
Planning for Rural Resilience: Coping with Climate Change and Energy Futures. Wayne J. Caldwell (Ed.)
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The main focus of this edited collection is rural resiliency and the twin challenges of peak oil and climate change. The authors seek to provide a broad view of rural resiliency and the issues surrounding the topic, tackling such diverse topics as natural disasters, sustainability, agricultural biodiversity, green infrastructure, transition towns, and more. The chapters are linked together through the focus on economic, environmental and social resiliency, leading the reader through the myriad of topics and issues faced by rural areas in Canada. Much of the work presented in the book is a culmination of the work of partnerships between communities and researchers to address issues salient to rural communities. These collaborations produced outcomes that were of benefit to the rural communities as well as the researchers and students involved in each study.

There are a number of themes presented in the book such as resiliency in the face of disasters, environmental planning (green infrastructure), transition towns, resiliency in the agricultural sector, and sustainability within rural systems. Each chapter attempts to present detailed information to the reader on a specific theme. The Introduction begins by setting the context, providing the reader with multiple definitions of resiliency based on the current literature from multiple fields of study, e.g. socio-ecology, disaster response, or community development. The introduction expands the current concepts of resilience outlining how communities can plan for resiliency in the face of the twin challenges of peak oil and climate change thus introducing a definition of resiliency from a planners and rural community's perspective.

Chapter 1 by Susan Reid expands the discussion on resiliency, presenting the case of Goderich, Ontario and the community's response to the 2011 tornado. Susan Reid uses the example of this natural disaster to walk the reader through a panarchy model that includes four phases; 1) Exploitation, 2) Conservation, 3) Release, and 4) Reorganization building the reader's understanding of transformation within a human or natural system. The reader's new understanding on the transformation of human and natural systems is then used to expand the planning scope of communities to include resilience in the face of natural disasters.

In Chapter 2, Paul Kraehling and Wayne Caldwell outline the use of Green Infrastructure (GI) defined as natural built elements of the landscape and human-inspired facilities, such as forests, streams, meadows or green roofs, as a part of the natural systems that are required for the long-term health of communities. The authors present the need to include GI in community planning to improve a community's health and resiliency.

In Chapter 3, Mr. Kraehling and Dr. Caldwell lead the reader deeper into the discussion on building resiliency through the inclusion of GI. The focus of this chapter is the use of natural systems, such as forests and streams, to address climate change and increasing energy prices (peak oil). The authors present a business rationale outlining the economic benefits of using

GI to build up a community's resilience.

The next chapter, Chapter 4 by Eric Marr, jumps to the topic of transportation, linking the issue of rural transportation to increasing energy costs and climate change. The difficulties faced by rural Ontario residents due to the increased distances and lack of access to environmentally friendly transportation such as public transit are presented. The chapter is brief in its discussion of public transportation in rural areas, and does not provide a great deal of detail on the "start small" approach to rural public transportation that it presents. The author does make a salient point about the delay between the development of alternative fuels and their implementation in rural areas, arguing that this delay makes it more difficult for rural communities to adapt to the issue of peak oil.

Chapter 5 by Emanuele Lapierre-Fortin, Wayne Caldwell and John Devlin with Chris White, presents a case study on Eden Mills, Ontario, and the community's move to become carbon neutral. This chapter pulls the reader back to the main topic of the discussion, presenting a clear outline of the community of Eden Mills' efforts to be environmentally responsible for their carbon production as they attempt a carbon neutral approach to rural community living through the Eden Mills Going Carbon Neutral (EMGCN) initiative.

The discussion about Eden Mills flows into the next topic, presented in Chapter 6: Transition Towns. Emanuele Lapierre-Fortin, Wayne Caldwell, John Devlin and Sally Ludwig explore the potential of communities to act on the issues of climate change and peak oil through a collaborative approach. The case of Guelph, Ontario is presented to provide the reader with a clear picture of a Transition Town, which is an international network of communities seeking to build local resilience to climate change, resource depletion, rising energy prices, and economic instability and inequity. The Guelph case is linked to the concept of community resilience through the development of bridging social capital that is encouraged by the Transition Guelph network as it acts to build relationships within the community.

The book then changes themes in Chapter 7 as Erica Ferguson discusses agriculture and food systems. Two cases are presented that discuss the need for support for Ontario farmers. The chapter discusses the need to improve the resiliency of the farming sector and the two case studies provide significant detail on the topic.

Chapter 8 continues the discussion about the agricultural sector, but at the level of the individual farmer. The author for Chapter 8, Tony McQuail, is a long-time farmer who studied environmental science at the University of Waterloo. Mr. McQuail provides valuable insight into the issues of the conventional farming sector in terms of energy return on energy invested (EROEI). The chapter outlines how the current farming sector is changing petroleum into food at an increasing cost of production. Throughout the chapter, the reader is presented with inspiring insight into the ability of this farmer to adapt his farming methods to be more resilient and less energy intensive.

Chapter 9 by Margaret Graves, Bill Deen, Evan Fraser and Ralph C. Martin, provide a discussion on the resiliency of the current agricultural sector. In this chapter, concerns of biodiversity and land use within the current agricultural sector are discussed. The use of short rotations between two crops, corn and soybean, are presented as an issue in terms of

decreased biodiversity within the Ontario farm system decreasing resiliency within the farming system. The authors suggest the need for integrated agricultural systems to help develop a more resilient and adaptable agricultural sector in Canada.

The final chapter, Chapter 10 by Christopher Bryant, brings the larger topic of sustainability into the discussion. Sustainability is spoken of in terms of the environmental, social, and economic dimensions of a community. The need for a healthy environment to support a resilient society that helps to stimulate a vibrant economy is presented as an integrated approach to the sustainability concept. The author then presents a fourth dimension to sustainability, that of governance, as the author believes that rural communities must actively manage and plan for resiliency.

The book presents a good overview of resiliency in communities and in the agricultural sector. Most planners, municipal leaders, agriculturalists and rural academics would find this book a valuable resource as it provides detailed information on the current research in the area of resiliency as well as significant references for further information. The strength of this book is its clear presentation of the complex topic of community resiliency utilizing effective cases for the reader to follow. The researchers are active in many rural communities across the province of Ontario studying topics such as disaster management, green infrastructure planning, transportation and agriculture. The researchers utilize case studies and interviews methods to examine rural resiliency and present their findings to the reader. There is some disjointedness between the chapters as the book attempts to present the broadest possible view of resiliency, making it difficult to link all the concepts presented. *Planning for Rural Resilience* is a timely book that provides good evidence that communities must look to the changing environment and actively plan for the twin challenges of climate change and peak oil to produce a resilient community. By working together communities and researchers can find solutions to the unique problems facing rural communities today and develop plans for the future.

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