

# Study cites gap between theory and practice in natural resource management

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Natural resource agencies have embraced an approach known as adaptive management to adjust and refine their management plans in the face of uncertainties caused by climate change and the functioning of complex ecosystems.

But a paper co-written by an Indiana University [law professor](#) finds that agencies often apply adaptive management in ways that fail to promote learning, an approach the authors call "AM Lite."

"Everyone agrees adaptive management is the right thing to do, and the agencies all make express promises to do it," said Robert L. Fischman, the Richard S. Melvin Professor of Law in the IU Maurer School of Law. "Our study shows there is a troubling gap between the theory and the practice."

The paper, "Judging Adaptive Management Practices of U.S. Agencies," is being published by the journal *Conservation Biology* and is now available online. Co-author is J.B. Ruhl, the David Daniels Allen Distinguished Chair of Law at Vanderbilt University.

Adaptive management is an approach to managing natural resources that incorporates monitoring of the consequences of decisions and methods for adjusting a management plan as it continues to be implemented. Ideally, Fischman said, managers create experiments that reveal whether decisions are effective. Such plans also include provisions for monitoring, clear thresholds for deciding when management should

change, and detailed provisions for how it will change.

Managers often implement "passive" forms of adaptive management that, while not ideal, allow them to learn whether their management plans are succeeding and to make changes if they are not. But often, the study finds, agencies settle for "AM Lite" approaches that short-circuit the managers' ability to learn as they go.

Fischman and Ruhl examined the use of adaptive management through a close reading of court decisions in which resource management decisions were challenged. They focused on 53 decisions that applied the law to some aspect of the practice of adaptive management.

The paper cites several examples in which judges overturned resource management decisions because of flawed approaches to adaptive management.

In one, a judge rejected a plan for managing California Central Valley irrigation systems because it didn't specify thresholds to trigger additional protections if an endangered fish's habitat declined too much. In another, a judge rejected removing the grizzly bear from protection because the proposal relied on vague, procedural responses to a possible reduction in the bear's food source without any indication of whether they would work.

Yet another involved the operation of dams on the Columbia River in the Pacific Northwest. A judge criticized "vague" promises to take nonspecific actions if certain conditions were met.

While resource managers could do a better job with adaptive management, Fischman and Ruhl suggest revising statutes and administrative law to provide better guidance and clarity. Another recommendation: Provide consistent funding to cover the ongoing costs

of implementing management plans, not just the cost of developing the plans.

"We think adaptive management is not more expensive," Fischman said. "But it does require a steady stream of funding for monitoring, which is not how agency funding typically works."

Provided by Indiana University

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