

Evaluating Next-Generation Environmental Policy Tools: Adaptive Management in the Bureau of Land Management

Peter Brandenburg

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ABSTRACT

The U.S. Bureau of Land Management (BLM) has begun to embrace the concept adaptive management as an alternative to traditional natural resource planning and management models. Adaptive management may provide BLM managers with a means to evaluate the effectiveness of management actions, the flexibility to adjust actions that have not proved effective, opportunities for rapid learning relevant to improved management, and improved public support for resource management decisions. To realize these benefits, BLM must include two critical elements in its adaptive management strategies: 1) adaptive design of management objectives, actions, monitoring and evaluation protocols and 2) effective collaboration among BLM and interested stakeholders. I evaluate three case studies of BLM adaptive management and find that none of the cases have fully included the critical elements. While there are some encouraging signs, the cases collectively reveal several key shortcomings. The strategies have not capitalized on the potential to improve management through learning. Two cases illustrate the risk that adaptive management may be misapplied to remove requirements for predictive impact analysis and mitigation, putting resources at risk. The cases have not featured a joint fact finding collaborative structure to provide stakeholders with early and integrated roles in the adaptive management process.

I also identify a number of institutional barriers that have prevented BLM from consistently including the critical elements. If BLM cannot remove these barriers by providing agency-wide policy and guidance for adaptive management, capacity building for local staff and stakeholders and adequately funded, binding implementation commitments, the agency will not realize the benefits it seeks and adaptive management will not represent a significant improvement to BLM's practice of natural resource management.

CHAPTER 6: Conclusion

BLM has begun to implement adaptive management in the hope that it will improve upon traditional resource planning and management processes by providing the means to evaluate the effectiveness of management actions in meeting identified goals and objectives, suggest management adjustments that better meet goals and objectives, implement adjustments with a high degree of process efficiency, and generate publicly-supported management decisions.

At its core, adaptive management is a simple concept: improving the effectiveness of management by learning from experience. Adaptively managing complex resource

systems in a complex institutional and political environment, however, requires that BLM incorporate a number of critical ingredients into its adaptive management strategies. I have grouped these ingredients into two critical elements: adaptive design and effective collaboration.

I evaluated three cases of BLM adaptive management efforts, each still in early stages of implementation, and found that they have inconsistently included the critical elements. If BLM cannot overcome a number of barriers to planning and implementing strategies that include adaptive design and effective collaboration, the agency will not capitalize on the potential of adaptive management for improving resource management practice and will not realize the benefits it seeks.

Adaptive Design

BLM has demonstrated, in two of the three cases, a reasonably strong grasp of the principles of adaptive design. Land use plans with well-defined, outcome-based goals and objectives and detailed, rigorous monitoring protocols should prove valuable for evaluating the effectiveness of management actions. Adaptive designs, however, fall short in two areas. First, *BLM's strategies have not tapped adaptive management's potential to suggest improved management actions through learning.* The specific uncertainties and hypotheses underlying the adaptive management strategies have not been clearly stated and most actions are not management experiments designed, at least in part, to proactively generate the new knowledge necessary for developing improved management actions.

Two cases demonstrated the risk that, in the interest of avoiding time- and resource-intensive planning requirements, *adaptive management strategies may sacrifice some of the up-front, predictive work of applying the best available existing knowledge to the design of specific management actions.* BLM should be concerned that inadequate upfront planning may place important resources at unnecessary risk in the short term. *BLM should seek efficiencies from more rapid development of relevant information, not from reduced up-front planning and analysis requirements.* An improved ability to meet goals and objectives will be the product of more science, not less.

Going forward, BLM should develop guidance for adaptive management planning that confirms the role of specific, measurable goals and objectives and rigorous monitoring. More importantly, guidance should reinforce the importance of up-front predictive planning and building in the means for learning in adaptive management.

Effective Collaboration

Adaptive management, in each of the cases, was applied partly in response to high levels of public concern over BLM's management of public resources. *Only one of the cases demonstrated a collaborative approach close to the ideal joint fact finding model. The cases produced variable results in achieving the shared understandings that serve as the benchmarks for adaptive management and show limited potential for creating the agreements necessary to support the series of evaluations and decisions of the adaptive management cycle.*

Public participation strategies in each of the cases succeeded in providing representation to all of the important stakeholder groups, but the collaborative arrangements that included a larger number of participants, working within a consensus

building process, with BLM as a working partner, demonstrated better capacities for effective collaboration.

In only one of the cases was a structured collaborative process convened from the very beginning of the planning process, enabling early support for and ownership of the adaptive management approach and constructive, collaborative work to develop it. Other cases realized less support for adaptive management strategies, corresponding to how late in the process structured collaboration was initiated.

Collaborative groups in each of the cases had defined roles, but these roles represented varying degrees of involvement with the adaptive management process. *Strategies that provided stakeholders with a more integrated role in the development and implementation of adaptive management enjoyed greater overall support.*

The findings suggest that BLM should encourage and facilitate collaborative structures other than typical advisory committees, with wide or open participation in a consensus building joint fact finding process and BLM in a partner role. Stakeholders' role should be integral to the adaptive management process and should start at earliest stages of planning.

Institutional Barriers and Implications

Adaptive management efforts in each of the cases have been confronted with similar barriers and uncertainties that have prevented the critical elements from being included in adaptive management strategies and will limit BLM's ability to implement the strategies as planned.

Inconsistent adaptive designs and collaborative arrangements are due, in large part, to a lack of agency-wide guidance and policy offering a consistent definition of the critical elements and requiring their inclusion. Each of the cases represented a purely local effort, with little or no top-down guidance. In particular, BLM faces uncertainty around how to enable management flexibility while meeting the requirements of NEPA and FLPMA, and how to set up effective collaborative arrangements within the context of FACA.

A failure to build capacities among agency staff and stakeholders at the local level has constrained BLM and stakeholders' ability to work with scientific information in a consensus building process to develop adaptive management strategies. It will also limit the parties' ability to implement the strategies in the future.

Existing commitments, mostly general descriptions of the adaptive management concept and references to incomplete monitoring plans, in BLM land use plans will not be sufficient to bind BLM and its partners to implement adaptive management strategies as planned, over the required long term. Uncertain funding for monitoring and other expenses may also complicate implementation.

These institutional barriers have constrained the design and implementation of adaptive management strategies in the three cases and have left the strategies with mixed prospects for success. Future efforts will be similarly challenged unless BLM can provide agency-wide policy and guidance that defines adaptive management and requires inclusion of the critical elements, and provides consistency within the statutory framework of NEPA, FACA and other applicable laws.

At the local level, BLM and its partners must build the necessary capacities for joint fact finding and the science-intensive work of adaptive management by providing

training opportunities for stakeholders and staff, using independent neutral facilitators, and directly involving scientists in the collaborative process

To ensure ongoing implementation of adaptive management strategies, BLM and stakeholders must create binding implementation commitments. These should include more specific and more prominent commitments within land use plan documents, supplemental planning regulations that mandate the monitoring, evaluation and adjustment steps of the adaptive management cycle, and site-specific, collaboratively negotiated, binding implementation agreements among BLM and its partners which detail specific responsibilities and timelines for adaptive management.

There is little reason to believe that a continued reliance on uncoordinated, locally initiated efforts will consistently provide the benefits BLM seeks. If BLM can build on the existing potential of the Las Cienegas, Steens Mountain and Pinedale Anticline strategies by accounting for the factors outlined above and providing coordinated guidance to the field, this next-generation approach could indeed prove to be a significant improvement in the agency's practice of natural resource planning and management.