

The evening of Tuesday, May 20<sup>th</sup> served as a bit of a watershed moment for the Institute of Island Studies (IIS). In the first public event following the uncertainty regarding the Institute's future last year, it hosted a public symposium entitled *Island Water Futures: Assessing the Science*. This event was planned specifically to reinforce what is viewed as one of the most important roles of the IIS; to serve as an 'honest broker' in raising and discussing issues topical to Prince Edward Island and the Atlantic region. On PEI in 2014 you would be hard pressed to find an issue that is more topical than water.

The event consisted of presentations by three university researchers: 1) Dr. Ryan O'Connor is an environmental historian and a graduate of UPEI. He recently completed a book entitled *The First Green Wave: Pollution Probe and the Origins of Environmental Activism in Ontario*, to be published by UBC Press later this year; 2) Dr. Cathryn Ryan is a professor in the Department of Geoscience and B.Sc. Environmental Science Program at the University of Calgary. Dr. Ryan leads a team of scientists studying groundwater on PEI and Nova Scotia as part of the Canadian Water Network's Secure Source Water Consortium; 3) Dr. Michael van den Heuvel is the Canada Research Chair in Watershed Ecological Integrity at UPEI. He studies the effects of agriculture and chemical use on freshwater and coastal environments, focusing specifically on the rivers of PEI. The symposium was moderated by Diane Griffin, long-time Councillor for the Town of Stratford, a former deputy minister of the provincial Department of the Environment and an honorary UPEI Doctor of Laws. After the three presentations, the audience had an opportunity to ask questions of the panelists. I served as rapporteur. As such, it was my job to summarize the main themes that emerged during the event, including the question and answer period.

The first thing I noticed was that we have to be careful we do not set up a false dichotomy between the two groups present. This was not a one way transmission of scientific knowledge by a small group of experts to an uninformed audience. The depth and breadth of wisdom and research expertise among the audience of over 150 people was as valuable and thought-provoking as the research findings conveyed by the panelists. Conversely, all scientists are members of communities and they cannot disassociate themselves from their experiences and perceptions as members of these communities.

I encouraged the audience to take the time to read Dr. Ryan O'Connor's background paper on the research that has been completed on PEI's groundwater supply to be found at <http://projects.upei.ca/iis/past-events/>. In it he summarizes thirty-one reports, theses, articles and conference papers on the science behind groundwater research on Prince Edward Island. Although these reports have a diverse set of research objectives, they fall roughly into two major areas, those that have examined saltwater intrusion and those that have looked at nitrate contamination. In both areas, the agricultural sector and climate change have occupied a prominent place in the research.

Dr. Cathy Ryan reminded us that PEI has an incredibly productive aquifer and is the only province that relies on groundwater exclusively to satisfy its water needs. When pressed by the audience about the efficacy of drilling deep water wells, she said that the impacts on the supply of surrounding "shallow"

water really depend on a variety of factors, including whether the well shafts are encased and how far down the well this casing extends, and the distance of the wells to existing surface water. She noted that PEI has a long history of challenges in monitoring and enforcing existing regulations and that effective public policy regarding water use requires both communication and cooperation. In her words, not only do you have to be smart about this, but you have to be 'very smart'.

Dr. Michael van den Heuvel started his talk by stating that, in his view, water will be the most important global issue of the next hundred years. He situated his talk on the impacts of contamination of surface water by reminding the audience of Garrett Hardin's 'Tragedy of the Commons', wherein individuals, acting rationally and in their own self-interest, can engage in behaviours that are contrary to the interests of the larger community, including ultimately depleting a shared resource. He systematically provided evidence that supported the direct relationship between potato production and the presence of nitrates in the water and the relationship between the intensity of rainfall and fish kills. Following an ecological chain of cause and effect, he showed the links between the loss of eel grass, the growth of sea lettuce, the anoxia on rivers when the sea lettuce rots, and the loss of the number and diversity of sea creatures in these areas, including the reduction in salmon spawning sites. He noted that, despite increased regulation of the agricultural sector, the frequency of fish kills in PEI has not declined over the past fifteen years. His almost 'matter of fact' portrayal of the current and potential future of PEI's water ecology was chilling.

Since this event was intended to 'assess the science' of PEI's water, I have to comment on what appears to be both an unrealistic and simplistic understanding of the role of science as portrayed in the media and by some members of the public. Science outcomes are often seen as being definitive, as in, 'when we get more science, we will be able to answer some of these questions.' Although I am not a natural scientist, I do know that the results of scientific research very much depend on the questions being asked, the assumptions made, the methods, equipment and techniques used to measure phenomena, the location or setting and many other factors. Therefore, 'science' can sometimes lead to what at first may appear to be contradictory results. I also know that science is socially constructed. In other words, what we study and how we study it is connected to the values and priorities established by society that are often then reflected in public policy.

My interpretation of the panelists' remarks suggest that there has to be ongoing monitoring of the water supply and impacts on PEI and that this monitoring must be done at arm's length from those who have a vested interest in the outcomes, including the agricultural sector, industry and municipalities. This independence means that the science not only has to be transparent and objective, but it has to be seen to be objective by all stakeholders. As is often the case with contentious issues, there appears to be a polarization of views on the future of PEI's water supply and use and, more importantly, a deterioration in trust among the groups involved in the discussion. Trust can only be rebuilt when, in Dr. Cathy Ryan's words, we are 'very smart' and we focus on communication and cooperation.

These comments reflect the perspective of the rapporteur and may not necessarily reflect the attitudes or opinions of the panelists at the water symposium.

Dr. Jim Randall

Coordinator, Master of Arts Island Studies Program, UPEI and a member of the Institute of Island Studies Executive Committee.