

Making Earth Day Everyday on Campus *by Will Toor*

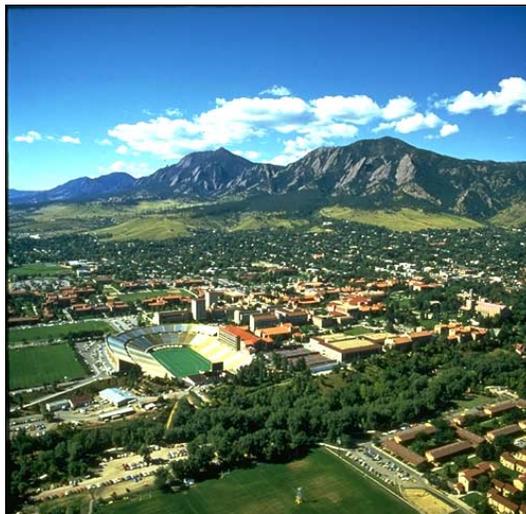
I still remember my graduate school advisor shaking his head back in the spring of 1990, complaining about all of the time I was spending organizing for Earth Day, and telling me all of the work he had for me to do come April 23. He just about fell out of his chair when I walked in with an “Earth Day Everyday!” t-shirt, muttering that he was never going to get any work out of me!

But the sentiment was right – Earth Day events should contribute to concrete change that will take place every day, not just once a year. In that spirit, for the last 30 years students at the University of Colorado (CU) have consciously used the attention gained by Earth Day to push for ongoing environmental reforms on campus.

Earth Day 1970: Starting the CU Environmental Center

This started when a group of students organized the first Earth Day back in 1970. After the day was over, they decided that they needed to institutionalize environmentalism on campus – and founded the CU Environmental Center. The student government agreed to assess every student \$1.00 a semester, generating about \$40,000 a year, and the Center was born.

The key insight that the students had back in 1970 was that creating a physical home for environmental activism on campus, and permanent paid staff to provide continuity, would keep activism alive over the years. And they were right. The paid staff were particularly important – providing a means to keep things going when student leaders graduated, and to train new leaders. In the early 90s, a number of other campuses took advantage of the excitement generated by Earth Day 1990 to start new environmental centers, at schools like Yale and the University of Chicago. This could be a legacy of Earth Day 2000 at your school.



Aerial photo of Colorado University

The 1990's: Reforming Campus Operations

Students at CU also use Earth Day every year to advocate for improvements to campus environmental programs. For the past 7 years, they have sponsored a “Campus Earth Summit” in late April, which brings students, faculty, and administrators together to review campus operations and the environmental studies program. The purpose of the Earth Summit is to assess the state of campus environmental conditions, recognize accomplishments, and identify areas needing improvement. The Summit uses the vast talent and expertise at the university by focusing it inward to address environmental issues. Because it is timed to fall near Earth Day, it tends to get significant interest from the press, and to attract many participants.



Students do research in advance and prepare an earth summit guide which analyzes campus activities and proposes improvements in the areas of energy use, water use, recycling, recycled product purchasing, transportation, green building, campus investments, food service operations, and environmental studies. They make sure to invite the key stakeholders into the process, and to recognize budget and institutional constraints, while at the same time advocating for ambitious change. The Summit also generally invites one to two administrators from campuses that have exemplary programs in one of

these areas, in order to show that these reforms really are feasible.

We also use the Summit to recognize individuals and departments that have gone above and beyond to reduce their environmental impacts. The campus chancellor presents the

Letter from the Manager



Dear Campus Environmental Leaders:

Since 1989 when the program was founded, Campus Ecology has seen a lot of campus greening initiatives come and go. We've had many conversations with staff, faculty, and students about what constitutes strong environmental initiatives on campuses, and why some programs endure while others do not. We have been able to distill many of these conversations and other research into a 12-step system for improving campus environmental performance which you can find on page 10.

The presence of an environmental management system (EMS) is an indication, though not a guarantee, of a campus' commitment to environmental responsibility and literacy. It is entirely possible for a campus to have a detailed environmental policy that is never implemented, regular communications that are not well facilitated or environmental courses that fall flat with students.

One of the things that makes implementing an EMS on a campus different than in a corporate setting is that the primary mission of the campus is to foster students' learning. On a campus, an EMS can be extended to include research and curriculum as well as operations. This issue's feature articles address several elements of a campus EMS. Will Toor's feature article on turning Earth Day into every day, for instance, covers cultivating leadership, providing resources for coordination, and developing accountability mechanisms. Ben Nicholsons, Dr. Jonathon Bulkley and Greg Keoleian's article on developing standard performance metrics at the University of Michigan (UM) addresses an important element of assessment. The UM project is one of several assessment projects occurring around the country right now and reflects a surge of interest in this topic, including a number of projects at Pennsylvania State, University of Wisconsin—Madison, as well as a campus sustainability indicators project coordinated by the University Leaders for a Sustainable Future (ULSF). Campus Ecology will conduct a campus environmental performance survey on a national level.

Each campus culture is unique, and the elements of the EMS need to be selected and tailored with care. Campus Ecology recognizes the need for more information and resources on Environmental Management systems for colleges and universities. Our new guide, *Campus Environmental Management Systems*, will feature interviews with Drs. Elizabeth Davey and Will Toor, environmental coordinators at Tulane University and the University of Colorado, and will address such challenges as how to foster coordination of environmental programs across academic disciplines and operations, how to ensure that environmental responsibility is woven into campus planning, and how to encourage the review, refinement and advancement of environmental performance over time. *Campus Environmental Management Systems* surveys several precedents at the campus, corporate, and international level, including those developed by students, faculty and staff at Penn State and Oberlin College, as well as the Natural Step, CERES and Rio Principles. A section devoted to this topic will also be available on our website soon.

I thank you for your continued support, vision and enthusiasm for campus environmental responsibility. It is your work that makes the difference.

Julian Keniry
Manager, Campus Ecology Program

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Campus Ecology Mission

The Campus Ecology program assists students, faculty, and administrators in transforming colleges and universities into learning and teaching models of environmental sustainability, by assisting with the design and implementation of practical conservation projects, providing training and incentives, and helping to document and share lessons learned nationally and beyond.

National Wildlife Federation Mission

The mission of the National Wildlife Federation is to educate, inspire, and assist individuals and organizations of diverse cultures to conserve wildlife and other natural resources and to protect the earth's environment in order to achieve a peaceful, equitable, and sustainable future.

Contact us!

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Special Thanks to our Sponsors:

The Educational Foundation of America, Nathan Cummings Foundation and our member campuses.



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Measuring Progress: Developing Standard Campus Performance Metrics

by Ben Nicholson, Jonathan Bulkley, and Greg Keoleian

Improving Campus Environmental Performance

While there are numerous successful campus ecology programs across the nation focusing upon implementation strategies and program coordination, such as energy conservation initiatives or recycling and waste minimization projects, there are fewer projects focused strictly on measuring environmental performance. The University of Michigan's Center for Sustainable Systems (CSS), one of a handful of such programs, is working to advance these efforts by developing metrics to quantify and assess our environmental performance. The concept is simply, "what gets measured gets managed and what gets managed can be improved."

Many of industry's most prominent companies—such as Dow, DaimlerChrysler, and Xerox—have used metrics to further advance their environmental programs and corporate organization. This has resulted in comprehensive environmental reports that quantitatively measure and track environmental progress. To foster a more sustainable academic environment at the University of Michigan (UM),



Center for Sustainable Systems

Located in Ann Arbor on the University of Michigan's campus, CSS applies quantitative analysis tools to advance the precepts of sustainability. Take a moment and examine the logo above; what do you see?

CSS intends to create a template for the production of a similar environmental report for college campuses nationwide— independent of size, location, and specialty. Specifically, CSS aims to measure environmental performance in terms of standardized metrics in an effort to characterize campus sustainability on a functionally relative scale.

The Center for Sustainable Systems (CSS) Framework

CSS is a research organization located in the School of Natural Resources and Environment on UM's Ann Arbor campus. We employ quantitative tools such as life-cycle assessment and the development of environmental metrics to advise decision-makers on sustainability issues.

This project was initiated in April 1999 with support from the Wege Foundation of Grand Rapids, Michigan. An initial assembly of 10 colleges and universities resulted in a collaborative effort to share perspectives on environmental assessment and campus sustainability. Our process at UM is proceeding as follows. First, we define the system boundaries as the geographical limits of the campus. This distinguishes on-site and off-site performance (including up and down stream impacts), which can also be factored into

the analysis. Secondly, we establish the level or depth of study. A Dean may wish to know a school's environmental performance, for instance, while a university Regent may desire to examine the institution on a campus-wide scale. Third, because an institution of higher learning can be considered a microcosm of society, we must understand its functions, services and activities prior to environmental assessment. These include, but are not limited to, education, research, food and water provision, shelter provision, transportation, and communication services.

"What gets measured, gets managed and what gets managed can be improved."

With these considerations in mind, we are examining environmental performance at UM in terms of the following categories:

- (1) energy usage and efficiency,
- (2) water usage and efficiency,
- (3) emissions and discharges,
- (4) material resources,
- (5) material resources as waste,
- (6) hazardous and regulated materials,
- (7) land use,
- (8) environmental health and safety, and
- (9) the extent of environmental education within the curriculum.

This framework combines CSS' sustainability criterion with that of a hybrid of the National Academy of Engineering's recommended categories for environmental performance for both manufacturing and product-use related applications. Given the diverse scope of campus activities, an environmental performance framework for an institution of higher learning must incorporate aspects of both production *and* usage.

As an example, the campus electrical consumption for 1999 was first normalized by student population (37,846 total students including graduate and professional), resulting in 11,960 kWh/student. However, it is more accurate to use total campus population (63,175 persons including staff and faculty) which yields a consumption of 7,162 kWh/person. This is comparable to the Department of Energy's 1998 national figures for average electrical consumption: 7,824 kWh/person/year [non-residential], 4,177 kWh/person/year [residential], and 12,000 kWh/person/year [total consumption per capita]. While this metric of kWh/person/year indicates power consumption per individual,

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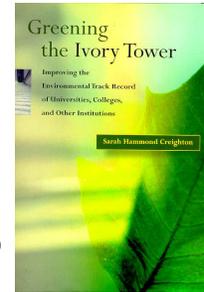
HENSE

The National Wildlife Federation's Campus Ecology Program is pleased to announce the formation of a new network, the Higher Education Network for Sustainability and the Environment (HENSE), dedicated to fostering leadership for sustainability in higher education. The goal of HENSE is to advance understanding nationally and beyond of the critical role of institutions of higher education in fostering social and ecological sustainability. Check out the new HENSE web site after Earth Day 2000: www.hense.org

Summer Reading: *Greening the Ivory Tower*

by Sarah Hammond Creighton

Read up on the best, tried-and-true campus greening methods by a national expert! Get ready over the summer for next year's big projects. To order a copy of this great resource, call **410.516.6583**. Don't forget to ask for your enrolled discount!

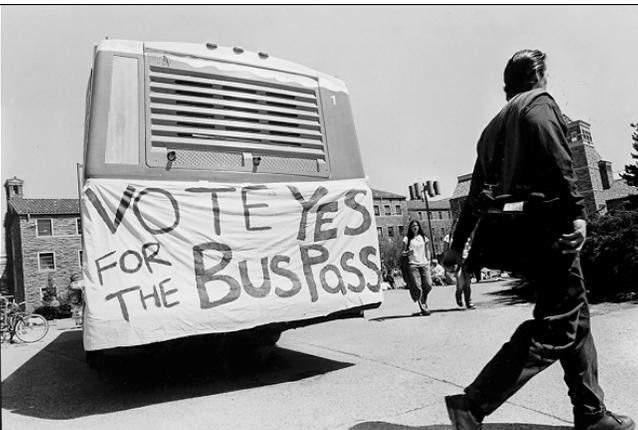


What's New?!

EARTH DAY, continued from page 1

awards, and the newspaper recognizes them, so that recipients get both public recognition and appreciation from their employer.

This approach has paid off rather handsomely. In the words of Bill Herbstreit, the director of CU Financial and Business Services, "This has helped change the culture at CU to make our operation more environmentally friendly." Some of the changes implemented in the last few years include the creation of a faculty/staff bus pass, an integrated pest management program to reduce pesticide use, a new environmental supervisor position within facilities management, and a strong commitment to green design in the upcoming expansion of the student union building. Most recently, the Board of Regents just adopted an environmental management plan for campus which includes



Vote Yes: In 1997, CU students voted 16 to 1 in favor of increasing student fees to improve student bus pass benefits

policies addressing air and water pollution, reduction of greenhouse gas emissions, expansion of recycling, green building practices, hazardous waste reduction, and energy conservation. I believe that most of these improvements would not have been adopted without the work that went

into the Campus Earth Summit over the last 7 years.

What are the steps to success in this process? I see four key elements:

- 1. Do thorough research to document current practices.
- 2. Propose changes which are ambitious yet achievable.
- 3. Find examples of other institutions that are already implementing some of these changes.
- 4. Always recognize the improvements that have been made, and provide positive public feedback to the individuals and departments responsible.

Earth Day 2000

For Earth Day 2000, we are taking this one step further. Just before Earth Day, we will unveil a plan that will build on the recommendations of the Earth Summits to articulate the vision of a growing, dynamic campus that steps lightly upon the earth and satisfies additional demands for energy, transportation, and resources through increased efficiency rather than increased consumption. With a bit of luck, our successors will be able to look back at Earth Day 2000 on campus as a watershed event, just as we look back at Earth Day 1970.

Will Toor is director of the University of Colorado Environmental Center, where one of his responsibilities is directing the student bus pass program.

Campus Ecology Fellows

Six students from around the nation (Occidental College, Los Angeles, CA; California State University at Humboldt; Fort Lewis College, Durango, CO; Tulane University,

New Orleans, LA; Middlebury College, Middlebury, VT; Western Michigan University, Kalamazoo, MI) have undertaken projects that inspire them and will spark better environmental practices on their campus. Their work ranges from cataloging national, state and local environmental regulations that affect the university to creating a more efficient recycling program.

The goal of Campus Ecology's fellowships is to nurture and inspire individuals to find those issues or projects that make them come alive. Campus Ecology is establishing a campus-based opportunity for students to develop hands-on experience. Our objective is to find and encourage projects that will have a direct impact on the local community and campus where the work is being done, in addition to moving the national campus greening effort forward. Providing funding in the form of stipends and grants allows students to determine how the money can and should be used. Fellowship stipends allow students who may not otherwise be able to hold an internship the chance to gain the same hands-on experiences without incurring some of the traditional costs. In situations where students feel seed money is critical, fellowship money can be used in the form of a grant.

Each fellow in his or her own way has found work that is inspiring, challenging and gratifying. To learn more about specific projects or get application information, please visit the fellowship page on our web-site. Watch your mailboxes for information on application deadlines and requirements for Fall fellowships.

" Don't ask yourself what the world needs. Ask yourself what makes you come alive, and then go and do that. Because what the world needs is people who have come alive."

Three currently enrolled fellows, from left to right: Sean Armstrong at Humboldt State; Tasam Savathasuk at Occidental College; and Andrew Nixon at Western Michigan



Campus Ecology New Resources

ONLINE RESEARCH STATION

Thinking about launching a "green campus" project at your college or university? Need to do a project for an environmental studies class? Not sure where to start? Check out the newest resource, developed by Dr. David Eagan, on Campus Ecology's web site: The Campus Environmental Projects RESEARCH STATION. The Research Station is a detailed, online guide to help students develop and carry out effective individual or class projects. It is also a useful tool for faculty and administrators looking for ways to incorporate campus-focused research into courses and service projects.

Sections of the Research Station cover how to choose a project, design it, organize a team effort, and document final results. Examples are given from campuses across the country, showing the successes and challenges others have experienced while working on projects that may be similar to yours. Topics covered in the Research Station include resource flows, solid and hazardous wastes, campus infrastructure, and policies and plans. And be sure to see the bibliography which gives a wealth of resources for furthering your work on campus greening.

This is a new and evolving resource, and we encourage you to contribute reports about projects you have conducted, adding to the pool of ideas for making campuses more environmentally responsible.

"This site provides encouragement for faculty and students to become active with campus environmental improvements. This encouragement is facilitated through such features as a clear project outline which initiates environmental action."

Campus Ecology Upcoming Events

May 6, 2000: Greening the Campus -- The Role of Higher Education in Creating a Sustainable Future, O'Shaughnessy Education Center, University of St. Thomas, St. Paul, MN Bringing together issues of green campus building and operations, and integrating the concepts of greening and sustainability into curricula across academic departments, the conference intends to bridge the gap between what is taught and practiced on campuses through an interactive workshop. Campus Ecology representative Jessica Stine will be speaking on campus greening, along with many well-known leaders in the field, including Dr. David Orr.

Contact Linda Countryman at 800.657.3843 or linda.countryman@moea.state.mn.us

May 17, 2000: The Green Campus: Model of Sustainability, Reynolds Alumni Center at Turner and Maryland Street intersection, University of Missouri: Columbia Dr. David Orr, author of "Ecological Literacy" and "Earth in Mind" and chair of Environmental Studies at Oberlin College, will give a keynote presentation. Campus Ecology's Julian Keniry will present on Environmental Management Systems and will present workshops with Ithaca College composting expert, Mark Darling. This conference will explore the opportunities presented by the ecological paradigm shift in higher education. Workshops will provide "hands-on" assistance in strengthening campus environmental efforts, purchasing environmentally preferable products, conserving energy and water, calculating savings from waste reduction efforts, and other ways to transform our universities and colleges to living models for sustainable development.

Contact Marie Steinwachs at the Office of Waste Management; 1031 E. Battlefield, Ste 214, Springfield, MO 65807; 417.889.5000; owm@missouri.edu.

Our web site always has the most up-to-date information on all program offerings, so check it out!

www.nwf.org/campus

Campus Ecology On-campus Report

Each year Campus Ecology works with enrolled campuses on specific projects, assisting them in their work to improve the environmental performance of their college or university. Here is just one snapshot of what is happening on-campus.

Wake Forest University, Winston-Salem, NC

The Student Environmental Action Committee (SEAC) of Wake Forest University works in four committees, each committee focusing on a different part of campus operations. Before the teams began work on their subsection of campus though, they held meetings with the Chief Financial Officer and other administrators to build support for their project on campus. This initial step helped open doors and ease the work of the students down the road.

The University Store Committee has developed a survey to send out to campus vendors to assess the vendor's environmental commitments and policies. The information gathered from the vendors will be compiled into a report that will be presented to administrators and purchasers on campus. The goal of this committee is to identify and recommend environmentally preferable vendors.

The Dining Services Committee works closely with Aramark, the campus dining service contractor, and has had many successes at reducing waste and implementing more earth friendly practices. Last year, by launching a massive education campaign, the SEAC group convinced Aramark to use china plates and silverware in the main eating facility on campus which had previously used disposable styrofoam and plastic. The committee is now working with Aramark on increasing recycling in the whole of dining services including recycling the disposables that are still being used in the cafeterias and removing excessive packaging, such as individual milk cartons and cereal boxes.

The Reduce, Reuse and Recycle committee is working through Student Government on a bill recommending the implementation of recycling bins at fraternity parties coupled with incentives to recycle.

The Facilities Management committee focused on four main concepts: energy conservation, water conservation, roads and transportation, and grounds and landscaping. They worked to convince the campus police to install a bike patrol, which the chief of police has said will commence in early spring. Next they are working on energy conservation in the academic buildings during off-peak hours.

Campus Ecology Clinics

Seven hundred students, faculty and staff from 121 campuses participated in training clinics and workshops conducted by the National Wildlife Federation's Campus Ecology Program in fall and winter of the 1999-2000 academic year. We thank the Nathan Cummings Foundation and host campuses for making these workshops possible.

"Green Campus, Green Community: The Second Annual Facilities and Services Conference" ***SUNY Stonybrook, NY, August 6, 1999***

Attended by over 300 facilities managers, staff and buyers from campuses throughout New Jersey and New York, the event commenced with a shared keynote by Walter Simpson, Energy Manager at SUNY-Buffalo, and Julian Keniry of NWF's Campus Ecology Program. Walter and Julian also conducted workshops on how conservation projects can save campuses money and how to implement energy efficiency programs. Participants had the opportunity to explore two electric vehicles and sample environmentally sensitive products from dozens of vendors, ranging from green cleaning supplies to chlorine-free, recycled paper products.

"Lean and Green: Making a Winning Case for Campus Conservation" at the Greening of the Campus III Conference, Ball State, Muncie, IN, October 2, 1999

At this workshop, designed and facilitated by Dr. David Eagan and Julian Keniry, four teams of 75 participants at "Wanna Be Green University" made their case for various cost-saving projects, ranging from energy efficiency to green transportation, before a mock panel of judges representing key decision-making sectors of the campus. The winning team "received a check for \$100,000" to fund the start-up of their project. Participants received a copy of "Green Investment, Green Return: How Campuses are Saving Millions Through Practical Conservation Projects."

"Campus Ecology Track" at EcoConference 2000, University of Pennsylvania, Philadelphia, October 15-17, 1999

One hundred and twenty five participants from 70 campuses attended Campus Ecology's five-workshop track designed and conducted by Jessica Stine, Campus Ecology Coordinator, and Mark Darling, composting expert and Campus Ecology Peer Expert from Ithaca College. Sixteen of the participants earned the Campus Ecology Certificate of Completion for attending four of the five workshops offered in the track. Evaluations and attendance suggest this was one of the most well-received offerings at the conference. The Conference, sponsored by 30 organizations including NWF's Campus Ecology Program, drew 2,500 students.

"Greening the University of Florida Conference," University of Florida, Gainesville, October 28-30, 1999

This two-day intensive session on the greening of operations and curriculum began with a shared keynote address from Dr. Howard Odum and Julian Keniry. Julian conducted workshops on office greening for approximately 100 staff and buyers from throughout the campus and facilitated a session on improving recycling and waste reduction on campus. On day two, Cynthia Staples, program manager at Second Nature, delivered a keynote and workshops on greening curriculum.

"An Introduction to Green Purchasing," 1st Annual Joint CSU/UC Conference: Procurement for the Millennium," CSU- Monterey Bay, March 8, 2000

Approximately 100 purchasers from both the California State University and University of California systems attended a presentation on green purchasing and ecolabels by the NWF's Jessica Stine. Jessica outlined the concept of green purchasing, provided a visual overview of best practices ranging from paper buying at Northland College and the University of Oregon to improving mass transit and bicycle ridership through better contracting at the University of North Carolina. Jessica also reviewed some of the great web sites and other sources of information available to college buyers and provided each attendee with a copy of the report she edited, *Buying Green the Easy Way*, published by the NWF's Campus Ecology Program.

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normalizing by campus utility square footage (26,800,000 total square feet) has also allowed for a facility level comparison. Application of this metric has highlighted the noteworthy conservation achieved through the implementation of programs such as EPA/DOE's Energy Star on 22 campus buildings, leading to a total savings of over 5,191,560 kWh and \$801,247 in the 1999 Fiscal Year.

In this example, energy consumption is measured in terms of baseline data (campus population and square footage) in order to relate performance to functional units of assessment. To further illustrate this concept, an analysis of campus recycling revealed that approximately 86 20-ounce bottles and 89 pounds of paper were recycled per person for the 1999 Fiscal Year.

Establishing the Year 2000 Report and Beyond

CSS intends to produce the most accurate environmental report possible. Therefore, we have formed a Campus Environmental Management Committee made up of representatives from each applicable department (i.e. utilities, waste, grounds, academic programs, etc.). These campus experts are providing consultation on practical environmental management to aid CSS in the implementation of the framework.

With the help of this committee, CSS intends to produce a report for the 2000 Fiscal Year. This report is considered the first step in the process of institutionalizing a campus environmental report. Follow-up steps include production of the annual report; further research on indicative metrics, performance tracking, and environmental programs; and the application of this research into the following year's report. Thus, this project is intended to be a natural educational and research ground for students as well as catalyst for environmental improvement of campus operations.

Future plans include a workshop to be held in Ann Arbor on May 16, 2000 with the Wege Foundation, NWF's Campus Ecology Program, and representatives from the original assembly of colleges and universities. In addition to our research efforts, numerous other colleges and universities are making strides in this arena such as Penn State and its Sustainable Indicators Report and Williams College's Environmental Audit. We hope to learn from these efforts and collaboratively work towards a sustainable end. We invite additional comments and inquiries; for more information please contact CSS at (734) 764-1412, <http://www.umich.edu/~css>.

STATE OF THE CAMPUS ENVIRONMENT PROJECT

Campus Ecology New Project

During the 1990's, students, faculty and staff made great strides toward greening our nation's campuses. However, after a decade of work filled with countless achievements, we still lack an empirical measure of our progress, though there are research projects such as the metrics research happening at the University of Michigan Center for Sustainable Systems (p.3). The basic question remains: have we, as a nation, improved the environmental performance of our colleges and universities? Individual campuses can conduct environmental audits to assess their own performance but they aren't in a position to get a snapshot of where campuses across the country stand. Campus Ecology is developing the first-ever large-scale environmental performance survey of U.S. colleges and universities, thanks in part to support from the Educational Foundation of America.

Up to this point, no one has asked environmental performance questions on a national scale. Consequently, colleges and universities have no point of comparison from which to measure progress. Campus Ecology's Environmental Survey seeks to bridge this important gap in information. We hope to set a baseline for environmental performance, which will serve to measure future progress as well as help to determine current trends.

We have established ambitious objectives for this project. Campus Ecology is designing a web-based survey for analysis of national trends, establishment of benchmark standards and, potentially, comparison of environmental achievements across campuses. The instrument will cover campus operations such as land use, building design, waste management, purchasing, energy, transportation, management systems, and related educational initiatives.

In order to complete this ambitious project, Campus Ecology is collaborating with Princeton Survey Research Associates (PSRA). Andrew Kohut, former president of the Gallop organization, founded PSRA in 1989. Since that time, it has grown to become one of the country's most respected policy and social research firms. PSRA Vice President and Washington D.C office director Mary McIntosh will head the Campus Ecology survey project.

The Campus Environmental Management System in 12 Steps by Julian Keniry

1. Provide and Cultivate Leadership: Leadership from senior administrators, faculty, and from students is a crucial component of an effective environmental management system

2. Design Guiding Principles: As students, faculty, and staff determine how they wish to modify the curriculum, operations, research and other aspects of the campus to foster environmental sustainability, it may be helpful to have a series of principles to forge a common understanding of sustainability. These guiding principles can also channel activities in more sustainable directions, without necessarily spelling out the specifics.

3. Determine Indicators: Assessment, establishment of objectives and timetables, and other components of an EMS are predicated upon indicators. As stated in the introduction to Sustainable Seattle's 1995 report, *Indicators of Sustainability*, "indicators are bits of information that highlight what is happening in the large system. They are small windows that provide a glimpse of the 'big picture.'" Some of the most exciting work on indicators has been done at the community level. The University Leaders for a Sustainable Future (ULSF) is working with leaders all across the country to craft sustainability indicators for campuses.

4. Assess Performance: Environmental assessments are important components of an EMS for several reasons. They provide a baseline against which performance (both academic and business) may be measured over time; identify priorities for environmental improvement; pinpoint opportunities to reduce costs; give practitioners an opportunity to offer suggestions; and help identify best practices that can be shared with other departments and campuses.

5. Establish Goals and Policies: Goals and policies translate principles into plans and indicators into action. The experience at the University of Colorado suggests that goal-setting is probably a better process for cultivating campus-wide investment than policy development, but policies are sometimes required when a strict campus-wide standard (such as complying with fire codes, compliance with regulations, etc.) makes everyone's participation imperative.

6. Meet and Exceed Regulatory Compliance: Compliance with national and other applicable environmental regulations is a minimum standard for campus environmental performance. Applicable federal regulations may include the:

- Clean Air Act
- Clean Water Act
- Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)
- Toxic Substances Control Act (TSCA)

7. Provide Resources for Coordination: There is a limit to how long and how effectively staff and students can coordinate communications, volunteers, and all of the other facets of an EMS without official sanction and compensation. The administrative responsibilities involved in organizing meetings, maintaining records, organizing volunteers, fundraising, coordinating follow-up, and documenting results are significant. An effective Environmental Management System requires sustained communications over decades, and this is hard to maintain with a volunteer-based approach. A paid administrative coordinator is a crucial and worthwhile investment.

8. Establish Communications: Communications are key to improving environmental performance and, thus,

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vital to having an effective campus environmental management system. The secret to successful communication is to develop a system that offers a variety of ways to get involved. This can take shape as an environmental task force or a network of building conservation coordinators. Also, develop a newsletter and use existing communication vehicles (e.g., the campus paper, alumni magazine, and web page).

9. Integrate Into Existing Management Systems: Effective Environmental Management Systems are best when integrated into existing management systems on campuses, including strategic and master plans, budget planning, personnel management, and communications. Integrating environmental management into general management is a three-step process involving assessing current management systems, using this information to design an Environmental Management System that maximizes existing processes and resources, and then developing and implementing a strategy to integrate the EMS into existing processes.

10. Develop Accountability Mechanisms: Once measurable objectives have been established, mechanisms need to be put in place to hold the campus community, departments, and individuals accountable for achieving the environmental goals they establish. The University of Colorado's Environmental Center holds an annual forum, called the Earth Summit, to which the campus and surrounding community are invited. Staff, student and faculty participants report on progress towards objectives established for their departments, groups or residences in the previous year, and relay new objectives for the following year. The Earth Summit commences with an awards program and culminates in an annual environmental progress report distributed to the campus community and beyond.

11. Document and Publicize Success: Documentation is an important component of a successful campus environmental management system. It creates "institutional memory," helping new students and staff learn from and build upon past accomplishment. Documentation, especially when it focuses on environmental and financial achievement, can help provide the campus community with the sense that individual and departmental contributions make a difference. By publicizing accomplishments and the benefits of conservation programs, documentation can also set a positive example for other campuses, schools, and local businesses.

12. Continue to Learn and Refine the EMS: Achieving environmental sustainability is a journey, not an endpoint. Environmental learning can be fostered on campuses through an EMS that institutionalizes regular review and refinement of sustainability goals in light of new information and understanding. Over time, understanding will improve about how to foster and measure environmental literacy, how to reduce the campus' ecological footprint, and ultimately, how to foster sustainability within and beyond the borders of the campus. A well-constructed EMS can help ensure that this learning and correction of course take place.

For a **FREE** Campus Ecology Action Toolkit, call 1.800.822.9919 or fill out our on-line request form at:
www.nwf.org/campus/tools/publications

