

AN EVALUATION OF ECOSYSTEM MANAGEMENT AND ITS  
APPLICATION TO THE NATIONAL ENVIRONMENTAL POLICY ACT:  
THE CASE OF THE U.S. FOREST SERVICE

By

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This research develops a plausible interpretation of NEPA's intent based on a thorough review and synthesis of NEPA documents and the literature. From this synthesis, NEPA goals and criteria are developed to evaluate a sample of Forest Service Forest Plans and their corresponding EISs. Next, ecosystem management is defined based on a review and synthesis of the literature. Ecosystem management evaluation goals and criteria are similarly developed to evaluate the Forest Plans and EISs. Based on NEPA and ecosystem management criteria, evaluation questions are formulated for assessing the Forest Plans in order: (1) to evaluate the extent the Forest Service has implemented ecosystem management; (2) to ascertain whether and to what degree Forest Service implementation of ecosystem management has moved its EIS process closer to NEPA's intent; and (3) to assess the extent ecosystem management implementation has influenced agency planning and decisionmaking processes. Throughout, the literature is used extensively to support conclusions reached on the basis of the case findings. Forest Service EISs and Forest Plans used for the case analyses are:

- The 1986 George Washington National Forest Final EIS and Forest Plan (pre-ecosystem management) and the 1993 George Washington National Forest Final EIS and Revised Forest Plan (post-ecosystem management).
- The 1985 Francis Marion National Forest Final EIS and Forest Plan (pre-ecosystem management) and the 1996 Francis Marion National Forest Final EIS and Revised Forest Plan (post-ecosystem management).

Trends based on the post-ecosystem management evaluations that evidence the agency's implementation of ecosystem management principles include: maintenance of biodiversity of all species; adoption of measures to sustain ecosystem health;

acknowledgment of ecosystem patterns and processes; increased integration of scientific research and technology; incorporation of adaptive management; and increased integration of ecological, economic and social considerations. There were several practices, however, in the post-ecosystem management cases that did not support ecosystem management principles: limited incorporation of different geologic or long-term time scales; continued delineation of boundaries along political lines; no integrative, interdisciplinary approach to planning; and no or minimal educational programs.

Post-ecosystem management Forest Service practices that support NEPA's intent include: earlier identification of critical impacts; better management of critical impacts; increased integration of ecological information and a broader understanding of sustainability; increased provisions for monitoring and evaluation; better reflection of reviewing agency and public comments and concerns; more influence of environmental data on project decisions; increased consideration of unquantifiable issues; and better integration of ecological, economic and social considerations through a decisionmaking framework. There were several practices, however, in the post-ecosystem management cases that did not support NEPA's intent: EISs had a lower estimation of the magnitude or significance of impacts than the earlier EISs; no evidence supporting a broad, integrative, interdisciplinary approach to planning process; and no evidence of two-way, consensus building stakeholder involvement in the EIS process.

Overall, the case analyses provide evidence that the Forest Service's EIS process had, in fact, moved closer to NEPA's intent. This improved output is primarily the result of the agency's incorporation of many of the principles of ecosystem management into its decisionmaking process. Although, NEPA did not figure into the integration of an ecosystem management approach into the Forest Service's decisionmaking process, this research showed that the goals of NEPA and ecosystem management are essentially the same. The agency came to advocate ecosystem management as the outcome of a voluntary decision and an incremental process to improve its overall planning and management process. Implementation of ecosystem management led to a more substantive response to NEPA's intent.

Forest Service decisionmaking is a political process that involves balancing competing agency, private industry, and public interests. "Change agents" come from diverse sources—from within the agency's institutional structure (both top-down and bottom-up); from within the federal governmental framework (e.g., other agency policies, Congressional decisions, budgetary constraints); from outside the federal government (state and local governmental agencies, public and private interest groups); and from an uncertain and dynamic political and economic environment. Therefore, forest planning and its associated NEPA analyses must be considered a part of a never-ending and evolving process. Consequently, the Forest Service would do well to take an adaptive approach in its decisionmaking process—an approach compatible with ecosystem management.

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VITA



*Ideals pass into great historic forces by  
embodying themselves in institutions.*

—Hastings Rashdall 1936