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## "Between Now and Then": Tackling the Conundrum of Climate Change

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Canadian Risk & Hazards  
Network  
(Knowledge and Practice)

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*HazNet*

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## Welcome from the Co-Presidents

### Welcome to this edition of HazNet.

Ernie MacGillivray, CRHNet Co-president, and I extend to each of you our Board's greetings and well wishes. We at CRHNet are proud to offer you our latest "newsletter", which thanks to its editorial staff and contributors is once again a major tome.

CRHNet will soon deliver its 10<sup>th</sup> annual symposia - in Regina, SK. The symposium is once again linked to the National Roundtable on disaster risk reduction (DRR); it is expected to again broaden its coverage of topics as well as stakeholder involvement. We invite you to both events; learn more about them at [www.CRHNet.ca](http://www.CRHNet.ca).

CRHNet exists to promote dialogue, increase awareness, and advance collaboration towards disaster risk reduction in Canada. Our association's continued growth is a reflection of the increasing importance of this area of practice or research, within *all* facets of life regardless of sector (i.e., public, private, NGO, or voluntary). It also reflects the recognition by a growing number of stakeholders of both the need and value of informed collaboration, which requires shared awareness.

In fact, the Board has taken steps to make participation and involvement in CRHNet easier, more welcoming, and more meaningful. During much of the last year, we have worked to establish a clear and engaging "Work Plan" that has guided our actions towards a number of key targets.

One of these targets involved the reorganization of the Board and the manner through which CRHNet would be operated and managed. The proposed Bylaws (see our website) will be presented at the 2013 AGM, scheduled to be held during the annual

symposia. They suggest a smaller Board, a Management Team (under the Executive Director), and various standing committees that would be engaged more-directly in the affairs or issues of the Association. Our primary goal through these changes is to ensure the engagement of the membership in the Association, and allow for greater contribution to the growth of disaster resilience in Canada.

We are also pleased to report a new and more engaging website with its many opportunities to communicate and share information. It serves as a platform for discussion, engagement and collaboration and you are invited to contribute to its content. We are now engaged in an on-going project to develop and populate a searchable electronic library, focused on the many facets of emergency management and disaster risk reduction. This library is intended to complement our evolving E-book – the Canadian Disaster Management text, which is on our website

CRHNet is proudly continuing as a "permanent member" of the Canadian Platform on Disaster Risk Reduction (DRR). It is actively involved in Platform activities through its deliberations, committee work, and annual Roundtable activities. We are proud of our collaboration at that level and have continued our effort to connect with other associations or agencies that contribute to this field. To that end, we have expanded yet again our partnerships and organizational relationships with other like-minded associations and agencies.

In short, CRHNet has again made great strides this year. We want to thank those who belong and contribute to the Association, and welcome all others who are interested in enhancing emergency preparedness and disaster risk reduction. Success in

# What's Up in the Research World

## “Between Now and Then:” Tackling the Conundrum of Climate Change

By:

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and

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“Southeast Louisiana will experience the highest rate of sea-level rise anywhere on the planet by the end of the century.”

*Tim Osborne, U.S. NOAA Senior Scientist,  
February 23, 2013.*

"Louisiana is in many ways, one of the best examples of starting to see some of the near-term implications of climate change," says environmental policy expert Jordan Fischbach, of the Pardee RAND Graduate School in Pittsburgh . . . . "In some ways, I feel like it is the canary in the coal mine because they are seeing effects that change people's day-to-day lives."

*Dan Vergano, Reporter, USA Today, August 6, 2013*

To the people of coastal Louisiana, the realities of climate change -- namely sea level rise and its effect on hurricane storm surge and coastal land loss -- have arrived. At first the damage and loss were seen as a result of yet another event in the normal cycle of hurricane damage that has plagued

inhabitants of the area ever since humans came to it. The new reality, however, is different. These cyclonic events are threatening the very existence of both the large metropolitan areas in coastal Louisiana as well as the small, indigenous and 'historied' commercial and subsistence fishing communities. This is happening by virtue of the amount of destruction and the way that it is happening -- with storms of varying force and speed, not just the mega storms like Katrina. Every storm is affecting the area. A slow moving, stalled Category 1 can bring on as much damage as a fast moving Category 3. The area is simply subject to new risks and is vulnerable in new ways. To have both the scientists and the national media recognize this condition, is to bring the reality to a more conscious recognition both by the residents and by those concerned with climate change.

### Background

While climate change impacts have and are going to have regional and continental patterns, all climate impacts are 'local,' contextualized to the palate upon which the change occurs. The coastal Louisiana experience is no different. A brief setting of the scene is useful before we frame the more generic issues. The eastern part of the Louisiana coast was created by the fanning of mud deposition from the "Great" Mississippi River over a 5,000-year period, which built from 5-50 miles of land in the form of distributaries, i.e. fan-shaped patterns of land. Now that the river and its large, northern tributaries have been dammed and leveed, all the mud that is able to come down the river follows the main channel and goes off the Continental Shelf. As the distributaries shrink from lack of refurbishment, the rise of the sea intrudes further and further inland with each weather event. There is a powerful interaction effect. The barrier islands

and the marshes become thinner and thinner. And what the leveeing act of humans does not impact, the channels dug by the oil companies for oil and gas exploration and production complete as the passages fill with saltwater tides that kill the plants that hold the soil. Every 38 minutes, a football-field-sized parcel of Louisiana's wetlands is taken over by water.

The state of Louisiana has developed a master plan to restore the islands and the marshes and through a strange twist of fate, will be able to make an effort to do so due to the damage settlement of the BP massive oil disaster. However, the lack of experience and thus success to select the appropriate methods and the duration of time it will take to implement the proposed methods both contribute to high uncertainty that the efforts will be beneficial.

Where does such a challenge leave the Louisiana coastal residents? How should they respond both for their own personal and familial interests as well as for the communities that they inhabit and upon which they socially and environmentally depend? The responses from those outside the area range the gamut: "Leave!" to "Stay and fight for you heritage and place!" These are both painful choices and both ones that residents of coastal communities around the world will have to consider during this century. So where does that leave these coastal residents who must consider the answers to these questions now whether they want to or not. "Laissez le bontemps rouler," the cultural mantra of the French Canadians who occupy coastal Louisiana, does not only mean, "Let the good times roll." It also means, "Don't occupy yourself with deep, philosophical and functional questions. Instead "Live life!"

No longer is this possible without the questions of the future viability of coastal life rising to consciousness. Some of the paths which the thinking of the residents are taking lie in line with the approaches that we professional disaster specialists would think: 1) Concentrate more on what can be done to mitigate the risks as they are

experienced, i.e., intense adaptation. 2) Consider relocating and investigate how that might happen and in what time frame.

The third however, might not have been considered but the work that we (the Lowlander Center) are undertaking suggests this: 3) Work today with a passion toward 'exceptional resiliency'. Include in this effort *anticipating risks and impacts not yet experienced*. Such an investment will enable the best quality of life possible while the communities are still in place. And the communities will act as 'test beds' for the best that can be done to sustain habitation in these place-attached communities. As such, the condition of the coastal Louisiana communities as they are assaulted by the impacts engendered by sea level rise will 'model' what other communities around the world nearing impact themselves should likely experience and how they might approach adaptation in as creative a way as possible.

The awareness generated in coastal Louisiana will not only be the change in experience but also the change in response that might enable the communities to remain in place for a longer period of time. Thus the communities will act as bellwethers to both the negative and positive dynamics for the likely similar fate of so many other communities in the future. The goal: Give it one's best effort to stay in place. Already Louisiana coastal communities impacted by the hazards described in the beginning of this article are acting as "teaching communities" to visitors from all over the world: U.S. environmental and university groups, Alaskans subject to dramatic land loss, Europeans, Organization of American States (NAFTA), NAFTA Commission for Environmental Cooperation (see photos), etc.

This third option might appear to be inappropriate due to the extreme threat these communities are under. The logic, however, is that such an effort should be made *because\_of* the extreme risks that Louisiana communities are under with this logic:

Relocation is going to be *extremely* challenging. For example, in the United States alone, in 2010, 39% of the nation’s population lived in counties directly on the shoreline; by 2020 another 8 percent of the population will join them. To stop the trend and to reverse it will be a monumental undertaking. As much as possible, options to remain in place must be considered and honed.

And for those who will have to relocate, the challenge is even more daunting for communities or parts of communities that wish to accomplish the relocation *en group*, with the entire community or significant parts of it moving together. Indigenous groups are particularly hopeful that such a group move can be accomplished. There are very limited examples of successful community relocation, limited experience by governments to implement such, especially if the move is more than a short distance such as occurred up the banks of the Mississippi River after floods in the latter decades of the 20<sup>th</sup> century. Only the most skilled, practiced, resilient communities are going to even be able to attempt a relocation that is successful for the residents. Recent struggles in relocating the community of Newtok, Alaska are an example of the challenges.<sup>1</sup>

For those who decide they must move, the outcome



<sup>1</sup> Suzanne Goldenberg, Aug. 8, 2013, “Relocation of Alaska’s Sinking Newtok Village Halted” *Mother Jones*, online

may be very negative. Vulnerabilities at the other end of the move are described by Cernea: landlessness, joblessness (through detachment from place-based knowledge skills), homelessness, marginalization, food insecurity, increased morbidity and mortality, loss of access to common property and services as well as *social disarticulation*, a tearing apart of the existing social fabric (Cernea, 2000, “Impoverishment Risks, Risk Management and Reconstruction: A Model of Population Displacement and Resettlement,” UN Symposium, Beijing, October 27-29, on line.)

So how do coastal communities acquire the skills needed to be successful in achieving an outcome that has few precedents? One answer: By working at all of the dimensions of community resiliency as they remain in place “for the time being.” Focus and commitment to it encourages, in fact demands, the use of imagination and creativity because such a threat has not happened for the last 7,000 years when the glacial melting and its accompanying sea level rise that began some 15,000 years ago leveled off. Likely little learned in that distant epoch has been transferred culturally to the present.

In many respects the experiences are in the vein of the *black swan*, an improbable happening as contrasted to past risks experienced<sup>2</sup>. Identifying and honing new approaches and framings, and creating innovations must be explored to determine if they can be a “match” to the new experiences. And given that the unknown future occurrences have not happened yet although their form is hinted at with what is being experienced by coastal Louisiana residents, it is a useful practice to try out the creative processes on current challenges in the efforts to remain in place. Coastal Louisiana residents--by virtue of living their lives on the water as seafood harvesters and for a century as near shore and offshore oil industry employees, are very innovative in terms of challenges they face; they are

<sup>2</sup> N.N. Taleb, 2010, *Black Swan*, NY: Random House

on their own to achieve their work goals and to return home safely. Thus they are highly qualified to participate in this new ‘exceptional resiliency.’

A recent coastal Louisiana *urban* example of such creativity is the “Living with Water” partnership between the Dutch and Americans, emanating from New Orleans. Louisiana architects, landscape architects and engineers are partnering with their Dutch counterparts who have been managing their country’s flood threat for over 60 years. New Orleans is sinking due to the extraction of ground water from the pumping and piping out of the area of rainwater during storms. The innovative plan recently introduced is to open the canals to maintain attractive, livable “canalscapes” that permit the absorption of the rainwater back into the ground and the use of the canals and their water as an attractive development amenity. While not a substitute for storm surge protection, it is an element in managing the storm water within the levee confines. And likely even more important, the effort brings to the attention of the younger generation, many of whom have been moving to New Orleans since Hurricane Katrina, and of the world, that New Orleans is a ‘creative mitigator’ of its flooding problems.



Recently the 2013 annual meeting of the Natural Hazards Workshop at the University of Colorado contained panels organized by the Lowlander Center and UNO-CHART membered by young disaster responders. And the accompanying post-conference workshop by the Natural Hazards

Mitigation Association included a plenary panel on creativity and entrepreneurial mitigation efforts. The observations of the youth were different and challenging to the approaches of the adult practitioners. It was refreshing and encouraging. They will be the bearers of both the memories of the current disasters but also a long trajectory of growth in ways to respond to the disasters, creatively, as those challenges ‘morph’ due to climate change dynamics. The youth will provide the continuity of experience and response. We need their contribution to future resiliency and sustainability to have both a successful future where their current communities are located and also once they must leave their homes and communities to relocate inland.

In so many ways, working through how the “between now and then” should be experienced to make it a constructive era while acknowledging that the future prospects are frightening and sad, is the largest conundrum of climate change as manifested in sea level rise.

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## Are Disasters Natural?

By:  
*John Clague*

The devastating flooding in Calgary and other communities in southern Alberta in June 2013 has been termed a ‘natural disaster.’ It was, without doubt, a disaster caused by a natural process, but, viewed differently, the disaster resulted from past decisions made by governments.

### *The event*

Southern Alberta is situated east of the Canadian Rocky Mountains and is a relatively dry region that rarely receives high amounts of rainfall. In June 2013, however, a high-pressure system in northern Alberta blocked the passage of a low-pressure area to the south. With circulation blocked, winds from