



# Bridging the Gap with the Pacific Climate Impacts Consortium (PCIC)

Northwest (Pacific) Impacts Assessment Meeting  
CIG, University of Washington, Seattle.  
22,23 April 2009

**Dave Rodenhuis**, Director/CEO, PCIC,  
University of Victoria, BC, Canada

**Ben Kangasniemi**, Chair,  
Program Advisory Committee (PAC)  
BC Ministry of Environment, Victoria, BC

**Daniel Caya**, Acting Director, PCIC  
Ouranos

**Trevor Q. Murdock**, Lead  
Regional and Community Climate Impacts, PCIC

# Outline of Presentation

## • Introduction

- *bridging the gap* (the *abyss*) was identified in the vision of PCIC
- *among* climate research and applications; between disciplines; between physical sciences, climate impacts, assessment, adaptation, policy options.
- *brief* history: Canadian Institute for Climate Studies, CICS (1993-2004)  
PICS (2005-present)  
PICS Corporation (not-for-profit) (2008)  
UVic Endowment (2008)
- BC Climate - Current Trends and Future Projections (ref. *Climate Overview*)
- Regional Analysis Tool - website: [www.PacificClimate.org](http://www.PacificClimate.org)

## • Vision for PCIC

- Driven by the needs of stakeholders; targeted research
- A consortium, not an institute
- Prepare information and products for adaptation to climate change

## • Goals and Objectives

### • Scope

### • PCIC Themes

### • Products and Service

## Outline of Presentation (2)

- **Members of the Consortium**

- List
- List affiliates and collaborations

- **Budget**

- **Selected Milestones**

- Climate Overview of BC
- Water resources and power generation (BCH)

*Example* of research application and collaboration (with CIG)

- Forestry
  - Future habitats for spruce, fir and their enemies (FSP)

*Example* of extramural collaboration with experts (MoFR)

- Fraser River watershed

*Example* of overlapping interests (with RFC)

- Communities and Infrastructure (contracts and MoE)

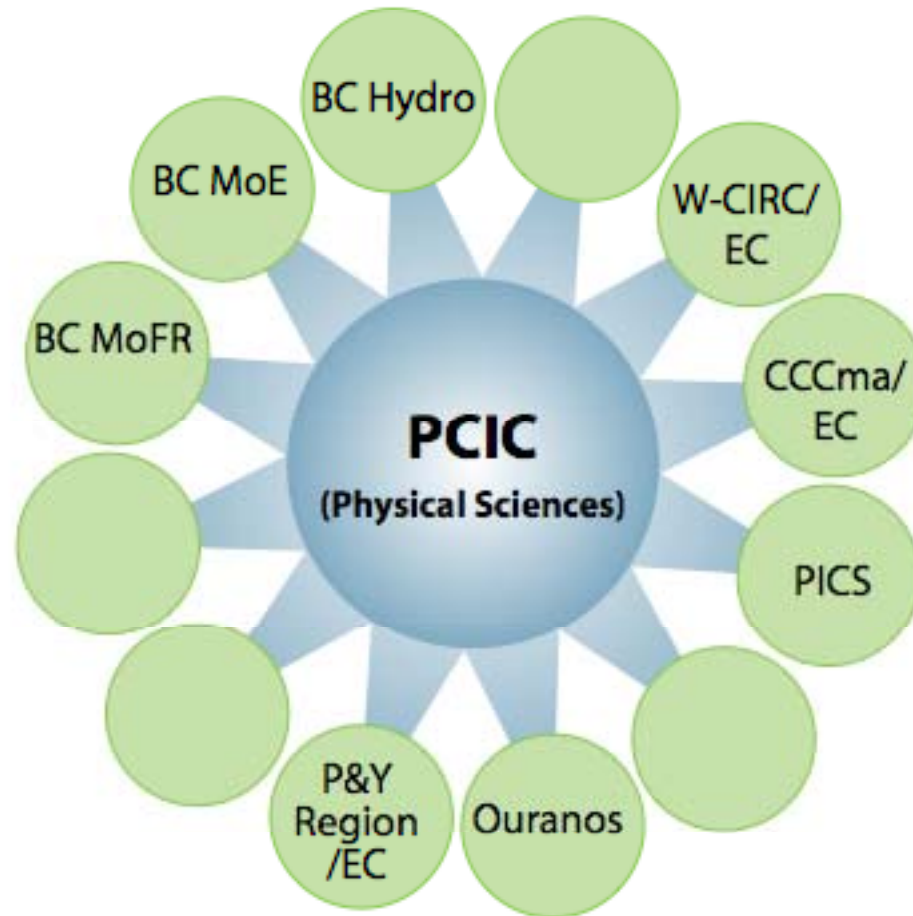
*Example* of a common/different user-need (communities)

- **Next Step**

# Vision for PCIC

***“...to stimulate collaboration between government, academe and industry to reduce vulnerability to extreme events, climate variability and the threat of global change. The consortium for climate impacts will bridge the gap between climate research and climate applications, and will make practical information available to government, industry, and the public.”***

# Consortium of Climate Researchers and Stakeholders



# Goals and Objectives

- to foster collaboration and interdisciplinary approaches to research on meteorology, atmospheric science, climate variability, climate change, social sciences and economics.
- to channel and strengthen the capacity to address regional climate change and variability, including extreme weather events,
- to focus research on public and private sector needs in order to provide the scientific basis to develop policy options.

# Perspective - Pacific North America



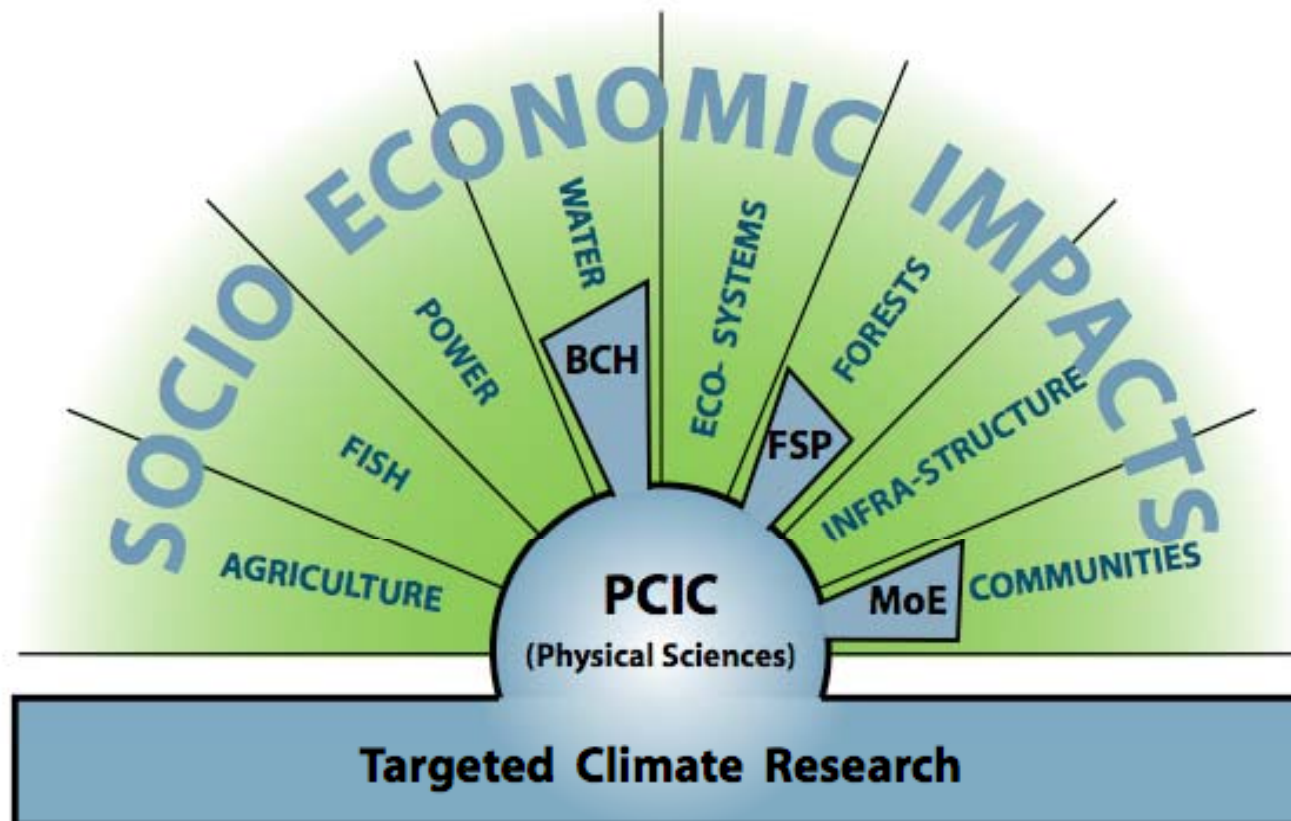
# Scope

- Climate change and variability, including extreme events
- Pacific North America
- Physical sciences
- Directed research

# PCIC Themes

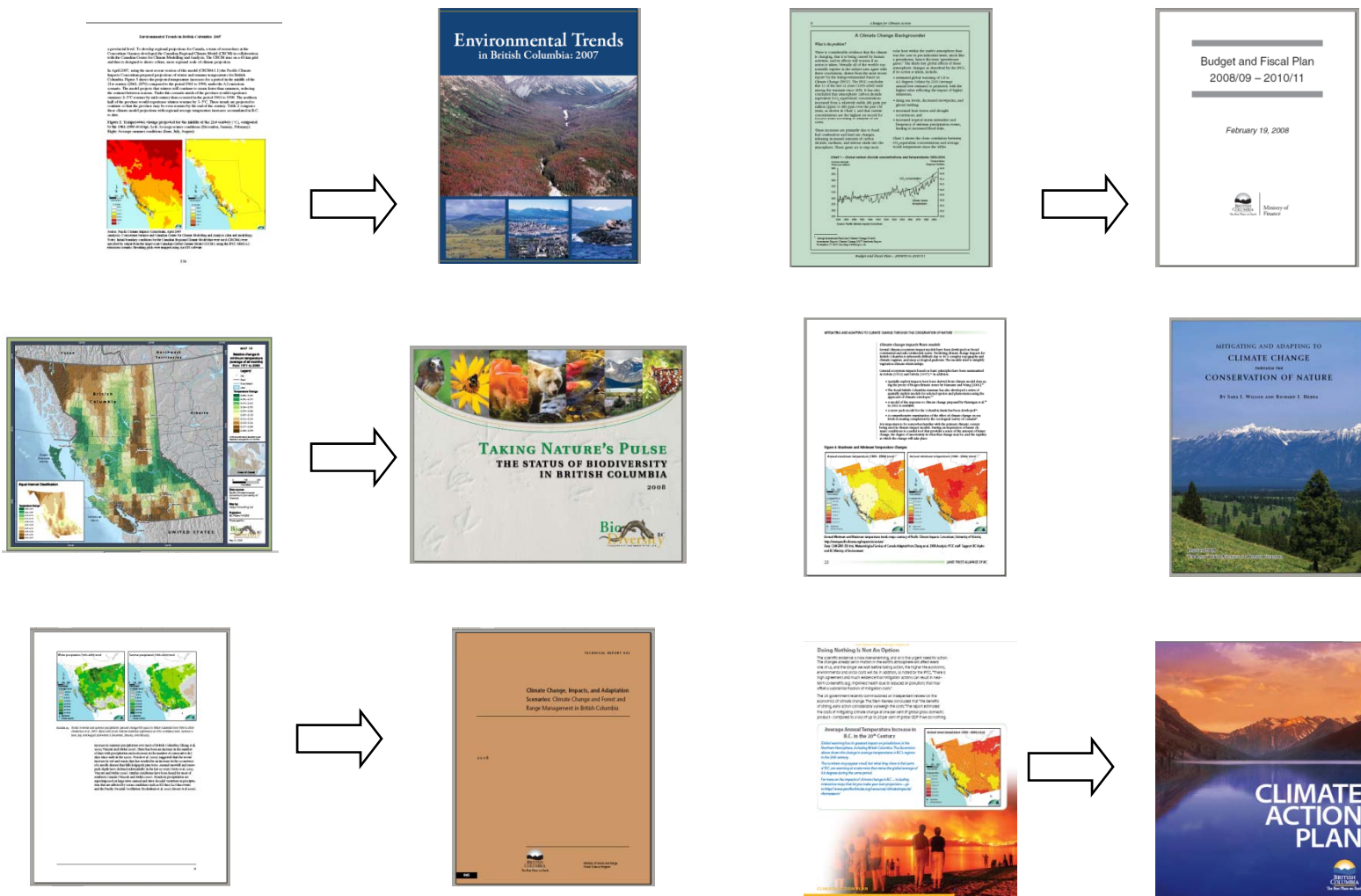
- Regional climate and community impacts
- Hydrological impacts
- Ocean Influences
- Climate analysis

# Climate Impacts in support of socio-economic impacts and adaptation



# Products and Services

- Targeted research projects
- Website and user-tools for scenarios and downscaling
- Reports and consultation to stakeholders and communities
- Visitors, secondments, and education/training



**Figure 3: Trends and projections provided for six reports: (a) BC Ministry of Environment, 2007: BC State of the Environment Report: Environmental Trends in British Columbia: 2007, (b) Biodiversity BC, 2008: Taking Nature's Pulse, The Status of Biodiversity in British Columbia, (c) Climate change, impacts, and adaptation scenarios: climate change and forest and range management in British Columbia, 2008: BC Ministry of Forests and Range, Spittlehouse, (d) BC Government, 2008: BC Budget Backgrounder, (e) Mitigating and adapting to climate change through the conservation of nature, Land Trust Alliance of BC, 2008, Wilson and Hebda ,(f) BC Government, 2008: BC Climate Action Plan**

# Members of the Consortium

- **BC Hydro**
- **BC Ministry of Environment**
- **Consortium Ouranos, Montreal**
- **Water-Climate Impacts Research Center (W-CIRC),  
Environment Canada, UVic**
- **Pacific and Yukon Region, Environment Canada**
- **Associates and collaborations**
  - Canadian Centre for Climate Modelling and Analysis (CCCma), Environment Canada, UVic
  - Climate Impacts Group (CIG), University of Washington
  - BC Ministry of Forests and Range
  - BC Royal Museum
  - L'Universite du Quebec Montreal (UQAM)

# Collaborative Agreements

## Memoranda of Understanding

River Forecast Centre, BC MoE	2008-2009
Consortium Ouranos	2008-2013
BC Hydro	2006-2010; renewed in 2008
University of Washington	TBD (2008 - ____)

## Agreements

UQAM—Assessment of climate-change impacts on Canadian water resources using Regional Climate Model projections (L.Sushama)	2008-2010
Canadian Centre for Climate Modelling and Analysis (D.Flato; V. Kharin)	2008-2009
U. Victoria Faculty MOU	
- A.Weaver, climate modeller, SEOAS	TBD, 2009
- Daniel Peters, hydrologist, Geography	TBD, 2009

# Visitors and seminars

Visit Date	Visitor	Affiliation	Presentation Title
03 Dec 2008	Francis Zwiers	Canadian Centre for Climate Modelling and Analysis	TBA
19 Nov 2008	Alex Cannon	Meteorological Service of Canada, Environment Canada	TBA
18 Nov 2008	Jörg Schulla	Zurich	Water Balance Simulation Model
06 Nov 2008	Daniel Bewley	Department of Forest Resource Management, UBC	Baker Creek Project: Hydroclimate measurements over larger basins to advance modelling technology.
06 Nov 2008	Younes Alila	Department of Forest Resource Management, UBC	Forests and Floods: Will a new paradigm shed light on forest hydrology age-old controversies?
30 Oct 2008	David Atkinson	International Arctic Research Center, University of Alaska Fairbanks	Empirical temperature downscaling: Method and potential applications
17 Sept 2008	Dilumi Abeysirigunawardena	Department of Geography, University of Victoria	Storm Surge Climatology for Coastal British Columbia
19 Aug 2008	James Byrne	Water and Environmental Science Group, University of Lethbridge	Downscaling Weather and Climate Data for modeling past, recent and future Environmental Change in BC
22 May 2008	Eric Salathé	Center for Science in the Earth System, University of Washington	Regional Climate Modeling and Impacts Assessment in the US Pacific Northwest
23 April 2008	Sven Kotlarski	Max Planck Institute for Meteorology	Representing Glaciers in a Regional Climate Model
26 March 2008	Norm Henderson	Prairie Adaptation Research Collaborative	Climate impacts adaptation options and issues in forests of the Prairie Provinces: From zero intervention to landscape-scale exotic species introductions
27 March 2008	Elaine Barrow	Private Consultant	Initial Explorations into Drought Variability in Alberta and Saskatchewan
23 Jan 2008	Dimitri Parishkura	University of Quebec at Montreal/ Environment Canada	<a href="#">Evaluation and application of dynamical and statistical downscaling tools for reconstruction of the variability and extremes of current climate regime and future scenario projections</a>

## Building resident expertise - new 2009 positions shaded in green

<b>Personnel</b>	
<b>President &amp; CEO</b>	David Rodenhuis
Acting Director (term)	Daniel Caya, Ouranos
Senior Scientist	TBD
Office Administrator	Cassbreea Dewis
Administrative Assistant	Melissa Nottingham
Writer/Editor (PT)	Heather Travers
<b>Regional Climate Impacts</b>	
<b>Lead, CCI</b>	Trevor Murdock
<b>Lead, RCI</b>	Gerd Buerger, Potsdam
Analyst-Empirical Downscaling	TBD
Analyst-Climate Diagnostics	Yongxin Zhang
Data-Manager	TBC
Programmer/Analyst	David Bronaugh
Forest Impacts Researcher	Aquila Flower
<b>Hydrologic Impacts</b>	
<b>Lead</b>	-----
Hydrologist (1)	Katrina Bennett
Hydrologist (2)	Areliia Werner
Hydrologist (3)	Markus Schnorbus
Postdoc	Lan Cuo
Hydrologist (4)	Joerg Schulla, ETH, Zurich
Programmer/Analyst	Paul Nienebar
Research Assistant	Harpreet Jaswal
Research Assistant	Vacant
<b>Ocean Influences</b>	
<b>Lead</b>	Vacant
Analyst	Vacant
<b>Climate Modelling</b>	
<b>Lead</b>	Vacant
Analyst	Vacant

# Support

- **FY2008/09 Budget ~ \$1.4 M**
- **BC Hydro Agreement (2007 – 2010) 15%**
- **PICS Endowment from MoE to UVic (2008 +) 70%**
- **Grants and contracts 10%**
- **Secondments 5%**

# What's Next

- **Hydrologic modelling**
  - Use VIC - Columbia, (Fraser), Peace, Campbell; account for glaciers
  - Apply WaSimETH
- **Regional Climate Model diagnostics - surface water balance**
  - Pacific Grid at 15 km.
  - Future climate scenarios
  - Diagnostic tools – UQAM; Ouranos.
  - Extramural research
- **Regional and community climate impacts**
  - Downscaling results, including uncertainty.
  - RCM downscaling at 5 km.
  - The RAC project - to communities
- **Ocean Influences**
  - under construction
- **Climate Analysis**
  - under construction

# MLA Uncertainties

- **Relate PCIC to PICS**
- **Jumpstart RAC (\$4M/years; match funding)**
- **Senior Scientist**
- **Double the funding support**
- **Develop Ocean Influences**
- **Develop Climate Analysis**
- **Space; new building ?**

# Doing things properly - Governance

