringe on Aboriginal rights and title. This course will explore the history and perspectives of Aboriginal people toward resource development in Canada, the laws governing resource development and their implications to Aboriginal people and the future of resource development in Canada.</p>	5 Credits

ENRT 145	Fire Ecology <p>This course develops students' understanding of fire behaviour as affected by environmental factors such as weather, topography and fuel types. Weather instruments, fire weather and the Canadian Fire Weather Index System are studied in detail to understand fire ecology concepts. Ecological effects of fire on soils, plants and animals will be examined. Prescribed burning techniques, use of water and fire pumps, domestic and industrial firefighting methods are also included. Woods safety is stressed throughout this course. Fire suppression techniques, including use of water, bulldozers, skidders, rotary and fixed wing aircraft, air tankers, chemical retardant and other equipment are topics covered in this course. Initial attack and fire crew organization, detection, communications and pre-suppression methods and concepts are studied. Students completing this course will receive their S100 ticket and will participate in a prescribed burn, if conditions are suitable.</p>	5 Credits
ENRT 150	Silvics and Dendrology <p>This course is a study of the life history and general characteristics of forest trees and stands, with particular reference to locality as a basis for silviculture. Identification and systematic classification of trees and site indicator plants will be emphasized. Plants with traditional values to First Nations will also form an important part of this course.</p>	5 Credits
ENRT 155	Soil Science <p>This course is designed to develop a basic understanding of soil sciences and the effects management practices have on soil as it pertains to water, grassland, wildlife and forest management. Topics covered are landforms and soil formation, physical and chemical properties of soil, descriptions of soil profiles, classification (according to the Canadian System of Soil Classification), bedrock classification and basic principles of soil hydrology.</p>	5 Credits
ENRT 160	Field Surveys I <p>This course is designed to provide students with a basic understanding of how to operate field survey equipment such as a compass, clinometer and distance measuring devices. Students will also learn how to record field data to industry standards and be introduced to various electronic data collectors, such as global positioning systems and tablets. Use of topographic maps and aerial photographs are also included in this course. Basic algebra, geometry and trigonometry will be incorporated into various field and classroom exercises.</p>	5 Credits

ENRT 165	Field Surveys 2 <p>This course is a continuation of Field Surveys I and provides students with a basic understanding of sampling methods used in the management of natural resources. Knowledge and use of methods such as fixed and variable radius plots, line transects and quadrats will be developed, with an emphasis on industry standard note taking procedure and accuracy. This course will also incorporate basic algebra, geometry and trigonometry, as it applies to the use of maps, orthophotos, satellite imagery and aerial photographs. Statistical analysis of data will also be included.</p>	5 Credits
MATH 140	Technical Mathematics <p>This course is designed to introduce students to the principles and practices of mathematics with applications to technologies. Topics include: number systems, algebraic concepts, analytic geometry, function and graphs, trigonometry, and basic statistics. This course will apply mathematical principles, so that they can be used in practical problem solving exercises specific to natural resources management.</p>	3 Credits
SCIE 140	Ethnoscience <p>This course is designed to provide the student with a solid understanding of the importance of a Traditional Use Studies to First Nation communities. The first section of the course will be devoted to understanding what T.U.S. is and how it evolved out of preparing for Treaty Negotiations. Considerable time will be devoted to understanding the theory, principles, tools and organization of Traditional Use Studies, particularly as it applies to British Columbia.</p>	5 Credits
ENRT 170	Principles of Ecology <p>In this course, students will study the relationship between organisms and their environment. Topics covered include perspectives in ecology, evolution and adaptation, the physical environment, the flow of energy and materials within an ecosystem, population ecology, and community ecology. Contemporary issues in ecology will also be explored.</p>	5 Credits

Course Descriptions – Diploma

COMM 145	Public Relations & Communications This course is designed to provide the student with the skills to communicate efficiently and effectively with a variety of audiences. Students will be required to solve public relations problems as individuals or in teams, and will be encouraged to use critical thinking techniques. Case studies incorporating current controversial issues will be used for debate and to develop resolution in ways that demonstrate professionalism and respect for equality and diversity in the workplace.	3 Credits
ENRT 240	Environmental Planning This course will provide students with the background and tools necessary to ensure multiple resource uses on British Columbia's lands are sustainable. Topics include legislation, regulation and policies for various land uses, land tenures, land use management planning, Ecosystem Stewardship, certification, consultation, conflict resolution and negotiation processes. Students will also produce a research paper on a local land-use issue.	5 Credits
ENRT 245	Watershed Hydrology In this course students, will learn the procedures required to understand water-related problems that may exist in a watershed. They will also learn to recognize water-related implications of development in watersheds.	3 Credits
ENRT 250	Silviculture This course will apply the basic tree biology and forest ecology to the growing, harvesting and regeneration of trees. Students will apply their knowledge of soils and ecology to ecological classification, site preparation, stocking surveys and planting operations. Field exercises will include planting and regeneration inspections, site assessments and prescriptions, and ecosystem mapping. This course will also include such topics as silviculture systems, tree seed collection and processing, direct seeding, nursery practices, intensive silviculture (spacing, pruning, fertilization, etc), tree improvement, and ecological impact of forestry practices.	5 Credits
ENRT 255	Timber Development I This course is designed to provide students with knowledge and skills to design timber harvesting plans. Upon successful completion of this course students will be able to recommend timber harvesting systems for both the Coast and Interior of British Columbia. Other concepts covered in this course, as they relate to timber harvesting, will be First Nations values, visual quality objects, sustainable harvest schedules, non-timber forest products, soil stability, operational cost analysis and safe work practices.	5 Credits

ENRT 257	Timber Development II <p>This course is designed to provide students with knowledge and skills to design and field locate natural resource development roads. Students will be instructed on how to collect data, determine location and recommend construction equipment as it pertains to resource development roads. First Nations values related to access to the land, road maintenance and road deactivation will also be topics covered by this course.</p>	5 Credits
ENRT 260	Forest Surveys <p>This course is designed to prepare students to assist and eventually take the lead in timber cruising operations. Timber cruising procedures taught will be as described in the Ministry of Forests, Lands and Natural Resource Operations Cruising Manual and include both interior and coastal procedures.</p>	5 Credits
ENRT 266	Environmental Assessment Surveys <p>Both the provincial and federal governments have requirements where certain resource developments proposals undergo an Environmental Assessment (EA) before they can proceed. This course will introduce students to the process of these EAs. Topics include the players involved in the EA process, legislation and guidelines established by BC and the federal government, steps to conducting an EA, the various tools and methodologies used to gather, analyze and interpret data, and monitoring techniques. Encompassing and integrating the recent reform to the federal EA process and the proposed changes to the provincial EA process as proposed by First Nations and the public will be a core component of this course.</p>	3 Credits
ENRT 270	Fisheries Ecology <p>This course will provide students with the skills and knowledge to carry out such technical skills as classifying streams, sampling fish using various techniques, fish species identification, describing habitat according to the life history of various fish species, and collecting data specific to aquatic surveys. Upon successful completion of this course, students will be able to recommend and apply sustainable management practices as they relate to fisheries resources.</p>	5 Credits
ENRT 271	Grasslands Ecology <p>This course is an introduction to grassland management, concentrating on range concepts and plant communities. The course will include range management, short duration grazing, grazing standards, tenures, planning and livestock management, and economics. The student will complete range unit plans and a business plan for a cow/calf operation. Field trips and a plant collection will play a large role in the education process.</p>	5 Credits

- ENRT 272 Forest Health 5 Credits**
- In this course students will develop a practical working knowledge of living organisms that affect the health of the forest. This course will concentrate on the reasons why the “natural” and sometime “unnatural” presence of insects, fungi, noxious plants and vertebrates can adversely affect our management objectives for the forest. Consideration is given to the beneficial roles played by these organisms in the ecosystem and the ways in which these roles can be upset by human intervention. Emphasis will be placed on getting to know how these functions affect forest ecosystems. Emphasis will also be placed on the recognition of existing and potential forest insect and pathogen issues in the field.
- ENRT 273 Wildlife Ecology 5 Credits**
- This course gives an overview of wildlife species (mammals, birds, reptiles and amphibians) identification and their habitat requirements with special emphasis on maintaining biodiversity, and managing forest habitat for wildlife in the Interior of British Columbia. This course also focuses on population dynamics within wildlife communities, as well as habitat assessment for various wildlife species. In addition to identifying wildlife and assessing habitat, this course will explore issues related to management of BC’s wildlife, human-wildlife conflicts, and the importance of Indigenous Knowledge in wildlife ecology.
- ENRT 298 Capstone Project 3 Credits**
- This course represents the culmination of students’ knowledge and skills in their final semester of the Environmental Resources Technology diploma. The primary outcome of this course is for students to complete a high-quality, professional capstone report (minimum 3000 words in body of report) in a chosen sub-discipline of Environmental Resources Technology. Students will research, plan, implement, report and present on a project of their choosing and at the expected level of a Technologist. Core to this report will be the inclusion of First Nations (FN) Indigenous Knowledge or FN voices as they pertain to the project and/or project outcomes. As part of this course, students will also attend a weekly seminar where they will be able to interact with professionals working in their respective fields.

Nicola Valley Institute of Technology Environmental Resources Technology (ENRT) Program

Forestry and Sustainable Resource Management Articulation Committee Meeting (June 1st and 2nd, 2021)

Program Overview

Our program offers students an Environmental Resources Technology **Certificate** following successful completion of Year 1 (54 credits), and an Environmental Resources Technology **Diploma** following successful completion of Year 2 (57 credits – 111 combined). The structure of the diploma program is designed to meet the core skills required of Forest Technologists, but has been integrated to include essential skills in biological sciences, policy and planning, and Indigenous Knowledge. The faculty of the ENRT program work hard to provide quality educational experiences and content that are relevant to Indigenous learners. Please see that attached Program Guide for more details.

Enrolment

New (Year One) enrolment in the ENRT program was down in 2020/2021 but Year Two enrolment was full. Based on the number of applications we are receiving, enrolment in Year One is expected to return to capacity for the fall 2021 semester. Remote deliveries of our program through our Community Education Dept. declined this year due to constraints imposed by COVID-19, but some of our courses were taught remotely in communities using online resources.

On-Campus Enrolment						Diplomas and Certificates Awarded in 2021	
This Year			Last Year				
Year 1	Year 2	Total	Year 1	Year 2	Total	Certificates	Diplomas
14	24	38	28	15	43	9	19

Program Changes

As part of our 2019 National Accreditation review through the Canadian Technology Accreditation Board (CTAB), we added one new course to the program. Students in their final semester are now required to take a Capstone Course (3 credits). The course was designed to more formally address the technology report requirements of National Accreditation. Program and course updates are also expected prior to our accreditation renewal (2022).

COVID-19 Response

COVID-19 created challenges for teaching and learning during the 2020/21 academic year, especially in applied programs like ours. Fortunately, due to the size of our Institution and the safety protocols that were put in place, we were able to start the academic year with the option for students to attend in

person. Hybrid learning, with some students attending classes online (via MS Teams) and some students attending in person, was able to continue into November of 2020 until provincial restrictions required us to move to online only for the remainder of the academic year. Prior to moving to online only, we were able to run local outdoor field labs in small groups with social distancing.

During summer semester (2020), NVIT's Leadership Team decided to run a *Teaching Strategies for e-learning* course for its faculty. The course was well-attended and allowed faculty to collaborate in building their online/hybrid courses for the fall. Primary themes included use of learning management systems (e.g. Moodle) and online classroom environments (e.g. MS Teams).

Program Highlights

Some ENRT highlights from this year include the following:

- Cultural/prescribed burn with the Nooaitch First Nation;
- Ethnobotany presentation with Dr. Nancy Turner;
- Student online short-film event (ecology theme);
- Presentation from Karilyn Alex with the Okanagan Nation Alliance on Biocultural Restoration; and
- Launch of co-op program for ENRT.

Current Program Faculty

Please see the attached, updated program guide.

Accreditation

The program received National Accreditation through CTAB in 2019 (Renewable Resources Technology – Forestry Specialization). Our accreditation expires in December of 2022 and we are in the process of re-accrediting with Technology Accreditation Canada following their amalgamation with CTAB.

The program has also received accreditation with a couple of the professional associations: namely, the College of Applied Biology (R.B.Tech. category) and the BC Institute of Agrologists (Technical Agrologist category).

Student Employment

ENRT graduates continue to have high job placement. All first year students had relevant summer employment secured prior to the end of the spring semester, and diploma graduates were typically moving to fulltime positions with their previous employers. NVIT receives regular requests from employers looking for qualified Aboriginal technologists.

Closure

This report was intended to provide a general update regarding NVIT's ENRT program. If you have any questions, please feel free to contact me directly at (250) 378-3328 or by email at twillms@nvit.ca . Feedback regarding our program is always appreciated!

Sincerely,



Tom Willms, Instructor / ENRT Dept. Head



KAMLOOPS, BC



Forestry & Sustainable Resource Management Articulation Committee Meeting (virtual)

June 1 & 2, 2021

Department of Natural Resource Sciences & M.Sc. Report by Dr. John Karakatsoulis & Dr. Tom Pypker

Department of Natural Resource Sciences
(<http://www.tru.ca/science/programs/nrs.html>)

General Overview

The main degree offered by the department is the Bachelor of Natural Resource Science (BNRS), which can be taken with Co-Op and Honours options. Below is a list of our courses as they appear in each year and semester of the program. Descriptions of each course can be found on our website, or you can contact Program Advisor John Karakatsoulis (jkarakatsoulis@tru.ca) if you require full course outlines.

Students graduating with the BNRS degree meet the educational requirements to become a Natural Resource Professional from the Association of BC Forest Professionals, a Registered Professional Biologist from the College of Applied Biology (under review), and a Professional Agrologist, from the Association of BC Professional Agrologists. In addition, BNRS grads can apply to become a professional forester (via the non-accredited route) with the addition of extra courses.

The department also offers a two-year forestry transfer program, and is an active participant in the Masters of Science in Environmental Sciences program (described later in this report).

The department is very active in research, with faculty holding NSERC and other peer-reviewed grants, supervising graduate students at TRU and other universities and publishing peer-reviewed journal articles. We have a strong commitment to undergraduate student research, supervising student research projects and hiring many students during the year to work as research assistants on various projects.

Changes and updates

Total enrolment in BNRS courses have been increasing over the last few years (Fig. 1). The numbers represent students in the NRS program, as well as students in biology and geography taking NRS courses as electives. Our capacity to take in more students is limited based on lab resources. The number of students accepted to the BNRS/Forestry Transfer programs as of June 1, 2021 was 55). This year we will graduate 44 students (Fig. 2).

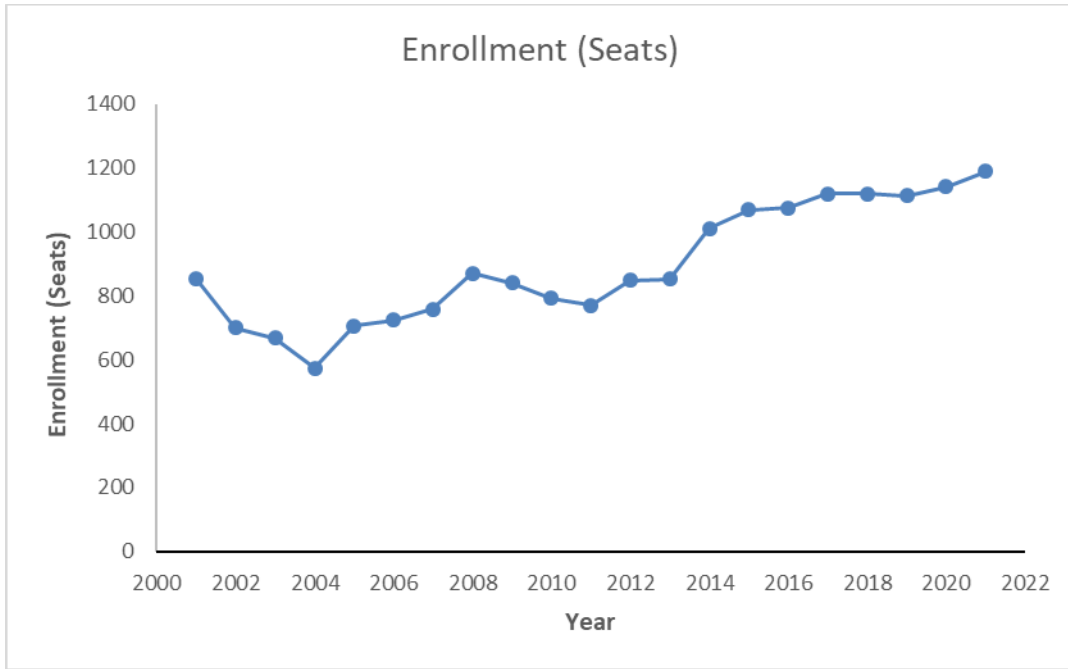


Figure 1. The total number of students enrolled in NRS classes from 2001 through 2020/21. This number includes both NRS program students and students in other programs.

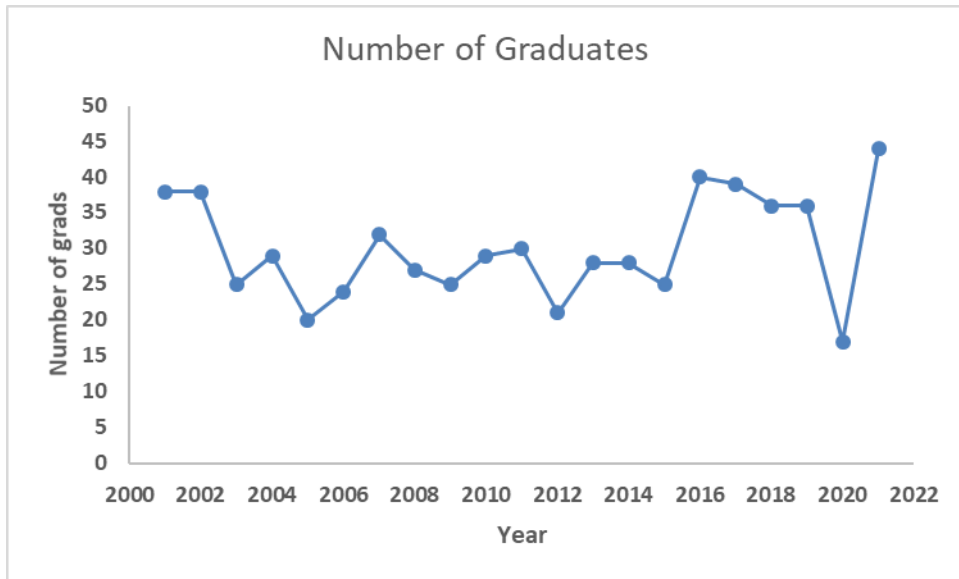


Figure 2. The total number of students graduating from the NRS program from 2001 through 2021.

New Initiatives

The Dept. Of Natural Resource Science has secured a new Canada Research Chair (Tier II) in Fire Ecology & Management. In addition, TRU has been granted a BC Chair in Predictive Services, Emergency Management and Fire Science (details to follow).

The Bachelor of Natural Resource Science Degree is currently undergoing a planned program Review. The review will be completed in the fall of 2021.

Thompson Rivers University

Course Requirements for the Bachelor of Natural Resource Science Degree (2021-2022)

First Year - Semester 1 Fall

BIOL 1110 Principles of Biology 1
 ENGL 1100 Intro to University Writing
 MATH 1150 or 1140 Calculus 1
 NRSC 1110 The Science & Man. of N.R.
 NRSC 1120 Dendrology 1

15 Credits

Second Year - Semester 3 Fall

BIOL 3000 Biometrics
 CHEM 1500 Chemical Bonding & Organic
 NRSC 2000 Introduction to Soils
 NRSC 2200 Forest Ecology and Silvics 2
 ANTH 2140 or 3270 or 3280 or 4040

15 Credits

Third Year - Semester 5 Fall

NRSC 3200 Silviculture
 NRSC 3260 Limnology
 NRSC 4020 Entomology
 NRSC 4030 Pathology
 NRSC 4130 Fire Ecology & Management

15 Credits

Fourth Year - Semester 7 Fall

NRSC 4100 Fisheries Management
 NRSC 4140 N.R. Policy & Planning
 NRSC 3210 Range Management
 NRSC 4040 Wildlife Management 1
 NRSC 4110 Watershed Management

15 Credits

First Year - Semester 2 Winter

BIOL 1210 Principles of Biology 2
 CMNS 2300 Writing for Science & Tech.
 NRSC 1220 Dendrology 2
 NRSC 2100 Forest Ecology and Silvics 1
 **ENGL 1110 Critical Reading and Writing
 *Or elective (i.e. AGSC 2200)

15 Credits

Second Year - Semester 4 Winter

CHEM 1510 Fundamentals of Chemistry
 ECON 1900 Microeconomics
 NRSC 2110 Forest Mensuration
 NRSC 3000 Diversity & Ecology of the Vertebrates
 NRSC 3170 Ichthyology

15 Credits

Third Year - Semester 6 Winter

GEOG 2750 Geographic Information Systems
 BIOL 3030 Population Biology
 ***ECON 3710 or ECON 3410 or 3740
 NRSC 3110 Grassland Ecology
 Elective

15 Credits

Fourth Year - Semester 8 Winter

NRSC 4050 Wildlife Management 2
 NRSC 4210 Conflict Resolution in N.R.
 NRSC 4230 Graduating Essay
 Elective
 Elective

15 Credits

Minimum credits required to graduate: 120

***Recommended Electives**

AGSC 2200 Food Systems at a Local Level and Beyond
 NRSC 1500 Introduction to Climate Change Science
 NRSC 4240 Research Design
 NRSC 4250 Tropical Field Studies
 NRSC 4300 Ecosystem Reclamation

**Students receiving a grade of B or better in ENGL 1100 can replace ENGL 1110 with an elective.

***Note: Students will take one of ECON 3710 (Economics of the Environment), 3730 (Forestry Economics), 3410 (Economics of Climate Change) or 3740 (Land Use Economics)

Faculty

Broad, Peggy, B.Sc.F. (Forest Ecology, Dendrology, Grassland Ecology)

Gardner, Wendy, B.Sc., M.Sc., Ph.D. (Range Ecology, Range Management, Fire Ecology, Ecosystem Reclamation)

Heise, Brian, B.Sc., M.Sc., Ph.D. (Limnology, Ichthyology, Fisheries Management, Ecosystem Reclamation)

Karakatsoulis, John, (Program Advisor), B.Sc., Ph.D. (Forest Ecology, Silvics, Silviculture, Conflict Resolution)

Larsen, Karl, B.Sc., M.Sc., Ph.D. (Wildlife Ecology, Wildlife Management, Belize field school)

Pypker, Tom, B.Sc., M.Sc., Ph.D. (Dept. Chair, Watershed Management, Climate change, Soils)

Sorensen, Jacque, B.N.R.S., M.Sc. (Limnology, Ichthyology, Fisheries Management)

Watson, Sheri, B.Sc., M.Sc. (Wildlife Ecology, Wildlife Management)

NSERC Industrial Chair in Restoration & Reclamation

Fraser, Lauchlan, B.Sc., M.Sc., Ph.D.

BC Regional Innovation Chair

Church, John, B.Sc., M.Sc., Ph.D. (Food Systems)

Program Assistant

Ledohowski, Dolores (Didi)

Part Time Faculty

Barnett, Andrea, BA, MA (MPP) (Public Policy)

McMurphy, Theresa, M.Sc. (Forest Pathology)

Gillich, Kyle BNRS, MSc Candidate (Forest Mensuration)

Master of Science degree

The Master of Science Program in Environmental Science has graduated between 3-17 students each year since 2010. There are currently 50 students in the program. Students from a wide range of undergraduate programs are admitted into the program, including natural resources, biology, forestry, geography, business, economics, mathematics and computing science. Admission into the program is dependent on the student having a strong undergraduate track record, and the availability of a faculty member to supervise and/or fund the thesis research. Students take a small number of courses (normally < 5) and focus primarily on their thesis research. Thesis research projects range from pure field studies to detailed data analysis and studies on the human dimension of the environment. A large proportion of students in the program conduct their research with the support of outside agencies, including government offices, non-government organizations, and industrial partners.

THE UNIVERSITY OF BRITISH COLUMBIA



Department of Forest Resources Management
2nd Floor, Forest Sciences Centre
2045 - 2424 Main Mall
Vancouver, B.C. Canada V6T 1Z4
Tel: (604) 822-3482 Fax: (604) 822-9106
(604) 822-4935

Report to the Forestry and Sustainable Resources Management Articulation Committee

University of British Columbia, Faculty of Forestry

2020/21 Academic Year

Prepared by: Peter Marshall, Professor and Director, Forest Resources Management Program

May 31, 2021

Institutional Summary:

The University of British Columbia is comprised of two principle campuses: (1) UBC Vancouver with approximately 44,000 undergraduate students and 10,000 post-baccalaureate students; and (2) UBC Okanagan with just under 10,000 students. The UBC Vancouver campus, where the Faculty of Forestry is located, is comprised of 12 Faculties (managed by deans) and 12 Schools (managed by heads, but reporting through a Faculty). Academic affairs are governed by two Senates (one for each principle campus). Financial matters and other university business is governed by a single Board of Governors. The university president (along with numerous vice-presidents) are responsible for the day-to-day running of the university. Deans report to the academic vice-president and provost on each campus.

Faculty Summary:

Faculty members (professorial ranks a.k.a. tenure-stream appointments and instructors a.k.a. term appointments) within the Faculty of Forestry are organized into 3 departments: Forest and Conservation Sciences; Forest Resources Management; and Wood Science. Each department is managed by a department head and has between 20 and 30 faculty members, plus post-doctoral associates, clerical staff and technical staff. As well, each department has 10-20 associated adjunct professors. The Deans' Office also has about 25 clerical and technical staff plus 5 associate deans: academic; Asian strategies, equity diversity and inclusion; graduate and post-doctoral studies; and research. The Directors of the two research forests (Malcolm Knapp Research Forest and the Alex Fraser Research Forest) report directly to the Dean, as does the director of the Haida Gwaii Institute. The dean and the associate deans are faculty members, and as such, belong to a department as well as to the Dean's Office.

Academic programs are technically not associated with any of the any of the departments directly, but rather with the Faculty of Forestry as a whole under the auspices of either the

associate dean academic (undergraduate programs) or the associate dean of graduate and post-doctoral studies (graduate programs). However, each of the 6 undergraduate degree programs and 3 of the course-based masters programs offered by the Faculty of Forestry are, in practice, most closely associated with one of the departments. For the two degree programs that are accredited by the Canadian Forestry Accreditation Board (the Bachelor of Science in Forestry, comprised of the Forest Resources Management and the Forest Operations majors, and the Master of Sustainable Forest Management) Forest Resources Management is the most closely associated department. Each of the course-based programs offered by the Faculty is overseen by a program director.

The senior management committee for the Faculty advises the dean and collectively deals with strategic and operational planning and implementation. This committee is chaired by the dean and consists of the 5 associate deans, 3 assistant deans (senior staff members) and the 3 department heads.

Enrolment

Undergraduate Programs:

	Year	Total Students		New to Program Students		Graduates
		Number	Total	Number	Total	
BSFS (Forest Sciences)	1	23		19		
	2	14		1		
	3	35		24		
	4	34	106	0	44	34
BSCN (Natural Resources Conservation)	1	101		89		
	2	76		5		
	3	102		25		
	4	101	380	1	120	81
BSCW (Wood Products Processing)	1	17		14		
	2	19		4		
	3	39		26		
	4	65	140	0	44	43
BSF (Forestry)*	1	93		75		
	2	40		2		
	3	49		11		
	4	68	250	0	88	61
BEST (Forest Bioeconomy, Sciences & Technology)	1	36		36		
	2	2		2		
	3	0		0		
	4	0	38	0	38	N/A
BUF (Urban Forestry)	1	87		71		
	2	29		4		
	3	70		8		
	4	58	244	1	84	44
		1158		418		297

* Accredited by Canadian Forestry Accreditation Board (CFAB)

Comments:

- Overall numbers increased by 44 (4%) over the 19/20 academic year.
- International students comprise 45% of the undergraduate student body. (Identical to the 19/20 academic year).
- Numbers enrolled in the Forestry (accredited) program decreased by 23 compared to the 19/20 academic year.
- International students comprise 44% of the Forestry (accredited) degree program. (Up from 42% in the 19/20 academic year).

Graduate Programs:

Program	Number of Students
Course-Based Master Programs	
MIF (Master of International Forestry)	10
MGEM (Master of Geometrics for Environmental Management)	28
MSFM (Master of Sustainable Forest Management)*	20
MF (Master of Forestry)	13
Total	71
Research Degree Programs	
MSc (Master of Science)	91
MASc (Master of Applied Science)	7
PhD (Doctor of Philosophy)	118
Total	216
Grand Total	287

* Accredited by the Canadian Forestry Accreditation Board (CFAB)

Comments:

- The MIF, MGEM, and MSFM are all one-year programs and were negatively affected by COVID-19. The MIF and MSFM were taught face-to-face (cohort-based) and student numbers were down by 50% and 20% over usual levels. MGEM was offered on-line and was only 2 students below their target of 30 due to late withdrawals.
- There is little immediate impact of COVID-19 on the numbers of students in research degree programs. Those numbers are driven by faculty member capacity and available research funding. There is no shortage of qualified applicants.

Program Changes

- A new one-year course-based master program (Master of Urban Forestry Leadership - MUFL) will begin in September.
- The Forest Bioeconomy, Sciences & Technology (BEST) bachelors program will accept its second cohort of new students and will fully implement courses listed in its second and third year.
- Planning continues for a new bachelor program in Indigenous Forest Land Stewardship. It is proposed that this program be housed on Westbank First Nation's land outside of Kelowna but be linked to the Faculty of Forestry at UBC Vancouver. An academic program was developed and approved by the UBC Vancouver Senate and the Board of Governors. The proposal is currently pending approval with the BC Ministry of Advanced Education & Skills. The intent is that this program be fully accreditable by the Canadian Forestry Accreditation Board (CFAB).
- The Urban Greenspace Management minor within the Bachelor of Urban Forestry degree program is planning for a preliminary accreditation visit by the CFAB this fall as an initial step towards achieving full forestry accreditation for the graduates of this minor.

Recent or Impending Personnel Changes

- Dean John Innes' second (and final) term finishes at the end of June, 2021, although he will continue serving as dean until the end of August.
- The current associate dean academic (Rob Kozak), whose term as associate dean ends at the end of June, 2021, has been selected as the next dean for the Faculty. He will start this position on September 1, 2021.
- There will be two new associate deans (academic and research & graduate studies), plus a new department head (Forest and Conservation Sciences) as of July 1.
- There have been too many recent or impending changes to faculty members to enumerate here, other than to say the number of faculty members continues to grow despite retirements and resignations (i.e., a net positive change) due primarily to a strong financial position for the Faculty despite the impacts of COVID-19.
- Recent hires that will impact on our accredited programs include a new lecturer in forest operations (Lee Salmon, RPF) and a new coordinator for the MSFM program (Dr. Ken Byrne, RPF). Both will start their appointments on July 1. Deb DeLong, RPF the current coordinator of the MSFM program will be taking a reducing appointment this coming academic year, followed by retirement at the end of June 2022.
- Dr. David Montwe (FIT) was appointed as an Assistant Professor in Silviculture and began July 1, 2020. Dr. Ignacio Barbeito, currently a professor at SLU in Sweden, will be starting with the Faculty of Forestry as an Associate Professor in Silviculture as of September 1.

- Drs. Andres Varhola (FIT; Forest Management) and Suborna Ahmed (Computer Applications and Biometrics) were appointed as Assistant Professors of Teaching and Academic Leadership this past year.
- Dr. Gregory Paradis (formerly an Eng.F. in Quebec in the past) will begin an appointment as an Assistant Professor in Forest Management as of September 1. This a replacement for Dr. Verena Griess, who left for a position in Switzerland at the end of December 2020.
- Dr. Peter Marshall, RPF will assume the role of associate dean academic from July 1 through to his retirement December 31, 2021 to help support the Faculty through the transition to the new dean.
- Dr. Dominik Roeser will assume program directorship for the Forest Resources Management major, along with the Forest Operations major where he is currently program director, as of July 1.

Major Impacts of Covid-19

- Generally, our programs appear to have “weathered the Covid-19 storm” as well as possible. Thanks to the hard work and adaptability of our faculty and students, almost all of the programs’ contents were offered virtually through the 2020-21 academic year.
- Due to the situation in April through August of 2020, the spring field camp (generally offered in April at Malcolm Knapp Research Forest near Maple Ridge), scheduled for the end of 3rd year, and our fall field camp (generally offered at the end of August at the Alex Fraser Research Forest near Williams Lake), scheduled for the start of 3rd year were cancelled.
- This April, we offered a virtual spring field camp to those students who should have attended the previous April. (They were, for the most part, 4th year students). We have a double cohort lined up to take the camp (hopefully) face-to-face in April of 2022.
- We are presently planning to offer a face-to-face fall field camp to a double cohort of students (those scheduled to take the camp last year plus those scheduled for this year) this August, with some contingencies in place regarding location and format depending upon the evolving Covid-19 situation.

**REPORT TO THE FORESTRY AND SUSTAINABLE RESOURCES MANAGEMENT
2020/21 ARTICULATION COMMITTEE
UNIVERSITY OF NORTHERN BRITISH COLUMBIA
BSC NATURAL RESOURCE MANAGEMENT – FOREST ECOLOGY AND
MANAGEMENT, WILDLIFE AND FISHERIES (MAJORS)**

Adapted by: Roy V. Rea, UNBC (reav@unbc.ca)

1. Introductory Overview

1.1. Institutional Snapshot

The University of Northern British Columbia (UNBC) is a “primarily undergraduate university” with a diverse set of undergraduate degrees that range from the health sciences to natural resources management. The university offers a number of graduate degrees (MEd, MScN, MSW, MBA, MA, MSc, MNRES (Master of Natural Resources in Environmental Studies), PhD NRES, PhD Psychology, PhD Health Sciences). In September 2020, there was a total of 3,416 students in academic programs (“Fall Headcount”: Undergraduate Programs = 81%, Graduate Programs = 19%). These programs and courses were supported by approximately 193 full-time tenured and tenure-track and regular term faculty. In the spring of 2021, the university underwent significant structural changes following a 5-year academic planning process and has just created 5 faculties from 2 colleges. The Ecosystem Science and Management Department is now within the Faculty of Environment. Other faculties are: Business and Economics, Health and Human Sciences, Indigenous Studies, Social Sciences and Humanities, Science and Engineering. We also now have the Division of Medical Sciences

1.2. Department offerings overview

As of September of 2020, the Ecosystem Science and Management (ESM) Department (formerly – Program) offered stand-alone BSc degrees in Forest Ecology and Management, Wildlife and Fisheries and in Conservation Science and Practice with majors in Wildland Conservation and Recreation or Landscape Conservation and Management. (enrollments included below). The degrees are supported primarily by courses administered by the ESM department, but other departments from across UNBC’s two colleges offer core curriculum for the degrees/majors. Students completing the Forest Ecology and Management degree can seek admission as Registered Professional Forester with the ABCFP. The Wildlife and Fisheries degree (as well as Biology) is accredited as meeting the College of Applied Biology’s education requirement for

enrollment as a Registered Professional Biologist in BC. The Wildlife and Fisheries BSc meets the requirements of the ABCFP’s Natural Resource Professional designation. There are a number of options for students pursuing graduate studies in natural resources management. This includes the MSc Natural Resources and Environmental Studies (NRES; focal areas include Biology and Forestry). The Master of Natural Resources and Environmental Studies (MNRES) and PhD in NRES provide students with a more interdisciplinary perspective. These degrees are housed in the NRES Graduate Program.

2. Enrollment/Graduation Summary Tables for 2020/2021 Year

Institution: University of Northern British Columbia

Program Name: BSc Forest Ecology and Management

Capacity: none

Accreditation: Registered Professional Forester; may meet the education requirements of the College of Applied Biology if student chooses appropriate Minor and electives.

Table 1. Headcount of Students in Forestry for the last 6 academic years.

	Academic Year					
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Enrollment	51	71	96	113	110	102
Graduates	9	8	9	12	12	9

Note: Autumn headcount; does not include 1st year students or transfer students with <30 credit hours

Program Name: BSc Wildlife and Fisheries

Capacity: none

Accreditation: Registered Professional Biologist and Natural Resource Professional.

Table 2. Headcount of Students in Wildlife and Fisheries for the last 6 academic years.

	Academic Year					
	2015/2016	2016/2017	2017/2018	2018/2019	2019/2020	2020/2021
Enrollment	76	89	98	116	98	105

Graduates	13	13	9	27	28	14
-----------	----	----	---	----	----	----

Note: Autumn headcount; does not include 1st year students or transfer students with <30 credit hours

Program Name: BSc Conservation Science and Practice

Capacity: none

Accreditation: N/A

Table 3. Headcount of Students in Conservation Science and Practice for the last 6 academic years.

	Academic Year					
	N/A	N/A	N/A	N/A	2019/2020	2020/2021
Enrollment	-	-	-	-	24	27
Graduates	-	-	-	-	4	2

Note: Autumn headcount; does not include 1st year students or transfer students with <30 credit hours

3. Institutional Activities

3.1. Significant Curricular Changes

Forest Ecology and Management

In 2008, the UNBC senate approved significant revisions to the UNBC Forestry major (that was in the BSc Natural Resources Management), including renaming the major to Forest Ecology and Management. The revised major (B.Sc. in fall of 2018) was structured so that it meets the core competencies, as defined by the CFAB, as well as providing students with a choice of a minimum of one of 13 approved minors. Each minor was designed or selected so that it complemented the core and met the disciplinary needs of professionals choosing to specialize in a particular area of forestry. Currently, minors in Natural Resources Planning and Operations as well as Environmental Science, and Biology and Conservation are most often chosen by students pursuing the Major in Forest Ecology and Management (Table 3). The large number of enrollments in the Planning and Operations minor represents the easiest transition (i.e., fewest

credits) for students that had partially completed the degree requirements of the former Forestry major.

Table 3. Declared minors for BSc. Forest Ecology and Management for 2020-2021.

PROGRAM	MINR_CODE	MINOR	2020/21
ESM Forestry	(blank)		
	BICO	Biology & Conservation	9
	EASC	Earth Sciences	3
	ENPL	Environmental Planning	0
	ENST	Environmental Studies	1
	EVSC	Environmental Science	7
	FORE	Forest Recreation	1
	GBUS	General Business	8
	GEC	Global Environmental Change	1
	GIS	Geographic Information Systems	10
	IEK	Indigenous Ecological Knowledge	1
	NRPO	Natural Resource Planning & Operations	18
	SDNRM	Social Dimensions of Natural Resources Manager	1
	SOEN	Soils and Environment	0

The Forestry Curriculum Committee administers a comprehensive exit survey to students graduating from the Major. Survey data allow us to monitor the new course offerings, general acceptance of the Major by students, as well as issues of course scheduling and overlap. Students have consistently requested additional exposure and/or course work in operational forestry. Although the degree is compliant with the standards set by the Canadian Forestry Accreditation Board, some members of the UNBC Forestry Advisory Committee have also suggested that students would benefit from additional exposure to the practice (not just theory) of active forest management. Canfor has recently partnered with UNBC to offer a 4th year course in forest operations. The course is coordinated by a faculty member at UNBC (Kathy Lewis), but mostly taught by Canfor employees. Students are required to participate in field trips to working forest locations in the region as well as local mills.

Table 4. Course requirements and example progression (2020-2021) for students pursuing a BSc degree in Forest Ecology and Management.

FOREST ECOLOGY AND MANAGEMENT CURRICULUM

(Calendar year 2020-2021)

FIRST YEAR COURSES

FALL	FALL OR WINTER	WINTER
BIOL 103-3	ECON 100-3	BIOL 104-3
BIOL 123-1	MATH 152-3	BIOL 124-1
CHEM 100-3		CHEM 101-3
CHEM120-0.5		CHEM 121-.5
* NREM 100-3		NREM 101-3
		NRES 100-3

TOTAL 30 credit hours

*Note: application for exemption from NREM 100-3 must be made within the first year of study in any Natural Resources Management major (FEM, WIFI, CSP)

SECOND YEAR COURSES

FALL	FALL OR WINTER	WINTER
BIOL 201-3	STAT 240-3	ENSC 201-3
FSTY 201-3	NREM 203-3	FSTY 209-4
FSTY 207-1		
FSTY 205-3		
GEOG 204-3	←----- OR -----→	GEOG 205-3
GEOG 210-3		

TOTAL 29 credit hours

THIRD YEAR COURSES

FALL	SPRING	WINTER
FSTY 305-4		FSTY 310-3 OR NREM 306-3
FSTY 307-3	NREM 333-3	ENVS 326-3
FSTY 317-1		
NREM 303-3		

TOTAL 20 credit hours

FOURTH YEAR COURSES

FALL	FALL OR WINTER	WINTER
FSTY 408-3	NRES 421-1 and NRES 422-2	FSTY 405-3
	OR	NREM 400-4
	NRES 430-6	ENVS 414 -3

TOTAL 16-19 credit hours

Forest Ecology and Management majors are required to complete a minor as part of their degree (see academic calendar). Beyond the minor requirements, students must complete elective credit hours as necessary to ensure completion of a minimum of 123 credit hours.

STUDENTS SHOULD CONSULT WITH AN ACADEMIC ADVISOR IN THE 1ST YEAR TO DECIDE ON A MINOR.

Wildlife and Fisheries

In September 2018, the Wildlife and Fisheries Program became its own degree (BSc Wildlife and Fisheries); there is no longer a Natural Resources Management degree with a wildlife and fisheries major offered at UNBC. The curriculum committee for the Wildlife and Fisheries degree has implemented only minor changes in course content over the past two years. That includes the requirement of a course in evolutionary biology to ensure that the degree meets the revised accreditation standards of the College of Applied Biology as well as some new elective options. By its nature, the degree is very prescriptive, covering terrestrial and aquatic aspects, biology and management. Consequently, one area of concern by faculty and students continues to be the difficulty in transferring from college programs into this degree. The diploma programs often lack introductory biology, chemistry, physics, and math courses that articulate to the required first-year courses at UNBC. Transfer students then are limited in their progression through the degree by a lack of prerequisites for upper-level courses as well as overlaps in course scheduling when attempting to complete upper-level and lower-level courses during the same year. Complementing course learning, many students enrolled in the Wildlife and Fisheries degree are active participants in the UNBC Fish and Wildlife Student Chapter of The Wildlife Society. This includes Chapter-led field visits to UNBC Research Forests and to fish and wildlife facilities, such as local bird-banding operations, fish hatcheries, and wildlife rehabilitation centers, as well as attendance at conferences. The Student Chapter managed to stay in business even through the last two semesters of online learning.

Table 5. Course requirements and example progression (2020-2021) for students pursuing a degree in Wildlife and Fisheries (BSc).

**BSc WILDLIFE AND FISHERIES CURRICULUM
(For students following the 2020–2021 UNBC Calendar)**

FIRST YEAR COURSES		
FALL	WINTER	
BIOL 103-3/123-1	BIOL 104-3/124-1	
CHEM 100-3/120-1	CHEM 101-3/121-1	
NREM 100-3	NREM 101-3	
PHYS 115-4 or PHYS 100-4	NRES 100-3 or ENGL 170-3	
	MATH 152-3 (F or W)	
15 credit hours	17 credit hours	TOTAL 32 credit hours
SECOND YEAR COURSES		
FALL	WINTER	
* SELECT 2 OF BIOL 204-3 or GEOG 210-3	or BIOL 202-3 or NREM 210-4	
BIOL 201-3	CHEM 220-3	
FSTY 205-3	BIOL 210-3	
NREM 204-3	STAT 240 -3 (F or W)	
FSTY 207-1		
FSTY 201-3 or BIOL 301-3	*Elective-3	
16 credit hours	15–16 credit hours	TOTAL 31–32 credit hours
THIRD YEAR COURSES		
FALL	WINTER	
BIOL 307-3	BIOL 302-3	
BIOL 308-3	BIOL 315-3	
*NREM 303-3 (F) or NREM 306-3 (W)	*ENPL 305-3 or ENVS 414-3 or ENVS 326-3	
GEOG 204-3	BIOL 325-3	
*Elective-3	BIOL 323-3	
15 credit hours	15 credit hours	TOTAL 30 credit hours
FOURTH YEAR COURSES		
FALL	WINTER	
BIOL 404-3 or BIOL 402-3	BIOL 411-3	
BIOL 406-3	BIOL 413-3	
BIOL 410-3	BIOL 414-3	
BIOL 412-3	BIOL 409-3 (F), NREM 400-4 or NREM 410-3 or NREM 333-3	
*Elective-3	*Elective-3	
15 credit hours	15–16 credit hours	TOTAL 30–31 credit hours

* Students interested in TWS or AFS Professional Certification should consult www.unbc.ca/wildlife-fisheries/professional-accreditation when choosing optional and elective courses.

** Students electing to take Biol 301 in place of FSTY 201 should take an elective in Fall of second year.

123 required credit hours total (40 courses), which includes 12 credit hours of electives

Revised November 2020

4. Department Activity Highlights

There are changes in the faculty complement in the Ecosystem Science and Management Department that will have some bearing on the majors in Forest Ecology and Management and Wildlife and Fisheries. Dr. Kathy Lewis was the chair of ESM from 2006 to March of 2020 and has now taken on the role of VP (acting), Research. Dr. Ken Otter is now the Chair of ESM. Dr. Jane Young, plant biologist retired in the summer of 2017. Lisa Wood has been hired to fill that position as a plant ecologist. In 2019, Mike Gillingham and Kathy Parker both retired from teaching wildlife and fisheries courses in the Department. They were replaced with two new hires, Heather Bryan and Erin Baerwald, who are both wildlife ecologists. Also, in 2019, Keith Egger retired from teaching biology, microbiology and mycology. In 2020, Michael Preston was hired to teach Biological Sciences. In 2020, Dr. Hugues Massicotte retired from teaching Plant Systems, Forest Biology and Mycology. Was replaced by a session instructor, Dr. Samuel Bartels. That position will be filled with a full-time faculty member on July 1, 2021.

5. Accreditation

In March 2021, the CFAB site team visited UNBC and reviewed the Forest Ecology and Management major for accreditation. The final assessment of the review will be granted on June 14th. For now, we can report that the accreditation process went well and the review team indicated that they were happy with the virtual site visit. The Wildlife and Fisheries Major (and BSc in Biology) was reviewed by the College of Applied Biology in 2021 and was accredited as meeting the education requirements of the College.

6. ESM Travel Grants

The ESM Department supported the following Travel Awards in 2020:
Travel was suspended for the last 15 months due to Covid-19.

7. Facility Changes

The Aleza Lake Research Forest completed construction of their long-planned Field

Education Centre (celebratory opening was on May 16, 2016). The Centre is located in the ALRF approximately 60 km northeast of Prince George. This is a 1,200 square-foot interpretive building of log and timber construction, designed to host field courses, meetings, retreats, training, and community events (<https://www.aleza.ca/>)

The Cinnabar Research Station is located centrally in the John Prince Research Forest on the shores of Tezzeron Lake. The property is 4.5ha of lakeshore frontage which features accommodation for up to 25 people in 5 rustic cabins, kitchen and dining room, shower facilities, and classroom. The facility has cell and internet coverage and is accessible by all-season roads. The facility is off the electrical grid and is powered by solar and wind generation with back-up diesel generator. During the colder seasons heat is provided by a centralized wood boiler. The JPRF is largely accessible during the snow-free season by gravel roads supported by a network of ATV, snowmobile and hiking trails. (www.jprf.ca)

8. Student Recruiting/Community Outreach

Various faculty support local natural resources management outreach efforts and requests from youth organizations and schools. For example, elementary, preschool and youth groups (e.g., Sparks and Brownies Girl Guides of Canada) often request visits to UNBC to visit labs and explore the natural sciences. These visits not only increase youths' interests in science and the environment, they also increase the University's exposure to teachers and parents. ESM often displays their exhibition booth at various student information sessions (e.g., the ESM sponsored "Learn more about your Major"), career and sustainability fairs (e.g., UNBC Green Day), industry conferences (e.g., Natural Resource Forum), and annual the meetings of professional associations (e.g., CIF Demo Event in Vancouver).

9. Student Placement

There are no statistics reporting employment of UNBC graduates. However, the majority of the students in the Forest Ecology and Management Degree are finding summer positions and full-time work upon graduation. The job market has been very healthy for students pursuing the Wildlife and Fisheries Degree, and more recently Conservation Science and Practice.



2021 Annual Report to the Forestry and Sustainable Resources Management Articulation Committee

1. Introductory Overview

1.1. Institutional Snapshot

VIU has more than 18,000 students and offers a diverse selection of applied trades, technical diplomas and degree programs. The main campus is located in Nanaimo, with satellite campuses in Duncan, Parksville and Powell River.

1.2. Program offerings overview

- 2-year Forest Resources Technology diploma program
- 1 year bridging program to allow entry into 3rd year Forestry at UBC

2. Enrollment/Graduation Summary Table for 2019/20 Academic Year

Technical Programs

Institution:			
		Academic Year	
Program Name:		2019/20	2020/21 proj.
RFT registerable	Capacity 1st year	28	28
	Capacity 2nd year	26	26
	Applicants (as of this report date)	75	50
	<i>1st year enrollments</i>		
	full time	24	23
	part time	4	2
	<i>2nd year enrollments</i>		
	full time	23	22
	part time	5	2
	Graduates	28	24

Program Activities

2.1. Program Highlights

- EDI Workshops for 1st, 2nd year students & instructors
- Mental Health Forums for 1st, 2nd year students & instructors
- ABCFP AGM- Students attended online
- CIF Mentorship Program- Primarily 1st year students. Won National Quizbowl!!!
- We survived online delivery

2.2. Significant Curricular Changes

- Coastal Field Trip (1 week) – First Nations focus

2.3. Faculty Changes

- Retirements Bill Beese-July 2021, Doug Corrin-Dec. 2021
- Temporary Replacements Spring 2020
 - Lindsey Canary – Fire
 - Jocelin Teron – Covid relief

3. Accreditation

Currently TAC accreditation cycle ongoing ☹

4. International Education/Exchanges

- Belize- Supporting the development of forestry content into Agriculture Program. Agroforestry Diploma @ University of Belize.
- No student exchanges due to Covid

5. Students

5.1. Recruiting

Enrollments are steady – we have 24 students registered with 25 on a waitlist (we stopped accepting applications at this point). Three seats reserved for First Nations.

5.2. Student Placement

To our knowledge, nearly all students got either summer or full time employment in the forestry sector.

Annual Report to the Forestry and Sustainable Resources Management Articulation Committee

Introductory Overview

1.1. Institutional Snapshot

CNC continues to offer Natural Resources and Forest Technology (NRFT) through the Prince George campus. It is a two-year technology diploma program that carries national accreditation as a forest resource technology through Technology Accreditation Canada (TAC). The program is recognized by both the Association of BC Forest Professionals and College of Applied Biology.

The College has been developing its research initiatives through the College wide research Office of Applied Research and Innovation. This initiative is intimately connected to the NRFT program and is providing opportunities to expose students and faculty to applied research projects and employment opportunities. The NRFT program has developed a funding model through the CNC Research Forest Society to sustain our research as the NSERC grant expired spring 2019.

1.2. Program offerings overview

The Natural Resources and Forest Technology program is built on a core of forest-based courses with a focus on harvesting/engineering, forest measurements, forest protection, silviculture and GIS. Other courses include habitat management, aboriginal studies, soil science, and forest ecology. The program is intended to provide graduates with the skills required for work in various forest land-based natural resources sectors primarily for the forest sector but also with potential to support natural resource aspects of oil and gas exploration and mine exploration/development/operations.

Student employment is excellent with virtually 100 % placement in natural resources, mostly forest sector jobs. There are jobs still open if we had more students.

Enrollment

The student intake for NRFT continues to be capped at 22 students in each year. Intake into first year continues to be strong with a waitlist of 9 qualified applicants and an additional 22 applicants with outstanding requirements. We expect 13 full time students returning to second year.

Current enrollment/Graduation Summary Table 1 with projections to next year.

Table 1. CNC Technical Programs Applications and Enrollment.

Institution: CNC			
		Academic Year	
Program Name: NRFT		2020/21	2021/22 proj.
RFT requirements	Capacity 1st year	22	22
	Capacity 2nd year	22	22
	Applicants	39	46
	<i>1st year enrollments</i>		
	full time	22	22
	part time	0	0
	<i>2nd year enrollments</i>		
	full time	17	13
	part time	1	0
	Graduates	17	13

Program Activities

3.1. Program Highlights

Research activities are providing exciting developments at CNC. Faculty are directly involved with or leading projects with the community. This is building interesting connections with the natural resource sector and providing new opportunities for curriculum enhancement, real world research projects for students, student and graduate employment opportunities, and a higher profile for the NRFT program in the community.

3.2. Significant Curricular Changes

Changes were made to the Aerial Photography and Image Interpretation course. The course name has been changed to Map and Spatial Data and has been converted from a stereoscopic based image interpretation course to computer-based. The course now covers Remotely Piloted Aircraft Systems (RPAS) and a broad application of technology to data collection, manipulation and reporting that better aligns with natural resource sector applications.

3.3. Faculty

This past year the program was delivered by 5 full time faculty (with research workload releases), 1 part time faculty (with a heavy research workload) and 1 full time laboratory tech support position. Several courses including English, Math and Aboriginal Studies were delivered as service courses by other departments. Ed Morrice has announced his retirement and the program will now be delivered by 5 full time faculty. We will miss him!!

Continuing Initiatives

4.1. Research

Students and faculty worked on a number of research projects through the school year. These projects normally include data collection in the fall but that component was suspended due to Covid 19. Students were given existing data to work with and conducted analysis and report preparation through the winter term. The preparation of the report is done in concert with the English department through two courses, ENGL 229 and ENGL 252.

Students normally work in groups to collect data and reports focus on different aspects of data sets. A faculty member worked with each student as an advisor on their projects. A sample of projects undertaken follows:

- Review of the effects of soil compaction mitigation treatments on tree growth.
- Use of bioengineering restoration techniques to facilitate natural successional processes to restore a functioning riparian zone by planting live willow and cottonwood staking of the river banks, live gravel bar staking, and installation of large woody debris features.
- Evaluation of the effect of adjacent vegetation on the efficacy of funnel traps to capture spruce beetles.
- The effect of weather variables, elevation, slope and aspect on the spread of comandra and stalactiform blister rusts.
- Silviculture projects including efficacy of aspen girdling treatments by season, the efficacy of naturally occurring fungus to control cut aspen resprouting, the impact of glyphosate on non-target blueberry plants and an updated evaluation on an industry established western larch migration trial.

Accreditation

The program underwent a full accreditation through Technology Accreditation Canada (TAC) and has been accredited for 5 years (April 24, 2020 -April 23, 2025). The review committee was very pleased with their site visit held on December 1, 2020. NRFT was satisfied with the process and found the TAC committee easy to work with. We are pleased with a much longer accreditation timeline! Our annual report is due mid-June and does not appear to be an onerous task.

International Education/Exchanges

The Natural Resource Field School and Cultural Exchange course is currently on hold. Each year we have been alternating travel between Costa Rica and Ecuador. Students are offered funding support from the Research Forest Society of \$3000/student which covers ~50% of the total trip cost.

Students

7.1. Recruiting

Most recruiting efforts are on hold but CNC has hosted virtual open houses that we have participated in. The reach does not seem extensive but we were able to connect with a few interested potential students. NRFT continues to be very involved with the Council of Forest Industries (COFI) under the banner of their forest education program. This has provided us many opportunities to recruit new students and has been a conduit for connecting with the forest sector and local communities. In addition, we normally present to the local Rotary service club's "Adventures in Forestry" program as part of our recruiting efforts. We plan to participate in the Outland Youth Program in August to connect with Indigenous students from across the province who are exploring career opportunities.

7.2. Student Placement

Student employment has had another stellar year. Employment is all but guaranteed for students and graduates seeking work in the forest sector, with little competition. Both BCTS and [FLNRORD](#) are attracting students to positions especially in more remote locations.

We continue to work with the Wildfire Services Branch and have had success in placing students with them. We continue to have a number of fire fighters attending our program as a route to obtaining an RFT credential. This helps with their goal of enhancing their opportunities for full time employment with the Wildfire Services Branch.



May 31, 2021

Forest Technology Program Summary Report 2020/21

The following report will summarize the most noteworthy events that occurred over the past fourteen months, including the end of the 2019/20 academic year, within the Forest Technology program.

COVID Impacts

At the end of the 2019/20 academic year, March 15th to be precise, we were forced to suspend all classes due to the rapid spread of COVID-19. Because of the time of year and the courses that were running at the time we were able to quickly pivot to a virtual delivery platform to complete the term. We suspended classes for three days total, commencing online on March 19th. We did however lose a total of 17 field days between both years of the program. I am quite happy to state that we were able to complete the program requirements and outcomes, graduating 42 students on time in April.

Student Registration and Enrollment

In August of 2020, the FOT program welcomed **54** new registered first-year students and **47** returning second-year students for the 2020/21 academic term. With the ongoing issues of the pandemic, the decision was made to deliver virtually only, for the fall term. This meant that for the first time in years neither group of students would be having a fall camp. It also necessitated a major realignment of courses to meet this requirement, with 16 courses being moved to accommodate online delivery.

Program Quota and Recruitment

The program entrance quota remains at **54** with a graduation quota of **40** for 2020/2021.

For the 2020/21 fall intake, **180** applications were received. For comparison,



196 applications were received for 2019/20. The Office of the Registrar has set a cap for waitlists and is redirecting applicants to their second choice or another similar program if the program.

Program pre-requisites for the 2020/21 fall intake remained unchanged and are currently as follows: Math 30-1 or 2 (Pure or Applied), English 30-1 or 2, one of; Physics 20, Chemistry 20, Biology 20, or Science 30. Standard First Aid and CPR (2 days) is also a non-academic requirement.

For the upcoming intake, 2021/22 and based on continued application pressures for the program, the Registrar's Office has adjusted the requirements to a competitive average of **63%**. Should the program not fill under competitive entrance requirements, waitlisted applicants who meet the program's current pre-requisites would be admitted to the program to fill the remaining spots.

NAIT will begin accepting applications for the 2022-2023 Fall intake on October 1.

Curriculum

As part of NAIT's Curriculum Review and Renewal process, the program has implemented the curriculum/course adjustments for all courses. These changes align with NAIT's Credit Framework procedure.

Starting in the 2018/19 intake all students are now governed by NAIT's Academic Standing procedure and are required to maintain a term weighted GPA of 2.0 to remain in "Good Standing". Students falling below this threshold will be placed on "Academic Warning" and required to develop a learning plan with the program's Student Advisor or program chair, to help ensure their academic success. Should a student fail to improve to "Good Standing" future semesters, there is a risk of being withdrawn from the program due to academic difficulties.

Employment

During the summer of 2020, 90% of students found summer employment. In comparison, 2019 was at 91%, 2018 at 82%, and 2017 saw 87% of first-year students finding summer positions while 95% of second-year students at least found summer employment.



The ninth annual FOT Industry Job Fair day was conducted in the fall of 2019 was well attended with representation from several industry sectors. The 2020 edition was a virtual affair due to restrictions but we hope to return to a live event in the fall.

Facilities & Infrastructure

A major challenge that the program faces is the age of our field camp at Kidney Lake. This camp was established in 1974 and hosted its first camp in 1975. One of the buildings on-site dates from 1977! We are currently assessing the condition of the various building to assist in developing a renewal plan and exploring various funding options to update the facilities at the camp so it will continue to serve our needs into the future.

Equipment

The program has made a change, replacing 20 ruggedized Windows-based field tablets purchased in 2018 with a set of Apple iPads that are better supported for running various GPS data collectors and forest engineering software packages in the field. The evolution of technology is very rapid and continues to pose challenges for the program in staying current.

Staffing

The program staff has remained stable for the last year. Rodger DeChamplain returned in August 2020, after a personal leave, and rapidly had to adjust to online delivery.

Marko van Streun continues to spend a portion of the year as an instructor while providing field support during our fall camps. Our newest team member, Paul Ciobanu, has completed his first year as the primary instructor for harvesting (Planning & management).

Kevin Martens continues in the role of Ed-Lab Technologist with support from sessional employees to assist with the Kidney Lake Field School and Hinton Harvesting Lab. Within the School of Applied Sciences and Technology, Colin Polanski has taken over the role of Associate Dean of Academics with the retirement of David Zdebiak in June of last



SCHOOL OF APPLIED
SCIENCES AND TECHNOLOGY

year. Trevor April remains the Department Head for the Forest Technology program, working closely with me to ensure smooth delivery.

If you have any questions please contact me at heaths@nait.ca or 780-471-8652.

Stay well

Sincerely,

Heath Schneider

Heath Schneider, RPFT.
Chair - Forest Technology
School of Applied Sciences and Technology
P 780.471.8652 C 780.999.1425
E heaths@nait.ca