

**Curriculum Renewal and Program Review**

**Annual Summary Report**

**School of Environmental and Natural Resource Sciences**

**(SENRS)**

### Ecosystem Management Program

Prepared by:

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for Linda Skilton, Dean SENRS

### Ecosystem Management Program

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| **Program:** Ecosystem Management **Co-ordinator:** Michael Fraser **Date:** February 2012 |
| **A. Analysis of Indicators**Note: data is **not** recorded in this section of the template.**Reflect on, and discuss, the following indicators in the context of the curriculum and program:**  |
| **1. Industry / Sector Trends**Over the past 5+ years there has been a strong emphasis placed on global environmental issues. With global warming, green economics, green technologies, urban planning, the protection of biodiversity, species at risk, population health and well-being, energy and resources and the local food movement leading the way, the Ecosystem Management Program continues to present curriculum that is relevant, timely and reflective of the current trends within the environmental sector. The program continues to establish relationships with external organizations such as the Canadian Organization for Tropical Education and Rainforest Conservation (COTERC), Ontario Federation of Anglers and Hunters (OFAH), Pidwa (Askari – Wilderness Conservation Programme in South Africa and other organizations which support our Credit for Product course and our annual Field Placement activity which occurs during the last two weeks of four semester of the Technician Program. The Advisory committee will meet on March 16th 2012. Steps are being taken to strength our advisory committee by bringing new people on board and removing those who have not demonstrated commitment.In terms of professional development related activities two members of the faculty team have travelled to Washington D.C. with the third year students for the past six years for a National Environmental Conference on Science, Policy and the Environment. This activity is an annual event. Two faculty and five second year EM students travelled to South Africa for two weeks in May 2011 to support ongoing conservation work with Askari’s Wilderness Conservation Programme and to establish a long term relationship for this organization so future faculty/staff and students and obtain international experience. This trip is now an annual trip and this year two faculty will be taking 8 students to the same location so the students can complete their required field placement. The program is also in its fourth year of sending Faculty/Staff and students to the Canadian Organization for Tropical Education and Rainforest Conservation (COTERC) to support ongoing conservation work with sea turtles and to establish a long range monitoring program for reptiles and amphibians in the coastal region of Tortuguero.**2. Curriculum Development****2.1** Successful introduction of the Field Placement Course four years ago has seen approximately 200+ students from the Technician program completed a two week mandatory field placement during weeks 14 and 15 of their fourth semester. This initiative replaced the Winter Camp course.Curriculum has been updated in the Introduction to Vector GIS course, current software is ArcGIS 9.3Ongoing work is occurring with the Ecology: Concept and Linkages and Restoration Ecology courses. These courses now have a consistent faculty member who has strengthen these courses and improved the field components of these courses. Student now gain a wide variety of applied field skills and in some cases complete projects for external organizations. (e.g. Atlantic Salmon Restoration Initiative with the Ontario Federation of Anglers and Hunters)The Career Advancement Techniques course is looking at ways to engage 2nd year students with 3rd year students through a joint assessment.The Human Relations course and the Ecosystem Monitoring and Assessment (EMA) course have joined forces, whereby the major team project in EMA has team based evaluations in the Human Relations course. The goal is to have the Human relations course specialize in the team based approach to learning while the EMA course focuses in on the more technical element of their learning. This change has shown a significant improvement is students abilities to work more collaboratively The program has re-introduced the annual Eco-health conference based on recommendations from the Advisory committee during our last meeting in 2007. April 2012 will represent the fifth conference since re-introduction. The conference has attracted such speakers as Gord Miller, The Environmental Commissioner of Ontario, Steve Hounsell from Ontario Nature, Jon Steinman from deconstructing dinner.com and our very own Kevin Callan, one of Canada’s most renowned canoe authors, speakers and enthusiasts. This years conference will include Maude Barlow as the Keynote speaker**2.2**Along with a number of other programs at the Frost Campus, The Ecosystem Management Program has solidified an articulation agreement with Cape Breton University whereby our graduates from the 3 year program are eligible to complete a degree in 8 months (full time studies) by distance education. The program has agreements with universities in Ontario (e.g. Trent and York) and across Canada and Australia. The agreement with York University has recently been updated.The Program has been working on and promoting a “bridging” type initiative for University graduates who are interested in the advanced standing into third year. Students who are available to start in the January term are encouraged to complete; Forest Measurement (FSTY73), Soil Studies (NATR41), Trees and Shrubs of Ontario (FSTY50) Wildlife Observation Skills (FIWI 41) and EM-Geomatics (GEOM16). For the student who accepts this advice they are typically more prepared for third year and more accurately meets the Essential Employability skills and Program Vocational Outcomes as established by the program. This initiative has successfully been endorsed by APDC. The following courses are included in this Certificate (Ecology Concepts and Linkages, Forest Measurement, Soils Studies I & II, Trees and Shrubs of Ontario, Wildlife Observation Skills and Field Placement. **2.3**Confederation College in Thunder Bay has a program called “Forest Ecosystem Management Technician (Co-op) program. Although different in its focus, when a potential student Googles Ecosystem Management, this program along with our own comes up. Sault College in Sault Ste. Marie has a program called Integrated Resource Management Technology however it was suspended for the fall of 2009. Additional Programs of a similar nature appear across the United States. **2.4**The program needs to look into Alberta’s provincial standards for accreditation because a number of EM students have indicated that the program is not well recognized in Alberta and are often encouraged to complete a Forestry Program to meet provincial standards even though the EM students get hired.**2.5**The program has successfully re-introduced the Annual Ecohealth conferenceThe program has successfully launched an annual trip to Costa Rica and to South Africa to take part in Rainforest, and Savannah Conservation related activitiesThe program has replaced Winter Camp with a Mandatory two week (80 hour) field placement course which occurs during week 14 & 15 (April) of the fourth semester of the Technician program.The Program has successfully introduced a number of additional certifications over-and-above the core curriculum (e.g. Ontario Benthic Biomonitoring Network Protocol, Radio Telemetry) These courses are not mandatory, they are simply value added for those students who are interested in building their educational portfolio.Future certification courses that the program would like to have in place include Backpack Electro-fishing Level 1 and Land Pesticide Application License.An updated curriculum map should be submitted with this document.**3. Student and Graduate Satisfaction**3.1 Key performance indicators # 4, 8, 9, and 11 (see **Appendix C** for a description of these).**4. Employment Trends****4.1** Aside from the down turn in the global economic environment there does not appear to be a change in the employment trends. For example in the winter semester of 2008 the program coordinator received between 70 – 100 job ads and for the same period in 2009 saw an increase in job ads coming into the program coordinator’s office; therefore even though a number of sectors have been hit hard with job lay-offs, the environmental sector does not appear to have been impacted to the same degree as other sectors. Based on growing global awareness and general interest in environmental issues it is expected that we will see future growth in this area. **4.2** A number of curriculum based issues that need attention include;development time so that the program can embed Aboriginal based knowledge and education within core EM Courses. These courses include: Ecology: Concepts and Linkages (Semester 2) Aquatic Ecosystems, Restoration Ecology and Terrestrial Ecosystems (Semester 3). **(This has been successfully accomplished – we continue to work on this to strengthen this initiative)**The program would also like to have the Aboriginal History and Culture General Elective as a required course in semester 2 which means that this course would need to be available for both the winter and spring/summer semesters. **(This has been successfully accomplished)**A number of strengths that employers identify in our graduates include; individuals who are well prepared, posses strong written and oral communications skills, who often perform well in interviews. They are also recognized particularly if they have attended third year as having the ability to think critically and have the ability to manage multiple tasks effectively. |
| **B. Curriculum Strengths and Challenges** Summarize the curriculum strengths and challenges identified by the team.  |
| * The strengths identified by the team include, diversity of curriculum, the use of current provincial protocols with curriculum, course interaction amongst faculty, emphasis on communication between students & faculty and between faculty, Certifications, International opportunities, sense of community.
* The challenges identified by the team include diversity of curriculum, it can be seen by some not to be in-depth enough, curriculum may not be recognized in other provinces such as Alberta, class sizes particularly for field work related activities, the introduction of additional real-world hands-on projects to support the needs of the environmental community and our students alike. The team also seems to agree that we need to continue to raise the bar so that students can graduate with an established reputation.
* As the program grows in numbers (as it is) it is becoming harder-and harder to manage enrolment
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| **C. Action Plan**Identify priority actions for the next year and the rationale for their inclusion. For each, indicate the project lead, and the proposed timelines for completion.   |
| * Introduce Aboriginal knowledge into a minimum of four core EM courses: Ecology: Concepts and Linkages, Aquatic Ecosystems, Restoration Ecology and Terrestrial Ecosystems. This is necessary so we can have an aboriginal emphasis embedded into our curriculum by September 2010. **(Complete).** Program team will continue to work on this to ensure excellence in curriculum and to ensure respect is given to this initiative
* Establish a professional on-line reporting system for the Field Placement course. This would include working with Fleming Data Research to establish an on-line questionnaire which can be completed by the employers when the students have completed their field placement. This questionnaire should be linked to our program webpage along with the student Daily Journal so that all submissions for this field placement course can be completed anywhere where there is computer access. The project lead would be Ernie Silhanek and should be completed by spring of 2010. **(This is on-going – however a great deal of this has been accomplished)**
* Establish a third international field placement opportunity so students have options when it comes to international work opportunities. The program would like to have this in place by the time the 2013 (April) field placement activity takes place.
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| **D. Deferred Actions**Record any issues that will need to bemonitored, researched, or deferred for future action. |
| * **N/A**
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**Common Themes**

1. **Infrastructure Needs**

All programs indicated there is a need to update existing equipment and facilities. Several programs share equipment and with the increased use and demand for these pieces, there is extensive wear and tear on most of the equipment. The cost to repair a lot of the equipment is expensive. Storage space also continues to be an issue.

***Action:***

Continue to advocate for capital equipment and a space plan that includes a designed area to store, sign out, monitor and maintain existing equipment.

1. **Industry Support**

Various members of the Advisory Committees have requested lists of needed equipment to see if they could donate any of their surplus pieces.

***Action:***

Coordinators have to be proactive to make the requests for donations.

1. **Program Quality**

It was identified that some of the protocols and procedures used, and the supporting materials, are outdated. There is the challenge to find time to update curriculum at the same time as moving forward to adopt corporate initiatives such as blending learning. There is also a need to develop new skills around assessment and evaluation, and the use of new technology in the learning environment.

***Action:***

Faculty are making a conscious effort to ensure relevance and currency in their curriculum, but they need professional development to incorporate different learning methods. There needs to be more support for individual assistance to redesign curriculum and its assessment, to embrace the advancement of technology, and to learn how and where to use technology.

1. **Human Resources**

There has been an increased use of contract faculty, primarily due to enrollment growth, which can potentially compromise program content as the faculty may change from semester to semester. There have also been several retirements, whose specialized skill sets needs to be replaced.

***Action:***

Develop a hiring plan to replace the skill sets required as SENRS moves forward to start new programs and update existing ones. Five fulltime faculty and one full time instructor are in the approved plan for 2012/13.

1. **Articulation/Transfer Agreements**

Program coordinators continue to be active in engaging in opportunities to create articulation agreements across colleges and universities. With increased competition for a shrinking student population, and the desire of employers to have graduates with both technical, applied skills as well as advanced learning, the environment is favourable to create more pathways for learning.

***Action:***

Coordinators identify potential articulation opportunities to the Chair, who will make the connections and initiate dialogue to establish agreements. Once established, a clear visual aid for marketing these opportunities to students needs to be created.