

# **VIU Forestry SWOT Analysis**

## **STRENGTHS**

### **Regional & Provincial Relevance**

- Forestry is a major employer for the Vancouver Island, northern and central interior regions of BC. It is forecasted that up until 2017 employment in forestry will grow slightly faster than the average for all industries (according to COPS [Canadian Occupational Projection System] and the Guide to the BC Economy & Labour Market). Further, there is an expected medium and long term shortage of forestry technicians and professionals throughout North America. “[I]t is estimated that colleges will need to produce about 246 forestry technician graduates per year over the short term and well over 300 per year in the long term” ([http://www.nafaforestry.org/forest\\_home/documents/CCFM-HRdemand.pdf](http://www.nafaforestry.org/forest_home/documents/CCFM-HRdemand.pdf)).

### **Reputation with the Forestry Sector in BC**

- The Forestry Department has a strong relationship with the forest industry in BC. Faculty members are well known and regarded. Graduates are held in high regard for their knowledge, competency and problem-solving skills. Several employers selectively seek out our graduates for hiring. Our graduates are employed by firms throughout the interior and coastal regions.

### **Innovation**

The Forestry Department has become known for its innovative approach to education:

- Broad-based Program-Level Learning Outcomes have been incorporated into all of the Forestry courses, allowing us to focus on the development of “soft skills”, in addition to the “hard forestry skills”, for which we are well known.
- Adoption of smart devices into the curriculum (“Forestry goes paperless”). Starting in September 2014 incoming students will be required to purchase an iPad, in exchange they will not be required to buy any forestry texts. The iPads will be used for field navigation, data collection, will serve as a virtual forestry library and be utilized for group work in class.
- We are fostering a relationship with the Faculty of Trades in order to provide our students with time on heavy equipment (i.e. excavators) to help them better understand the limitations of such equipment and be better able to engineer cut blocks.

### **Relationship with industry and NGOs**

Faculty are actively engaged with the forestry sector. Activities include:

- Instructors are active members in several organizations, including the CIF, the Coastal Silviculture Committee and the Forest Measurements Board
- The department has strong ties with the UBC Faculty of Forestry
  - about ¼ of our graduates go on to complete their BSF at UBC – we offer a “bridging year” that enables our graduates to directly enter the 3<sup>rd</sup> year of the degree program
- Some individuals are active as professional consultants in the summer months to maintain currency
- Extensive use is made of “experts in the field” as guest lecturers (especially in the Integrated Resource Mgmt course)
- The Faculty draws on its strong networking with the Forest Industry and Government to organize field schools and field trips; exposing the students to a diversity of forests and management approaches.

## **Faculty**

- All Faculty members are registered professional foresters with the ABCFP
- All faculty members have extensive experience practicing forestry (each with over 25 years of experience in all fields of forestry and forest resource management) ... cumulative experience exceeds 170 years

## **International**

- The department has affiliations for a number of universities throughout Europe to allow VIU students the opportunity to study abroad and receive credit at home. European institutions with which we have had agreements include Tampere Polytechnic in Finland; the Universities of West Hungary in Sopron, Padua in Italy, Göttingen in Germany, Life Science in Prague, Transylvania in Romania, Lycée Meymac in France, and Cumbria in Britain.
- Every spring the forestry department takes its second year class on a 2 to 3 week field trip to study forestry practices in other parts of the world. Over the years, our students and faculty have travelled to most parts of Europe, New Zealand, South America, the US, and Britain.
- The Forestry department has successfully obtained 3 consecutive 4 year HRSDC sponsored Canada-EU academic mobility grants.

## **Interest/elective courses for other Programs**

At present our courses in Forest Health (FRST 351 & 352) and GIS (FRST 328) are available as electives for students in:

- Bachelor of Science – Biology
- Bachelor of Science in Fisheries & Aquaculture
- Bachelor of Natural Resource Protection
- Bachelor of Arts

In addition, there is some equivalency (currently in discussion) with a couple of Geography courses:

- GEOG 226/228 Spatial Analysis == FRST 121 Mapping & Air Photos
- GEOG 328 GIS == FRST 328 GIS for Natural Sciences

Last, there are a few FRST courses that have proven to be of interest to the student body at large:

- FRST 111 – Measurements I (Surveying)
- FRST 131/132 – Botany & Ecology
- FRST 151/152 – Soils (esp. for those in Earth Science)
- FRST 162 – Fire
- FRST 242 – Integrated Resource Mgmt

## **Woodlot / Biosolids**

- The Forestry Department manages a 1700 hectare Woodlot Licence on the lower slopes of Mount Benson which supports an annual harvest of 4600 m<sup>3</sup> of timber. We use the woodlot extensively for instruction, field exercises, and professional development. In addition the woodlot is used to demonstrate forestry practices to the public and other departments at VIU.
- Other departments utilize the VIU Forest to complement their programs. For example, the RMOT conduct wildlife inventory exercises; some Biology students have utilized the forest for 491 projects and the GEOG department has utilized it for orienteering exercises.

- The VIU Forest Fertilization project utilizes the woodlot to demonstrate the beneficial use of biosolids through the application of the treated solid waste onto nutrient poor forest sites. The project supports research on growth responses and undertakes environmental monitoring. Biology students have studied soil insect populations, soil chemical properties and measured tree growth in treated and untreated areas. The project also provides financial support to the Forestry Department by hiring students and contributing to student bursaries.

### **Scholarship, Award & Bursary Money**

- The endowment for forestry students at VIU is substantial. Depending on market conditions, monies available to students is in the range of \$25,000 – 29,000. The combined first and second year students typically total 40-50, of which about half qualify for a bursary, award and/or scholarship.

### **Faculty : student ratio**

- The low faculty: student ratio has obvious benefits, especially for an applied science program with a significant proportion of hands-on labs. This opportunity enables the students to acquire a *marketable skill set* for which our graduates are well known. Typically there are 35-40 FTE forestry students, with a 1<sup>st</sup> year class size maximum of 28 and a typical class size of 17-24 in 2<sup>nd</sup> year.

### **Location**

- An advantage VIU Forestry has over other forestry programs in BC is quick access to the field on a year round basis – Woodlot is 10 minutes away and we do not have “down periods” due to inclement weather (e.g. snow, excessive cold)
- We have the added benefit that the Nanaimo campus is simply a nice place – “love where you learn”

## **Weaknesses**

### **Perception**

- Public perception “forestry = bad” (i.e. no future careers and/or damaging to the environment)
- internally we are sometimes considered as “vocational training” – illustrates a lack of understanding that we are an *applied* science
- perception that the program focus is simply about harvesting; but in reality we strive to offer a balance of core engineering, ecology and silviculture courses

### **Transportation**

- Forestry is best studied in the field and class transportation is often difficult to obtain. A second “off road” bus would be very useful.

### **Access to more biologically diverse forest**

- The VIU Forest and local area represent only one small component of BC’s diverse forested landscapes. Increased exposure to Interior as well as west coast forests and forest practices would enhance the program. Travel to North Vancouver Island and to the mainland is costly; with the funding limited.

## **Opportunities**

### **Re-branding**

One option to counteract the negative perception of the forestry program is “re-branding”. Much of the negative perception comes from the view that forestry is “an industrial machine” that focuses on profits and has little regard for the environment. Re-branding would aim to break this view by making it obvious that much of what is taught in the forestry program directly considers the environment (e.g. a substantial portion of time is spent on ecology, hydrology, non-timber forest values, etc.). Refer to “Revise Course Offerings” below.

### **Revise Course Offerings**

- We have recently reconfigured some of our course offerings in order to create *stand alone* courses that address the following:
  - Forest Hydrology & Riparian Management
  - Forest Ecology
  - GIS (currently taught in 1<sup>st</sup> year, considering moving the course into 2<sup>nd</sup> year)
- The opportunity exists to design these courses in such a manner that they could be taken as 3<sup>rd</sup> year electives for those in the Biology, Fisheries and Natural Protection degree programs. This would be a *no cost* expansion of electives for these programs.

### **International**

- Through our international affiliations, students from VIU have the opportunity to student at various European institutions and receive credit at VIU; VIU students register at VIU and study abroad – European students receive the same opportunities.
- Through our strong European affiliations, VIU has the opportunity to develop international undergraduate programs.
- The VIU Forestry department is also investigating potential partner institutions in other parts of the world including China and Nepal.

### **First Nations**

- Over the years several First Nations students have entered the forestry program. However, we feel there is a great potential for capacity building in regards to forest resource management. Dialogue with interested First Nations to determine the best bridging options is needed. Note, much work has been done on this in the past – and we can make use of this work in our future efforts. Also to be explored would be the possibility of customized programs. The primary complications for this endeavour will be funding, facilities and timing. A strong demand would be required.

### **One-Year Post Graduate Diploma (under consideration)**

- **One-Year Post Graduate Forest Engineering Diploma** aimed at Fisheries graduates
- **One-Year Post Graduate Silviculture/Forest Conservation Diploma** aimed at Biology graduates

Graduates from relevant programs would have the appropriate background to undertake a specialized post graduate diploma in one year. The courses for these proposed diplomas already exist. These prospective students would occupy “empty seats” in existing courses (primarily 2<sup>nd</sup> year

courses). What is required is the determination of the required course combinations that satisfy each specialty.

### **Research**

- Faculty are involved in several long-term, multi-disciplinary research projects investigating the ecological effects of different forest practices. Topics include prescribed burning, intensive silvicultural treatments for salal-dominated sites (SCHIRP – Salal Cedar-Hemlock Integrated Research Program), and alternative silvicultural systems for high elevation forests (MASS – Montane Alternative Silvicultural Systems).
- These projects provide ongoing opportunities for research funding, journal publications, and potential study or summer employment for forestry and biology undergraduate students. The biosolids program on the VIU Woodlot also provides opportunities for applied research.
- Faculty have expertise in adaptive management approaches for balancing competing demands on natural resources as well as experience with development and implementation of Ecosystem-Based Management (EBM). There are opportunities for continued collaboration with government and industry on the cutting edge of innovative forestry, particularly with EBM research and adaptive management programs.

### **Create Demonstration Forest**

- The VIU Forest is located on the boundary of the City of Nanaimo. With the high level of public recreation uses, there is an opportunity to enhance public interest in Forest Resources Management with the establishment of a Demonstration Forest. There would also be potential to draw the forest community to host forestry work shops; as well as enhance the program through information exchange.

## **Threats**

### **Budget Cut**

It is rather obvious that any significant budget cuts will affect the course composition of the program. It would be critical to maintain the integrity (and reputation) of the program.

### **Current state of the forest industry**

The health of the BC forest industry is strongly tied to housing starts in the US, and to a lesser degree in Asia. At present, the economic recovery in the US is proceeding, but at a painfully slow speed. However, the demographics of the US indicate the long term housing start rate to be healthy and sustained. Thus the long term outlook is for a stable forestry sector in BC.