



Pacific Institute
for Climate Solutions
Knowledge. Insight. Action.

Annual Report 2009/10

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1. MESSAGE FROM THE EXECUTIVE DIRECTOR

A Year's Review: September 2010



Twelve months ago, I was handed the reins of the Pacific Institute for Climate Solutions (PICS) by Ned Djalili, who had overseen the operations of the Institute since the beginning of 2009, while simultaneously meeting his myriad obligations as a Professor of Mechanical Engineering at the University of Victoria (UVic). PICS was in its infancy then, and I am grateful to Ned for guiding and nurturing the Institute during that early growth phase. The past year has seen an acceleration of that growth, at the same time as global concern about climate change and its impacts has deepened. But that deepening concern has not yet translated into national or international action. The need for an organization like PICS to provide sound policy-relevant research and analysis to governments – to turn climate knowledge into climate action – has thus never been stronger.

As the following pages describe, this has been a year of firsts. A year ago, and working in close collaboration with ISIS research centre at the University of British Columbia (UBC)'s Sauder School of Business, we launched the PICS News Scan, a weekly compendium of current key developments around the world that spans the breadth of the climate-change issue. The scan now reaches over 530 subscribers and reinforces our knowledge dissemination and outreach effort. In May 2010, again through collaboration with the ISIS group, we launched the PICS Briefing Notes series which provides targeted briefings on topics in science, social science and the climate-change policy domain that are directly relevant to the British Columbia (BC) government. In the spring, we kicked off a lecture tour of northern and interior communities, and held at UVic a highly successful public event on Climate Change and the Media; some 575 people attended that event, including 175 who watched our live webcast. And in June, PICS hosted at the Simon Fraser University (SFU) Wosk Centre for Dialogue in downtown Vancouver our second annual forum, entitled "FutureGrid: BC's Energy Options in a Changing Environment." We have hosted multiple seminars and lectures, almost all of which were live-webcast, and some of which attracted viewers – in the middle of the night no less! – as far away as Spain and the Netherlands.

The past year has seen a substantial increase in direct research program funding, bringing annual research expenditure to approximately \$2.4 M. We organized and held five expert workshops, four of which addressed the PICS principal research themes: Resilient Ecosystems, Sustainable Communities, the Low Carbon Emissions Economy, and Social Mobilization, with a fifth tackling an issue of specific importance to the province: Carbon Management in BC Forests. Each workshop saw some 30 invited researchers from appropriate disciplines determine a set of key research questions that PICS will now support through its endowment, to an aggregate tune of \$1.4 M per year. Multiple white papers have been commissioned and are addressing such topics as access to venture capital for BC's cleantech sector, the business case for imposing a BC-sourced content requirement for renewable technology installations in the province, and issues associated with the generation of electricity in BC. Some papers have already been published, and are available for download on our website; topics include the impact of electrification of the vehicle fleet on the BC power grid, and the impact of carbon dioxide releases from shale gas processing on BC's emissions targets.

Behind many of these initiatives stand our PICS fellows. We now invest close to \$800,000 per year to fund 39 graduate-student and postdoctoral fellowships at the four PICS universities, all of which focus on various aspects of our broad research mission. We provide another \$200,000 plus per year to support co-op work terms for graduate and senior undergraduate students in such areas as cap and trade policy analysis, adaptation to sea level rise, transportation policy, issues associated with district-heating and green-building initiatives, and provision of climate-science reference information for the lay public.

PICS has many other irons in the fire, including the imminent launch of our short-course initiative. Thanks to the coupling of a malleable media with a concerted campaign from the small but vocal global-warming denier community, the last 12 months have seen a regrettable rise in confusion about climate-change science. To address this we are developing a set of web-based courses that will present climate-science basics, discuss climate myths and misrepresentations, explore how adaptation to climate change can (and must) happen, and describe in lay terms the intricacies of mitigation approaches to limiting carbon emissions. Our initial audience will be the 26,500 civil servants across British Columbia, but soon after – in mid 2011 – we expect to make the courses available to the general public.

The outreach and communications budget, which includes research workshops and annual forum support, totals some \$400,000. PICS runs a lean administrative operation across its four campuses; I am proud to note that more than 81% of PICS's annual budget is dedicated to research, public outreach and inter-campus events, with the bulk of that funding going directly into research support.

There remains much to do. We will continue to work closely with the Climate Action Secretariat and other parts of the BC government, while reaching out to industry and establishing national and international collaborations with other climate-research organizations. We will continue to reinforce and expand our public outreach effort, and we will intensify our research efforts to provide insights to, or answers for, the key questions that face British Columbia in the face of climate change – change that, if anything, is intensifying.

Compiling an annual report provides an opportunity to reflect, and in that light I am proud of the progress that PICS has achieved in the last 12 months. In large part, this is the direct result of the sterling work of our PICS central-office staff: Dr. Lawrence Pitt, Associate Director; Megan Jameson, Administrative Officer; our communications experts Robyn Meyer and Ivan Watson; our researcher Anna Rozwadowska; and Jessica Worsley, the Executive Assistant to the Director. Others, too, have been instrumental in helping PICS build its programs: our Campus Coordinators Kyle Aben (UNBC), Nastenka Calle Delgado and her predecessor Deborah Herbert (SFU), and Sarah Muir-Owen and her predecessor Alison Munro (UBC), our internal co-op student Katharine McCallion, and our short-course organizer, Coralie Breen. I am grateful to them all.



2. ABOUT PICS

The Pacific Institute for Climate Solutions (PICS) represents a collaboration among BC's four research-intensive universities – the University of Victoria (UVic), the University of British Columbia (UBC), Simon Fraser University (SFU) and the University of Northern British Columbia (UNBC). Hosted and led by the University of Victoria, it brings provincial, national and international climate researchers together to work with governments, non-government organizations (NGOs) and the private sector to develop innovative climate change solutions, and to address the full range of mitigation measures and adaptation requirements that the climate challenge presents.

The Institute has five main objectives:

- understand the magnitude and patterns of climate change and its impacts;
- evaluate the physical, economic and social implications;
- assess mitigation and adaptation options and developing policy and business solutions;
- evaluate and strengthen educational and capacity-building strategies to address climate change; and
- communicate climate change issues to government, industry and the general public.

In light of these general objectives, a main thrust of the Institute is supporting research that will lead to the development of alternative energy-production technologies and new forms of transportation; greater ecosystems resilience; sustainable communities; better management of carbon in BC's forests; and increased mobilization of socio-behavioral change. PICS also works to communicate information and ideas to the public, business leaders and government through the production of briefing notes and white papers; through hosting and offering seminars, lectures, and special events; and by developing and presenting short courses.

More information about the Institute's governance structure can be found in Appendix 1.

3. RESEARCH

3.1 Research Themes

Five generic themes defined by the broad PICS community comprise the Institute's research effort. Sub-topics for research within each theme are overseen by a sub-committee that includes two members of the PICS Program Committee (see Appendix 1), a theme leader (a scholar from one of the four PICS universities), a member of the BC Climate Action Secretariat (CAS), as well as (ex officio) the Executive Director. Expert workshops were held for each theme over the course of the October 2009 to May 2010 period, and brief descriptions of the outcomes follow.

Low Carbon Emissions Economy

On October 31, 2009, more than 30 invitees – including BC academics, government officials, industry and NGO representatives participated in a one-day workshop to develop the first PICS research theme: The Low Carbon Emissions Economy. Led by SFU Professor and theme leader Mark Jaccard, participants discussed key questions that will drive, and are currently driving, the research agenda. Recommendations subsequently sent to the PICS Program Committee helped to shape the postdoctoral fellowships call in November 2009. Nygil Goggins of CAS was named Chair of this theme in March 2010. Research on various issues

defined by the workshop is underway, and the first products are being rolled out, including the first of series of PICS White Papers entitled, "Shale Gas and Climate Targets: Can they be reconciled?" which was released in August 2010. Additional issues now being explored include sustaining BC's carbon pricing initiative, ensuring environmentally sound renewable electricity generation, accelerating the province's energy efficiency trend, and reducing emissions from transportation and buildings.

"The transition to a low carbon emissions economy will be extremely difficult. It will require policies that price emissions and that regulate emission-causing technologies and energy forms. Some governments, like that of British Columbia, have started to take serious policy steps in the right direction, but the process is in its infancy. The goal of the PICS low carbon emissions economy theme is to help governments and key players at all levels in British Columbia with the design and implementation of the critical policies to drive the transition ahead. We have made some progress. We have a long way to go."

Mark Jaccard, Low Carbon Emissions Economy Research Theme Lead, Simon Fraser University

Resilient Ecosystems

The Resilient Ecosystems workshop, led by UVic Professor Eric Higgs, was held December 7 and 8, 2009.

Thirty participants attended from government, academia, NGOs and industry across BC, Canada, the U.S and Australia. Topics of discussion included ecosystem resilience, human relationships to ecosystems, and the role of historical knowledge and intervention mechanisms that can be

used to enhance or strengthen resilience in the face of a changing climate. Key issues raised by the workshop helped to shape the subsequent call for PICS postgraduate research fellowships, and are stimulating interdisciplinary collaboration between government and academia.

UVic Professor Dan Smith assumed the theme leadership in July 2010 when Dr. Higgs went on research leave. Jenny Fraser, of CAS is the governmental representative on the Resilient Ecosystems Subcommittee.

"It is surprising that in bringing so many ecologists together that the conversation turned to governance and policy. I suspect this is because we realize the present divide between science and policy, and the challenge of solving something as monumental as climate change and changing ecosystems."

Eric Higgs, Chair, Resilient Ecosystems Research Theme Workshop, University of Victoria

Sustainable Communities

The Sustainable Communities (SC) Workshop, held May 5 and 6, 2010, convened 35 individuals from BC and US universities, the City of Vancouver, BC Hydro, the Canadian Centre for Policy Alternatives and the Centre for Indigenous Environmental Resources, as well as the provincial ministries of Environment, Citizens' Services, Housing and Social Development. Disciplines represented in the room included architecture, anthropology, atmospheric science, business, communication, community and regional planning, geography, interactive arts and technology, psychology, sociology, sustainable resource management, transportation, and urban studies. The institutional breadth of the participants'

affiliations, coupled with the disciplinary breadth, reinforced the complexity inherent in building truly sustainable communities.

"Of particular interest to the Sustainable Communities theme is understanding and advancing collaboration between academic research and action in BC. How best can PICS support the connection between research, policy making and action at the community level to support climate action and sustainability goals?"

Mark Roseland, Sustainable Communities Research Theme Lead, Simon Fraser University

Like the other workshops, the SC effort defined a set of wide-ranging but key research issues that PICS will support. These include: identifying best practices in overcoming jurisdictional barriers

between local, regional and provincial bodies, and in establishing tax regimes that encourage sustainable community development as well as economic benefit; how to best address the political contradiction inherent in the contrast between electoral and sustainability timescales; and, how to divorce sustainability from politics.

SFU Professor Mark Roseland leads the theme, while the Chair of the subcommittee is Ben Finkelstein of CAS.



Green roof on Vancouver high-rise.

Social Mobilization

Social mobilization in the context of climate change was the subject of a two-day PICS sponsored workshop on March 11 and 12, 2010. Leading international and BC researchers and practitioners primarily discussed applied research—identifying “what works” in fostering public action on climate change. The workshop defined a set of research priorities that include dealing with social barriers to clean energy adoption, evaluating effectiveness of ongoing social mobilisation efforts in BC, and using digital media methods to engage the public. Core recommendations from the workshop are guiding the theme.

“BC’s innovative policies, which set hard targets for carbon emission reductions at the local and provincial level, provide both a tough challenge and an internationally unique context for social mobilization on climate change. New initiatives on clean energy and green communities will require major shifts in public awareness, acceptance and behaviour, in order to transform BC into a low-carbon resilient society. Our job is to help others capitalize on the opportunities and more effectively overcome social barriers to meeting those critical targets.”

Stephen Sheppard, Social Mobilization Research Theme Lead, University of British Columbia

The theme leader and subcommittee chair is UBC Professor Stephen Sheppard, and Colleen Sparks is the CAS representative.

Carbon Management in BC Forests

On March 22 and 23, 2010, PICS brought together experts from academia, government, environmental non-government organizations (ENGOs), and industry to discuss carbon management in BC forests. A particular focus, in view of the profound need to reduce global carbon emissions, was maximization of carbon sequestration

“Forests and forest sector activities can contribute to climate change mitigation objectives, but the development of an effective mitigation portfolio requires the assessment of management impacts on carbon stocks in forest ecosystems and harvested wood products, and on the substitution benefits achieved through the use of wood products and bioenergy. Incomplete accounting can lead to policy decisions that will not achieve the mitigation objective of lowering atmospheric greenhouse gas concentrations. Science-based models are needed to assess mitigation options and the time dynamics of carbon costs and benefits.”

Werner Kurz, Senior Research Scientist, Canadian Forest Service

by BC’s forested landscape – a surprisingly complex topic that is politically, environmentally and economically charged. Workshop sessions focused on four key areas: risks and effectiveness of mitigation and sequestration strategies; costs, benefits and potential guidelines for future mitigation and adaptation strategies; co-benefits, including conservation; and implementation issues. Key research challenges that emerged and that PICS will underwrite, include quantitative carbon and offsets accounting, bio-energy potential and associated environmental concerns, understanding the soil carbon pool and its future behaviour, and developing sustainable forest management policies in the face of a changing climate. A subcommittee to oversee this theme is now being created.

3.2. Annual Forum 2010

FutureGrid: BC’s Energy Options in a Changing Environment

Building upon the success of last year’s inaugural PICS forum on *Decoding Carbon Pricing: Achieving a Low Carbon Society in British Columbia*, a second forum, *FutureGrid: BC’s Energy Options in a Changing Environment*, was held on June 15 - 16, 2010 in Vancouver. The forum brought together international energy and climate-change experts to examine critical energy questions that face the province. Keynote speakers included SFU Professor Mark Jaccard, who addressed BC’s Clean Energy Act; Hans Holger Rogner from the International Atomic Energy Agency in Vienna, and science policy expert Prof. Roger Pielke Jr. from the University of Colorado, who discussed global greenhouse-gas emissions trends, including the latest Global Energy

Assessment figures. Former BC Premier Mike Harcourt spoke about energy solutions behind sustainable cities, and early results of the Quality



Urban Energy Systems of Tomorrow (QUEST) project. The forum attracted 120 participants. A PICS White Paper entitled “BC Electricity Export Policy”, will soon be released as a principal product of the forum. The paper will provide an analysis of BC’s future energy options informed by the FutureGrid discussions.

A free public panel discussion on BC’s potential as a “clean exporting powerhouse” was held on the evening of June 16th in downtown Vancouver. Speakers included George Hoberg, Professor, UBC; Paul Kariya, Executive Director, Independent Power Producers Association of BC; Vaughn Palmer, Columnist, Vancouver Sun; Josh Paterson, Staff Counsel, WestCoast Environmental Law; and, Judith Sayers, Adjunct Professor, UVic/Hupacasath First Nation. More than 250 members of the public attended, and addressed questions to the panel members on topics ranging from energy exports and run-of-river power production, to the rationale for building (or not building) the Site C Dam.

Follow-up from FutureGrid continues. On August 18, 2010, PICS-UBC hosted a one-day workshop led by UBC Professor George Hoberg and PICS Associate Director Lawrence Pitt, that saw eight experts – including representatives from BC Hydro, West Coast Environmental Law, Pricewaterhouse Coopers, Clean Energy BC, and Sea Breeze Power Corp – discuss implications raised by discourse

during the forum. Points raised in the workshop will be included in the above-mentioned white paper on BC electricity-export policy authored by Dr. Hoberg.

“The FutureGrid forum has fostered concrete effort on three important issues: BC’s goal of becoming a major exporter of electricity; demand-side management and the smart-grid; and carbon neutrality in the public sector. A number of the forum attendees have begun to collaborate on these issues to help develop new policy strategies with regard to electricity exports and demand-side management; new research and development initiatives around the smart grid; and carbon neutrality challenges within the four PICS universities. FutureGrid’s impact will continue throughout the coming years.”

**Lawrence Pitt, Associate Director,
Pacific Institute for Climate Solutions**

3.3 Fellowship Program

PICS awards fellowships on an annual basis to outstanding Masters and PhD students. Fellowship recipients are based at the four collaborating PICS’ universities, and their research is aligned with the principal research themes established by the Institute. Since 2008, PICS has awarded 43 fellowships (see Appendix 2) – totaling to date more than \$1,000,000 in funding – that support research across a spectrum of climate change issues and multiple disciplines. PICS fellowships

are worth up to \$12,000 a year for master’s students, \$18,000 a year for PhD students, and \$50,000 a year for post-doctoral fellows. PICS’ current annual fellowships budget is \$700,000 across the three academic levels.

The first PICS Fellows Workshop was held in Vancouver in October 2009, with the intention to have the (then 20) fellows from all four campuses share their research interests with each other. All presented short overviews of their ongoing or proposed work. The impact was immediate and profoundly stimulating, providing a springboard for interdisciplinary and intercampus climate change research and cooperation. It also marked a significant step forward in building a PICS community. In recognition of its success, PICS will now host an annual fellows workshop

every February, at which all fellows will have the opportunity to discuss their research. The workshop will be structured to encourage vigorous inter-campus and interdisciplinary interaction.

3.4 Co-op/Intern Program

Co-op programs offer a powerful opportunity for students to gain experience during their academic careers by spending work-terms directly in the labour force.

In the fall of 2009, PICS recognized that there is an abundance of opportunities for students to work directly on climate-change research and policy development issues in various sectors of the BC economy. Four four-month work terms were subsequently funded as of January 2010. Three were placed within CAS, serving as a Social Mobilization Analyst, a Climate Mitigation Analyst, and a Coastal Researcher. A fourth joined the PICS office as a short-course content writer. The impact and outcomes of this first PICS co-op group exceeded expectations and as a result, the program was dramatically enlarged: 14 work terms in total will be funded in the 2010 fiscal year. Recent incumbents are working with the BC Ministry of Energy, Mines and Petroleum Resources (MEMPR) on renewable heat initiatives and low carbon transportation systems; with the Ministry of Environment on parks and water stewardship initiatives; with Dr. Mark Roseland at the SFU Centre for Sustainable Community Development; with CAS on the Western Climate Initiative project and carbon offsets; and with Dr. Eric Higgs in the School of Environmental Studies at UVic, on ecological modeling.



PICS Interns, Summer 2010 - L-R: Dar Purewall, Laura Guzman, Julia Ratcliffe, Nick Clark, Vikki St. Hilaire, Katharine McCallion, Kim Munroe, Larissa Ardiss.

The program will be continued through 2011, and may be strengthened further, budgets permitting.

A list of all Coop/Intern placements for January to August 2010 is included in Appendix 3.

3.5 White Papers

PICS commissions white papers on topical subjects that explore key issues across the full adaptation to mitigation spectrum. The papers are publicly available for download on the PICS website. Research topics have included climate change policy options for BC in the areas of transportation, public health, carbon emissions, alternative energy technologies, carbon sequestration and management in BC forests, and fostering sustainable communities.

As PICS' profile has grown, so has interest in these papers. The 9th white paper in the PICS series entitled, "Electrifying the BC Vehicle Fleet: Opportunities and Challenges for Plug-In Hybrid, Extended Range & Pure Electric Vehicles", was published in November 2009. The paper analyzed the generation capacity within the BC electrical grid, and suggested that underutilized capacity exists to support the introduction of more than two million plug-in electrified vehicles, enough to eventually replace nearly every registered vehicle in

the province, provided that recharging occurs in off-peak demand periods. The analysis attracted significant media attention. Another white paper that spurred public debate was entitled "Shale Gas and Climate Targets: Can They Be Reconciled?" published in August of this year. It suggested that the potential rise in emissions from shale gas development

in BC will make it extremely difficult for the province to achieve its CO₂ reduction targets.

PICS is anticipating five more white papers this fall on topics including: establishment of a BC-sourced content requirement for clean-technology installations in the province; access to venture capital for cleantech; food-production-related GHG emissions; pay-as-you-drive insurance; and electricity export policy.

4. OUTREACH AND COMMUNICATIONS

4.1 Seminars and Events

Pacific Climate Seminar Series/PICS Guest Lectures

The Pacific Climate Seminar Series, jointly hosted by PICS and the Pacific Climate Impacts Consortium (PCIC), commenced in September, 2009, with a lecture by Dr. Shawn Marshall, a Canada Research Chair at the University of Calgary. Dr. Marshall spoke about glacier climatology and the response of glaciers to climate change. Since that time, the seminar series has examined individual-level barriers to modification of behaviour in the face of climate change; the BC Greenhouse Gas Inventory Report of 2007; resilience, novelty and the future of BC ecosystems; the BC Government's Adaptation to Climate Change Strategy; and climate related impacts on marine biota. A full list can be found on the PICS website.

In addition, PICS guest lectures have featured speakers from BC, Ontario, the US, Australia and the UK. Lectures have addressed reducing the carbon footprint of business and industry; decision-making for adaptation in socio-environmental systems; climate change and international security; and climate change negotiations and governance. PICS also hosted lectures by Dr. Richard Hobbs, University of Western Australia, on novel ecosystems, climate

change and implications for policy and management options; and a lecture on environmental tax reform by Dr. Paul Ekins, Director of the UK Green Fiscal Commission. Most recently, PICS hosted Rear Admiral Neil Morisetti, the UK's Climate and Energy Security Envoy in a special meeting with BC's Climate Action Secretariat.

The Pacific Climate Seminar Series and PICS guest lectures have attracted 50 to 100 participants each time. Every lecture is webcast and the online audience continues to grow.

PICS Events

In the leadup to the UN Climate Conference Conference in Denmark, PICS hosted at UVic on

December 1, 2009, the Munk debates: Climate Crisis: Will Copenhagen Succeed? drawing a crowd of approximately 80 participants. On April 8, 2010, PICS presented a panel discussion designed to inform the community about the facts of climate change and the challenges faced by the media in reporting them. Panelists included: Peter Calamai, co-founder of the new Science Media Centre for Canada,

founding member of the Canadian Science Writers Association, and former science writer for the Toronto Star; Lucinda Chodan, Editor of the Times Columnist; James Hoggan, co-author of "Climate Cover-Up;" and PICS Executive Director Tom Pedersen. The highly successful event drew a crowd of over 400 people, and an additional 175 people watched the event online.

On June 8, 2010, PICS hosted an interactive evening that focused on "New Approaches to Mobilizing Climate Action." The evening included theater skits and local-expert presentations on key issues related to climate change, including sustainable energy, alternative transportation, compact land use, green buildings and food security. The event was attended



UVic's VP Research, Dr. Howard Brunt takes questions from the audience at the Climate Change and the Media panel on April 8, 2010. The panelists were Peter Calamai, Lucinda Chodan, Tom Pedersen and Jim Hoggan (L to R).



by more than 100 people and was held in conjunction with a two-day climate-action mobilization event co-sponsored by CAS and PICS. These sessions brought together climate action leaders from across Vancouver Island and the Sunshine Coast on June 9 - 10 at UVic.

4.2 News Scan and Briefing Program

The PICS News Scan is a weekly summary of climate change related science, technology and policy advances of direct relevance to the provincial and federal governments, and more generally to businesses, governments and civil society. The News Scan was launched in September 2009, and is now distributed to over 530 subscribers throughout Canada and internationally. Weekly news items are categorized and analysed for BC relevance under PICS' four principal thematic areas: The Low Carbon Emissions Economy, Resilient Ecosystems, Social Mobilization and Sustainable Communities. It is produced in partnership with ISIS, a research institute at UBC's Sauder School of Business.

The PICS Briefing Program, launched in May 2010, produces briefing notes on timely policy, scientific, technological, or social issues related to climate change. More than 20 briefs have now been released, with typically at least one being distributed each week. Issues researched to date include: green data centers; transportation sector emissions and reduction measures; biofuels and BC's low carbon fuel standard; protecting aquatic species from climate change impacts; integrating a public health perspective into municipal climate change policies; solar radiation management responses to climate

change; and ocean acidification. The briefing notes are posted on the PICS website, and made publicly available after initial distribution to key policy-makers in the BC Government.

4.3 Short Courses

In collaboration with CAS, the BC Public Service Agency (PSA), and UVic's Faculty of Continuing Studies, PICS is actively developing short courses that are designed to raise the level of understanding of the climate change issue within BC society. The courses are being built around the multiple perspectives of climate science, climate-change adaptation, and carbon-emissions mitigation. The first of the courses, Climate Change Foundations 101, will be released to BC's 26,500 civil servants later this year. The first module of the course will include an overview of climate change science, an introduction to climate modelling, and a section on climate myths and misrepresentations. Module 2 will discuss regional climate change and Modules 3 and 4, respectively, will explore adaptation in BC and mitigation at the BC and global scales, including a section on cap and trade applications to emissions reductions.

4.4 BC Lecture Tour

PICS is committed to taking knowledge of climate science and carbon economics to communities in the interior and north of BC in an effort improve both public understanding of the issue and in recognition that taking action on climate change presents new – and potentially valuable – economic opportunities for the communities throughout the province. The first such lecture took place in late March, 2010, in Dawson Creek, home to BC's first operational wind farm at

nearby Bear Mountain. PICS Executive Director, Tom Pedersen, and SFU economics Professor Nancy Olewiler respectively discussed climate science and the rationale for BC's carbon tax with an engaged audience of nearly 100 residents. The two-day stop also included a presentation to Mayor Mike Bernier and Dawson Creek Council, meetings with Northern Lights College and the South Peace Energy Cooperative Association, and a tour of the Bear Mountain wind farm. The second lecture, held in Kamloops on October 7, 2010, attracted 85 attendees and media coverage. Additional lectures are now scheduled for the fall in Whistler and Vernon.



Wind turbine at Bear Mountain Wind Farm, Dawson Creek, BC.

BC. Both workshops presented to civic planners and others future visualizations in light of changes to the BC landscape anticipated to be induced by climate change.

- August 30-September 1, 2010: MITACS/BC Ministry of Environment with support from PICS hosted the BC Water Symposium, designed to help develop a comprehensive

forward-looking Water Science Strategy for BC.

6. CAMPUS UPDATES

PICS has resident Campus Coordinators at each of the partner universities. Their primary roles are to liaise regularly with PICS fellows, to act as a central distribution point for information about PICS, and to work with faculty and staff at each institution to improve integration of PICS research and outreach objectives while encouraging interdisciplinary collaboration.

5. SPONSORED INITIATIVES

PICS regularly sponsors a number of external initiatives. Select examples in the recent past have included:

- July 2009. Quality Urban Energy Systems of Tomorrow (QUEST). QUEST is a partnership between key modeling teams at UBC (land use), the University of Toronto (transportation), and Mark Jaccard and Associates Inc. (energy economy modeling), in which the potential for integrated energy systems in four archetype communities throughout Canada is being examined.
- September 2009. World Student Environmental Summit on Climate Change Solutions.
- November 2009. Building a Vision for Green Energy in BC. Held at SFU in Vancouver, the discussion focused on options for renewable energy, primarily hydro power.
- December 2009. UVic Faculty of Engineering Eco-Car Challenge, and SFU's ACT (Adaptation to Climate Change Team) Clean Energy for BC Panel.
- June 2010: BC Climate Action Secretariat's "Small Steps and Big Leaps: Climate Action Mobilization in BC" workshops, Victoria and Prince George,

University of British Columbia

Sara Muir Owen joined PICS as the new UBC Campus Coordinator in May 2010, replacing Alison Munro, who helped to establish a PICS presence at UBC. Sara works in concert with the UBC Sustainability Initiative (USI) team to support sustainability and climate change activities on campus. She hosted two PICS UBC Fellows gatherings, including a summer "meet-and-greet" in July 2010, which provided the opportunity for the eight newly appointed UBC Fellows – UBC now has a total of 18 PICS Fellows on campus – to learn more from their existing graduate and post doctoral PICS colleagues. UBC Fellows will continue to meet on the last Thursday of every month, starting September 30, 2010.



UBC established in 2010 ambitious GHG emission reduction targets – a 33% reduction by 2015, 67% by 2020 and 100% by 2050, and an oversight

body, the UBC Sustainability Initiative (USI), that will lead the effort to meet those bold targets, while weaving the requirement for sustainability into the overall campus operations and the teaching and research missions of the university. PICS is a subsidiary partner in this effort, and through its research and outreach programs will support, or is already supporting, various initiatives that straddle the objectives of both PICS and the USI.

Two current examples include:

- support funding of the “Greenest City Conversations project (GCCP)”, a multi-disciplinary, two-year, public engagement research program led by UBC and SFU, that is being carried out in partnership with the City of Vancouver and other partners.
- support for the PICS UBC-SFU Public Lecture Series in downtown Vancouver launched on September 29, 2010, with a presentation from Professors Nancy Olewiler, SFU, and John Robinson, UBC, on “Smart Energy Systems at the Urban Scale: Sustainable Solutions to Reduce GHGs and Promote Livable Regions.” This series – a welcome collaboration between UBC and SFU – will be ongoing and vigorously promoted by PICS.

Simon Fraser University



The PICS Campus Coordinator on Burnaby Mountain, Deborah Herbert, organized the first meeting of the PICS Low Carbon Emissions Economy theme at SFU Harbour Centre in October 2009. As described in

Section 3.1, that workshop yielded a set of key research objectives that PICS is now undertaking.

Nastenka Calle Delgado assumed the reins of the SFU Campus Coordinator position in early 2010, replacing Ms. Herbert who had moved to Toronto, and she has been instrumental in helping organize webcasting of PICS seminars and public lectures at SFU, and the Sustainable Communities Workshop in May at SFU Downtown. PICS-SFU has worked closely with PICS-UBC to establish the SFU-UBC public lectures on climate change this fall. Lecture venues in this

joint series will alternate between SFU’s Harbour Centre and UBC’s Robson Square facilities.

University of Northern British Columbia

Under the able guidance of Campus Coordinator Kyle Aben, the PICS-UNBC community has grown over the past year to include nearly 50 members. The group brings an important northern perspective on



climate change mitigation and adaptation in an area of the province that is likely to continue to see more impact from climate change than reaches to the south. Mr. Aben is a member of the UNBC Green University Committee and sits on the Natural Resources and Environmental Studies Institute Steering Committee, which ensures that day-to-day PICS operations are well represented at grassroots levels on the campus.

PICS-UNBC hosted several public events at the university over the past year, including showings of “The Age of Stupid” in October 2009 and the award-winning documentary film ‘FUEL’ in March 2010, co-sponsored with the City of Prince George and the BC Sustainable Energy Association. PICS-UNBC also co-sponsored a lecture by UVic Professor Robert Gifford entitled, ‘Changing Climate Change Behaviours: Individual-Level Barriers and Solutions’. PICS-UNBC also played a critical role in helping to mount the “Small Steps and Big Leaps: Climate Action Mobilization in BC” held in Prince George in late June (see Section 5).

While PICS-UNBC is now integrated within the university community, it is also working to become more involved externally with the public and local governments. The City of Prince George, for example, has asked PICS for guidance on its commitment to carbon neutrality for 2012, including the offset opportunity and associated costs, and for assistance in GHG quantification for the Cities’ 2015 Canada Winter Games bid.

In addition, Mr. Aben visited Dawson Creek on behalf of PICS and established a link between the municipality and the Institute. Through PICS-UNBC Mr. Aben has also been able

to support the Stellat'en First Nation project 'Reducing the Carbon Footprint of Stellat'en,' by helping establish measures for residents that will lead to the reduction of GHG emissions.

7. WORKING WITH THE BC GOVERNMENT

PICS continues to forge a close and welcome working relationship with the BC Government, particularly in establishing research priorities in the broad areas of mitigation and adaptation, and in promoting knowledge transfer from academic to government sectors. Active links have been established with the Minister of State for Climate Action and government ministries through the BC Climate Action Secretariat. As a result both ministries and CAS have provided placement opportunities for PICS co-op/intern students, and provincial government representatives have participated actively in all five PICS research theme workshops, playing an important contributory role in developing the PICS research and outreach agenda.

8. THE PICS COMMUNITY: GETTING INVOLVED

There are a number of ways to get involved with PICS.

Climate Solutions Network

The PICS Climate Solutions Network at www.pics.uvic.ca/research/ – an online community of climate change experts from government, academia, industry, business, NGO and civil society – has grown to 300 members since its launch in March 2009. PICS uses the CSN to publicize sponsored activities and disseminate information, to connect experts and practitioners when and where appropriate, and to locate specific expertise at the request of media outlets.

PICS Publications

Our various publications are freely available on our website www.pics.uvic.ca. Should you wish to be sent electronically the NewsScan and notifications when current briefing notes are published, please email us at pics@uvic.ca and we will be happy to add you to our distribution lists.

PICS on Twitter

In August 2010, as part of the continuing evolution of PICS' communications outreach strategy, we

established a social media Twitter account as well as an associated RSS feed. We continue to add followers on a regular basis and Twitter has proven to be a very effective tool for distributing the latest in PICS media releases, white papers and research reports, news scans, briefing notes, event invitations, and a variety of other communications materials. Our Twitter feed can be accessed at twitter.com/PICSCentral

A FINAL WORD

Now in its third year of operation, PICS is approaching full stride. We have a growing corps of research-fellows now numbering nearly 40 post-doctoral, Masters and PhD level scholars; we have the active and interdisciplinary engagement of scores of faculty members from the four partner campuses; we have a vigorous and growing outreach, communications, and knowledge-transfer effort; and we have established robust collaboration and interaction across all four campuses and with a suite of provincial government ministries and the Climate Action Secretariat.

But while much has been accomplished, much more remains to be done. PICS will continue to strengthen its relationships with industry and the business community in such spheres as renewable energy production and sustainable-community development. We will factor adaptation needs and approaches more directly into our research agenda. We will continue to be vigorous in our efforts to improve understanding of climate change amongst the broader population of British Columbia, to alert residents to what is coming down the pipeline locally and globally. And we will reach out to establish ties and research collaborations with climate-change research institutes and think-tanks in Canada and elsewhere. These are key areas of focus for the upcoming year.

Finally, PICS exists thanks to the foresight and bold commitment of the Government of British Columbia. We are very grateful for that commitment, while implicitly recognizing the obligation that we have to deliver on behalf of the residents of British Columbia. Toward that end, we look forward to reporting continued progress in the next annual report, progress that – a year from now – should see us at full stride.

APPENDIX 1: PICS GOVERNANCE

BOARD AND COMMITTEE MEMBERSHIP

Executive Committee

Howard Brunt, Vice-President Research, University of Victoria (Chair)

Ken Denman, Senior Scientist, Canadian Centre for Climate Modelling and Analysis, Environment Canada and Institute of Ocean Sciences, Fisheries and Oceans Canada

Gail Fondahl, Vice-President Research, University of Northern British Columbia

John Hepburn, Vice-President Research and International, University of British Columbia

Peter Keller, Dean of Social Sciences, University of Victoria

James Mack, A/Head, Climate Action Secretariat, BC Ministry of Environment

Tom Pedersen, Executive Director, Pacific Institute for Climate Solutions

Mario Pinto, Vice-President Research, Simon Fraser University

Jim Soles, Assistant Deputy Minister, BC Ministry of Small Business, Technology and Economic Development

Advisory Board

Howard Brunt, Vice-President Research, University of Victoria (Chair)

Lyn Brown, Vice-President, Catalyst Paper Corp.

Michael Brown, Executive Director and Chairman, Chrysalix Energy Management Inc.

Claire Dansereau, Deputy Minister, Fisheries and Oceans Canada

David Demers, CEO, Westport Innovations Inc.

Bob Elton, former President and CEO, BC Hydro

Richard Flury, former Chief Executive, Oil, Gas and Renewables, BP plc (retired)

Doug Horswill, Senior Vice-President, Teck Cominco Ltd.

John MacDonald, Chairman and CEO, Day4 Energy Inc.

Jonathan Rhone, President and CEO, Nexterra Energy Corp.

Peter Robinson, CEO, The David Suzuki Foundation

Ian Shugart, Deputy Minister, Human Resources and Skills Development Canada (former Deputy Minister, Environment Canada)

Cheryl Slusarchuk, Climate Action Team Chair and President, Premier's Technology Council

James Tansey, President, Offsetters Clean Technology Ltd.

Joe van Belleghem, Partner, Windmill West

Tamara Vrooman, President and CEO, Vancity Savings Credit Union

Graham Whitmarsh, Deputy Minister, BC Ministry of Finance

Program Committee

Tom Pedersen, Executive Director, Pacific Institute for Climate Solutions (Chair)

Diana Allen, Professor, Department of Earth Sciences, Simon Fraser University

Ned Djilali, Canada Research Chair in Energy Systems Design and Computational Modelling, Department of Mechanical Engineering, University of Victoria

Art Fredeen, Professor, Ecosystem Science and Management, University of Northern British Columbia

John Fyfe, Research Scientist, Canadian Centre for Climate Modelling and Analysis, Environment Canada

Nancy Olewiler, Director, Public Policy Program, Simon Fraser University

John Robinson, Executive Director, UBC Sustainability Initiative (USI), University of British Columbia

Lee Thiessen, Executive Director, Adaptation and Regulatory Development, Climate Action Secretariat

Ken Wilkening, Chair, International Studies, University of Northern British Columbia

David Wilkinson, Professor and Canada Research Chair, Department of Chemical and Biological Engineering, University of British Columbia

Monika Winn, Associate Professor, School of Business, University of Victoria



Valley of the Ten Peaks, Banff National Park, AB.

APPENDIX 2: PICS FELLOWSHIP RECIPIENTS (SEPTEMBER 2009 - SEPTEMBER 2010)

GRADUATE FELLOWSHIPS

Simon Fraser University

Steven Conrad, PhD Candidate, School of Resource and Environmental Management

Supervisor: Dr. Wolfgang Haider, Resource and Environmental Management

Topic: Improving water allocation adaptation policies and decision-making through an integrated hydrological-stated preference water demand model.

Tanja Hoffmann, PhD Candidate, School of Resource and Environmental Management

Supervisor: Dr. John Welch, Resource and Environmental Management

Topic: Exploration of how the Katzie First Nation, government and industry can work together using traditional and scientific knowledge to recognize opportunities and mitigate impacts of climate change.

Cedar Morton, PhD Candidate, School of Resource and Environmental Management

Supervisor: Dr. Murray Rutherford, Resource and Environmental Management

Topic: Enduring waters: Building resilient international water institutions in a changing climate.

Rose Elise Murphy, PhD Candidate, School of Resource and Environmental Management

Supervisor(s): Dr. Mark Jaccard, Resource and Environmental Management; Dr. Nancy Olewiler, Department of Economics/Public Policy Program

Topic: Econometric modeling of the impact of awarding offsets for afforestation activities in Canada.

Vinu Subashini Rajus, PhD Candidate, School of Interactive Arts and Technology

Supervisor: Dr. Robert Woodbury, Interactive Arts and Technology

Topic: Ambient, interactive displays and controls for sustainable living.

Elizabeth Sutton, MRM Candidate, School of Resource and Environmental Management

Supervisor: Dr. Karen Kohfeld, Resource and Environmental Management

Topic: Storm induced hazards: Impacts of climate change on debris flows near Chilliwack, BC.

Rupananda Widanage, PhD Candidate, School of Resource and Environmental Management

Supervisor: Dr. Duncan Knowler, Resource and Environmental Management

Topic: Economic risk of biological invasion: Impact of climate change on invasive plant species in BC rangelands.

University of British Columbia

Maggie Baynham, MSc Candidate, School of Community and Regional Planning

Supervisor: Dr. Maged Senbel, Community and Regional Planning

Topic: Land-use tools for adaptation: Opportunities for integration into official community plans.

Zofia Brown, Ph.D. Candidate, Resource Management and Environmental Studies

Supervisor: Dr. Raymond Cole, Architecture and Landscape Architecture

Topic: An investigation of green buildings and the assessment and use of them by occupants.

Laura Cornish, MA Candidate, Institute for Resources, Environment and Sustainability

Supervisor: Dr. Stephen Sheppard, Architecture and Landscape Architecture

Topic: Visioning to empower community action on climate change.

Waleed Giratalla, MSc Candidate, School of Regional and Community Planning

Supervisor: Dr. Maged Senbel, Community and Regional Planning

Topic: Adapting ecovillage climate change solutions to conventional housing developments.

Susanna Haas Lyons, MA Candidate, Institute for Resources, Environment and Sustainability

Supervisor: Dr. John Robinson, Institute for Resources, Environment and Sustainability

Topic: Greenest city conversations.

Kim Lau, PhD Candidate, Institute for Resources, Environment and Sustainability

Supervisor: Dr. Hadi Dowlatabadi, Institute for Resources, Environment and Sustainability

Topic: British Columbia's "carbon-neutral" government: A critical evaluation.

Patrick Little, MSc Candidate, Department of Forest Resources Management

Supervisor: Dr. Younes Alila, Forest Resources Management; Dr. Marwan Hassan, Geography

Topic: Hydrogeomorphic-ecological implications of a changing climate on an altered landscape.

Sarah Kimball, MASc Candidate, Institute of Mining Engineering

Supervisor: Drs. Mory Ghomshei and Dr. John Meech, Institute for Mining Engineering

Topic: The potential for geothermal energy systems in Canada.

Nicole Miller, PhD Candidate, Resource Management and Environmental Studies

Supervisor(s): Dr. Stephen Sheppard and Prof. Ronald Kellett, Architecture and Landscape Architecture

Topic: Development of a practical method of modelling the carbon footprint of urban environments at the neighbourhood scale.

Jennie Moore, PhD Candidate, School of Community and Regional Planning

Supervisor: Dr. William Rees, Community and Regional Planning

Topic: Getting serious about sustainability: Exploring the potential for one planet living in Vancouver.

Polly Ng, MSc Candidate, School of Community and Regional Planning

Supervisor: Dr. Maged Senbel, Community and Regional Planning

Topic: Case studies of community responses to the BC Green Communities Act.

Catalin Ristea, PhD Candidate, Department of Forest Resources Management

Supervisor: Dr. Thomas Maness, Forest Resources Management

Topic: Climate change mitigation potential and economic feasibility of producing bioenergy from woody biomass: A multi-objective analysis and life-cycle assessment approach.

Elizabeth Schwartz, PhD Candidate, Department of Political Science

Supervisor: Dr. Kathryn Harrison, Political Science

Topic: Climate policy in Canadian cities: A comparative study.

Gerald Singh, PhD Candidate, Institute for Resources, Environment and Sustainability

Supervisor: Dr. Kai Chan, Institute for Resources, Environment and Sustainability

Topic: Cumulative impacts and resilience in social ecological systems.

University of Northern BC***Matthew Beedle, PhD Candidate, Natural Resource and Environmental Management***

Supervisor(s): Dr. Brian Menounos and Roger Wheate, Geography

Topic: Communicating the implications of climate change through the study of glacier recession.

Kathryn Hrinkevich, Ph.D. Candidate, Natural Resources and Environmental Studies

Supervisor: Dr. Kathy Lewis, Ecosystem Science and Management

Topic: An investigation of the interaction between mountain pinebeetle outbreak history and past climate in BC.

Ian Picketts, Ph.D. Candidate, Natural Resources and Environmental Studies

Supervisor(s): Drs. John Curry and Eric Rapaport, School of Environmental Planning

Topic: An exploration of community adaptation to climate change focusing on the case study community of Prince George, BC.

Alex Schare, MA Candidate, International Studies (Global Environmental Policy Stream)

Supervisor: Dr. Kenneth Wilkening, International Studies

Topic: Keeping British Columbia 'The Best Place on Earth': Reducing the carbon footprint of air traffic in BC.

University of Victoria

Torsten Broeer, PhD Candidate, Institute for Integrated Energy Systems

Supervisor: Dr. Ned Djilali, Mechanical Engineering

Topic: Modeling of the existing conventional electricity generating system and the impacts of an increasing of wind energy to Canada's power generation system.

Rod Davis, PhD Candidate, School of Environmental Studies and Department of Geography

Supervisor(s): Dr. Eric Higgs, Environmental Studies; Dr. Dennis Jelinski, Geography

Topic: Conservation strategies for wildlife ecosystem resilience: An evaluation of land management policy alternatives to adapt to climate change.

Michael Fischer, PhD Candidate, Institute for Integrated Energy Systems

Supervisor: Dr. Peter Wild, Mechanical Engineering

Topic: Impacts of climate change on the British Columbia electrical grid and adaptation strategies for resilience.

Anita Girvan, PhD Candidate, Departments of Political Science, English and School of Environmental Studies (Social, Cultural and Political Thought Concentration)

Supervisor(s): Dr. Warren Magnusson, Political Science; Dr. Nicole Shukin, English

Topic: Tracing the mediations of the carbon footprint – A critical analysis of the central role of the metaphor in climate change solutions.

Chris Jensen, MSC Candidate, Department of Geography

Supervisor(s): Drs. Stanton Tuller and Daniel Peters, Geography

Topic: An examination of the merits of a "working with nature" approach rather than a traditional engineering approach to flood mitigation.

Christine Kormos, PhD Candidate, Department of Psychology

Supervisor: Dr. Robert Gifford, Psychology

Topic: Social influences on the acceptance of new energy technologies: An investigation of the plug-in hybrid electric vehicle (PHEV).

Leila Scannell, Ph.D. Candidate, Department of Psychology

Supervisor: Dr. Robert Gifford, Psychology

Topic: An investigation of whether individuals are more responsive to local or global climate change messages.

Michael Shives, MASc Candidate, Institute for Integrated Energy Systems

Supervisor: Dr. Curran Crawford, Mechanical Engineering

Topic: The efficiency of ducted tidal current turbine arrays.

Amy Sopinka, PhD Candidate, Department of Geography

Supervisor: Dr. G. Cornelis van Kooten, Economics

Topic: Economic and environmental effects of wind energy integration in the Pacific North West.

Trevor Williams, PhD Candidate, Institute for Integrated Energy Systems

Supervisor: Dr. Curran Crawford, Mechanical Engineering

Topic: Probabilistic power flow modeling (PLF) of renewable energy & PEV grid interactions.

POSTDOCTORAL FELLOWSHIPS

University of British Columbia

Dr. Adam Bumpus, Centre for Sustainability and Social Innovation, Sauder School of Business

Supervisor: Dr. James Tansey, Sauder School of Business

Topic: British Columbia's carbon tax and the wider carbon policy landscape: business action, evolution and equity.

Dr. Duncan Cavens, School of Architecture and Landscape Architecture

Supervisor: Prof. Ronald Kellett, Architecture and Landscape Architecture

Topic: A tool for municipalities to assess the impact of their spatial planning processes on GHG emissions.

Dr. Sonja Klinsky, Institute for Resources, Environment and Sustainability

Supervisor: Dr. Hadi Dowlatabadi, Institute for Resources, Environment and Sustainability

Topic: Justice in the negotiation and implementation of emission trading: Leveraging lessons from the Western Climate Initiative.

Dr. Tara Moreau, Design Centre for Sustainability, School of Architecture and Landscape Architecture

Supervisor: Prof. Patrick Condon, School of Architecture and Landscape Architecture

Topic: Sustainable agricultural systems for the 21st century: Integrating urban and peri-urban agriculture with human settlements to minimize GHG production and maximize carbon sequestration.

Dr. Olaf Schroth, Collaborative for Advanced Landscape Planning, Department of Forest Resource Management

Supervisor: Dr. Stephen Sheppard, School of Architecture and Landscape Architecture

Topic: Energy landscapes – Social acceptance of different renewable energy options.

University of Victoria

Dr. Dan Wang, Institute for Integrated Energy Systems

Supervisor: Dr. Ned Djilali, Mechanical Engineering

Topic: Modelling and comparative analysis of expanded power generation in BC. Large-scale centralized VS distributed generation systems.



APPENDIX 3: PICS CO-OP/ INTERN PLACEMENTS (JANUARY - AUGUST 2010)

BC Climate Action Secretariat

Laura Guzman (SFU Environmental Studies), Climate Mitigation Analyst
Supervisor: Laura Lapp, Manager, Adaptation and Regulatory Development

Dar Purewall (UVic Public Administration), Social Mobilization Analyst
Supervisor: Ben Finkelstein, Manager, Green Communities

Vikki St. Hilaire (UNBC Geography), Coastal Impacts Researcher
Supervisor: Tina Neale/Jim Crover, Climate Change Adaptation Advisor

BC Ministry of Energy, Mines and Petroleum Resources

Nick Clark (UVic Geography), Low Carbon Transportation Systems Analyst
Supervisor: Janice Larson, Director, Renewable Energy Development

Julia Ratcliffe (UVic Geography), Renewable Heat Initiatives Analyst
Supervisor: Janice Larson, Director, Renewable Energy Development

BC Ministry of Environment

Kim Munroe (SFU Public Policy), Parks Planning and Management Analyst
Supervisor: Brian Bawtinheimer, Director, Parks Planning and Management

Emily Willobee (SFU Public Policy), Water Stewardship Analyst
Supervisor: Ian Graeme, Manager, Operational Policy and Planning

Pacific Institute for Climate Solutions

Katharine McCallion (UVic Geography), Short Course Writer
Supervisor: Tom Pedersen, Executive Director

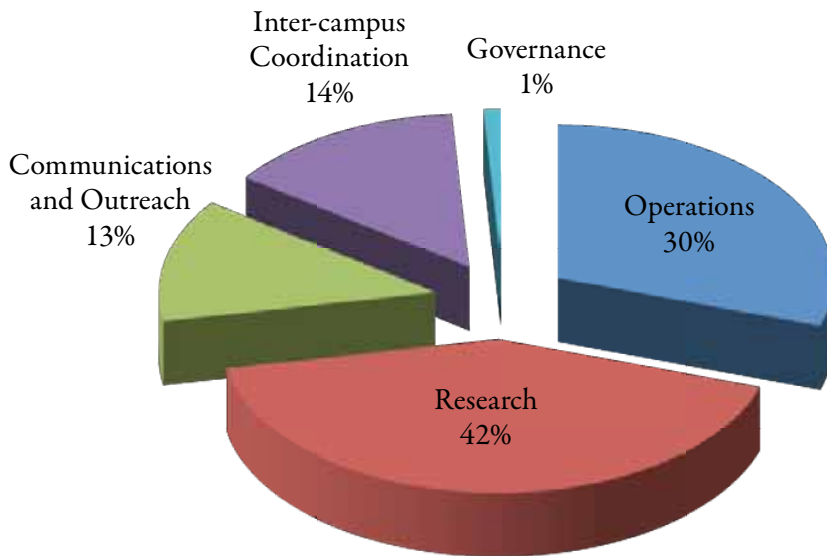
Simon Fraser University

Larissa Ardiss (SFU Resource and Environmental Management), Research Assistant
Supervisor: Mark Roseland, Director, Centre for Sustainable Community Development

APPENDIX 4: FINANCIAL REPORT

PICS is funded through a \$90 million endowment received from the Province of British Columbia in 2008 and held by the University of Victoria Foundation. The 2009/10 yield provided PICS with a budget of approximately \$3 million, while the 2010/11 budget is approximately \$4 million. The 2009/10 expenditures are presented in Figure A below. Figure B reflects the 2010/11 budget allocations.

Figure A: PICS Expenditures 2009/10.



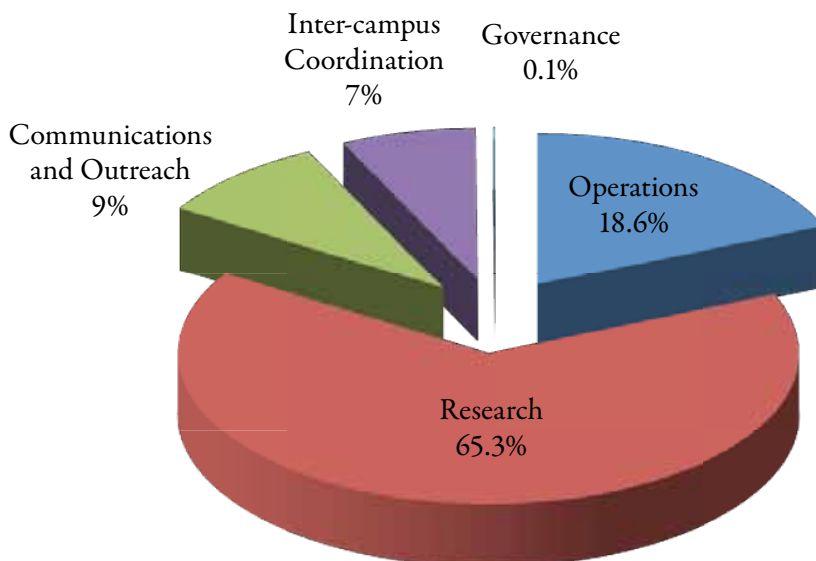
Operations includes UVic overhead, salaries, administrative costs;

Research includes graduate, post-doctoral and visiting fellowship support, Coop/ Intern program, white papers, and research theme funding;

Communications and Outreach includes seminars and guest lectures, PICS events, short courses, news scan, briefing program, website, and newsletter. Sponsored initiatives are split between research and communications/outreach depending on the nature of the project.

Inter-campus Coordination includes salaries, operating and communications/ event budget for Campus Coordinators at SFU, UBC and UNBC.

Figure B: PICS Budget Allocation 2010/11.





**Pacific Institute
for Climate Solutions**
Knowledge. Insight. Action.

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