

Title: *Adaptively Managing for Sustainable Resource Use: Challenges and Opportunities*

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Abstract: *Adaptive management, an increasingly important paradigm governing the science, management and 'politics' of sustainable resource use, is broadly framed as a sequential process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a 'trial and error' process, but rather emphasizes learning while doing, in a formal, rigorous framework where key uncertainties and the bounds of the decision framework are explicit and transparent. Adaptive management does not represent an end in itself, but rather a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders. While there has been broad adoption of the principles of adaptive management in a variety of contexts, there remains considerable need for fundamental technical development - a subset of a number of these research opportunities will be presented. Researchers at Cornell in economics, operations research, decision theory, optimization, population dynamics, and social sciences could work collaboratively to solve some of these challenges.*