

Introduction

The concept of sustainability is not new to the University of Victoria. While terms may evolve, our commitment to responsible resource use, protection of natural areas and a pedestrian oriented campus has been in place since the 1960s.

The word “sustainability” describes the challenge of meeting current human needs without compromising the ability of future generations to meet their own needs. It involves recognizing limits, living within the constraints of nature and understanding the connection between the environment, the economy and social well-being.

Simply put, sustainability can be defined as “less waste and more creativity.” At the University of Victoria we strive to model sustainability, applying ingenuity to find new and creative solutions and practices that can serve as examples for others.

In a world in which the most challenging problems are shared, co-operative international solutions are required. The University of Victoria has both a role and a responsibility to respond and take action.

Through our research activities, UVic is building a reputation for collaborative work that promotes an equitable balance of the governance, environmental, human and economic factors at the heart of global sustainable development. Through our operations, UVic is demonstrating that incorporating sustainability into decision making makes good business sense.

This report provides only a glimpse of the University of Victoria’s academic, research and operational efforts related to sustainability. Perhaps more importantly, it highlights our partnerships with government and community organizations who are working to achieve a common goal of local and global sustainability.

For more information on these projects and other current initiatives, visit www.uvic.ca.





Sustainability on campus

The physical environment at the University of Victoria makes this campus a unique place to learn, teach and work.

With the recent completion of two Leadership in Energy and Environmental Design (LEED) green buildings and the upcoming construction of three new buildings, sustainable development is a part of our strategy to reduce our impact in the region.

While UVic does not have a formal campus sustainability policy, the university has showed a strong commitment to sustainability over the years. Specifically, the university has

- adopted a strategic plan and campus plan which support long-term sustainability,
- maintained a pedestrian-oriented campus,
- preserved natural areas and ecosystems,
- implemented a number of resource conservation programs,
- applied innovative technologies to campus operations, and
- constructed a number of buildings with emphasis on low-impact development.

Campus design guidelines

In the spring of 2006, the UVic campus planning committee, one of the two multi-stakeholder bodies involved in campus planning, adopted sustainable campus design guidelines to assist decision making related to sustainability in new buildings and renovations.

These guidelines essentially provide options for meeting the academic mission of the university in a manner that is socially, economically and environmentally sustainable. In addition, the guidelines complement municipal strategies for reducing demand on utilities and roads, minimizing sprawl development and protecting the environment.

The guidelines promote green buildings which

- emphasize responsible construction and building practices,
- feature recycled materials and renewable resources,
- minimize impacts on natural areas,
- accommodate more floor space within a smaller building footprint,
- utilize systems that emphasize water and energy conservation and efficiency, and
- enhance indoor environmental air quality.

While the capital cost of designing and constructing green buildings is initially higher, there are numerous long-term benefits, including lower operating costs and reduced resource consumption.

Engineering Computer Science Building

The recently completed Engineering Computer Science Building will be another showcase project for the University of Victoria. The building is aiming for GOLD level status in the LEED Green Building Rating System. Designed by Victoria architect Terence Williams, this building will provide 830 classroom and lecture seats as well as a new home for the Department of Computer Science.

Building features include:

- overall 35 per cent more energy efficient than model national energy code
- designed with dual plumbing for use of treated waste water, saving 2,700,000 litres per year of potable water
- innovative heat recovery system from re-circulated waste water, supplementing building's heating requirements by 350,000 kWh annually
- showers for cyclists and pedestrians

- bicycle parking and indoor clothing lockers
- low-flow toilets and faucets
- waterless urinals
- natural landscaping with stormwater detention
- green roof planted with native grasses (first on campus)
- optimization of daylight—over 85 per cent of occupied spaces will have access to natural light
- low VOC materials such as paints, adhesives, carpets
- locally sourced materials
- use of existing site—constructed on old parking lot
- compact design—6 stories
- sunscreens
- energy efficient light fixtures including occupancy sensors
- materials with high recycled content

Natural and landscaped areas

The University of Victoria is known for its unique ecosystems and strong sense of place.

From the wetlands at Bowker Creek to the forests of Mystic Vale, there are many valued spaces on campus that contribute to the local and regional strategies to preserve ecosystems and retain biodiversity. With more than 400 acres of land, the UVic grounds act as a living laboratory for students in a number of academic disciplines. Continued funding will be required to maintain these areas and expand restoration efforts in the coming years.

Natural landscaping

Naturescape is a landscaping concept which emphasizes restoring, preserving and enhancing wildlife habitat in urban and rural areas. The intent is to create new habitats, utilize native plant species, reduce the need for extensive watering and eliminate the need for chemical pest control.

There are a number of natural landscaping projects on campus, including the Native Plant Study Garden, the Lorene Kennedy Memorial Garden, Medical Sciences Building, Continuing Studies Building and outside the MacLaurin Building.

Integrated Pest Management Program

As a part of the Campus Integrated Pest Management Program, facilities management strives for zero pesticide/herbicide use and applies pesticides and herbicides only in very limited cases when problems occur. For example, in 2005 facilities management undertook a Hogweed and Hemlock eradication program using spot treatments of RoundUp on both mature and young plants. While the application was required, staff also applied physical controls to prevent further seed germination.

Restoration in Mystic Vale

Grounds staff have been busy in Mystic Vale removing invasive species, relocating the jogging trail and constructing detention ponds in Hobbs Creek. Each of these initiatives contributes to the enhancement of the entire forest ecosystem and ensures the long-term protection and continued use of this space. While new native species will take time to set root, work has been successful in removing aggressive invasive species such as ivy and holly and replacing them with sword ferns, snowberry and Indian plum.

Garry Oak Reclamation Trials

Now in its third year, the UVic Garry Oak Reclamation Trials are being conducted in the field on the corner of

Cedar Hill Cross Road and Henderson Road. This is a joint project of the restoration of natural systems program and facilities management.

This experiment is being conducted to compare different methods of soil preparations and planting regimes to assess optimal ways of controlling exotic species and re-establishing native plant communities.

For the Department of Facilities Management, understanding the most effective planting and soil regimes will result in more successful restoration projects on campus saving both time and money. Data from this project will also supplement efforts to restore and enhance Garry Oak ecosystems in the region.

Bowker Creek Urban Watershed Renewal Initiative

The Bowker Creek watershed is one of the largest watersheds in the region and is one of four watersheds of which the Gordon Head campus is a part. For the past five years, the university has participated in the CRD Bowker Creek Urban Watershed Renewal Initiative. The initiative is a collaborative effort involving the municipalities of Saanich, Oak Bay and Victoria to improve the overall health of the creek, manage stormwater flows, expand public areas along the creek

and protect the watershed from pollution. From creek clean up projects to riparian area restoration, university staff have played an active role in the revitalization of this urban watershed.

Groundwater protection and erosion control

Maintaining healthy and aesthetically pleasing grounds can be a challenge during periods of heavy construction. Several controls are in place to avoid erosion and impact on vegetation. The university works with landscape architects, arborists and grounds staff to evaluate and protect trees on campus during construction. Efforts are made to limit the amount of tree and vegetation removal to the line of excavation. In the design process, efforts are also made to reduce the overall footprint of the building to minimize the amount of non-pervious surfaces.

While there are written landscape procedures, the university does not have specific construction standards and policies to ensure a consistent standard for tree protection and erosion control. An important undertaking for the university in the near future is to develop sustainability-oriented policies, procedures and standards to address these issues and build on the sustainable campus design guidelines.

UVic Research Spotlight



Barbara Hawkins

When Barbara Hawkins walks into her laboratory, she sees both the forest and the trees. Director of the Centre for Forest Biology, Hawkins is interested in how trees adapt to stresses like low nutrient availability and cold weather—factors that can limit the re-growth of forests after harvesting. Her research has long-term implications in keeping BC's forest-resource economy healthy. Recently, forest management systems in coastal BC have shifted away from clear-cutting, toward partial cutting and retention. Hawkins has conducted studies on how amabilis fir seedlings respond to these different silvicultural systems and to fertilization during natural forest regeneration. A current project examines the way conifers are able to redirect nutrients from older leaves to newer ones during periods of stress, a process called re-translocation. Understanding the way conifers react to stress may help us build forests that are better adapted to BC's harsh growing conditions and more able to support the communities that depend on them.



Transportation demand management

Transportation pervades every aspect of campus life, from textbook deliveries to student travel. The university is working in concert with a range of community partners to reduce the transportation impact on the region.

Transportation Demand Management is a series of initiatives that encourages travel options other than the use of single-occupant vehicles. The goal is to reduce traffic volumes and parking demand by changing travel behaviour.

TDM focuses on pricing strategies, infrastructure and incentives to encourage sustainable transportation behaviour and complements the CRD Travel Choices Strategy. The result is reduced roadway congestion, reduced demand for the construction of new parking spaces, improved air quality, and amenities that cater to users of alternative modes of transportation.

The university has adopted a budget framework which supports the TDM program by providing funding for the bus pass programs, cycling infrastructure improvements, trip reduction strategies and education programs, and a full-time TDM coordinator position.

The TDM program includes:

- cycling infrastructure improvements
- crosswalk and signage improvements

- rideshare, car-share and car-pooling programs
- dedicated parking areas for motorcycles, scooters and electric bicycles

Recent results:

- Since 1996, traffic volume to campus has decreased by 20 per cent, while the campus population has increased by 15 per cent.
- Single-occupant vehicle use now represents fewer than 50 per cent of all trips to campus.
- Demand for parking permits dropped by 13 per cent in 2005.
- Transit use continues to increase, both for students and employees.

Employee bus pass program

The University of Victoria was one of the first post-secondary institutions in Canada to introduce the Universal Bus Pass Program for undergraduate and graduate students. Based on its overwhelming success, in the fall of 2005 the university created a transit program for faculty and staff.

With the aim of reducing the cost difference between public transit and driving, the university and BC Transit partnered to create the Employee Bus Pass Program. This voluntary program offers all UVic employees a monthly bus pass at a cost of \$38 per month, a \$27-per-month discount. This partnership was the first in the region to be funded by both

Travel Mode	1992 Audit	1996 Audit	2000 Audit	2004 Audit
Single Automobile Drivers	58.1%	57.6%	54.4%	47.1%
Vehicles w/ 2 or more	14.7%	15.7%	11.0%	11.8%
Transit Users	11.0%	11.1%	17.8%	26.2%
Cyclists	8.5%	6.9%	5.5%	6.0%
Pedestrians	7.7%	8.7%	11.3%	8.7%
Skateboarders/rollerbladers	n/a	n/a	n/a	0.2%

the employer and the transit system.

Uptake has been a huge success in the first year, with average sales of more than 350 passes per month.

Bike to Work Week

UVic once again cycled its way to success during Greater Victoria Bike to Work Week. As one of the largest employers in the region, the university's participation has been steadily growing in this annual event since 1998. In 2005, over 60 UVic teams and more than 700 employees participated in this week-long event. With bicycle support stations and free commuter cycling courses, UVic riders had the chance to learn about bike safety and maintenance while taking an active and sustainable approach to transportation. Bike to Work Week has proved to be a great opportunity to introduce faculty and staff to the benefits of commuter cycling and have fun at the same time.

Cycling amenities

The campus has more than 2,800 bike parking spaces and continues to add to this inventory. In 2005, facilities management installed four new sets of bike lockers on campus, bringing the total number of individual lockers to 64. A new bicycle shelter was added to the Continuing Studies Building and standard bicycle parking on campus was expanded to accommodate an additional 80 bicycles.

A campus bicycle repair kiosk is scheduled for completion in the fall of 2006. This self-serve kiosk will offer basic tools and instructional information and serve as a hub for on-campus maintenance workshops and commuter cycling skills classes. In response to requests from students, faculty and staff, the repair kiosk will also house two charging stations for electric bicycles.

Energy management

With over 5,000,000 kWh of electricity saved in the past four years, the university is well on its way to meeting its goal of reducing energy consumption 10 per cent by 2010.

In the fall of 2005, the university had reached a campus reduction of 8.24 per cent.

By reducing energy consumption on campus, the university reduces demand on BC Hydro to provide more energy for the island and the province. The university is pursuing a number of initiatives to further reduce energy consumption on campus including education campaigns, retrofit programs, purchasing programs and investments in green power certificates. While the up-front costs of energy management projects are high, the long-term saving and avoided costs for the institution provide benefits for years to come.

Energy-efficient buildings

Since its inception, the university has promoted the development of energy-efficient buildings. UVic limits the use of air conditioning to specific areas such as archives and special collections, computer server rooms, laboratories with fume hoods, and animal care facilities.

New buildings also incorporate occupancy sensors, energy-efficient equipment (e.g. fume-hoods, photocopiers, computers), reflective roof material, energy-efficient lighting, sun-shades, and natural ventilation systems, all of which contribute to reducing energy use and providing a healthier work environment.

The Medical Sciences Building was the first campus facility to be registered in the LEED (Leadership in Energy and Environmental Design) green building program. Through innovative design, the building was rated as 37.9 per cent more energy efficient than the model national energy code.

Renewable energy

Renewable energy sources, such as solar and wind power, produce no greenhouse gas emissions or air pollution. In addition to the 173 solar panels installed on the roof of the McKinnon gym to heat the indoor swimming pool, the university has added solar power to its parking ticket dispensers and lights mounted on campus transit stops.

Without the requirements to connect to central electricity sources and no scheduled maintenance for at least five years, these installations have proved to be a great investment and a practical demonstration of locally made technology.



Solar-powered parking solutions on campus.

The university also continues to invest in green power certificates through BC Hydro. These certificates invest directly in the generation of electricity from solar, wind, biomass, wave, small-scale hydro developments and landfill gas operations. Investments such as these promote research and development of renewable energy sources and complement the university's efforts to reduce demand and consumption of electricity.

To date, the university has offset almost 3 million kWh of electricity and has set up an investment program to offset more than 100 per cent of the energy consumption from each of the three new building projects on campus until 2008.

Greenhouse gas reduction strategies

Greenhouse gas (GHG) emissions contribute to global climate change, which has significant economic, environmental and social consequences. Many of the activities on campus, such as vehicle travel, using electricity and creating waste, produce GHGs.

In an attempt to reduce operating costs while assisting the provincial and federal governments in meeting the Kyoto protocol, UVic is committed to undertaking measures



Campus Security officer with new hybrid vehicle.

to limit the production of greenhouse gas emissions on campus.

Facilities management has four major programs in place to help reduce GHG emissions: energy management, waste

management, transportation demand management and campus fleet management.

For example, the facilities management utility vehicle fleet is now more than 90 per cent emissions free. In addition, there is a new hybrid vehicle in the campus motor pool fleet. With these additions, as well as the recent expansion of the staff bicycle fleet in facilities management, the university continues to reduce the need for gas-powered vehicles for operations on campus.

UVic Research Spotlight



Ned Djilali

"In the not-too-distant future we may drive our cars, heat and light our homes, and power our cell phones and MP3 players with fuel cells," says Ned Djilali, director of UVic's Institute for Integrated Energy Systems. When fuelled by hydrogen, fuel cells produce no pollutants or greenhouse gases. The only by-products of the electrochemical reaction in a hydrogen fuel cell are heat and pure water. Djilali, who holds the Canada Research Chair in Energy Systems Design and Computational Modelling, likens fuel cells to living systems that breathe air and require the regulation of numerous fluid transport processes, heat and chemistry. To unravel some of these complex processes, Djilali, his colleagues and students use laser diagnostic techniques and advanced computational models. They are exploring novel concepts and advanced designs such as the use of biological catalytic agents and micro-structured architectures that offer avenues for higher performance and lower cost fuel cells. Djilali is also working on the integration of fuel cells and renewable energy systems, "such systems will allow truly zero-emission production of hydrogen and expand the potential of renewable energy," Djilali explains.

Waste management

The Department of Facilities Management is leading the way with innovative programs, policies and infrastructure to reduce, reuse and recycle wastes in order to extend the life and capacity of the region's landfill facility.

Waste management

The greatest contribution a user can make to the campus waste management program is to limit waste production in the first place. The university promotes the four rules of waste management:

- reduce the waste you produce
- reuse as much as you can
- rethink the way you purchase
- recycle the rest

The university does not have current data on campus waste diversion rates. As funding becomes available, an updated waste assessment will be undertaken to determine current diversion rates and identify opportunities for further reducing wastes on campus.

Recycling

In April 2004 facilities management expanded its existing recycling program to accommodate a greater range of materials. Various university departments are now recycling specialty plastics such as styrofoam chips, rigid plastics, overhead transparencies, polystyrene foam and polyurethane blocks. In 2005, the campus

recycled 856 bags of specialty plastics, equivalent to filling up two semi-truck trailers.

On-campus recycling also includes:

- electronic equipment, such as computers, printers, and fax machines
- furniture, such as desks, chairs, mattresses, and tables
- concrete
- wooden pallets
- toner cartridges from printers and photocopiers
- paints and solvents

Preventing contamination in recycling

With the installation of centralized recycling stations in building foyers and hallways, as well as the new outdoor recycling cans, the university has dramatically improved recycling contamination rates. In the mid-nineties, some campus recycling bins had as much as 40 per cent contamination. With the new bins and an on-going education program, the rate has dropped to less than 10 per cent.

Campus composting program

The CRD estimates that as much as 23 per cent of waste in Hartland Landfill is made up of food waste. In 2003, UVic started composting all food wastes from the University Centre cafeteria, the Cadboro Commons cafeteria, Mac's



Reducing campus wastes through composting.

Bistro, Nibbles and Bytes Café, Fraser Café and food outlets in the Student Union Building. Now running in the Graduate Student Building and Finnerty Express, the composting program

has diverted almost 500 metric tones (over 1 million pounds or 40 full dump trucks) of waste from the landfill.

In 2006, facilities management added three centralized compost drop stations on campus, making it easy for students, faculty and staff to compost organic matter. From paper cups to fruit peels to leftover foods, the compost stations accept much more than the common household compost bin.

Cell phone and battery recycling

E-waste is a growing concern in the region and around the world. With the increased use of cellular phones and personal electronics on campus, the university added two designated recycling bins in the University Centre and the UVSS Resource Centre of the SUB. Since the program started in 2005, over 8,000 batteries and 200 cell phones have been recycled.

UVic Research Spotlight



Jutta Gutberlet

Informal recycling helps reduce the waste of resources otherwise destined for landfills and it improves the quality of life of the urban poor by generating income. UVic geographer Jutta Gutberlet is leading a Canadian International Development Agency project to build community-based, sustainable recycling programs in São Paulo, Brazil, where nearly 80 per cent of the collected household waste is dumped rather than recycled or composted. Co-operatives and associations will be trained to participate in the city's waste management strategy, recovering resources from the waste stream and in educating the wider community in selective collection and recycling. The six-year project will also help develop policies for sustainable and participatory waste management.

Campus health

Enhancing campus health through day-to-day operations is an important part of the university's commitment to sustainability.

Green Cleaning Program

One way the university dramatically reduces waste and chemical use each year is through the Campus Green Cleaning Program. Launched in 2000 as a pilot project, the program became a permanent part of maintenance operations in 2002.

The campus Green Cleaning Program does more than just reduce packaging and chemical waste generated by janitorial services. The use of environmentally friendly products is contributing to healthier indoor environments, reducing the amount of potable water used in building maintenance, and protecting the long-term health of employees.

Since 2002, over 95 per cent of all cleaning products used on campus meet or exceed Green Seal GS37 or Environmental Choice ECP 33 certification programs. In addition, the campus microfibre cleaning system reduces the need to use chemical cleaning altogether.

Tobacco smoke control

Many of the new buildings constructed on campus utilize natural ventilation and operable windows. As such, care must be taken to avoid the infiltration of tobacco smoke

into buildings. In addition, the LEED Green Building Rating System dictates that designated smoking areas must be located at least 10 meters away from all entrances, doors, windows and ventilation units.

In response, the university will implement new policies that reflect enhanced indoor air quality standards and protect building users from second-hand smoke.

Idle-free zones

UVic recently implemented idle-free zones into all loading areas on campus to reduce vehicle emissions from commercial and private vehicle use. This initiative will also help to protect the health of employees working near these areas.

Hazardous waste management

Hazardous waste is any waste with physical or chemical properties that are capable of having a harmful effect on human health and the environment. The UVic Hazardous Waste Management Program is designed to deal with any hazardous wastes on campus coming from laboratories, research facilities and operations, so that no dangerous wastes are released into the sanitary sewer or garbage. Wastes are collected by qualified chemists throughout campus and then bulked at the central campus facility in preparation for recycling and processing.



Water management

Reducing the amount of water used on campus through conservation and innovative water recycling projects minimizes the demand on the regional water supply and reduces the cost of water distribution on campus.

Like the rest of the region, the University of Victoria receives all its potable water from the CRD Sooke Reservoir. Unfortunately potable water, like many of our natural resources, is undervalued. This means that water conservation projects have high costs with low return on investment. However, the university recognizes that the cost of conserving water now is much cheaper than expansion of new regional reservoirs in the future.

Water conservation initiatives

In 2005, the university consumed 178,000,000 imperial gallons of potable water, down 2 per cent from 2004. While major efforts are still required to reduce potable water consumption, the university has implemented a number of water conservation initiatives.

Sensor faucets and low-flow toilets are used to replace units in older buildings, and new technology is used in new facilities. For example, the Engineering Computer Science Building features waterless urinals, a



Permeable paving stones reduce stormwater runoff.

new technology for the UVic campus. Each waterless urinal typically saves 151,000 litres of fresh water per year.

In addition, the grounds department runs a computer controlled state-of-the-art irrigation system to water only when required and during times of the day with the least amount of evaporation.

Integrated stormwater management plan

Sitting on the height of land feeding four watersheds, Bowker, Hobbs, Cadboro and Finnerty, the university recognizes that its activities have impacts downstream.

Stormwater refers to the rainfall (and occasionally snowmelt) that runs off buildings, roads, parking lots and other impermeable areas and drains into surrounding creeks and stormdrains.

In order to protect natural ecosystems and prevent flooding, the university has undertaken an aggressive plan to reduce the quantity and flow, as well as improve the quality, of stormwater runoff leaving campus.

The university unveiled an innovative Integrated Stormwater Management Plan in the spring of 2004, designed to reduce the negative impacts of stormwater runoff as the university grows in size. The plan takes a campus-wide approach to understanding campus hydrological systems and managing water runoff for both existing and new facilities.

Implementation efforts have included:

- utilizing impermeable areas, such as parking lots, for new building sites
- minimizing new building footprints to reduce amount of impermeable surface
- using porous paving materials on pathways and access routes
- using roof-top water detention and green roofs on new buildings
- developing both natural and engineered water detention facilities to reduce flow rates and minimize sedimentation in receiving waters
- constructing bioswales and reducing extent of curb and gutters on surface parking lots

Campus Water Reuse Initiative

The Water Reuse Initiative is an innovative program which involves treating waste water from the campus Outdoor Aquatic Facility and recycling it through toilets and urinals in the Medical Sciences Building, saving over 2,000,000 litres of potable water each year.



Water collection from the rooftops of the Medical Sciences Building.

The second phase of the initiative will be completed in the summer of 2006 in the Engineering Computer Science Building. It will result in further water savings of 2,700,000 litres per year and will

also utilize an innovative water-to-water heat pump to supplement the building's energy requirements by approximately 350,000 kWh per year.

In 2003, anticipating success of the initiative, UVic built three new student residence buildings and the Continuing Studies Building to connect to the waste water system. Facilities management is now working with consultants on plans to incorporate into the system the four existing buildings and all of the upcoming building projects. By 2010, up to seven additional buildings will be using the treated waste water for flushing purposes.

UVic Research Spotlight



Asit Mazumder

To ensure clean drinking water from source to tap, Canadian communities need to take an integrated approach to water and watershed science and management.

This is the guiding principle of the NSERC Industrial Research Chair on the Environmental Management of Drinking Water, established at UVic in 1999. Headed by aquatic ecologist Asit Mazumder, the chair program conducts interdisciplinary research on a wide range of sustainability and community health issues related to drinking water, land use, fisheries ecology and contaminant transport.

More than 30 scientists, graduate students, technicians and undergraduates work out of Mazumder's research lab, which is equipped to detect and analyse taste and odour compounds, contaminants, toxins, drugs, disinfection byproducts and nutrients. Mazumder and his team work closely with utilities, governments, communities and industries who are seeking science-based solutions to water and aquatic resource issues.

There are currently more than 25 research projects on the go, on topics as far-ranging as: the factors that regulate drinking water quality in the Sooke Reservoir; mercury levels in fish; the drinking water potential of the Leech River watershed; climate impacts on aquatic ecosystems, sea lice and salmon; and salmon ecology in marine ecosystems.

Sustainability research highlights

Through its research activities, UVic is building a reputation for collaborative work that promotes an equitable balance of the governance, environmental, human and economic factors at the heart of global sustainable development.

Modeling climate change

Andrew Weaver, Canada Research Chair in Climate Modeling and Analysis, was a lead author of the 2001 UN scientific report concluding that most global warming over the past 50 years is due to human activities. He is now involved in producing the follow-up UN report, due out in 2007. That document will draw on climate scenarios generated by Weaver's team using its internationally known comprehensive Earth System Climate Model.

Restoring ecosystems

Can we repair human damage to ecosystems? Eric Higgs, director of UVic's School of Environmental Studies believes we can. A philosopher and ecological planner, Higgs studies ecological restoration—the repair and sustainable maintenance of ecosystems—and how it might be used to secure a sustainable future.

Protecting marine areas

Understanding biodiversity in the deep sea is fundamental to the protection of key ecosystems. Canada Research Chair in Deep Ocean Research Verena Tunnicliffe has spent the last 25 years studying animal communities in the world's oceans and is an international authority on deep sea life. Her explorations of the exotic ecosystems that develop near hydrothermal vents contributed to the establishment of Canada's first Marine Protected Area: the Endeavour Hydrothermal Vents off British Columbia.

Preserving traditional plant knowledge

Distinguished Professor in Environmental Studies Nancy Turner integrates the scientific practice of botany with a rich cultural understanding of the traditional use of plants, especially among First Nations in British Columbia. Widely acknowledged as the authority on the ethnobotany of the Pacific Northwest, she is well known in First Nations communities for helping to document and revive their rich, cultural connection to plants.

Driving the social economy

Across Canada, thousands of organizations providing everything from health care and banking services to housing and food production plow their

profits back into their communities, driving the “social economy.” The national, UVic-led Social Economy Network is researching how such organizations can work more effectively and influence society. The network is co-directed by Ian MacPherson, director of UVic's Institute for Co-operative Studies, and one of the world's foremost experts on the co-operative movement.

Framing environmental policy

Professor Michael M'Gongle, UVic's Eco-research Chair in Environmental Law and Policy, is publishing a new book, *Planet U*, which examines how universities around the world are, or are not, incorporating sustainable practices into campus design and operations. He's also working on green legal theory, examining how existing law prevents or obstructs the use of more sustainable practices.

Economics of the environment

Protecting Canada's environment is key to the continued growth of our economy and well-being. Canada Research Chair in Environmental Studies and Climate Cornelis “Case” van Kooten is widely recognized as a leader in devising effective economic measures for analyzing various aspects of the environment. He studies a wide range of issues related to changing climate, energy systems, forestry, land use, invasive species and wildlife conservation.

Greening the corporation

It pays to be green. That's a message business professor Monika Winn brings to corporations in an effort to reduce negative business impacts on our environment. She is also researching how the effects of major climate change events can be built into long-term business planning models. Her work will help business sectors, such as tourism, to realize the full meaning of creating sustainable and sustained shareholder value.

Spinning-off green companies

With the assistance of the UVic Innovation and Development Corporation, faculty and student research expertise on sustainability has led to the creation of several successful spin-off companies. One such company is Greenleaf Integrated Energy Systems, which develops innovative clean energy and greenhouse gas reduction systems.

Another, Green Building Exchange, serves green builders, architects, developers and suppliers via a web platform providing market information, industry expertise, e-commerce solutions and access to an active network of green products trading partners.

Sustainability awards

In the recent years, UVic has been recognized in a number of ways for its efforts in sustainability.

2005 Association of Physical Plant Administrators Innovative Practices Award

2005 BC Hydro Power Smart Excellence Award

2005 Capital Regional District EcoStar Award for Drinking Water Stewardship

2005 Commercial Building Incentive Award for the Medical Sciences Building

2005 Masonry Institute Merit Award for the Medical Sciences Building

2005 Saanich Environmental Award for Development and Construction

2004 BC Hydro E-Points Bonus Award

2004 Capital Regional District EcoStar Award for Urban Watershed Protection



Message from the Department of Facilities Management

The Department of Facilities Management is proud of the role we play in maintaining the aesthetic quality of the campus while minimizing the environmental impact on the campus and our surrounding communities.

Numerous students, faculty and staff have contributed to advancing the implementation of sustainable practices on campus. To all of those who have provided support, we offer our sincere gratitude.

In particular we would like to acknowledge the ongoing dedication and support of the following staff who continue to raise the bar in sustainability. Without the on-the-ground efforts of university personnel, many of these initiatives would not be possible.

Bill Aylesworth, Mechanical Shop
Steve Brown, Grounds Shop
Colin Butterfield, Manager of
Janitorial Services (retired)
Larry Cannon, Campus
Coordinating Architect
Dick Chappell, Director of
Maintenance and Operations
Gordon Dash, Transportation
and Parking Coordinator
Allan Dunlop, Transportation
Demand Management Coordinator
Bill Freethy, Plumbing Shop
Larry Greenhalgh, Paint Shop
Bernie Gunster, Electrical Shop
Tony James, Manager of Grounds
Bill Johnston, Manager of Parking Services
Don Lovell, Manager of Design
Tom McGee, Janitorial Services
Betsy Moyer, Project Officer
Fred Paulson, Carpentry Shop
James Pearce, Manager of Maintenance
Larry Scharschmidt, Grounds Shop
Dino Valeri, Manager of Projects
Don Vaughan, Campus Coordinating
Landscape Architect

In addition, the university would like to recognize members of the campus planning committee and facilities development and sustainability sub-committee, as well as the entire office of the vice-president finance and operations for their ongoing support and funding.

Gerald A. Robson
Executive Director
Facilities Management

Tracy Corbett
Director
Campus Planning

Sarah Webb
Sustainability Coordinator
Facilities Management



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of Victoria