

Stephen Sobie

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WORK EXPERIENCE

Regional Climate Impacts Analyst

November 2010 – Present

Pacific Climate Impacts Consortium

Responsibilities: Investigation of the effects of climate change and methods to predict future climates in regions within British Columbia and the Yukon.

Earth and Ocean Sciences Teaching Assistant

September 2009 – April 2010 and September 2008 – April 2009

University of Victoria

Responsibilities: Instruction and supervision of a 1st year Introductory Ocean and Atmospheric Sciences laboratory course.

Oceanographic Research Cruise Scientist

May 2009

Institute of Ocean Sciences/School of Earth and Ocean Sciences

University of Victoria

Responsibilities: Deployment, monitoring and retrieval of observational sensors to track the results of a dye-release experiment.

Software Developer

May 2008 - August 2008 and May 2007 – August 2007

University of Victoria Climate Modeling Group

Responsibilities: Statistical analysis of weather variable data from the UVic School-Based Weather Station Network.

EDUCATION

Master of Science

September 2008- October 2010

Thesis: Climate Model Downscaling of Precipitation over Vancouver Island using a Synoptic Typing Approach

School of Earth and Ocean Sciences

University of Victoria, Victoria, BC

Bachelor of Science

September 2004 - April 2008

Honours Physics

Thesis: Breaking the Sound Barrier: Construction of a Supersonic Wind Tunnel and Analysis of Wedge Generated Shockwaves

Department of Physics and Astronomy

University of Victoria, Victoria, BC

PUBLICATIONS

Sobie, S.R., (2020) Future changes in precipitation-caused landslide frequency in British Columbia. *Climatic Change*. 162(2), 465-484.

Brubacher, J., Allen, D., Dery, S., Parkes, M., Chetri, B., **Sobie, S.R.**, Takaro, T.K., (2020) Associations between five food and waterborne diseases and ecosystem classification, aquifer type and agricultural land in a changing climate. *Science of the Total Environment*. 728, 138808

Wells, R., Ek, M., Murdock, T.Q., Love, C., **Sobie, S.R.**, (2020) Learning to Design Future Climate Ready Multifamily Residential Buildings in British Columbia, Proceedings of the 2020 Summer Study on Energy Efficiency in Buildings, Online Conference, August 17-21, 2020.

Cannon, A.J. et al., [Contributor] Climate-Resilient Buildings and Core Public Infrastructure: An Assessment of the Impact of Climate Change on Climatic Design Data in Canada. Environment and Climate Change Canada. *Project Report*, 106pp.

BC Agriculture and Food Climate Action Initiative, [Contributor] (2020) Vancouver Island Adaptation Strategies, Project Report, 60pp.

Okanagan Regional Districts [Contributing Author], (2020) Climate Projections for the Okanagan Region, *Project Report*, 62pp.

PRISM Engineering [Contributing Author], (2020) Penticton Airport Climate Change Risk Assessment Report, *Project Report*, 50pp.

KWL Engineering [Contributing Author], (2020) Toquaht Nation Coastal Adaptation Planning Project Integrated Vulnerability Assessment Summary Report, *Project Report*, 34pp.

KWL Engineering [Contributing Author], (2020) Toquaht Nation Coastal Adaptation Planning Project Integrated Vulnerability Assessment Technical Report, *Project Report*, 165pp.

Interior Health [Contributing Author], (2019) A Changing Climate: An Interpretation of Climate Data for Interior Health, *Project Report*, 33pp.

Fraser Valley Health Authority [Contributing Author], (2019), Climate Projections for the Fraser Health Sites: Technical Bulletin, *Project Report*, 33pp.

Chetri, B., Galanis, E., **Sobie, S.R.**, Brubacher, J., Balshaw, R., Otterstatter, M., Mak, S., Lem, M., Lysyshyn, M., Murdock, T.Q., Fleury, M., Zickfeld, K., Zubel, M., Clarkson, L., Takaro T.K., (2019) Projected local rain events climate change and its impacts on waterbourne diseases in British Columbia, Canada. *Environmental Health* 18, 116.

BC Agriculture and Food Climate Action Initiative [Contributing Author], (2019) Bulkley-Nechako and Fraser-Fort George Adaptation Strategies, *Project report*, 60pp.

Fraser Basin Council [Contributing Author], (2019) Climate Projections for the BC Northeast Region, *Project Report*, 46pp.

BC Agriculture and Food Climate Action Initiative [Contributing Author], (2019) Kootenay and Boundary Regional Adaptation Strategies, *Project report*, 60pp.

Vancouver Coastal Health [Contributing Author], (2018) Moving towards climate resilient health facilities for Vancouver Coastal Health, *Project report*, 86pp.

Wilson, T. and Eco-Logical Resolutions [Contributing Author], (2018). Enhancing runoff and drainage management in the Fraser Valley agricultural sector. Project Report for the BC Agriculture and Food Climate Action Initiative, Project Report, 28 pp.

RDH Building Science [Contributing Author, Appendix B: Climate Parameters], (2018) NRGH Climate Change Vulnerability Assessment Report, PIEVC Report, 52 pp.

Ek, M., Murdock, T.Q., **Sobie, S.R.**, Cavka, B., Coughlin, B., Wells, R., (2018). Future weather files to support climate resilient building design in Vancouver. Proceedings of the 1st International Conference on New Horizons in Green Civil Engineering, Victoria B.C., April 25-27, 2018.

Zhang, X., Li, G., Cannon, A.J., Murdock, T.Q., **Sobie, S.R.**, Zwiers, F.W., Anderson, K., Qian, B., (2018) Indices of Canada's future climate for general and agricultural adaptation applications. *Climatic Change*. 148. 249-263.

Hiebert, J., Cannon, A.J., Murdock, T., **Sobie, S.R.**, Werner, A.T., ClimDown: Climate Downscaling in R. (2018) *Journal of Open Source Software* 3(22), 360.

Cowichan Valley Regional District [Contributing Author], (2017) Climate Projections for the Cowichan Valley Regional District, *Project Report*, 46 pp.

PCIC memo [Contributing Author], (2017) Climate Extremes in the Georgia Basin – Summary Report.

Sobie, S.R., Murdock, T.Q. High-resolution statistical downscaling in southwestern British Columbia. (2017) *Journal of Applied Meteorology and Climatology* 56: 1625-1641.

Pinna Sustainability [Contributing Author], (2017) Climate Projections for the Capital Region, *Project report*, 66pp.

Pinna Sustainability [Contributing Author], (2016) Climate Projections for Metro Vancouver, *Project report*, 80pp.

PCIC memo [Contributing Author], (2016) Summary of 2050s climate projections for Whistler area.

PCIC memo [Contributing Author], (2016) City of Vancouver climate projections summary.

PCIC memo [Contributing Author], (2016) District of North Vancouver climate projections summary.

Takaro, T.K., Chhetri, B., Mak, S., Otterstatter, M., Balshaw, R.F., **Sobie, S.R.**, Henderson, S.B., Zubel, M., Len, M., Brubacher, J., Zickfeld, K., Fluery, M., Galanis, E. (2016) Extreme precipitation, turbidity, drinking water and acute gastro-intestinal illness in a canadian surface drinking water system: mechanisms and opportunities to build resilience to climate change. *Occupational and Environmental Medicine* 73(Suppl 1):A234.1-A234

Murdock, T.Q., **Sobie, S.R.**, Eckstrand, H.D., Jackson, E. (2016) Georgia Basin – Projected Climate Change, Extremes, and Historical Analysis. *Pacific Climate Impacts Consortium Report*, 63pp.

Cannon, A.J., **Sobie, S.R.**, Murdock, T.Q., (2015) Precipitation by Quantile Mapping: How well do methods preserve changes in quantiles and extremes? *Journal of Climate*. 28.17:6938-6959

Murdock, T.Q., Cannon, A.J. and **Sobie, S.R.** (2015) Statistical downscaling of future climate projections for North America. *Pacific Climate Impacts Consortium Report*, 25pp.

Murdock, T.Q., Cannon, A.J., **Sobie, S.R.**, Veerman, B., Anslow, F. and Zwiers, F.W. (2014) Workshop Primer: Projected precipitation extremes for Coastal British Columbia. *Pacific Climate Impacts Consortium Report*, 8pp.

Sobie, S.R., Murdock, T.Q., (2014) Analysis of climate change projections for the Ministry of Transportation and Infrastructure highways risk assessment. *Pacific Climate Impacts Consortium Report*, 27pp.

Nodelman, J. and co-authors [Contributing Author], (2014) Climate Change Engineering Vulnerability Assessment of Three British Columbia Highway Segments, *Public Infrastructure Engineering Vulnerability Committee (PIEVC) Project report*, 91pp.

Pacific Climate Impacts Consortium [Contributing Author], (2014) Regional Climate Impacts Meeting Report, *Pacific Climate Impacts Consortium Report*, 6pp.

Pacific Climate Impacts Consortium [Contributing Author], (2013) Climate Summaries for the Resource Regions of British Columbia, *Pacific Climate Impacts Consortium, Summaries* 1-8.

Murdock, T.Q., **Sobie, S.R.**, Zwiers, F.W. and Eckstrand, H.D. (2013) Climate change and extremes in the Canadian Columbia Basin. *Atmosphere-Ocean*. 51:456-469

Burger, G., **Sobie, S.R.**, Cannon, A.J., Werner, A.T. and Murdock, T.Q. (2013) Downscaling extremes- an intercomparison of multiple methods for future climate. *Journal of Climate*. 26:3429-3449

Murdock, T.Q., **Sobie, S.R.** (2013) Climate extremes in the Canadian Columbia Basin: A preliminary assessment, *Pacific Climate Impacts Consortium Report*, 59pp.

Sobie, S.R., Shrestha, R.R., Murdock, T.Q., Schnorbus, M.A. (2012) Columbia Basin regional climate change analysis for an industry partner. *Pacific Climate Impacts Consortium Report*, 130pp.

Murdock, T.Q., **Sobie, S.R.**, Shrestha, R.R., Schnorbus, M.A., Concepts and approaches for regional climate change analysis. *Pacific Climate Impacts Consortium Report*, 41pp.

Bürger, G., Murdock, T. Q., Werner, A. T., **Sobie, S. R.**, & Cannon, A. J. (2012) Downscaling extremes - an intercomparison of multiple statistical methods for present climate. *Journal of Climate*, 25:4366-4388

Sobie, S.R., Weaver, A.J., (2012) Downscaling of precipitation over Vancouver Island using a synoptic typing approach, *Atmosphere-Ocean*, 50:176-196

Murdock, T.Q., Hennessey, R., Hebda, R., **Sobie, S.R.**, (2011) Preliminary Analysis of Climate Change in the Atlin-Taku area of British Columbia, *Pacific Climate Impacts Consortium Report*, 30pp

Weaver, A.J., **Sobie, S.R.**, 2011. Snowfall projections for an industry partner, *Private Consulting Firm Report*, 18pp

PRESENTATIONS

Oral Presentations

Sobie, S.R., Future precipitation-caused landslide hazard in British Columbia, Oral presentation for the CMOS Congress, 25 May – 15 June 2020, Online Conference.

Sobie, S.R., Murdock, T.Q., Modelling future snowpack at high-resolution with a process-based energy balance model in southwestern British Columbia, Oral presentation at the Northwest Climate Conference, 8-10 October 2019, Portland, Oregon.

Murdock, T.Q., **Sobie, S.R.**, Wells, R., Ek, M., Coughlin, B., Wimmers, G., Adapting Energy Efficient Building Design to Future Climate. Oral presentation for the Northwest Climate Conference. October 2018, Boise, Idaho.

Murdock, T.Q., **Sobie, S.R.**. Climate impacts assessments for regional governments in southwestern British Columbia using high-resolution statistical downscaling. Oral

presentation for the Northwest Climate Conference. November 2017, Tacoma, Washington.

Sobie, S.R., Cannon, A.J. and Murdock, T.Q. Analysis of Intensity-Duration-Frequency Curves in British Columbia. Oral presentation for the Northwest Climate Conference. November 2015, Coeur d'Alene, Idaho.

Chhetri, B., Galanis, E., Mak, S. Otterstatter, M., Balshaw, R., Henderson, S., Zobel, M., Lem, M., Brubacher, J., Takaro T.K., Fleury, M.D. and **Sobie, S.R.** Extreme precipitation, drinking water and acute gastro-intestinal illness in a Canadian surface drinking water system: Putative links and future impact of climate change. Oral presentation for the 27th Conference of the International Society for Environmental Epidemiology. September 2015, Sao Paulo, Brazil.

Sobie, S.R., Murdock, T.Q. and Cannon, A.J. Analysis of MOTI highway indicators in past and future climates. Oral presentation for the MOTI PIEVC Planning Workshop. August 2013, Prince George, BC.

Sobie, S.R., Murdock, T.Q. and Cannon, A.J. Analysis of climate extremes in Canada using gridded downscaling of region climate model simulations. Oral presentation for the Canadian Meteorological and Oceanographic Society Annual Congress, May 2013, Saskatoon, Saskatchewan.

Sobie, S.R., Murdock, T.Q. and Eckstrand, H.D. Analysis of NARCCAP results for extremes in the Canadian Columbia Basin. Oral presentation for the NARCCAP User's Workshop. International Conference: 10-11 April 2012, Boulder, Colorado.

Poster Presentations

Sobie, S.R., Murdock, T.Q., Modification of building design weather files with future climate projections, Poster presentation at the American Geophysical Union Fall Meeting, 10-15 December 2018, Washington, DC.

Sobie, S.R., Murdock, T.Q., Experiences with collaborative climate impacts assessments for regional governments in southwestern British Columbia, Poster presentation at the American Geophysical Union Fall Meeting, 12-16 December 2016, San Francisco, California.

Sobie, S.R., Cannon, A.J., Murdock, T.Q., Evaluation of increasing spatial resolution in downscaled climate projections and the effect on extreme precipitation, Poster presentation at the American Geophysical Union Fall Meeting, 15-19 December 2014, San Francisco, California.

Sobie, S.R., Cannon, A.J., Murdock, T.Q., Evaluating the role of increasing spatial resolution in climate projections for highway impacts assessments in British Columbia, Poster presentation at the Pacific Northwest Climate Science Conference, 9-11 September 2014, Seattle, Washington.

Murdock, T.Q., **Sobie, S.R.**, Cannon, A.J., Zwiers, F.W., Evaluation of influence of spatial resolution on extreme precipitation projections, Poster presentation at the Regional-scale Climate Modelling Workshop, 16-19 June 2014, Lund, Sweden.

Sobie, S.R., Murdock, T.Q., Regional Projections of Climate Change Using an Earth System Model of Intermediate Complexity, Poster presentation at the American Geophysical Union Fall Meeting, 5-9 December 2014, San Francisco, California.

Burger, G., Murdock, T.Q., Werner, A.T., **Sobie, S.R.**, Cannon, A.J., “Validating the downscaling of Climdex extremes for multiple methods”, Poster presentation at the Pacific Northwest Climate Science Conference, 13-15 September 2011, Seattle, Washington.

Sobie, S.R., Murdock, T.Q., “Climate change in the Atlin-Taku region of northern British Columbia”, Poster presentation at the Canadian Meteorological and Oceanographic Society Annual Congress, 4-8 June 2011, Victoria, BC.

Sobie, S.R., Weaver, A.J., “Climate model downscaling of Vancouver Island precipitation”, Poster presentation at the American Geophysical Union Annual Meeting, 13-17 December 2010, San Francisco, California.

VOLUNTEERING

Peer Reviewer

Journal of Climate, Journal of Hydrology, Geoscientific Model Development, Stochastic Environmental Research and Risk Assessment.

Program Committee Member

2013-present

4th, 5th, 6th, 7th and 8th Annual Northwest Climate Conferences

Portland, Oregon (2013), Seattle, Washington (2014), Coeur d’Alene, Idaho (2015), Skamania, Washington (2016), Tacoma, Washington (2017).

Responsibilities: Planning conference sessions and reviewing submitted abstracts.