

13. Education

13.1 Introduction

Currently students entering Mount Allison who do not possess the interest or initiative to learn about environmental issues will often leave having gained little or no enlightenment on the subject. Those students who do take courses with environmental content will often complete them still lacking awareness concerning the concrete environmental impact of their actions. Without this understanding, they may fail to accept individual responsibility for their environment.

13.2 Responsible Parties

The University Senate handles the academic affairs of the university.

13.3 Environmental Significance

It is imperative in this time of environmental degradation that students entering the workforce in any field, do so with the dedication and knowledge needed to undo the damage which has been done to the planet; damage described by TIME magazine as The next generations biggest challenge. Not only are graduates with a specialized green knowledge needed (environmental law, engineering, architecture, journalism, planning) but also those with a general environmental literacy who can use their knowledge to make responsible choices as parents, politicians, secretaries, business people, etc., etc..

13.4 Environmental Education At Mount Allison

Mount Allison is currently offering an interdisciplinary Environmental Studies Minor. The minor consists of 24 courses from Geoscience, Geography, Economics, and Philosophy. See appendix D for courses required.

The Environmental Science Double Major was temporarily suspended in Senate this spring. The suspension was triggered by the retirement of a Geoscience professor and supported by many Faculty who felt the program was an inadequate combination of courses with an overly demanding course load. The program is currently under revision and will probably be reintroduced some time this year. In the mean time students entering Mount Allison have been informed that there will be an Environmental Science Major of some kind offered but it may not be the one currently listed in the 1998/1999 course calendar. See Appendix E for the courses required for the original Environmental Science Double Major.

Mount Allison has a total of six courses in Chemistry, Economics, Geography, Geoscience, and Philosophy, which focus on environmental issues. See appendix F for these courses, their descriptions, and prerequisites.

With two exceptions, all of these courses are designed for third or fourth year students possessing a solid background in the subject of choice. Although advanced courses on specific environmental issues are needed and valuable, the prerequisites required for these courses may stop students with majors and interests outside of these five departments from taking the courses.

Mount Allison has courses in Biology, Canadian Studies, Commerce, Geography, Geoscience, History, Political Science, Religious Studies, and Sociology/Anthropology with some environmental content. See Appendix G for these courses, their descriptions and prerequisites.

These courses better represent the academic spectrum of the university with 9 out of 28 departments included. The majority still require prerequisites but there are six which do not.

It is worth noting that several other courses at Mount Allison contain at least some reference to the environment. This often results from the initiative of the professor. For example, in Dr. MacMillans English courses on Canadian Literature, she addresses the ideology of colonialism and imperialism and their implications for the environment. Dr Bogaard weaves environmental content into the Philosophy courses *The History of Science* and *The Philosophy of Science*. Dr. Read includes discussions concerning his research on the neutralization of waste run off in his first year Chemistry course. Although most courses are traditionally taught without addressing environmental issues, the problems and resulting solutions are so broad that they can be integrated into almost any area. Three quarters of the professors who responded to the survey question Do you incorporate environmental content into any of your courses? answered yes. Among the courses that professors listed were: Biochemistry, Native Flora; Geography, Economic Geography, Urbanization, and Regionalism; Geoscience, Dynamics of The Earth; Chemistry, Introductory Chemistry and Chemistry In Modern Society; Physics, General Astronomy,

General Physics, Classical Waves, Computing Techniques for Scientists, and Application of Physics in the Life Sciences; Math, Mathematics for Life and Environmental Science; German, Goethe and Schiller, and German Culture and Society from 1870 to the Present; English, Canadian Literature from the Beginnings to 1914, and Literature by Women in the Twentieth Century; and Commerce, Fundamentals of Marketing; Fine Arts, Intermediate Painting. Although a professors understanding of environmental content may vary from a passing comment to several lectures, the list is proof that the environment is connected to everything from waves to war.

The initiative of the teaching staff is showing up in other areas in the form of proposed courses. The Philosophy department is hoping to introduce a first year course that tackles environmental issues. The hiring of a new professor in the Sociology/Anthropology department with a background in resource management has sparked plans of reintroducing *Ecological Anthropology* and perhaps a new course or two on ethnobotany and traditional resource management. The Geography department also has plans to reintroduce a course on hydrogeology.

Environmental education *outside* the classroom is usually generated through student initiatives. The school year of 1997/98 saw a climate change campaign and press conference, an environmental speakers series, a conference on globalization and the role of youth, an educational art exhibit on International Rivers Day, a campaign to encourage reuse of paper, a Buy Nothing Day campaign, a Protected Areas Strategy campaign and several articles in the campus paper. These events were carried out mainly by members of the Blue Green Society, Friends of Christmas Mountains, and WUSC (World University Services of Canada). A notable event next year will be a Distinguished Speakers Series focusing on the environment.

13.5 Case Studies

Tufts Environmental Literacy Institute:
 In 1990 Tufts President Jean Mayer and Dean of Environmental Programs Anthony Cortese launched the Tufts Environmental Literacy Institute (TELI) with the goal that each of the 7 800 students at Tufts would graduate environmentally literate. The institute's central feature is a two-week intensive summer workshop in which a multidisciplinary group of faculty comes together to learn about environmental literacy. The workshop is designed to increase environmental knowledge and provide a forum for discussing how environmental information can overlap with the goals of specific courses. (Blueprint For A Green Campus)

13.6 Recommendations

For Senior Administration:

1. Include the statement all students, upon graduating, will possess the knowledge, skills, and values to work towards an environmentally sustainable future. (Blueprint for a Green Campus) as part of the university's mission statement.
2. Appoint an environmental literacy task force to work towards the implementation of the following recommendations.
3. Develop a mandatory first year course, which would focus on the problems of environmental degradation and, more importantly, the possible solutions. This course would focus on students' individual responsibility for the environment and provide them with the tools needed to be environmentally responsible citizens. The course could also include a section on the environmental impacts of campus life and methods to reduce that impact.
4. Introduce a Green Certificate program similar to one currently used at Princeton University. This certificate

would be awarded to all students who have successfully completed the mandatory first year course on the environment (if implemented) as well as one other course with a focus on environmental issues. Other methods of earning the certificate might include the completion of two courses with environmental focus, or one with environmental focus and two others with significant environmental content etc. etc. This certificate would be included on the student's diploma upon graduation.

5. Encourage faculty to incorporate and highlight environmental content in their courses.

For Faculty:

1. Organize workshops for faculty in all relevant disciplines that teach professors how to green their courses. This could be done with the help of an organization such as Second Nature, which provides training to faculty so students will graduate environmentally literate.
2. Research environmental issues applicable to your field and green first year courses with high enrollment.
3. When discussing an environmental problem in class be sure to carry through on the subject by informing students of actions they can take. For example: While discussing Global Warming in a Geoscience class, be sure to mention that turning off lights and computers when not in use and walking or cycling rather than driving can help to reduce the greenhouse effect. These suggestions may seem obvious, but it is only through the constant reinforcement of these actions that they will become second nature.

For Students:

1. Take the initiative to educate yourself on environmental issues through books, newspaper, television, etc.
2. Encourage faculty to green[] their courses through questions and comments in class.
3. Invite guest speakers to your society meeting to discuss relevant environmental issues. For example; The commerce society could have someone speak about environmental cost analysis, or the film society could show a documentary on the destruction of the rain forest
4. Organize and advertise an event such as a Mount A. Earth Day[] to educate students on environmental issues.
5. Teach by example, bring a reusable cup to *Tim Horton's*, and a reusable bag to the grocery store.

14. Environmental Audit Survey

To increase awareness concerning the environmental practices and beliefs of university employees, a survey was sent out to all faculty and staff in July via mass E-mail. The survey and its results follow:

This summer Mount Allison University has hired two students to conduct a comprehensive environmental audit on campus. In order to provide the auditors with a better idea of campus life, the faculty and staff are asked to complete this short, easy survey. We hope you will take the time to answer each question as honestly as possible. To complete the survey press the reply code and place an X in the appropriate box or fill out your response. If you wish your response to be anonymous, surveys can be returned to box #2247, however, all responses will remain confidential. Thank you for your help!

1. What method of transportation do you use to commute to work every day?

*146 respondents.
69 travel by car.
57 travel by foot or bike.
20 use a combination of car and either foot or bike. Those that used a combination alternated depending on the season/weather, stuff to carry, day of the week, etc., etc.*

2. How far do you live from campus? (Km)

Distances ranged from 0.5km to 60km.

3. Would you use unbleached and/or recycled paper if it was offered?

100% of those that responded to this question answered yes.[] A few of those who responded stipulated that for some things they would prefer regular paper (ie formal letters)

Rationale: A common response was simply Why not?[]

4. Would you accept assignments via E-mail?

144 respondents

yes: 70

no: 27

N/A: 47

Rationale:

Those that answered yes, included as their reasons:

- *decreased paper use*
- *efficiency*

Those that answered no included as their reasons:

- *too difficult to read and mark (would have to print up anyway)*
- *subject does not lend itself to easy computer usage (some math and language courses requiring special notation)*

5. Would you accept assignments double sided?

143 respondents

yes: 87

no: 10

N/A: 46

Rationale:

Those that answered yes commonly noted reduced paper wastage. Reasons for not accepting assignments double sided included difficulty marking.

6. Would you support a university purchasing policy which

favoured environmentally friendly products, equal in quality to the unfriendly alternative, at a cost;

- 10 % more expensive
- 5% more expensive
- equal in price
- other

137 respondents

10%: 36

5%: 48

equal: 53

Rationale:

Respondents noted that the only way that quality and variety will increase and prices decrease for environmentally friendly products is if a market develops for them. Concerns included whether or not the university could afford a policy requiring the purchase of a more expensive (albeit better for the environment) product.

7. Would you support a departmental purchasing policy which favoured environmentally friendly products, equal in quality to the unfriendly alternative, at a cost;

- 10 % more expensive
- 5% more expensive
- equal in price
- other

132 respondents

10%: 34

5%: 43

equal: 47

Rationale:

See rationale for #6

8. Do you support the spraying of the campus with herbicides in order to maintain a weed free campus?

- Yes
- No

129 respondents

yes: 27

no: 102

Rationale:

Responses to this question were generally quite passionate. Those who supported herbicide use believed they were necessary to maintain a good image for Mount Allison. Those against herbicides expressed concerns for the health of people and the surrounding environment, as well as money spent in an area they felt was of no use to the university community.

9. Do you incorporate environmental content into any of your courses?

- yes
- no
- N/A

136 respondents

yes: 38

no: 14

N/A: 84

Rationale:

The large number of N/A responses could be due to professors believing that the environment was not applicable to their subject rather than the response of non-professors.

If yes, which one(s)?

See Education

10. Would you consider the ventilation in the building you work in to be:

- []Very Poor
- []Poor
- []Fair
- []Good
- []Excellent

136 respondents

Very Poor: 26

Poor: 31

Fair: 50

Good: 24

Excellent: 5

Common complaints came from the library, conservatory, and chemistry building. People were more contented in Avarad Dixon and the CLT.

11. What areas of wastage do you see in your department and around campus?

An overwhelming number of respondents cited paper as an area of major wastage on campus. Other areas of concern were unneeded lighting and heating.

12. What ideas do you have to improve the environmental practices of this university?

Suggestions included:

- greater use of E-mail*
- more recycling containers*
- educating people on energy conservation*

13. What initiatives have you or your department taken to decrease your environmental impact?

The most popular and often the only response was recycling paper.

As an example of what a department can do on their own initiative here is one persons response:

The Social Sciences took the initiative four years ago to buy blue boxes for each member of the Faculty to have by their desks. It took awhile for some people to use them effectively but now everyone uses them as a matter of course. We also recycle cans and bottles on our own. Phone books are saved and carted to any groups which collects them for fundraising. We also encourage all our staff to photocopy double-sided whenever possible. A number of us try to turn off lights whenever we see them left on inappropriately. We purchased a shredder in 1995 to shred documents which cannot go in the regular recycling. The shredded material can then be sold to a recycling firm. We shred enormous amounts of paper each year. We have also saved the unused portions of test/exam booklets and have them made into scratch pads. It saves us buying scratch pads and our "home-made" cost much less. We almost never throw out padded envelopes we receive in the mail. We reuse them. We reuse computer disks from outdated software. We reuse binders and duo-tangs from old student assignments and outdated handbook

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16. Appendices

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- Appendix N Mount Allison University Income

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Appendix A Representative Species

Representative Waterfowl: Yellow Warbler,
 Tree Swallow
 Yellow Throat
 Common Snipe
 Red-winged blackbirds
 Ducks of many breeds

Appendix B NB Power's Environmental Policy

Additional principles of NB Powers Environmental Policy
Leadership:

NB Power maintains a leadership role in the investigation of new environmentally responsible technologies and methodologies, through co-operative efforts with The public, industry, researchers and government.

Environmental Standards and Guidelines:

NB Power maintains consistency with all applicable environmental standards, guidelines, and codes for its facilities, from early planning through operation and finally to decommissioning.

Environmental Audits: NB Power is committed to periodic environmental audits of its facilities and associated monitoring programs, to asses compliance with regulatory requirements and

consistency with industry standards and internal procedures

Environmental Protection Plan

NB Power provides a framework of objectives and procedures to Assisi its employees in meeting utility commitment of environmental protection

Partnership:

NB Power strives to ensure its Environmental Policy is respected by all its partners including contractors, consultants, and suppliers of goods and services.

(NB Power Environmental Report, 1996)

Appendix C Bulk E-Mail Policy

Electronic mail is a very useful communication tool, used every day in University academic and administrative activities. It is also a convenient method for distributing information to the University community (using a bulk or mass mailing).

Bulk e-mail is an e-mail message that is addressed to a large number of people in the University community.

This policy seeks to promote the timely distribution of information to members of the University community via electronic mail while avoiding two common problems:

1. Large mailings have the potential to cause system performance problems.
2. Too many informational messages diminish the usefulness of e-mail as a tool for distributing information

recipients will often delete such messages without reading them if bulk e-mail messages become a nuisance.

This Policy will be administered by Computing Services.

Computing Services will make available a system to allow designated users to easily send e-mail to the following target groups: all members of the University community, all students, or all staff.

In order to send messages using this system, a departmental representative must be authorized under this policy. Authorization can only be given by a Vice-President. Authorization will normally be granted with the following restrictions:

1. Bulk e-mail messages will only be used for University business.
2. Bulk e-mail message will only be sent when they concern a matter of interest to most members of the target group.
3. Initially departments will be limited to one such message per week. This restriction can be overridden by a Vice-President in a specific case. This restriction will be reconsidered once we have sufficient experience with these messages to determine the problems this restriction causes and the capacity of the system to handle these messages.
4. Bulk e-mail messages to students are only to be sent by departments authorized to do so because each such message will increase e-mail traffic on that day by about 10%. This authorization will normally be given to departments that must communicate with students regularly to conduct University business (e.g. SAS).

This policy may be revised from time to time as feedback from users is received.

Appendix D Environmental Studies Minor

To earn a minor in Environmental Studies 24 credits must be earned from the following courses:

3 from Geoscience 1011, or 1021, or 2031, or, 2101.

6 from Geography 2101 and 4101

9 from Economics 1000 and 3801

3 from Philosophy 3721

3 from Geography 3531 or Economics 3821 chosen in consultation with a program advisor.

Appendix E Environmental Science Double Major*

This program is offered only as a double major (environmental science major with second major in one of Biology, Chemistry, Math, or Physics) of 99 credits earned from the following courses:

21 from Geoscience 1001, 1011, 1021, 2031, 2101, 2501, (or 2401), 3111

3 from Physics 1051

3 from Physics 3511, 3521

9 from Chemistry 1001, 1021, 3411

9 from Biology 1001, 1501, 2101

3 from Math 1111

3 from Math 1121, 1131

9 from Economics 1000, 3801

Biology

9 from Biology 2301, 2401, 2601

3 from Chemistry 2141

3 from Biochemistry 2001

9 from Biology 3101, 3301, 3341, 3351, 4001

15 from Biology at 3000 and 4000 levels

Chemistry

3 from Physics 1551

3 from Math 2121

12 from Chemistry 2141, 2151, 2221, 2321

9 from Chemistry 3011, 3411, 3421

12 from Chemistry 3141, 3211, 3221, 3311, 3331

Math

6 from Math 2311 and 2321

9 from additional Math at the 2000 level

24 from the 3000 and 4000 levels or Math or Math/Computer Sciences

Physics

6 from Math 2111 and 2121

12 from Physics 1551, 2251, 2701 and 2801

9 from Physics 3101, 3811, and Engineering/Physics 3701

12 from Physics at the 3000 and 4000 level, Engineering 3601

Appendix F Environmental Courses

Chemistry

3011 Environmental Chemistry

Prerequisites: 2141 (or 2131), 2221, 3411; or permission of the department

This course examines the chemical aspects of the environment and will draw heavily upon the analytical, organic, inorganic, and physical chemistry background of the student. The implications of human activities on the atmosphere, water resources, and the soil will be explored. Some of the topics discussed will be environmental monitoring, waste management, acceptable limits, risk/benefit analysis and economic/social issues. Student practical work will involve projects in analytical chemistry, recycling, waste treatments as well as in researching and reporting on environmental chemistry topics. It is recommended that this course be taken in the final year. □ (Mount Allison 1998/99 Course Calendar)

Economics

3801 Environmental Economics

Prerequisites: 1000 or permission of the department

The application of economic analysis in the study of environmental problems. Students will examine when and why markets often fail to allocate sufficient resources to environmental conservation, and will critically assess different policy instruments available to correct for the fundamental market failure.[] Using the analytical methods developed in this course, the following type of policies will be examined: measures to control air and water pollution, the disposal of hazardous wastes, the protection of endangered species, and the control of cross border pollution, including the Canadian Green Plan.[] (Mount Allison 1998/99 Course Calender)

Geography

2101 Natural Resources Management

Prerequisites: None

This course explores the characteristics, extent, and sensitivity of natural resources. It emphasizes how humans manage these resources and includes a critical evaluation of the concepts of sustainable development and environmental friendliness.[] (Mount Allison 1998/99 Course Calender)

4101 Seminar In Environmental Issues

Prerequisites: One of the Geosciences 1011 or 1021 or 2031; Geography 1201 or 2101; or permission of the Department

This course examines the current state of scientific knowledge related to various contemporary environmental issues and the public policy implications of these issues.[] (Mount Allison 1998/99 Course Calender)

Geoscience

2031 Global Change

Prerequisites: None

An introductory level course dealing with the interaction of the environment with the Earth-particularly those aspects of the environment influenced by civilization and vice versa. The course gives an overview of major natural processes and geologic hazards which influence civilization, with detailed consideration of natural flooding, land slides, coastal processes and erosion, earthquakes and volcanoes as well as hydro Geoscience and ground water. It also deals with the effect of civilization on the physical environment-particularly on surficial deposits and near surface crystal rocks or bedrock eighth contamination of ground water and surface waters by waste disposal (including nuclear waste): Acid Rain, Radon gas and the Greenhouse Effect.[] (Mount Allison 1998/99 Course Calender)

Philosophy

3721 Environmental Ethics

Prerequisites: Six credits in Philosophy; or permission of the Department

After reviewing the traditional attitudes toward the environment, this course will explore recent attempts to apply[] ethical analysis to such problems as pollution and conservation. We will pay particular attention to the ways in which problems of preservation and challenge us to extend our traditional norms and values. To what extent, for example, does growing sensitivity to our natural environment require of us a new environmental ethic: and oblige us to recognize animal rights?[] (Mount Allison 1998/99 Course Calender)

Appendix G Courses with Environmental Content

Biology

Although these courses dont necessarily deal with humans impact and connection with the environment, they do offer and understanding of ecology and ecosystems.

1211 World Ecosystems

Prerequisites: None

2101 Population and Community Biology

Prerequisites: Biology 1501; or permission of the Department

3501 Native Flora (Vascular Plants)

Prerequisites: Biology 2301; or permission of the Department

3011 Evolution

Prerequisites: Biology 2601; or permission of the Department

Canadian Studies

2000 An Introduction to the Study of Canada

Prerequisites: None

This course includes lectures on Canada's environmental history.

3400 Contemporary Canadian Issues

Prerequisites: Canadian Studies 2000; or permission of the Director of Canadian Studies

This course allows student to pursue a topic of special interest which changes every year. One of the potential choices looks at Canada and the environment.

Commerce

3371 Issues In Business and Society

Prerequisites: Commerce 2131 and 2301; or permission of the Department

Business and the environment is one of the topics examined during this course.

Geography

2221 The Developing World

Prerequisites: None

As a portion of this course the decline of traditional land systems and resource use is examined.

3201 Geography and Public Policy

Prerequisites: Third year standing and at least one full Social Science credit.

Geoscience

1001 Introduction to Oceanography

Topics covered include marine ecology

Prerequisites: None

2101 Coastal Oceanography

Prerequisites: None

Special Attention is given to sea level changes, erosion and pollution problems.

History

3360 Culture and Society in Modern Europe

Prerequisites: Second year standing and at least six credits in History at the 1000 or 2000 level; or permission of the Department
Includes a look at the emergence of a mass consumer society.

Political Science

4311 Canadian-American Relations

Prerequisites: Political Science 2301; or permission of the Department

Environmental issues is but one of the themes in this course on the post 1945 Canadian-American Relationship

Religious Studies

1651 Contemporary Myths

Prerequisites: None

The ecology myth is one of the myths examined in this course.

2221 World Religions and World Concerns

Prerequisites: Six credits from the Humanities 1600 series; or Sociology/Anthropology 1001, 1011, or six credits from Geography 1201, 2101.

World religions and their relationship to world problems including populations, pollution, ecology and resource distribution is examined in this course.

3541 Contemporary Ethical Issues

Prerequisites: Six credits from the Humanities 1600 series, or Religious Studies 2501 or 2511, or Philosophy 2701; or permission of the Department

Ecology is one of the ethical issues tackled.

Sociology/Anthropology

3611 Public Controversies

Prerequisites: Six credits in Sociology/Anthropology at the 2000 level; or permission of the Department

Particular attention will be paid to social, technological, scientific, and environmental controversies in a comparative context. (Mount Allison 1998/99 Course Calender)

Appendix H Quebecor Printing Environmental Policy

The following guidelines have been established for the conduct of Quebecor Printing Inc:

- Utilize methods and processes designed to reduce air and water pollution and energy material usage.
- Promote the production and use of recycled materials to our customers.

- Promote and invest in the development of natural or non-hazardous products and methods in the printing process that are compatible with a clean and healthful environment.
- Promote environmental awareness and responsibility among our employees our customers and communities.
- Implement programs to reduce waste and recycle residual wastes. Other remaining wastes will be disposed of in a manner consistent with sound environmental practice.
- Respect environmental regulations and apply responsible environmental standards for the construction, renovation and maintenance of any Quebecor Printer facility. Whenever possible, integrate energy systems using sources of renewable energy.

All Company operations will be reviewed on a regular basis to ensure that they are being conducted consistent with the above guidelines. In addition, these guidelines will be updated as required to ensure that they meet the Company's commitment as a leading enviro-printer in the industry.

(Environmental Policy of Quebecor Printing Inc.)

Appendix H Xerox Environmental Policy

Xerox carries several Energy Star and Environmental Choice Compliant Products

- Ozone emission levels are up to 50 times lower than regulatory limits
- Reduced and returnable packaging, and a supplies return program (copy and printer cartridges, toner containers, and waste toner) with no cost to customers
- Principles of Xeroxs Environmental Policy are as follows:
 - a) Protection of the environment and the health and safety of Xerox employees, customers, and neighbours from unacceptable risks takes priority over economic considerations and will not be compromised.

- b) Xerox operations must be conducted in a manner that safeguards health, protects the environment, conserves valuable materials and resources, and minimizes risk of asset losses.
- c) Xerox is committed to designing, manufacturing, distributing and marketing products and processes to optimize resource utilization and minimise environmental impact.
- d) All Xerox operations and products are, at a minimum, in full compliance with applicable governmental requirements and Xerox standards.
- e) Xerox is dedicated to continuous improvement of its performance in Environment, Health, and Safety.
- f) Xerox has a goal of waste-free products manufactured in waste-free factories to enable waste-free offices.

(Xerox and the Environment: A Natural Partnership)

Appendix J Mount Allison University Mission

Mount Allisons mission is to provide a rigorous liberal education of high quality primarily to undergraduate students in a co-education, intimate residential environment. In providing this education the University chooses to concentrate on a limited number of programs so as to preserve their quality. The liberal nature of education means both breadth and depth in academic programs, as well as the development of the whole person through involvement in extracurricular activities such as music, drama, art, athletics, community involvement, spiritual development, university governance and other activities.

Appendix K Valdez Principles

In 1989 the coalition for Environmentally Responsible Economies developed a set of ten principles for corporate environmental responsibility called the 'Valdez Principles'. These principles are designed to commit businesses to protecting the environment through their actions and policies and are one way of evaluating university and corporate responsibility.

Introduction

By adopting these principles, we publicly affirm our belief that corporations have a responsibility for the environment, and must conduct all aspects of their business as responsible stewards of the environment by operating in a manner that protects the earth. We believe that corporations must not compromise the ability of future generations to sustain themselves.

We will update our practices continually in light of advances in technology and new understandings in health and environmental science. In collaboration with CERES, we will promote a dynamic process to ensure that the principles are interpreted in a way that accomodates changing technologies and environmental realities. We intend to make consistent, measurable progress in implementing these Principles and to apply them in all aspects of our operations throughout the world.

The Valdez Principles

1. Protection of the Biosphere

We will reduce and make continual progress toward eliminating the release of any substance that may cause environmental damage to the air, water, or the earth or its inhabitants. We will safeguard all habitants affected by our operations and will protect open spaces and wilderness, while preserving biodiversity.

2. Sustainable Use of Natural Resources

We will make sustainable use of renewable natural resources such as water, soils, and forests. We will conserve nonrenewable natural resources through efficient use and careful planning.

3. Reduction and Disposal of Waste

We will reduce and where possible eliminate waste through source reduction and recycling. All waste will be handled and disposed of through safe and responsible methods.

4. Wise Use of Energy

We will conserve energy and improve the energy efficiency of our internal operations and of the goods and services we sell. We will make every effort to use environmentally safe and sustainable energy sources.

5. Risk Reduction

We will strive to minimize the environmental, health and safety risks to our employees and the communities in which we operate through safe technologies, facilities, and operating procedures, and by being prepared for emergencies.

6. Marketing of Safe Products and Alternatives

We will reduce and where possible eliminate the use, manufacture, or sale of products and services that cause environmental damage or health or safety hazards. We will inform our customers of the environmental impacts of our products or services and try to correct unsafe use.

7. Environmental Restoration

We will promptly and responsibly correct conditions we have caused that endanger health, safety or the environment. To the extent feasible, we will redress injuries we have caused to persons or damage we have caused to the environment and will restore the environment.

8. Informing The Public

We will inform in a timely manner everyone who may be affected by conditions caused by our company that might endanger health, safety, or the environment. We will regularly seek advice and counsel through dialogue with persons in communities near our facilities. We will not take any action against employees for reporting dangerous incidents or conditions to management or appropriate authorities.

9. Management Commitment

We will implement these Principles and sustain a process that ensures that the Board of Directors and Chief Executive Officer are fully informed about pertinent environmental issues and are fully responsible for environmental policy. In selecting our Board of Directors, we will consider demonstrated environmental commitment as a factor.

10. Audits and Reports

We will conduct an annual self-evaluation of our progress in implementing these Principles. We will support the timely creation of generally accepted environmental audit procedures. We will annually complete the CERES Report, which will be made available to the public.