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**DISCIPLINES:** Coastal Ecology and Governance  
Landscape Architecture and Planning

**KEYWORDS:** Coastal Ecology, Coastal Management, Adaptation



### **RESEARCH INTERESTS:**

Given the deteriorating state of coasts worldwide, and the difficulties affecting implementation of integrated approaches to coastal management in other areas, Colleen's research challenges the validity of popular assumptions that Canadian coastal environments remained relatively un-impacted by human activities, and that current practices in coastal management are sufficient to ensure the ongoing sustainability of coastal resources and coastal communities. To better understand the basis for continuing complacency on conditions within Canadian coastal environments, an intensive review of state of the coast information was conducted, including an assessment of the indicators being used to monitor change in coastal conditions. The review concluded that for much of the Canadian coast there was little or no information on current conditions. Where information and data do exist, it is site-specific, fragmented and focussed on marine environmental quality. Few attempts have been made to link human activities on the land with changing conditions within coastal ecosystems. To debunk the myths that environmental impacts were limited to urbanized, or industrialized harbours, Colleen combined a spatial analysis of land cover in primary watersheds with nutrient concentrations in riverine and nearshore coastal waters of the Atlantic shore of Nova Scotia. The disquieting research findings were used in the development of a GreenField Ratio and Coastal Sensitivity Index that proposed minimum thresholds for land cover types.

To better understand the apparent failure of existing global efforts towards integrated coastal management, deductive research methods (i.e., meta-synthesis), were used to identify commonly reported impediments. Building on these findings, a similar analysis was conducted on Canada's efforts towards the development of a national coastal management system. While integrated approaches to coastal management has contributed to improved understanding and concern for coastal conditions worldwide, too little progress has been made towards the actual integration of environmental and economic values. Integration, while a worthwhile goal, has remained largely within the conservation and protection departments of governments and has yet to have significant effect on established practices in coastal resource development or in urbanization.

Colleen has proposed an alternative approach to coastal management in Canada that does not require integration of coastal jurisdictions and responsibilities, but relies on collaborative efforts within existing institutional and community organizations to achieve needed change in policy and practice. The CoastWORKS alternative provides a shared vision for the future of Canadian coasts, a definition of coastal landscapes, and a set of principles to promote collaborative governance and to guide both individual and organizational action.

### **BIOGRAPHY:**

With over 35 years experience in Atlantic Canada and internationally, Mrs. Clarke is both an experienced marine ecologist (M.Sc. Memorial 1976) and a landscape architect (M.L.A. Guelph, 1987). Her unique combination of skills and experience have been applied to a wide array of initiatives in the consulting sector, in government and in academia. Her portfolio includes commercial and industrial development and expansion projects, as well as environmental assessment, environmental audit of contaminated sites, site selection and planning, impact mitigation and remediation, and ecological restoration. She was the Founding Executive Director for the Nova Scotia Centre for Environmentally Sustainable Economic Development (CESED), and served for two years as the Director, Environmental Management, for the Halifax Harbour Cleanup Pre-Design Project. A former President of the Atlantic Association of Landscape Architects, Mrs. Clarke is a Past President of the Canadian Society of Landscape Architects (CSLA). She has also served as a member of the Boards of the Oceans Institute of Canada, the Canadian Society of Environmental Biologists, and as a member of the Council of Centres for Sustainable Development Research. Internationally, she served as the Oceans Institute of Canada delegate to the NGO Forum of the United Nations Commission on Sustainable Development, and was the Canadian Co-Chair of the internationally acclaimed UNEP Global Programme of Action Coalition for the Gulf of Maine (GPAC). Working with multi-governmental and multi-sectoral teams Colleen has chaired bi-national initiatives between the United States and Canada, and worked on projects in the Caribbean and in Thailand. In 2009, in recognition of her contribution to the environment and to the profession, Colleen was made a Fellow of the Canadian Society of Landscape Architects.