

Environmental Literacy

LONG-TERM VISION	2
INDIVIDUAL GOALS	2
BACKGROUND, NEEDS AND TRENDS	2
CURRENT PROGRAMS AND ACCOMPLISHMENTS AT CU	5
ACTION STEPS CU CAN TAKE TO ACHIEVE GOALS.....	6
METRICS AND ASSESSMENT	7
FURTHER PLANNING AND RESEARCH NEEDS	8
CHALLENGES	9
SOCIAL IMPACTS.....	9
LINKS TO OTHER BLUEPRINT TOPICS.....	9
APPENDIX A: INTERNET RESOURCES FOR CAMPUS LITERACY PROGRAMS.....	11

Long-Term Vision

CU-Boulder will provide a basic amount of formal education for all students and will promote environmental stewardship and sustainability practices among all members of the campus community.

Individual Goals

1. Create a culture of sustainability among all on campus through traditional and more inventive educational approaches.
2. Equip every CU graduate with a basic understanding of environmental processes and the role they, as individuals, play in these processes.
3. Ensure that faculty and staff act as environmental stewards who are trained and motivated to follow positive environmental practices. This will require inscentivation and participation among administrators, faculty and staff.

Background, Needs and Trends

In January 2003, the National Science Foundation released a report of its Advisory Committee for Environmental Research and Education. The Committee found that “in the coming decades, the public will more frequently be called upon to understand complex environmental issues, assess risk, evaluate proposed environmental plans and understand how individual decisions affect the environment at local and global scales.”

The committee called for a far more scientifically-informed citizenry and pointed out that this will require a “concerted and systematic approach to environmental education grounded in a broad and deep research base that offers a compelling invitation to lifelong learning.”

Two years later, the National Environmental Education & Training Foundation, concluded in a national survey, *Environmental Literacy in America 2005*, that “while the simplest forms of environmental knowledge are widespread, public comprehension of more complex environmental subjects is very limited.”

These summaries (and many others that have reached similar conclusions) offer an assessment of environmental literacy in America that is both sobering and hopeful. They provide a loud wake-up call to environmental educators, community leaders, and

influential specialists ranging from physicians to weathercasters. At a time when Americans are confronted with increasingly complex environmental choices, we are discovering that our citizenry is both uninformed and misinformed.

School campuses can provide outstanding environmental education and learning opportunities. As many as one half of all American adults will spend some time on university, college, and community college campuses. A quarter of all adults will spend several years on campuses as resident or commuter students. At these places, students have the opportunity to gain exposure to many practical aspects of environmental education and conservation.

Currently, there is very little education about the skills or knowledge needed to maintain Earth's natural systems and the communities they support. Institutions of higher learning play a critical role in developing young people's world view, sense of civic responsibility and ethical code. From this point of view, it is only natural that colleges strive to cultivate a student's sense of environmental stewardship as well.

Currently, the majority of CU students graduate with little formal education regarding today's major environmental issues. As the educator of tomorrow's leaders, CU has an unmatched opportunity to equip these leaders with the knowledge on how to make environmentally-sustainable decisions.

The goal of environmental literacy is to establish a foundation of knowledge upon which the campus can build an environmentally-sound future. Once all parties on campus are educated about sustainability, they can work collaboratively to implement the programs, systems and partnerships needed to make CU's environmental footprint as small as possible.

Achieving a sustainable campus will require concerted effort at every level, from the highest levels of administrative policy making to the day to day actions of individual students, faculty, and staff. This means that individuals and decision makers on campus need to understand the implications of their choices—whether a student deciding whether to drive to campus, a departmental employee deciding what type of paper to buy, or a lab proctor deciding what type of equipment to purchase.

Environmental literacy goes beyond classroom instruction; it's a concept that includes active and experiential systems-based learning within all disciplines. The purpose of a college education is twofold: 1) To equip young people with the tools necessary to be successful after they leave, and 2) To foster an environment that is a fertile ground for testing new concepts and ideas. In this sense, the entire CU campus could be considered a living laboratory where students, faculty and staff have the opportunity to translate their knowledge into actions that promote the long-term sustainability.

CU and other universities can facilitate this process by providing the appropriate information to the campus community. This requires integrating education on sustainability into processes such as student and employee orientation, employee training programs, specialized training for employees with particular roles (such as those who

make departmental purchases), and integrating sustainability education into the general curriculum.

The concern expressed by various groups regarding the lack of environmental literacy in America has led to the development of programs aimed at increasing awareness of sustainability issues, including the Campus Sustainability Assessment Project, Second Nature, EFS West, and University Leaders for a Sustainable Future (See Appendix A for more information on these and other programs). These and other programs will serve as an invaluable resource in helping CU institute a well-rounded, comprehensive environmental literacy program.

CU can also look to other universities as it develops its own environmental literacy program. A number of colleges have developed environmental literacy courses, some of which are mandatory for a significant portion of the student body.

- **Brown University** (Providence, RI)
Course title: *Environmental Stewardship Practicum*
- **Goucher College** (Baltimore, MD)
Course title: *Global Civic Responsibility*
- **University of Waterloo** (Waterloo, Ontario, Canada)
Course title: *Greening the Campus and Community*
- **Northland College** (Ashland, WI)
Course title: *Sustainable Living on a College Campus*
- **University of Virginia** (Charlottesville, VA)
Course title: *Energy Star Building Analysis and Design*
- **Dartmouth College** (Hanover, NH)
Course title: *Environmental Problem Analysis and Policy Formulation*
- **University of Wisconsin-Madison** (Madison, WI)
Course title: *Environmental Studies Certificate Program Capstone*
- **Rice University** (Houston, TX)
Course title: *Assessment of Rice University as an Environmental System*

In recent years, substantial grants have been offered by governmental entities to universities and other institutions to establish or strengthen existing environmental literacy programs. The Office of Education and Sustainable Development (a branch of NOAA) proposed \$5 million in literacy grants last year. Meanwhile, the EPA has handed out nearly 2,900 environmental education grants nationally since 1992, including 500 grants to universities totaling more than \$8 million. And the National Science Foundation's Division of Undergraduate Education awarded Carnegie Mellon University a grant to establish an environmental literacy program of similar scope and size to what we propose for CU.

By establishing a strong environmental literacy vision, the University of Colorado would stand to benefit immensely from these and other funding programs. Grants from

government and business have the potential to pay for many of the expenses a campus environmental literacy program may incur.

Current Programs and Accomplishments at CU

CU-Boulder has already made significant strides in environmental literacy. While the progress made to date still comes far from affecting the entire campus community, it has been extremely successful and well-received.

Baker Residential Academic Program

The Baker Residential Academic Program (Baker RAP) is a residential and academic community for freshmen and sophomores. Designed for students who are interested in natural sciences, environmental studies or environmental subdisciplines of other majors (e.g. business, law, education, architecture and planning, etc.), Baker RAP integrates sustainability and environmental themes into classroom instruction and campus living. The Baker RAP is a perfect example of the type of active, experiential, interdisciplinary learning environment that is discussed above in the *Background, Needs and Trends* section. Furthermore, student interest far exceeds availability every year, making it clear that there is room for expansion of this or similar programs.

Major Requirements Involving Environmental Issues

In recent years, many departments have begun to integrate environmentally-themed courses into their required or optional curriculum. Examples include:

JOUR 4822: Reporting on the Environment
ECON 3545: Environmental Economics
ANTH 4150: Human Ecology
ATOC 4800: Policy Implications of Climate Controversies

Arts and Sciences Core Curriculum Involving Environmental Issues

There are also a number of other environmentally-themed courses that meet general core curriculum requirements in the College of Arts and Sciences. Examples include:

PHYS 3070: Energy and the Environment
GEOL 3520: Environmental Issues in Geosciences
PHIL 3140: Environmental Ethics
ENVS 3600: Principals of Climate

Environmental Studies 1000

As an introductory class for Environmental Studies majors, this course surveys ecological, socioeconomic, political, aesthetic, and technological factors that influence the quality of life on Earth and helps students lighten their environmental impact. ENVS

1000 has been well-received by students; the topics taught in this course could serve as a reasonable baseline for bringing formal environmental literacy to a larger portion of the student body.

Leeds Business School

There has been a recent effort to introduce sustainability issues into the curriculum at the Leeds School of Business. Feedback from students and instructors has been positive thus far. The CU-Boulder Leeds School of Business ranks top among MBA programs in efforts to prepare graduates for the new business realities demanding social and environmental stewardship. The School distinguished itself not only by offering a large number of courses that addressed social and environmental issues in business, but also by the relatively large proportion of students who actually took those classes. (2005, *World Resources Institute, Aspen Institute*).

Eco-Rep Programs

The Environmental Center has created “eco-rep” programs for students in the residence halls as well as faculty and staff departmental representatives. The residence hall program started in 2003 and has been volunteer-based with varying success of participation.

The Departmental Eco-Rep program was piloted during 2004-05 and formalized in 2005 by Vice Chancellor Tabolt. In 2006, it will be formally launched, by seeking a representative from each campus department. The goal of this program is to educate one or more liaisons from every department on sustainability issues. Trainings, coupled with a manual, monthly newsletter, and recognition, allow for effective, efficient dissemination of sustainability-related information throughout all campus departments. Another aspect of this program is Green Office Certification, which the Eco-Rep will help his/her department attain via a presentation series.

Earth Education Program

Earth Education is a volunteer organization based out of the University of Colorado’s Environmental Center that provides environmental education programs to local public and private schools in the greater Boulder community. Earth Education is over 15 years old and has successfully matched undergraduate volunteers and interns with local teachers who are interested in implementing environmental and natural science education into their classroom.

Action Steps CU Can Take to Achieve Goals

- Incorporate environmental and campus sustainability modules into the University 101 course, which is in planning stages. University 101 needs positive, inspiring curriculum beyond drug and alcohol awareness information.

- Solidify the Residence Hall Eco-Rep program, a peer-to-peer educational outreach program in the residence halls. The program aims to create “Sustainability Support Residents” in each hall who would disseminate information, create an engaged community, and serve as a resource for environmental issues. Another option is to create environmental representatives on each Hall Council who serve as a point person for environmental operations and outreach issues.
- Incorporate sustainability talking points into campus tours, consistent training of tour guides, and incorporate a sustainability session in the general student orientation. Alternatively, sustainability talking points could be incorporated into residence hall move-in.
- Publish and distribute a campus “green map” displaying the environmental programs and features on campus.
- Develop and implement sustainability training for students, faculty and staff through a variety of information campaigns and educational programs. The program could offer regular workshops to help faculty incorporate sustainability into classes in a wide variety of disciplines and provide continuing education opportunities for staff that would include formal training as well as informal facts, tips and reminders. These workshops would include certificates of completion or other reward structure that can be documented to superiors. Additionally, faculty members are currently encouraged to take courses with FTEP (Faculty teaching excellence program). FTEP courses may serve as a model for sustainability workshops or be restructured to include sustainability issues.
- Establish a committee to investigate the feasibility of an Environmental Literacy course. This taskforce will research curricula creation, seek out professor sponsorship, evaluate funding options and investigate the means by which other disciplines achieved core curriculum status. The Environmental Literacy Committee will incorporate feedback from Environmental Studies faculty, CU students, the Environmental Center, core class evaluators from various schools and colleges at CU-Boulder.
- Investigate training and incentive programs and environmental performance standards for staff.

Metrics and Assessment

<u>Metrics</u>	<u>Measurement Methods</u>
Expand environmental curriculum for all UCB students	Incorporation of a sustainability module in University 101
Formalize and expand eco-rep programs	Increase in number of eco-reps in residence

	halls and departments (goal of one per hall and one per department/ division)
Establish pledge program with tracking mechanisms	Target increasing percentages of pledges from undergraduates, first year students, faculty/staff.
Develop sustainability class requirements	Refer to timeline below

This section's taskforce expanded on the means to establish a required environmental literacy class which is a lengthy and involved process. The following steps and timeframe are offered:

- Year 1: Establish the Environmental Literacy Committee that will research and compile campus-wide efforts concerning environmental literacy.
- Year 2: Examine data from the committee and make appropriate recommendations for the curriculum and credit load.
- Year 3: Explore funding options for an environmental literacy course. Potential sources include the Environmental Studies and Geography departments, the Institute for Civic Engagement, federal grant monies, and private funding.
- Year 4: Make recommendations to the core curriculum advisors and CU administrators based on the previous year's data, utilizing student participation as the key argument.
- Year 5: Establish a 2-year pilot program for the expansion of an ENVS 1000 requirement and monitor the level of interest among students pursuing majors that are not environmentally-oriented.

Further Planning and Research Needs

- Scarce monetary resources present a potential hindrance to creating an Environmental Literacy course or expanding the current ENVS 1000 offerings. However, budgetary limitations can be overcome with a demonstration of strong student and faculty desire for expansion of course offerings. Providing these statistics will be one of the first tasks of the Environmental Literacy Committee. Much of the data that the Environmental Literacy Committee will need to compile is already in existence. Records of waitlists for ENVS 1000, enrollment statistics in other environmentally-oriented classes, the development of an upper division environmental requirement in the Business School, and overall campus and community openness to environmental issues all indicate a desire for increased environmental literacy education.
- In addition to the already existent information, a campus-wide environmental survey should yield results that are beneficial to the cause. This is an assumption based on previous surveys and task forces.

- For the liaison programs, such as eco-reps and the office liaison program, curriculum needs to be developed in order to train the representatives so they can share the best possible sustainability information with their colleagues and peers. Additionally, some amount of research must be conducted in order to establish the most efficient and effective means of disseminating information.

Challenges

- Establishing a consistent base of knowledge among all the organizations and individuals on campus may prove to be a large and complex logistical problem.
- Funding is also a sensitive issue. Many departments have very little budgetary flexibility and may find it too difficult to implement sustainability-oriented changes, despite a desire to do so. Creating coalitions and partnerships to jointly fund and operate sustainability programs, as well as seeking out grant monies will be vital to implementing change.
- Training and motivating individuals and groups who traditionally have shown little interest in environmental issues may prove the biggest hurdle to overcome. Effective and efficient communication is essential to make any progress on this front.

Social Impacts

Often, those most affected by environmental degradation are underprivileged communities. Many times, these take the form of low-income and/or minority populations. Environmental literacy education mitigates these concerns in two ways. First, if the general population is aware of the consequences their actions are having on others, how harming the environment may not affect them directly but puts the underprivileged at an even greater disadvantage, it is easier to convince the general public to incorporate sustainability into their lives. Second, reaching out to underprivileged communities enables those communities to understand some of the causes of a number of the problems they are facing. Education in environmental literacy is an important step in supplying disadvantaged communities with the resources, knowledge and inspiration to improve their situation, both through public action, and lifestyle awareness.

Links to Other Blueprint Topics

Environmental literacy is a critical, underlying link to all the other sections of the Blueprint. Advancing the visions and goals requires an informed public on all levels. Environmental literacy is a single theme that ties together all sections of the Blueprint for

a Green Campus. Education is required to bring about change and strengthen CU's commitment to sustainability.

Appendix A: Internet Resources for Campus Literacy Programs

Second Nature:

<http://www.secondnature.org>

EFS West:

<http://www.efswest.org>

Campus Sustainability Assessment Project:

<http://csap.envs.wmich.edu>

Environmental Literacy Council:

<http://www.enviroliteracy.org>

University Leaders for a sustainable future:

<http://www.ulsf.org>

Campaign for Environmental Literacy:

<http://www.fundee.org>

Environmental Education and Training Partnership:

http://eetap.org/html/environmental_literacy.php

The National Environmental Education & Training Foundation

Environmental Literacy in America, 2005 Report

<http://www.neetf.org/pubs/ELR2005.pdf>