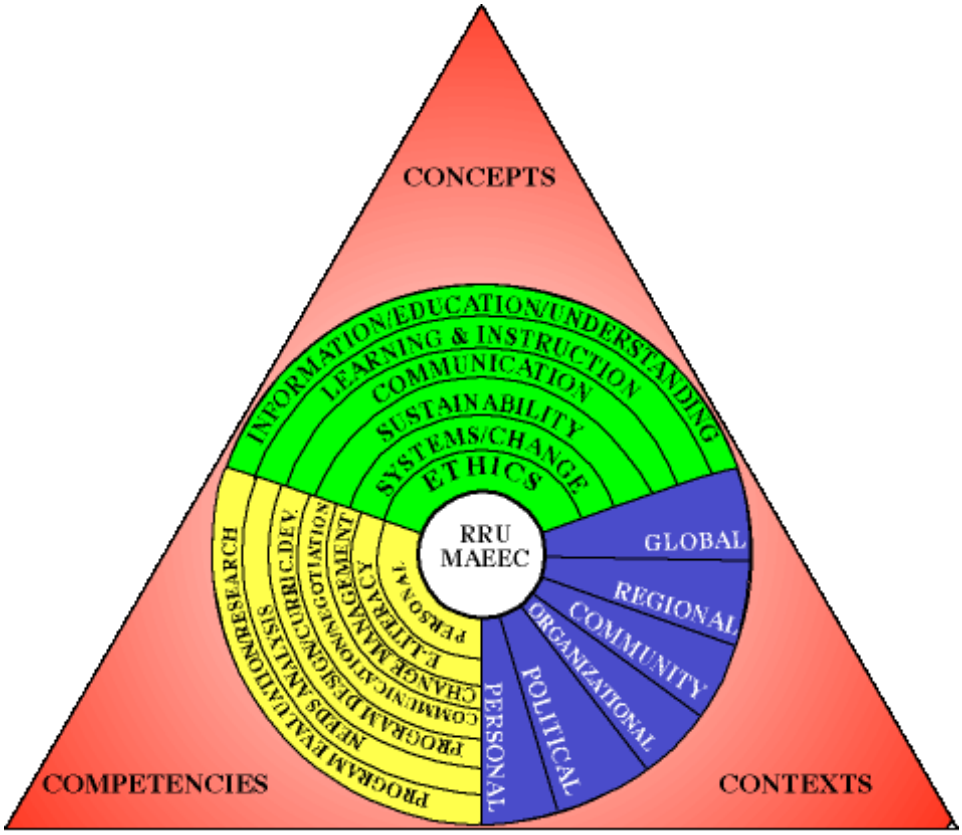
Royal Roads University

Division of Science, Technology and Environment



Masters of Arts Program in Environmental Education and Communications

Proposed Curriculum

Victoria BC

February 2002

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1 Executive Summary

Institutional and Program Identification

The Master of Arts in Environmental Education and Communication will be awarded by Royal Roads University. The program will be offered by the Division of Science, Technology and Environment. Dr. Steve Grundy is the Dean of this division.

The Mission of Royal Roads University is "To excel at the provision of continuous learning for people in the workplace". It accomplishes this mission through the unique combination of:

- Being a learner-centered University
- Meeting the changing needs of life long learners working in the information economy
- Providing market-driven applied programs based on learners needs and designed in collaboration with representative advisory boards.
- Facilitating access through the use of outcomes-based education, prior learning assessment and distance learning technologies
- Adopting an organizational structure that can readily adapt to change

The Mandate of Royal Roads University is for it to be a special purpose university, that will exercise its mission in a way that is valued internationally, nationally and locally, amongst learners, employers and governments because it will:

- Enable learners to enhance their knowledge and skills pertinent to work in the 21st century in order to develop as individuals and to play a fuller role in their communities
- Recognize learning through the award of credentials (and credit towards them) that are valued in the labour market and within the education community
- Provide collaborative, innovative and cost effective solutions to problems through research and consultancy
- Serve the local community by providing access to the campus and its facilities; providing continuing education, outreach support and advocacy; and through action that promotes British Columbia Pacific Rim Economic Development
- Provide employment opportunities that are stimulating, challenging, fulfilling and encourage and empower individuals to develop themselves.

This proposed program is consistent with RRU's mission and mandate. The M.A. in Environmental Education and Communication will augment the other degree programs within the Science, Technology and Environment Division and will, at the same time, make use of courses and institutional resources from other Divisions, in particular from Peace and Conflict Studies and Organizational Leadership and Learning, and from the proposed program in Applied Communications. Graduates are expected to make contributions to increase society's critical understanding of environmental issues through the exemplary communication of sound

science and forms of traditional knowledge, and through the development of analytical techniques for making value-based decisions.

Program Justification

It is becoming clear that the 21st Century will be marked by significant challenges to the existing patterns of human-environment relationships. Issues such as global climate change, ozone depletion, loss of biodiversity, deforestation, desertification, urbanization, resource depletion, population growth, and genetic modification of foodstuffs are regular items in the news media and are indicated as important public concerns in many polling and opinion surveys.

In Canada, as in other regions of the world, the current status of energy resources, endangered species and habitats, fisheries and forests are under continual scrutiny and debate and are often sources of intense conflict in communities. Meetings of the WTO, the World Bank, the Organization of American States and oil and gas producers have been marked by major public protests focused on the potential environmental impacts of decisions made by these bodies. In North America and Western Europe, rising fuel prices have sparked renewed interest in energy conservation and in the development of alternative energy sources. While public concerns and debates may sometimes be misguided or result from campaigns designed by special interest groups of a wide range of perspectives, they are a clear indication of community interest in the state of the environment.

The program is directed to the challenge of developing the leadership needed to nurture and enable that dialogue and implement effective actions. It is intended that graduates will be capable of providing leadership in the development of appropriate environmental education and communications missions within a range of organizational contexts.

Program Description

The Master of Arts in Environmental Education and Communication is a leadership program focused on developing the competency and skill of educators and communicators who have an interest in or a responsibility to present environmental information to audiences. These individuals will typically be engaged in a range of occupations, from classroom teachers to government public relations specialists, from non-governmental organization program developers to mass-media journalists. They will come from a wide range of locations in British Columbia and elsewhere, and with a broad set of background experiences and competencies.

The learners will require both theoretical and practical knowledge. Solid groundings in environmental science and sustainability, learning theory, environmental education, educational program development, philosophical and cultural analysis, journalism and communications theory will all be valuable tools developed through a Masters experience in this program.

The core of the program will focus on four themes:

- Science and philosophy of environment and sustainability

- Communicating about the environment (focus on teaching, learning and communicating, evaluation/assessment of learning, traditional and contextualized knowledge),
- Communicating in the environment (focus on program design, field studies, out of school experiences, informal learning settings), and
- Communicating for the environment (social marketing, conflict resolution, action plans and projects, and community development).

These four themes will be explicated through the investigation of four dimensions of environmental education and communications:

- Dimension 1: Knowledge of Foundations and Context
  - 1.1 Developing a Deeper Understanding of the Environmental Context
  - 1.2 Appreciating the Range of Opinions and Options
  - 1.3 Taking Stock of Public Knowledge and Attitudes
- Dimension 2: Program Design
  - 2.1 Developing Knowledge of the Foundations of Learning.
  - 2.2 Understanding the Range of Modes for Program Delivery
  - 2.3 Program Design
- Dimension 3: Program Implementation & Assessment
  - 3.1 Planning for Implementation
  - 3.2 Program Evaluation
  - 3.3. Program Revision and Renewal
- Dimension 4: From Awareness and Knowledge to Action
  - 4.1 Consensus Building and Conflict Resolution
  - 4.2 Facilitating Appropriate Actions
  - 4.3 Facilitating Environmental Education and Communications in an Organizational Context

A leading Australian environmental educator, Ian Robottom, has laid out five principles for professional development in environmental education that this program will focus around. Robottom feels that professional development studies should be[1]:

- *enquiry-based,* in order to encourage participants to adopt a research stance towards their own EE practice;
- *participatory and practice-based*, by directly involving teachers in addressing the relationship between their personal beliefs, social and educational ideologies, and between their educational intentions and institutional influences;
- *critical*, in that they involve a critique of environmental and educational values and assumptions that inform policies, resources and practices;
- *community-based*, involving participants in the active investigation and amelioration of the real world problems of relevance to the communities in which they exist;

[1] This material is derived from a Study Guide for Foundations of Environmental Education, developed by Annette Greenall Gough of Deakin University, Australia, 1992.

- *collaborative*, because collaborative action is usually more productive than individual efforts, and though working collaboratively, individuals are more easily able to clearly see the issues all face.

The program will be laddered, so that individuals may be able to receive a Graduate Certificate, Graduate Diploma, or full Masters degree. A Graduate Certificate would be awarded on successful completion of a residency and one distance-based semester (6 months). The Graduate Diploma would be awarded on successful completion of two residences and two distance-based semesters (one year). The full two-year program leading to the M.A. will be delivered through a combination of three residential periods, three distance-based semesters, and a major project (thesis equivalent).

2 Curriculum

2.1 Program Intent and Major Learning Outcomes

The Environmental Education and Communications program will have both applied and theoretical components.

There is no single way to think about environmental education, and there are many approaches to environmental communications. We will present a range of theoretical understandings about the topics presented. And as cultural understandings are an important part of education and communications, we will need to present opportunities for learners to be engaged in discussion with holders of traditional, as well as scientific, knowledge.

Theory needs to be tested in the crucible of application. The programmatic activities, leading up to the major project, will be where learners put theoretical understandings to practical test.

A primary objective of the program is that of developing educational and communications products and approaches that enhance environmentally appropriate and sustainable behaviour. As behaviour, broadly speaking, is driven by many things including knowledge, attitudes, habits, modeling, persuasion, values or ethics, learners in this program will have opportunities to examine and explore all of these drivers of behaviour.

In order to describe the specific purpose of this M.A. program, the following major learning outcomes have been identified. Implicit in these outcomes is that learners will develop broad leadership skills which should enable them to implement the knowledge acquired in the program. It is intended that graduates will achieve these outcomes as a result of their learning experiences and personal development in the program, and will be able to:

a) Develop and implement programs to provide students, clients and other audiences with up-to-date, reputable scientific and technological information, as well as traditional knowledge, about current environmental issues and opportunities;

b) Apply the best current knowledge of learning and cognition to the design, development, and implementation of programs of environmental education and communication;

c) Design, develop and implement environmental communications and education programs using a range of formats and incorporating relevant current technologies and media;

d) Evaluate the status of public information and prior knowledge concerning environmental values, issues and opportunities;

e) Possess a sophisticated awareness of the range of perspectives (e.g. attitudes, beliefs, values) towards the environment and human activity in the environment;

f) Evaluate environmental information and education programs;

g) Develop and implement strategies to foster conflict resolution, constructive dialogue and community knowledge construction concerning environmental issues;

h) Develop approaches to nurture effective and responsible environmental actions on the part of corporations, governmental and non-governmental organizations and citizens' coalitions;

i) Provide up to date information about innovations in environmental communication and education;

j) Possess a sophisticated awareness of the nature of contemporary human-environment issues and their implications for education and communications programs;

k) Develop a systems perspective on problems in environmental education and communications.

l) Develop an understanding of EEC functions within organizational contexts

2.2 Courses in Environmental Education and Communications

The program structure will be built upon a substantial foundation of theory and practical knowledge, providing a basis for the applied elements of the program. Two areas of theory will be developed concurrently with the applied components: ecological principles and approaches to sustainability, and educational and communications theory. These two areas will be integrated through practical and applied aspects of the program.

New and Existing Courses

It is clear that some of the courses needed for this program already exist at RRU in a number of different departments, including ES 586 (The Biosphere And Ecological Sustainability), LT 501 (Organization and Change), LT 504 (Systems Thinking), LT 520 (Developing Leadership

Capacity) LT 522 (Resolving Conflicts), DL 501 (Learning Theory), DL 502 (Instructional Design in Distributed Learning), and DL 514 (Needs Analysis and Program Evaluation), while some are proposed, such as AC 620 (Research Methods). However, a number of new courses would need to be created and implemented, related to subjects such as environmental education and communications, worldviews and ethics, environmental programming, learning in informal/non-formal settings, and placing EEC in an organizational context. Course descriptions are offered in Appendix A. The relationships between the proposed courses and both the learning outcomes and the dimensions of environmental education and communications are presented in Appendices B and C.

2.3 Program structure

The **first term** of the program will begin with a three-week residential period, followed by a distance education semester of four months. The **second term** will begin with the four-month distance education semester, followed by a three-week residency. The **third term** will involve a four-month distance education semester, followed by an eight-month period for carrying out a major research paper.

At the end of the eight-month period will be the **final one-week residency**. This final gathering will be allow students to present their findings before their peers, and to provide an opportunity for learner and faculty to debrief the program and consider recommendations for the future.

Each residency will have an on-going advanced seminar, with credit awarded at the end of the final residency. This advanced seminar will bring current practitioners to present state-of-the-art information and debate. Once the first graduates complete the program, the graduating students would present their findings during the final week of the seminar, which would correspond to their final residence period.

All learners will create learner agreements, articulating the terms under which they will complete the various requirements of the program. These agreements are then available as reference documents for both faculty advisor and learner, as the learner proceeds through the program.

Table 1: Matrix for M.A. in Environmental Education and Communications

Residency 1: Three weeks	Distance 1: Four months	Distance 2: Four months	Residency 2: Three weeks	Distance 3: Four months	Project:: Six months	Residency 3: One week
EEC 500 (3) Learning and Communicating about the Environment	EEC 530 (3) Learning and Communicating for the Environment	ES 586 (4)* The Biosphere and Ecological Sustainability	LT 522 (2)* Resolving Conflicts *Or,* LT501 (2)* Organizations and Change	AC 620 (2)* Research Methods *Or,* DL 514 (2)* Needs Assessment and Program Evaluation	EEC 690 (8) Major Research Project	
LT 504 (2)* Systems Thinking	DL 502 (3)* Instructional Design Methods	EEC 510 (2) Worldviews, Ethics, and Environment	EEC 505 (3) Learning and Communicating in the Environment	EEC 540 (2) EEC in an Organizational Context		

DL 501 (3)* Learning Theory			EEC 685 (2) Developing the Project Proposal	*Or,* LT 520 (2)* Developing Leadership Capacity		
EEC 680 Advanced Seminar (part 1)			EEC 680 Advanced Seminar (part 2)			EEC 680 (1 cr.) Advanced Seminar (final)
8 cr.	***6 cr.***	***6 cr.***	***7 cr.***	***4cr.***	***8 cr.***	***1 cr.***
	Certificate		*Diploma*			*MAEEC degree*

* Courses in other departments that may be used with or without modifications to reflect the focus of MAEEC program.

Graduate-level academic standards and assessment methods will apply to the major project. Learners will be strongly urged to organize their time so as to complete the entire program within the two-year period. Learners must complete their major project prior attending their final residency.

Total Credits for Master of Arts in Environmental Education and Communications = 40

2.4 Research Expectations

The M.A. in Environmental Education and Communication will have a research requirement in the form of a major project. Graduate candidates and their faculty advisors will use the following criteria for defining an appropriate applied research project:

a) Execution of the proposed research project should require the application and synthesis of the competencies acquired during the program of study.

b) The project must be grounded in solid academic scholarship and require sustained, creative, independent skill application and thought from the learner.

c) The proposed research project should examine a theoretical problem or proposal, a practical problem or series of problems, review or evaluate an operational program, or result in one or more communications or instructional programs or learning resources that can be adequately addressed or produced (including phases for evaluation and product-testing) in six to eight months.

d) The potential outcomes, conclusions or recommendation of the proposed research project should be founded in both the body of knowledge or area of study undertaken by the candidate, and, if relevant, the experiences and/or needs of the organization or institution involved.

3 Learning Environment and Methodologies

3.1 Learning Environment

A positive and supportive learning environment is necessary for successful education. For environmental education, an interesting and varied environment is essential for the development of instructional techniques. Each member of the learning community—learners,

faculty, mentors and advisors—will contribute to the development of a stimulating and challenging setting for learner growth.

The importance of the residency periods cannot be overstated: it is here that the learning community is created and relationships formed. It is here, through the relationships developed during face-to-face contact, that the quality of the distance-delivered courses will be ensured.

RRU's close proximity to marine, estuarine, freshwater, terrestrial and urban environments, as well as access to a range of NGO and governmental agencies (regional, provincial, federal), enhances our abilities to create an engaging learning environment for the study of environmental education and communications.

3.2 Learning Methodologies

This program will utilize a range of methodologies, including case studies, field studies, cultural studies, team projects, lectures and seminar discussions, and on-line modules. RRU has become a leader in the delivery of web-based interactive distance education courses, and these will be of great value during non-residential periods.

Faculty and peer review processes will provide continuous feedback to learners on their progress with competencies.

Active mentorship will be encouraged between learners and faculty, and between practitioners working in the field. Regular communications between learners and learners, and learners and faculty will be maintained.

4 Faculty

A Core Faculty coordinator will head the Environmental Education and Communications Program with responsibility for planning, oversight and management. Associate Faculty will also be added to the program for both the face-to-face and distance-education components of the program. Faculty from other divisions and programs will be utilized to teach courses within their area of expertise. Practitioners from a variety of backgrounds will be retained to participate as mentors, guest presenters and/or seminar leaders.

4.1 Academic Qualifications

Faculty principally involved in providing theoretical foundations will normally be expected to have doctoral degrees. Instructional personnel in applied areas of the program are expected to have a varied range of academic qualifications and experience relevant to the topic being examined.

The design of the program allows for flexibility in staffing and in course content. The residential periods are intended to attract sessional faculty and mentors of an international caliber. The ability to bring in sessional faculty allows the program to keep current with leading-edge thinking and practice in the field.

5 Program Consultations and Evaluations

5.1 Nature of Consultations

The proposed M.A. in Environmental Education and Communications program grew out of discussions with faculty involved in both the *M.A. in Leadership and Training* and *M.A. in Distributed Learning* programs. From this discussion, an on-line questionnaire was developed and posted to several large groups of practitioners with a potential interest in this program. These groups include email lists of:

- EECOM (Canadian Environmental Education and Communication Network),
- EEPSA (Environmental Educators professional group affiliated with the BC Teachers Federation),
- Society of Environmental Journalists,
- Ontario environmental educators,
- Alberta environmental educators,
- Environment Canada's list of environmental educators and communicators,
- Interpretation Canada (educational workers in parks, museums, aquaria, etc.).

The questions included on the web survey were congruent with the previous telephone surveys often carried out by RRU when planning new programs.

Comments from the on-line survey are presented in Appendix D, and further statistical analysis in Appendix E.

Valuable recommendations came from consultations with Dr. Bill Hammond (Florida Gulf Coast University), Dr. Paul Hart (University of Regina), Dr. Tina Baldwin (Phoenix Clean and Beautiful) and Mr. Kerry Baldwin (Arizona Game and Fish).

5.2 Program Review and Evaluation

The Environmental Programs Advisory Board (Appendix F) has favourably reviewed this proposal. Following approval of the proposal, an Implementation Committee will be struck, involving members of the Advisory Board plus new members bringing a professional expertise in Environmental Education and Communication (Appendix G).

As a standard institutional procedure, the program will be subject to on-going review and evaluation. The evaluation will consist of formal feedback obtained from learners, faculty and staff, advisors, partners and mentors. As well, the Environmental Programs Advisory Board, expanded to include specialists in Environmental Education and Communication, will regularly review the functioning and success of the program. In addition, the Academic Council of Royal Roads University requires that independent external, academic reviews be conducted for all degree programs.

5.3 Membership and Involvement

An Environmental Education and Communications Program Advisory Panel may be constituted as a subgroup of the Division Advisory Board, with the intent of engaging leading practitioners and academics in assisting with planning, implementation, program evaluation and program adjustments. This group will be brought together to review the program plan, along with members from the Program Advisory Board, shortly after the approval of this proposal.

6 Admission and Transfer

6.1 Academic Background and Personal Suitability

Characteristics for Admissions

Fundamental to the success of the program will be the ability to attract appropriate learners. Prospective learners must meet general admissions conditions and follow procedures for graduate level programs at Royal Roads University. The requirements for entry into the Environmental Education and Communication program will include:

- An undergraduate degree or establishment of equivalency through the University's prior learning assessment policies and with approval of the Dean of Science, Technology and Environment Division;
- Competency in the English language;
- A minimum of two years' demonstrable experience in the field of environmental education and communication.

In all situations, applicants are required to submit transcripts and additional materials including portfolios, a 500 word personal statement explaining your interest in the program, a resume and two references, all intended to demonstrate the development of skills and commitment to complete a program at this level.

Transfers

Royal Roads University actively pursues partnerships with other educational institutions as well as with other agencies and organizations to engage them in providing support for the design and delivery of their programs. relationships between partners may take several forms. Learners may propose to take courses or participate in learning experiences from other institutions in order to satisfy some requirements of the M.A. in Environmental Education and Communications. The University is committed to making provision for recognition and transfer of credits to/from other educational institutions.

As well, it is anticipated that learners in other Royal Roads programs may wish to transfer to or from the Environmental Education and Communications Program. Where this is the case, a process will be established for examination of credit transfer by authorities for the involved program. Decisions regarding approval of credit or transfer arrangements will be made by the Dean, Science, Technology and Environment, with respect to the appropriateness of the courses or experiences related to specific course and program outcomes as well as with reference to the integrity of the program.

Appendix A: Proposed courses

- courses proposed in other programs
- courses proposed for this (EEC) program
- existing courses

AC 620 Research Methods (2 cr.)

In preparation for their research /consultation project, learners will be introduced to a range of research methods and approaches, including research design (quantitative and qualitative), survey research, content analysis, textual analysis, discourse analysis, legal and documentary research, ethnographic techniques, cultural studies approaches. The divide between empirical and interpretive perspectives in communication research will be introduced, and learners will be encouraged to explore various research strategies as they prepare to submit their own research project proposals. The practical application of various methodologies will also be considered.

DL 501 Learning Theory (3 cr.)

This course introduces learners to a variety of learning theories and their impact on the creation of learning experiences and training programs.

DL 502 Instructional Design Methods (3 cr.)

This course is intended to introduce learners to the concepts and processes of instruction design. Instructional design will be seen as an intentional process intended to create learning environments that support effective and efficient learning and instruction appropriate to particular bodies of skill and content and in specific contexts. Learners will analyze the differences between various instructional design models and identify the theoretical constructs supporting each model. Learning activities will be illustrated through particular cases and topics.

DL 514 Needs Assessment and Program Evaluation (3 cr.)

This course prepares learners to conduct needs analysis studies, course and program evaluations, and return-on-investment studies for clients. We will review the literature, theory and practice of needs assessment and program evaluation, stressing the use of these approaches as both a practical enterprise and a research activity.

EEC 500 Learning and Communicating about the Environment (3 cr.)

At the core of environmental education and communication is how people learn about and understand the environment. How we come to our understandings of the world, how it operates, and our place in it, is influenced by early experience, cultural suppositions, available information and educational efforts. This course will examine a range of theories about environmental learning. Delivering environmental messages now involves using a wide range of media and other delivery vehicles. Learners will examine the efficacy of different forms of

environmental communication including the new media, and have opportunities to critically examine a range of educational and communications approaches. Principles and practices of communications as applied to environmental content and themes will be explored in this course.

EEC 505 Learning and Communicating in the Environment (3 cr.)

Much of environmental learning, and the learning of students, should take place in the environment. Field activities and direct, first-hand contact with nature, is critical to environmental understanding. We will examine the potential of informal learning environments, such as museums, parks, aquaria etc. A variety of methods and techniques for environmental learning will be explored, including heritage interpretation and field studies.

EEC 510 Worldviews, Ethics, and the Environment (2 cr.)

Our current environmental situation stems as much from issues of philosophy, ethics and values, of worldviews and lifestyles, as from the products of technology. We will look at the roots, both religious and philosophical, of the dominant tradition in Western culture and civilization behind the ecological crisis of today, and examine newly developing ethics of the environment (not merely an ethic about the environment). This course will examine the range philosophical stances at work today as expressed in contemporary environmental education and communications. Working with students to examine philosophical issues will also be covered.

EEC 530 Learning and Communicating for the Environment (3 cr.)

Action projects and community mobilization activities are essential steps for our society as we work to move towards sustainability. Learners will be able to develop and implement action projects, and be able to explore the place of action, and the relationship between action and knowledge, in the activities of education and communications. Enablers of action and inhibiters of action will be explored. We will examine social marketing as one of the ways to mobilize communities to take actions.

EEC 540 Environmental Education and Communications in an Organizational Context (2 cr.)

This course addresses the roles and relationships of persons and departments charged with EEC in organizations. It also examines leadership for EEC in organizations with diverse goals and missions. A systems view of organizations will be developed, and the potential contributions of EEC to an organization will be examined.

EEC 680 Advanced Seminar on Environmental Education and Communication (1 cr.)

This is a required course that will run across all three residency periods. Guest faculty, mentors, resident faculty and learners will make presentations addressing current issues in EEC. The final week of the seminar will be devoted to the presentation of major projects by graduating students in the MAEEC program. It may also provide a forum where distinguished speakers from a range fields and backgrounds, can share their ideas with the University community.

EEC 685 Developing the Project Proposal for MAEEC (2 cr.)

In collaboration with faculty, mentors and peers, the learner develops a proposal for a major project. This would include the development of a focus for inquiry or development of a technology, learning resource or communications product, a review of applicable literature, and a personal statement of the reason for interest of the project. The methodological section, including a design for field or pilot-testing of the proposal, will be completed by the end of the research methods course.

EEC 690 Major Project (8 cr.)

The major project is the culminating activity of the Master's degree program. It may demonstrate detailed and current research in a topic related to the objectives of the program, or mastery of the program competencies resulting in a technology, or educational or communications project. This project should be between 60-100 pages in length, with references and, if relevant, an appropriate research methodology.

ES 586 The Biosphere and Ecological Sustainability (4 cr.)

This course is geared for learners whose research or management interests include current ecological issues relating to the environment. The primary focus is on understanding interactions between human (anthropogenic) activity and the biosphere as they relate to such topics as habitat, biodiversity and conservation, environmental pollution (including global climate change), land use, and ecosystem health. Many of the basic ecological principles that govern the natural dynamic state of ecosystems anthropogenic stress, and how some of these activities might be modified to promote ecological sustainability. This will be achieved through a wide variety of approaches, including readings and case studies, online group discussions, and independent and group research or review assignments focusing on current local, regional and international environmental issues.

LT 504 Systems Thinking (2 cr.)

This course introduces learners to systems thinking as a way to conceptualize and solve problems. Learners focus on problem discovery, problem identification and creative problem-solving. They are provided with systems models that they can use to understand problem situations and lead change efforts. Learners will leave this course able to view their organization with new conceptual insights and an expanded frame of analytical reference.

LT 522 Resolving Conflicts (2 cr.)

In this course, learners demonstrate their understanding of and ability to resolve conflicts in a variety of situations.

Appendix B: Course / Learning Outcomes matrix

	AC 620	DL 501	DL 502	DL 514	EEC 500	EEC 505	EEC 510	EEC 530	EEC 540	ES 586	LT 504	LT 522
Develop and implement programs to provide others with information and knowledge			■		■	■		■				
Apply the best current knowledge of learning and cognition	■	■	■	■	■	■						
Design, develop and implement environmental communications and education programs		■	■		■			■				
Evaluate the status of public information and prior knowledge	■			■							■	
Possess a sophisticated awareness of the range of perspectives						■	■			■		■
Evaluate information and education programs;	■		■	■					■		■	
Develop and implement strategies to foster conflict resolution								■	■			■
Develop approaches to nurture effective and responsible environmental actions					■			■				■
Provide information about innovations in EEC									■			
Possess a sophisticated awareness of the nature of human-environment issues and implications for EEC programs							■	■		■		
Develop a systems perspective on problems in EEC	■			■	■		■		■	■	■	
Develop an understanding of EEC functions in organizational contexts				■	■		■		■	■	■	

Appendix C: Courses / Dimensions of Environmental Education and Communication

AC 620 Research Methods (2 cr.)

Dimension	Competency & Skill	Attainment indicator
1.3 Taking Stock of Public Knowledge and Attitudes	• Knowledge of common techniques for studying and surveying prior knowledge and public attitudes and values, as well as an appreciation for the powers and limitations of these tools and processes.	• A developed plan to survey public attitudes and knowledge concerning a selected environmental issue or policy proposal.
3.2 Program Evaluation	• Ability to develop appropriate program evaluation criteria and benchmarks. • Knowledge of a range of program evaluation strategies including qualitative and quantitative approaches. • Ability to define both formative and summative evaluation strategies. • Ability to develop a program evaluation plan	• The development of a program evaluation plan for a particular program example and context.
3.3. Program Revision and Renewal	• The ability to assess the significance and implications of information obtained from program evaluation processes.	• The utilization of information from program evaluations to create a plan for program renewal or revision.

DL 501 Learning Theory (3 cr.)

Dimension	Competency & Skill	Attainment indicator
2.1 Developing Knowledge of the Foundations of Learning.	• A working knowledge of current learning theory and its implications for program design, learning environments, and instruction. • An appreciation of the implications of prior knowledge, concept formation,	• A description of the major concepts of modern learning theory and an assessment of their implications for program design. • A description of the research approaches that have contributed to current knowledge of learning and

	and metacognition for the development of educational programs and materials, with specific application to environmental education. • An understanding of the relative importance of the roles of various media and other socio-cultural influences on the development of environmental concepts and attitudes in the young and in adults.	instruction and an assessment of the validity of learning theory as an influence on program design and development.

DL 502 Instructional Design Methods (3 cr.)

Dimension	Competency & Skill	Attainment indicator
2.3 Program Design 3.1 Planning for Implementation 3.2 Program Evaluation 3.3 Program revision and renewal	• Knowledge of strategies for program design, including methods for needs assessment and templates for instructional design. • Ability to develop programs which not only deliver content but that helps the clients or learners understand the content. • Knowledge of effective communications and instructional strategies and the ability to incorporate these in program designs delivered via various media and processes. • Knowledge of program design approaches involving prospective program instructors or facilitators in the design process as a means of enhancing the final product and creating a sense of ownership.	• An example program concept designed to nurture a better-informed or educated clientele with respect to a selected environmental issue or topic. • Effective communications and learning strategies incorporated within program design. • Appropriate media selected to attain program objectives and incorporated in final program design. • Prior knowledge and needs assessments reflected in final program design. • A program design tailored to the capabilities of those who will implement it or a plan for in-service training to support the program's users.

DL 514 Needs Assessment and Program Evaluation (2 cr.)

Dimension	Competency & Skill	Attainment indicator
1.3 Taking Stock of Public Knowledge and Attitudes	• Knowledge of common techniques for studying and surveying prior knowledge and public attitudes and values, as well as an appreciation for the powers and limitations of these tools and processes.	• A developed plan to survey public attitudes and knowledge concerning a selected environmental issue or policy proposal.
3.2 Program Evaluation	• Ability to develop appropriate program evaluation criteria and benchmarks. • Knowledge of a range of program evaluation strategies including qualitative and quantitative approaches. • Ability to define both formative and summative evaluation strategies. • Ability to develop a program evaluation plan	• The development of a program evaluation plan for a particular program example and context.
3.3. Program Revision and Renewal	• The ability to assess the significance and implications of information obtained from program evaluation processes.	• The utilization of information from program evaluations to create a plan for program renewal or revision.

EEC 500 Communicating about the Environment (3 cr.)

Dimension	Competency & Skill	Attainment indicator
1.3 Taking Stock of Public Knowledge and Attitudes	• Knowledge of the major findings of current research on public attitudes and values toward the environment in Canada, the U.S. and selected international contexts. • Understanding of the implications of current public knowledge and attitudes for programs of environmental information and education.	• Identification of major sources of information concerning public environmental knowledge, values and attitudes and social trends. • A plan and procedure to assess prior knowledge of a selected environmental topic or issue among members of a potential program client/student/ audience group.

2.1 Developing knowledge of the foundations of learning	• Understand the importance of early experiences with nature • Understand the history and evolution of EE • Understanding different concepts of environmental literacy • Appreciate cultural differences in environmental understandings • Understand the place of Traditional Ecological Knowledge in the understanding of place	• Environmental autobiography written
2.2 Understanding the Range of Modes for Program Delivery 2.3 Program Design	• An appreciation of the major means of delivery of environmental information and education programs, including print, non-print, and electronic media. • The ability to describe how various media and approaches have been applied to current and past programs of environmental communication, information, and education, citing appropriate examples taken from formal and non-formal education sectors, or from programs developed by corporations, government agencies, or NGOs. • An appreciation of the use of Internet-based communications and information technologies as vehicles for program delivery	• An analysis of example program materials and approaches as illustrations of how various media have been applied to environmental information and education, including a review of the appropriateness of the selected media and processes given program goals. • A critical review of selected environmental information and education programs which use the WWW/Internet as a medium for delivery • A communications plan or educational strategy proposal for a specific environmental issue or context.

EEC 505 Communicating in the Environment (3 cr.)

Dimension	Competency & Skill	Attainment indicator
2.3 Program Design	• Organize and	• Develop a design for

3.1 Planning for implementation 3.2 Program evaluation	facilitate meaningful field experiences for learners • Ability to create and develop programs and tools for field studies	a field studies program for a selected audience.

EEC 510 Worldviews, Ethics, and the Environment (2 cr.)

Dimension	Competency & Skill	Attainment indicator
1.1 Developing a Deeper Understanding of the Environmental Context	• An appreciation of the contributions of different forms of knowledge including science, economics, philosophy and politics to the understanding and discussion of current environmental issues and problems.	• An outline of the positions of major stakeholders/ advocates concerning a selected current environmental issue, indicating areas of uncertainty in foundational knowledge and the major differences among positions.
1.2 Appreciating the Range of Opinions and Options 4.1 Conflict Resolution 4.2 Facilitating appropriate actions	• Knowledge of major schools of thought and advocacy group statements concerning human-environment interactions and environmental prospects including sustainability, market economics, technological fixes, and deep ecology. • An appreciation of the differences among the various schools of thought and advocacy groups in regard to the importance of citizen involvement, and the role of effective programs of environmental education and information.	• A description and outline of some of the differences and similarities between sustainability, deep ecology, and market economic approaches to environmental policy, using examples such as the Kyoto Protocol, the Montreal Protocol, or the Convention on Trade in Endangered Species. • A synopsis of the challenges facing the approval or implementation of a proposed or contentious environmental policy or law in terms of public information and education strategies.

EEC 530 Communicating for the Environment (3 cr.)

Dimension	Competency & Skill	Attainment indicator
4.1 Consensus building and Conflict resolution 4.2 Facilitating Appropriate Actions	• Knowledge of a range of strategies for developing, implementing, and evaluating environmental action plans.	• A demonstration that an organization or community has clarified its action goals and developed an appropriate plan to attain the goals.

	• Knowledge of a number of examples of effective environmental actions carried out by individuals, organizations, and communities. • Knowledge of a range of action skills including skills in communication, conflict resolution, group process, and political lobbying.	• A demonstration that an organization or community has developed plans to assess the impact of its actions. • The members of the organization or community develop necessary action skills and implement them in the course of taking appropriate actions to address an environmental problem or resolve an issue.

EEC 540 EEC in an Organizational Context (2 cr.)

Dimension	Competency & Skill	Attainment indicator
4.3 Facilitating EEC in organizational contexts	• Ability to help organizations identify and develop their missions in regards to EEC • Ability to effectively communicate about EEC to other elements/departments within a multipurpose organization	• Development of mission statements and policy directions incorporating appropriate EEC functions • Development of plans and programs to address EEC functions for specific organizational contexts

ES 586 The Biosphere and Ecological Sustainability (2 cr.)

Dimension	Competency & Skill	Attainment indicator
1.1 Developing a Deeper Understanding of the Environmental Context	• An up to date and relevant base of knowledge and understanding of current and potential future directions in human-environment interactions and the status of environmental issues and opportunities. • Understanding of the implications of current and future issues as they apply to communities, institutions, and corporations.	• A briefing paper or report on the current status of an environmental issue, i.e. global climate change, complete with appropriate references and documentation.

LT 504 Systems Thinking (2 cr.)

Dimension	Competency & Skill	Attainment indicator

1.1 Developing a Deeper Understanding of the Environmental Context 4.1 Consensus Building and Conflict Resolution 4.2 Facilitating appropriate actions	• Understanding of the implications and possible consequences of policy proposals and action strategies	• Generation of a strategic plan or planning process within a specific issue context

LT 522 Resolving Conflicts (2 cr.)

Dimension	Competency & Skill	Attainment indicator
1.2 Appreciating the range of opinions and options 4.1 Consensus Building and Conflict Resolution	• Demonstrated skills in group processes including group problem solving and collaborative learning. • Demonstrated skills in Issue identification and clarification. • Demonstrated skills in conflict resolution, negotiation, and consensus building.	• The demonstrated ability to write and speak clearly and forcefully • A process to help an organization or community develop and articulate its position regarding an environmental problem or issue • A plan to help an organization or community articulate a vision, mission and priorities to other stakeholders • A plan for a process to foster communications and information to all cultural groups in a community or target audience • Processes to help an organization or community develop and carry out an internal and external communications plan.

Appendix D: Comments from the web survey

We have been hearing very good reviews from our summer students about the under grad. programs offered by Royal Roads. Further, I have been on boards and committees with people who have spoken highly of the masters programs that they were completing at Royal Roads. I am pleased to see the Environmental Communications and Education is being given consideration at this time. *Jennifer Mantha, Calgary, AB*

This sounds like a great program, and I believe one that is very much needed. Ideally, the proposed program should complement existing EE graduate programs offered by other universities, both in the education and environmental science/studies departments/faculties… *Cameron W. Lipp, Coquitlam, BC*

I think this is an excellent proposal. Offering training for this growing field is extremely important, especially since the options have always been very limited… *Carolyn Blasetti, Calgary, AB*

I need this training to do my job to the best of my ability! Please develop this program! It sounds great! *Andrea Kucey, Calgary, AB*

I think this is an excellent proposal. Offering training for this growing field is extremely important, especially since the options have always been very limited. It is frustrating to have to take training for a separate field that has relative skills for Environmental Education…. We end up losing so many of our talented professionals to other types of jobs that they can get direct training in. *Carolyn Blasetti, Calgary, AB*

It sounds very exciting and very much needed in Canada. *Erin Gluck, Edmonton, AB*

I have been teaching as an Environmental Educator full-time for three years and part-time for approximately five years. I am at the point as a certified teacher and professional in the field of education that I would like to gain more training, knowledge and experience…. Your program sounds extremely exciting. I have recently been searching across Canada in search of a Masters of Environmental Education program and I have had a lot of difficulty finding something that specifically meets my needs. The masters program that you are developing sounds like just the program I have been looking for. *Jerrilin Spence, Burnaby BC*

This program sounds exactly what I want to help further my career. *Chandra Prakash Dixit, Delhi, INDIA*

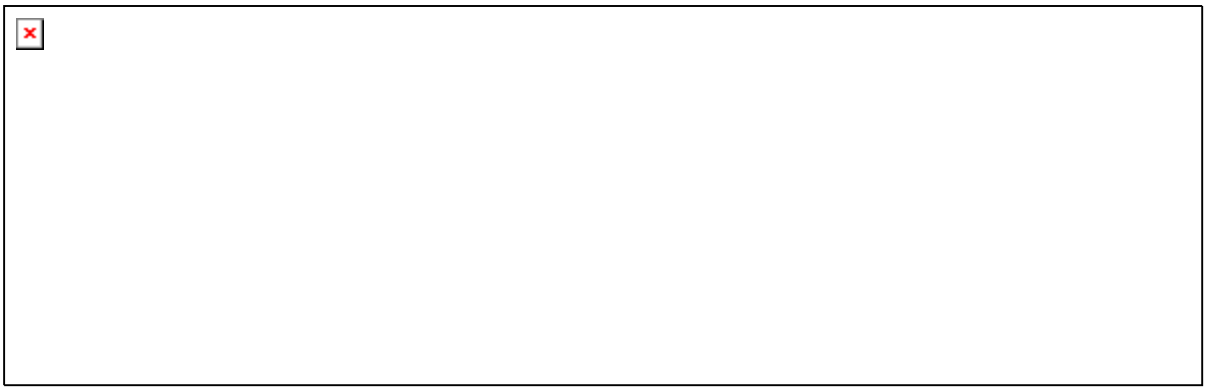
Also, I really like the idea of being able to continue working in my position and taking a masters course via distance education. *Stana Luxford. Kingston, ON*

Appendix E: Analysis of survey results

There is clearly a great interest in the MAEEC proposal as expressed by the survey respondents. More than 50% of the 150 respondents gave an indication that, even knowing the cost of the program, they felt that they would be somewhat likely or very likely to enroll in a program such as the one presented here.

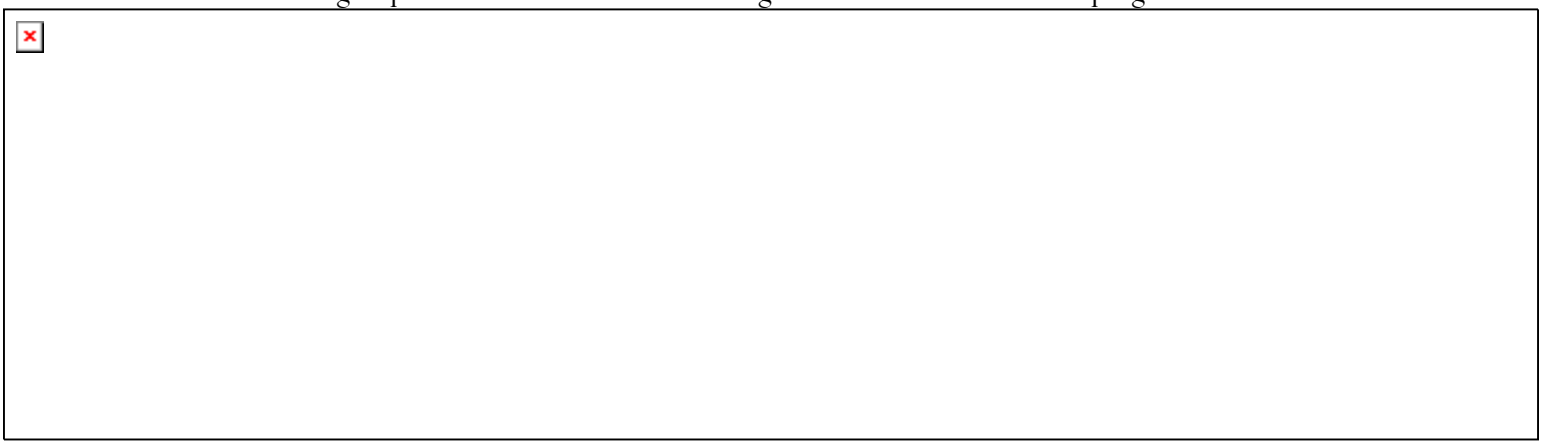
Age of respondents

The majority (60%) of people responding to this on-line survey were what might be called "mature professionals", and slightly more than 40% of the respondents reports were indicative of those at the earlier in their careers.



Educational background

Unsurprisingly, the majority of respondents (66%) reported having Bachelors degrees. This is an obvious group of interest to RRU's marketing for distance-based Masters programs.



Employment of respondents

50% of the respondents consider themselves educators outside of the formal k-12/post-secondary institutions. This group, lumped together as Non-formal educators, is representatives of NGO's, government, business/industry, and individuals who may work as environmental education consultants.

Of this large group, nearly 2/3rd identified themselves as working for either an NGO group, or for no particular employer (may be self-employed). That sub-group may be interested in the program, but may find the cost prohibitive.

Educational interests

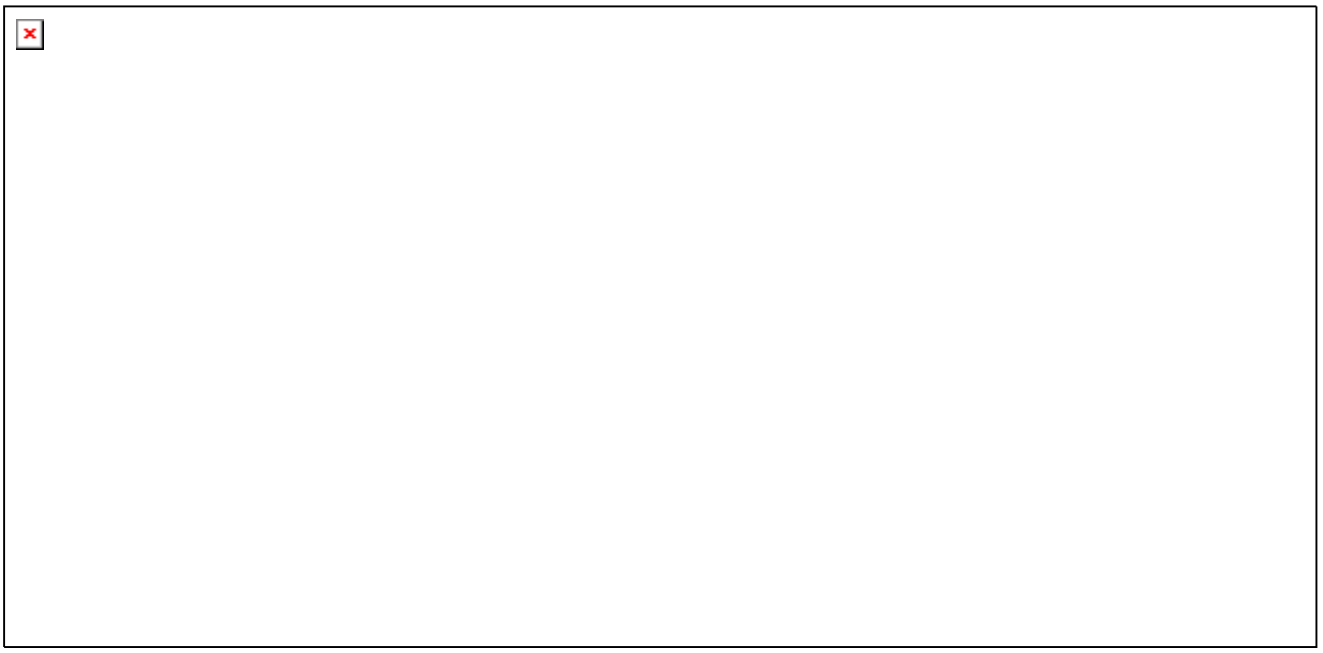
It is interesting to note that the areas of greatest interest—program development and delivery methodologies—likely reflects the fact that the largest number of respondents are not involved in the school system, but instead are going to be people responsible for developing and delivering programs to schools and the general public.

There are two major groups of people interested, those in the formal school system, and those involved in informal environmental education and interpretation. Relatively

few (≈20%) identify themselves as communicators, while ≈50% are involved in environmental education and interpretation from outside of a formal education institution. The remainder (≈30%) are formal classroom teachers.

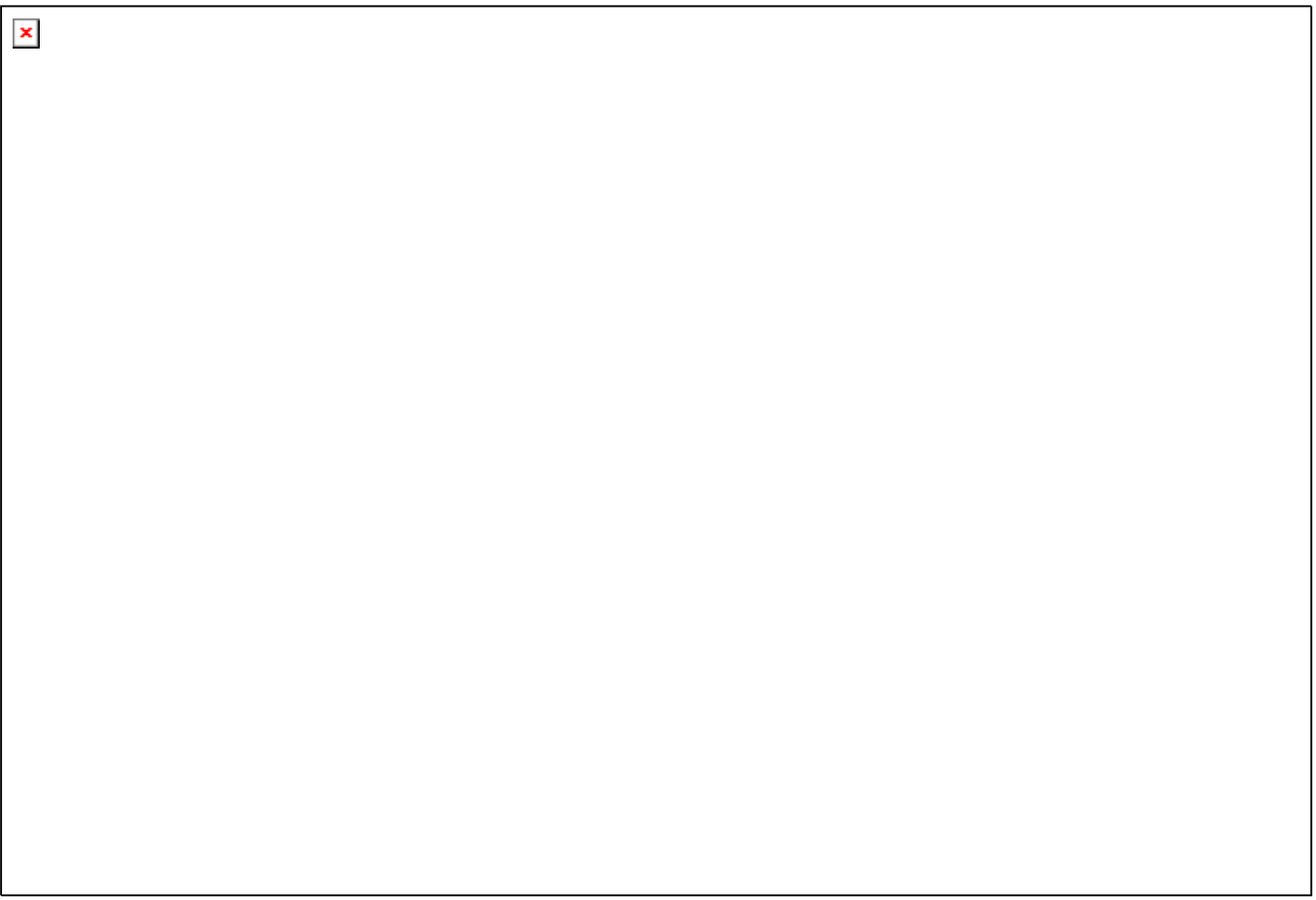
Likelihood of taking the program

The major problem facing potential learners is the cost: nearly 25% of the recorded comments related to the high price of the program. And overall, while more than 40% of respondents indicated that it was "very likely" that they would be interested in entering the program, when told the cost of the program, the number of "very likely" dropped to less than half that amount.



The most likely occupational category to take part in the MAEEC program is that of educators and communicators who work for government. As well, there is some strong indication of interest among schoolteachers responding to our questionnaire. More than 50% of the responding classroom teachers, university instructors, and government educators/communicators, indicated either somewhat or very likely an intention to take the program.

NGO educators, communicators, and people who work on contract to governments to deliver interpretation or educational services, in contrast, seem to not find the program as attractive, likely because of the high costs involved. Indeed, most of those people who indicate problems with the costs of the program are in the NGO category. They do not likely have regular incomes or income similar to that of a teacher or civil servants' salary. Of the 12 respondents in this category, only one is a teacher.



Appendix F: Environmental Programs Advisory Board

Robert Everitt
President, ESSA Technologies Ltd.
Vancouver, BC

Larry Funnell
Manager, Intergovernmental and International Affairs, Environment Canada
Vancouver, BC

Graham F. Kenyon (Chair)
Retired - Cominco Ltd.
Rossland, BC

Leslie King
Professor, Environmental Studies
University of Northern B.C.
Prince George, BC

Malcolm Metcalfe
Consultant
West Vancouver, BC

Michael Miller
President, EQ (Environmental Quality)
Wayne, MI

Dave Morris
Consultant
Kelowna, BC

Pat Moss
Executive Director, Northwest Institute for Bioregional Studies
Smithers, BC

Janet Watt
B.Sc. Graduate '99, MEM 2000 Learner
Victoria, BC

David Parker
Manager, Teck Cominco Ltd.
Vancouver, BC

Deborah Sargent, MCIP
Principal

Northwest Planning Group

Appendix G: Potential advisory committee members[2]

Richard Atleo, Ph.D.
First Nations Education Coordinator
Malaspina University College, Nanaimo

* Kerrie Baldwin, M.S.
A/ Assitant Director, Education and Information
Arizona Game and Fish
Phoenix, AZ

*Tina Baldwin Ph.D.
Executive Director, Phoenix Clean and Beautiful
Phoenix, AZ

*Nancy Baron, M.Ed.
Environmental Journalist, SeaWEB
Monterey, CA

Peter Blaze Corcoran, Ph.D.
Professor of Environmental Education
Florida Gulf Coast University

* Victor Elderton, M.A.
Principal
North Vancouver Outdoor School, Brackendale, BC

Pamela Courtenay-Hall, Ph.D.
Professor of Educational Philosophy
Faculty of Education, UBC

*Paul Hart, Ph.D.
Professor of Environmental Education
University of Regina

Stephen Hume
Reporter, Vancouver Sun
Vancouver, BC

* Kerrie Post, B.Ed.
Coordinator, WILD BC,

[2] Those people denoted by a * have indicated a willingness to sit on an advisory committee for this program.

Habitat Conservation Trust Fund, Victoria

Appendix H: Similar Canadian post-secondary programs

University of Victoria (Dr. Gloria Snively)

Masters of Education in Environmental Education

Offered for the first time in summer 2001 as a cohort program taking three years. This program is run through the Department of Continuing Studies of the Faculty of Education, and is not necessarily designed to be repeated.

Simon Fraser University (Drs. Milt McClaren, David Zandvliet)

Bachelor of Education with a minor in Environmental Education

For the past 30 years, SFU has run a Summer Institute for Environmental Education, using sites in the lower mainland, Kelowna and the Queen Charlotte Islands. While pre and in-service teachers may use the Institute for SFU credit, the pass/fail nature of the program makes it difficult to transfer credit to some Universities.

University of British Columbia

UBC occasionally offers Environmental Education courses as part of their summer school offerings.

University of Lethbridge (Dr. Rick Mrazek)

Environmental education is a feature of the undergraduate and graduate program, but there is no graduate degree or minor in EE.

University of Regina (Dr. Paul Hart)

Environmental education is a feature of the undergraduate and graduate program, but there is no graduate degree or minor in EE.

York University (Dr. Leesa Faucett)

Within the Environmental Studies program, one can take courses in environmental education, but there is no degree or minor offered in EE.