



VANCOUVER ISLAND  
UNIVERSITY

***PROGRAM REVIEW***  
***2011 – 2012***

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***FORESTRY DEPARTMENT***  
***FACULTY OF SCIENCE AND TECHNOLOGY***  
***DEPARTMENTAL SELF STUDY***

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# FORESTRY DEPARTMENT SELF STUDY

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## INTRODUCTION AND BACKGROUND

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The department delivers two forestry programs (a 2-year technical diploma and a 2-year university transfer program) – details are provided in Section 3, Program Credentials. In addition the department delivers a forestry course for the Resource Management Officer Training (RMOT) program.

Faculty in the department also manages the VIU Forest (a.k.a. Woodlot) and a Forest Fertilization (Biosolids) Project.

The department consists of

- 4.0 FTE Instructors and a 0.5 FTE Technician,
- 1.0 FTE for managing the VIU Woodlot, and
- 0.5 FTE for managing the Biosolids Project

Scholarship in the department consists of:

- Faculty manages the VIU Forest, which includes planning and implementing operational forest management activities. This provides a platform to demonstrate current as well as experimental forest practices. The VIU Forest keeps faculty current with new legislation, regulations, management, operational practices and technology in the forest sector. This link keeps also the program grounded in the applied operational forestry needed in a technologist program.
- Faculty actively practices professional forestry in the forestry sector primarily during professional development time.
- Faculty directs a forest fertilization project that demonstrates the beneficial use of biosolids (from the Regional District of Nanaimo) onto forestland of low fertility. Since 2004 research has been limited to a set of demonstration plots in a young Douglas-fir plantation. The results of biosolids application on site productivity is so encouraging that a new multi-year research project involving VIU and Metro Vancouver is now under negotiation. It involves staff and students from the forestry and biology departments. Studies will quantify the effect of biosolids on site productivity and carbon sequestration.
- Faculty also participates in forest research projects in collaboration with other universities, forest companies and government agencies. One faculty member has a grant from a forest company to investigate the effects of forest harvesting on biodiversity and to develop silviculture strategies for mitigating potential negative impacts from climate change. Recent international collaboration resulted in a book and several journal papers.
- One faculty member is actively involved at a National level with the Canadian Institute of Forestry. Activities include promotion of sustainable forestry, engagement of university students and teachers to promote forestry awareness and

education, and fostering professionals to discuss and resolve current forestry issues and topics.

- Two faculty members are on the Coastal Silviculture Committee, which organizes two workshops each year for practicing forester professionals to discuss current issues in forest practices.

Student demand has increased in recent years. This year there was a wait-list for students entering the program and our second-year classes are at or near capacity. Employment demand for forestry technicians over the next 10 years is expected to far exceed capacity of forestry programs in BC. Work Futures BC rates the job prospects for forest technologists and professionals as five out of five stars. The majority of students obtain forestry-related work within 6 months of graduation.

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## MISSION AND GOALS

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### Program Mission

The mission of the Forestry Department is to develop foundational concepts, practical skills and critical thinking in order to promote success in a forestry-related career or post-graduate educational pursuit.

### Goals

The driving goal of the department is to be engaged in a continued improvement process. To this end, the department has been informally reviewing the curriculum as well as delivery and evaluation methods for the past few years. In addition, as part of their accreditation processes, we are periodically reviewed by CTAB and the ABCFP. These reviews, both formal and informal, have triggered several initiatives; these are detailed in Section 4 of this report.

### Connections with Others

The Forestry Department has strong connections with a few other departments at VIU, other forestry programs in BC, provincial and national forestry bodies (i.e., the Association of BC Professional Foresters and the Canadian Institute of Forestry), as well as international partnerships with universities and institutes in Europe. We are looking at increasing our connections with the local community and local First Nations. These connections are highlighted below.

### Connections with Other Programs at VIU

- **GEOG:** FRST & GEOG share many resources and expertise relating to spatial data and GIS. A dual credential FRST diploma - GEOG degree has been established for which professional recognition by the ABCFP is now under discussion.
- **RMOT:** FRST provides a service course (FRST 256) to the RMOT program.
- **Upper level courses:** FRST 328, 351 & 352 are available as upper level electives for students enrolled in science degrees (i.e. Biology, Fisheries and Natural Resources Protection) and in Bachelor of Arts degrees (primarily Geography).

- **Lower level courses:** Several lower level courses are taken as electives by non-FRST students; this is a trend that continues to grow. The Association of Professional Engineers and Geoscientists now recognizes two first year forest soils courses for meeting certain educational requirements for Professional Geologist certification.
- **Woodlot and the Forest Fertilization Project:** The VIU Forest provides learning and research opportunities for students in other programs (RMOT, Biology, Geography). In addition, the woodlot provides income opportunities for our students and fund raising for international travel through silvicultural contract work. These work opportunities also provide students with “forest worker” experience that they would otherwise not receive as part of their education. The woodlot and biosolid forest fertilization project also provides bursaries and scholarships to our Forestry students each year.

### Connections with Other Institutions

- The articulation process has ensured that the diploma program at VIU is in line with offerings at other institutions, such as Selkirk, College of New Caledonia, BC Institute of Technology and to a lesser degree North Vancouver Island Technology. This is evidenced by the movement of students between programs after completion of first year, although this is infrequent.
- As mentioned in Section 3, after completing a bridging year our graduates can enter into the 3rd year of the UBC Bachelor of Science in Forestry (BSF) program. In addition, we are renewing our transfer agreements with University of British Columbia (UNBC) and University of Alberta (UoA).
- The diploma program is accredited with the Association of BC Forest Professionals (ABCFFP) and CTAB.

### First Nations

- First Nations students account for 9 to 13% of students over the last 3 years.
- The department is actively working with the Director of Aboriginal Education to increase capacity and offerings to Aboriginal communities, especially those on the island; we are currently meeting with the Snuneymuxw and Nanoose First Nations to discuss capacity building opportunities.

### Community Engagement

- Initial discussions between the Forestry Department and Nanaimo Parks have explored the use of City Parks for forest inventory and ecological/silvicultural assessments whereby information can be shared for public demonstration. The department – faculty and students -will develop scientific information posters that can be posted to the web and placed at various locations around the parks explaining the ecological development and forest stages of the park forests.
- Forestry students surveyed the new salmon side channel in Bowen Park, which will help facilitate future management.

- Several faculty members engage with communities on Vancouver Island through Canadian Institute of Forestry (CIF) activities and public talks.
- Faculty involved in the Forest Fertilization Project participates in Community open houses with the RDN and engage in tours with other municipalities.

#### National & International Activity

- On a national level, the department has very strong ties to the CIF through the local Section; in fact all members of the department are members of the CIF participate in managing the Sections affairs. The department is also engaged in National CIF affairs by participating on the national Board of Directors and National Executive – currently, there is one faculty member who is the sitting President of the CIF (2012-2013)
- On a provincial level, the department is an active participant and contributor on the Coast Silviculture Committee board of directors – currently there are two faculty members on the board and the university hosts an annual winter workshop.
- The faculty also actively participates in organizing an annual summer teachers' tour of various forestry operations through the "Festival of Forestry" organization.
- For the past 15 years the Forestry department has been involved in an international student/faculty exchange program with various European universities. The international program includes taking students abroad every spring to study forestry practices in other countries and hosting visiting groups of students from European schools. Also, individual VIU forestry students regularly travel to European universities for one semester of studies and the VIU Forestry department regularly hosts visiting European students for semesters of study. In the last few years the number of full-time exchange students has varied from 1 to 4 students, while the number of one-term exchange students has varied from 2 to 8 students. The VIU Forestry department has also developed relationships with other non-European universities located in such countries as New Zealand, Chili, the United States, Belize, and Mexico.

#### VIU Priorities

VIU's purpose and vision state that the institution aims to support the region (Vancouver Island and coastal BC) as an educational partner for sustainable cultural, economic, environmental and social prosperity. Furthermore, "Coastal Studies" has been specified as a focus for VIU. We consider forest resource management to be an important contributor to the economic, environmental and social prosperity of coastal BC.

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## PROGRAM CREDENTIALS

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### History

The program started in 1970 as a 1-year transfer program. The 2-year autonomous Forestry Program started in 1977. The Woodlot agreement was signed in 1989. Annual international field trips began in 1999.

The Forestry department delivers two programs:

- 2-year Forest Resources Technology Diploma
- 2-year Forestry Transfer Program to UBC (i.e., we offer the first 2 years of their 4-year BSF degree program). This transfer program consists of a subset of our FRST courses plus existing science courses.

There is also a 1-year “bridging program” for the diploma graduates to allow them entry into the 3rd year of Forestry at UBC, consisting of the requisite science and economics courses. Note, however, there are no FRST courses in this program.

### Transfer & Partnerships:

- Graduates may either do a bridging year or do a 2-year Transfer Program and transfer to UBC or UNBC Forestry for completion of a BSF (Bachelor of Science in Forestry);
- Quote from the Assoc. Dean of Forestry at UBC: "We have been pleased with the academic background and performance of the VIU forest technology diploma graduates who have enrolled in any of the four undergraduate degree programs offered by the Faculty of Forestry at UBC."
- Graduates are eligible to enroll with the ABCFP (Assoc. of BC Forest Professionals) and obtain Registered Forest Technologist (RFT) status;
- Second year students can study abroad for a term at one of our partner institutions in Europe.

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## INITIATIVES OF THE DEPARTMENT

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A summary of recent initiatives follows:

- In 2007 the department initiated a review of all learning objectives by creating an online survey that was made available to the coastal forestry sector. Reviewers rated each objective on a 5-point scale. The Advisory Committee and the department then reviewed all low-rated objectives. Appropriate changes were implemented.
- In 2009, based on a CTAB review, the following changes were implemented:
  - increased coverage of safety and professionalism;
  - creation of a research course (FRST 201 – Research & Communications).
- In 2011 the following initiatives were undertaken:

- subject offerings were altered to increase coverage of forest ecology, integrated natural resource management, forest hydrology and riparian management;
  - the department website was entirely revamped to provide a more inviting and positive presence on the web to assist with recruiting (<http://www.viu.ca/forestry/index.asp>);
  - the department met with the Lil'wat Band to examine the possibility of delivering selected courses on-site in Mount Currie. Three courses were identified as suitable. Funding for project was not acquired – project is deferred for the time being.
- In 2012 the following initiatives were undertaken:
    - working with the Centre for Innovation and Excellence in Learning:
      - all learning objectives were reviewed to ensure the appropriate language was used (outcomes were measurable and appropriately stated at the applicable level according to Bloom's Taxonomy).
      - the 10 critical learning objectives, as defined by the Ministry of Advanced Education, were incorporated into course syllabi as stated learning objectives; these learning objectives will now be considered an essential part of program delivery.
      - the assignment load was reviewed and determined to be too high; thus assignments for each course were reviewed and reduced as needed; in turn more comprehensive assignments were created to allow for "deeper learning".
      - adopted, as one of the pilot groups, Desire2Learn as a teaching/learning platform.
    - the department met with the Nanoose Band to discuss issues of common interest, namely operations on the Woodlot and potential for recruitment of interested Band members for entering the Forestry Program. Talks are on-going.
    - the department has initiated contact with the Snuneymuxw Band and plans to meet this fall to conduct similar discussions
    - the Biosolids contract with the RDN is under renegotiation that should result in reduced risk, increased revenue opportunity and faculty time for research; research partnerships with Metro Vancouver and the private forest sector are also under pursuit

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## SURVEY ISSUES

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### Student Identified Strengths

Below is an excerpt from the Report Highlights section of the Program Review 2011-2012 Forestry Department – Program Data and Analysis Report.

### *Overall Student Satisfaction*

In general, student satisfaction levels regarding the Forestry Program were very high. For example:

- Faculty were available, approachable, and helpful outside of class time (92%).
- Pre-requisite courses ensured that students were prepared for more advanced courses (91%).
- Faculty were knowledgeable in their fields of expertise (91%).
- Course outlines accurately described course content, feedback, grading methods, and delivery (90%).
- The program did a good job meeting its primary objective: "to develop foundational concepts, practical skills and critical thinking in order to promote success in a forestry-related career or post-graduate educational pursuit" (86%).
- Students agreed they would recommend the program to others (86%).
- Methods of teaching such as lectures, seminars and class discussions were helpful in assisting students to learn effectively (86%).
- Students had sufficient opportunities to practice the skills they learned in the program (85%).
- Quality of instruction was good overall (85%).
- Assignments were designed to promote a deeper understanding of the material (83%).
- Progression of challenge from lower to upper-level courses was logical (82%).
- Course content was appropriate to a university-level program (82%).
- Admission requirements were sufficient to promote student success (82%).
- Morale was generally good in the program (82%).
- The program objective was made clear to students (81%).
- Evaluation methods fairly reflected students' performance (80%).

### *Area of Focus: Employment*

- The Forestry department actively supported students to get a summer job (95%).
- Eighty-four percent of students in the program got a forestry-related summer job.
- The program is useful for students in performing their jobs (81%); this score exceeded the VIU average by 13ppts.
- Although not in the strength zone of 80% or higher, the score for the program's usefulness in finding a job (78%) was 15ppts higher than the VIU average.

### *Area of Focus: General Skills*

The Forestry program excelled in the teaching of six general skills associated with a university or technical education program.

- Using math and numeracy appropriate to the field (89%); 38ppts higher than the Vancouver Island University (VIU) average.
- Reading and comprehending material appropriate to the field (88%).
- Analyzing information and thinking critically (87%).

- Working collaboratively with others (84%).
- Independent learning (83%).
- Thinking creatively and flexibly to solve problems (82%).

Furthermore, although not in the strength zone, one general skill exceeded the VIU average by a fair margin:

- Using technology hardware and software appropriate to the field (71% versus 61%; 10ppts).

### Student Identified Areas of Concern

Below is an excerpt from the Program Review 2011-2012 Forestry Department – Program Data and Analysis Report.

Weaknesses are identified on the basis of low student agreement or satisfaction with certain aspects of the Forestry program (less than two-thirds or 67%).

- Only 63% of Forestry students agreed that the program taught them the general skill of "writing clearly and concisely;" this is also 14ppts below the VIU non-degree average.
- Students were asked whether their program was challenging but manageable and were given the opportunity to answer "too easy," "about right," or "too challenging." A majority (57%) said the program was too hard. Comments supported this statistic, centered on a heavy load of coursework and homework. This may indicate that the obligation and challenge required by the program are not being fully explained to prospective students.
- The additional costs for the program are good value for money spent (e.g., books, equipment, first aid training, etc.) (57%).
- Transportation arrangements are satisfactory for off-campus field labs (54%).

It may be important to note that the latter two of the identified weaknesses were questions submitted by the department as they were concerned these were indeed issues requiring attention.

### Faculty Identified Strengths

- Faculty is committed to continued improvement.
- Strong Faculty teamwork and communication ensures courses are well integrated and student workload is balanced
- The VIU Forest and its proximity to campus facilitate hands-on, experiential learning opportunities.
- All Faculty members have practical work experience which they bring into the classroom.
- Faculty has strong ties to industry and government; this provides a source of guest lectures, who are experts in their field. Students here from industry leaders what changes are coming to the forestry sector

- The Advisory Committee meets once a year to provide input and are very committed to the program

*Faculty Identified Areas of Concern*

- Recruitment is critical to any program; but there are insufficient resources and time to engage high school students about forestry and the Program.
- Insufficient field trip resources (money and transportation) to better expose the students to coastal and interior forests and practices

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## LIST OF RECOMMENDATIONS

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- To maintain a good working relationship with our Advisory Committee and the Centre for Innovation and Excellence in Learning with the goal of continued improvement.
- Staffing changes/additions to allow for the constant monitoring of woodlot and biosolids project throughout the summer holiday months.
- Faculty to continue to assess and adjust the volume of assignments to allow students “quality” time to work on projects that foster more critical thinking, develop improved writing skills and teamwork.
- Transportation limitations have been significantly reduced due to the purchase of 2 additional buses to the VIU vehicle fleet. However, the one bus that is allowed to travel “off-road” is periodically removed from service due to its age. Ideally, the purchase of a new bus suitable for logging roads would further reduce concerns over lack of transportation to field lab sites.
- With regards to additional costs of the program, Faculty will seek input from the current student body regarding ways to reduce unnecessary costs. Further, the Forestry website will be updated so that the costs associated with the Forest Technology program are transparent; and to increase the awareness that requirements such as first aid are “employable” skills.
- Forestry Faculty to meet with the English Department to discuss the one critical outcome that was rated lower than the VIU average.