

# Anticipate, act, adapt: *JEM* authors explore role of science in sustainable natural resource management

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**A**s we encounter challenges in the course of our daily lives, we all repeat the cycle—anticipate, act, adapt. For the bigger decisions, we take our time, gather information, consider all the angles and impacts. The big decisions facing the natural resource management community—those with provincial, national, and even global implications—are the ones that we aim to inform in this special issue of the *BC Journal of Ecosystems and Management (JEM)*.

The authors in this issue of *JEM* have invested time and thought in exploring a range of natural resource management challenges, at various scales, and from numerous angles. They promote awareness of the social, economic, and ecological dimensions of sustainability, and take steps to better define how divergent values and priorities can be understood and balanced. The approaches and solutions these authors suggest are founded in science and motivated by the need to innovate and adapt.

Anticipation and adaptation are important themes in the article by Spittlehouse and Stewart. To minimize the impacts of climate change on genetic diversity and resilience of forest ecosystems, and consequently on society, they recommend developing a “suite of readily available options.” They also discuss a framework for adaptive action.

Another framework proposed by Bourgeois supports Chief Forester Larry Pedersen’s vision of British Columbia’s forest industry as “. . . the best managers of naturally forested landscapes in the world.” Bourgeois outlines a strategy, system, and tools to provide companies with a stake in long-term forest management.

Mabee, Fraser, and Slaymaker highlight society’s often less-than-obvious stake in a healthy environment and access to natural resources, particularly when the effect of local management decisions is felt in distant jurisdictions. They propose that the concept of human security—the protection of lives and livelihoods—can inform definition of social networks, environmental pathways, and ecosystem boundaries in support of science-based management planning.

How can people’s needs and values best be understood? What are the pros and cons of different research approaches? Morford introduces Arnstein’s ladder of citizen participation in her discussion of various levels of community involvement—and power—in social science research. Application of this research is the focus of the article co-authored by Haider and Morford. They present 10 specific ways in which social science research can contribute to improved decision making in the area of natural resource management. The authors foresee more interdisciplinary collaboration between decision makers, managers, and scientists as well as increased cross-fertilization between academic faculties and departments—essential approaches when complex problems defy neat definition.

Complexity is inherent in the range of natural variability (RNV), a concept Wong and Iverson illuminate through discussion and an example taken from Lignum Ltd.'s (now Riverside Forest Products Ltd.) Innovative Forest Practices Agreement area in central British Columbia. This Extension Note touches on many of the themes raised in this issue's Perspectives, including biodiversity and resilience in managed forests, the importance of defining spatial and temporal scales, and integration of social and economic factors when managing for desired future conditions.

The final article in this special issue discusses knowledge exchange—what enhances the flow, and what impedes it. DeYoe and Hollstedt describe knowledge generation, knowledge exchange, and knowledge application as the key functions in the research-to-operations continuum, and highlight the role of extension professionals in ensuring that new knowledge and innovative technologies are put into practice. At the end of this article, and this special issue of *JEM*, we are left with the awareness that science-based innovation is economically sound as well as socially and environmentally responsible.