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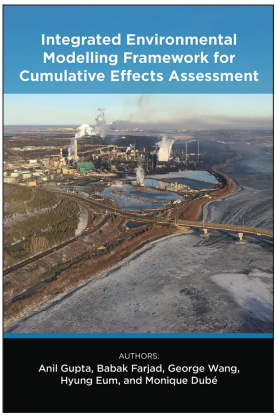

INTEGRATED ENVIRONMENTAL MODELLING FRAMEWORK FOR CUMULATIVE EFFECTS ASSESSMENT

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Investigating the complex nature of environmental problems requires the integration of different environmental processes across major components of the environment. Cumulative effects assessment (CEA) not only includes analyzing and modelling environmental changes, but also supports planning alternatives that promote environmental monitoring and management.

The adoption of integrated modelling approaches requires the development of frameworks which may be used to investigate individual environmental processes and their interactions with each other. Integrated modelling frameworks are often the only way to examine important environmental processes and interactions, relevant spatial and temporal scales, and feedback mechanisms of complex systems for CEA.

This book examines the ways in which interactions and relationships between environmental components are understood, paying special attention to climate, land, water quantity and quality, and both anthropogenic and natural stressors. It reviews modelling approaches for each component and existing integrated modelling systems for CEA. Finally, it proposes an integrated modelling framework and provides perspectives on future research avenues for cumulative effects assessment.

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