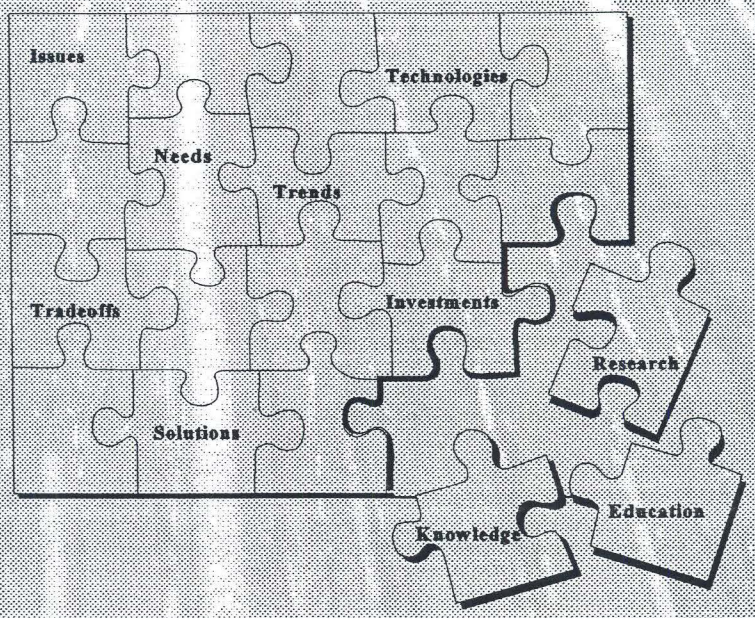
Report to the Secretary of Agriculture

by the

Forestry Research Advisory Council



November 1, 1999

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United States Department of Agriculture
1400 Independence Avenue S.W.
Washington, D.C. 20250

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Forestry Research Advisory Council
Report to the
Secretary of Agriculture

Executive Summary

Background: The Forestry Research Advisory Council (FRAC) was authorized by the 1995 Farm Bill for the purpose of providing recommendations and advice on forestry to the Secretary of Agriculture. FRAC consists of members appointed by the Secretary and drawn from federal, university, state, industry, and nongovernmental organizations. This report summarizes FRAC findings from its activities during the past year including its meeting of May 25-26, 1999.

Issues and Rationale for Action: Increases in worldwide demand for wood and fiber, coupled with increasing national and global concerns for the health of forest ecosystems continue as realities for this and the next century. These are largely manifested as conflicts over allocation, use, and management of the nation's federal forests. Nonfederal forests comprise two-thirds of the nation's total forest acreage and 80 percent of the 490 million acres of forest which are classified as timberland. Nonindustrial private forest (NIPF) landowners own 59 percent of the nation's timberland, another 14 percent is owned by industry, and 7 percent is under public ownership (state, county, and local government). Yet overall very little investment has been made in the research needs for these lands as compared to federal lands. At the same time, the potential for improvements in productivity and environmental quality for nonfederal lands are far greater than for federal lands. Recognizing this conundrum, the FRAC examined trends in forest protection and management over the last three decades.

Our findings suggest the nation will face intensifying difficulty in providing the full economic and environmental benefits of forest resources unless we foster concerted and coordinated research efforts on nonfederal lands. Such efforts must include: (1) fundamental knowledge of forest system behavior and response, (2) new technologies for protection and productivity, and (3) policy and program options.

Our society is not yet equipped to deal with the changes in forest land use that have occurred in the last decade nor the pressures of the next century. A strengthened research program will assist the landowners, a broad segment of society who serve as resource stewards. Further, this research will enable landowners and government to address the needs of the larger societal fabric that seeks the diverse benefits of forest resources.

The recent National Research Council report on nonfederal forest lands recommends increased federal efforts in research, monitoring, program coordination, and information transfer for both federal and private lands. FRAC has further identified a list of broad research issues and areas that, if fully addressed, would ensure:

- Sustainable intensive timber production
- Management to achieve a broad range of environmental outcomes
- Informed decisions on environmental versus economic and social tradeoffs
- Public understanding of issues and policy options

Recommendations:

1. We urge the Secretary to give forestry research a high priority within USDA and to work toward elevating the visibility of the subject in the "big science arena."

2. We urge the Secretary to continue, and as appropriate, augment support for the McIntire-Stennis and Forest Service R&D programs. As opportunities arise to strengthen and build research capacity and effort in needed emphasis areas, we strongly recommend investing in the three priority areas noted below:

   - sustainable intensive timber production on private lands,
   - forest assessment (inventory) and monitoring with emphasis on new technologies, and
   - social values of forests and tradeoffs between conflicting values and uses.

   We further see these priorities as including research on the underlying science and technologies and support to related extension education efforts.

3. We urge improvement in collaboration and mutual support in developing initiatives in forestry research, education, and technical assistance within USDA, especially among CSREES, Forest Service R&D, and Forest Service State & Private Forestry.

4. We urge the Secretary to seek linkages with other agencies that fund forestry-related research to foster competitive grant or other programs that bolster efforts to address the above priorities.

Full Report to the Secretary

1. Introduction

The 1995 Farm Bill authorized the Forestry Research Advisory Council (FRAC) for the purpose of providing recommendations and advice on forestry research to the Secretary of Agriculture. The Council consists of members appointed by the Secretary and drawn from federal, university, state, industry, and nongovernmental organizations. This report summarizes FRAC findings from its activities during the past year including its meeting of May 25-26, 1999. The report is submitted to the Secretary of Agriculture from the Chair and Vice-Chair of the Council.

The membership (list enclosed) has met to explore and share insights on the current issues and needs relative to research in support of forest management in the United States. As part of that exploration, we have as members sought participation in forestry issues and research symposia during the past year. Additionally, we asked for input from a wide range of agency, private, university, and Congressional sources to appreciate the situation before us. Finally, we conducted a futuring exercise. In this sharing and analysis, we worked to identify the key issues in research, and the priority research and related needs to address these issues. As a result, FRAC believes this document can provide important and unifying guidance to the USDA in its efforts to meet the nation's needs in the area of forestry research.

2. The Importance of Forestry Research

By study and a facilitated examination of the major issues of the last three decades, how decisions were made, and why things happened the way they did, we sought to explain the present and from the present trends, the nature of possibilities for the future.

Historical Context

During the 1970s, we saw issues of timber harvesting, especially clearcutting, emerge. Air travel allowed people dramatic views of forested landscapes and harvesting practices under intensifying even-aged management. Forest management issues came into public debate and became highly politicized. The public expressed distaste for clearcutting and several important environmental laws were passed. The decade of the 1980s continued with more polarization of the publics, the birth of many new federal laws, e.g., the National Forest Management Act, a proliferation of law suits, and expansion of agency mandates to interpret and reinforce the law. Increased media coverage gave forest issues national attention. The environmental NGO's became well organized and sophisticated in their strategies to mobilize the public. In the 1990s, we saw increasing politicization of federal agencies which manage public lands. The diversity of public views increased along with increased public involvement in environmental issues and decisions.

Trends

World population growth is one of the major drivers for natural resources management decisions. Resources are limited while the demand for a higher standard of living and more resources per capita continues. The task of managing forest resources gets much more complex than ever because of changing publics, diverse values, and partisan politics. In the United States, public land management is moving away from production and toward environmental values. While less timber will come from public lands which are primarily managed for environmental values, the demand for wood and fiber is transferred to private lands to grow more wood on less acres in less time to meet the nation's need. The public is confused and poorly informed about the resource management choices and policy options. It is not clear whether the United States has a strategy for industrial timber supply. Within this confusion, the credibility of the scientific community is still high. The public is hungry for scientific information and analysis but also wants policy based on public participation.

The Foreseeable Future

There are several possible scenarios for the next decade or so, some of which are not very bright unless we prepare soon with the right investments. The competitiveness of the United States forest industry is a serious concern. The industry is facing competition from nonwood products and from international regions with less stringent environmental constraints. The federal government lacks a timber supply strategy for the nation, especially for nonfederal lands. The strict land zoning models used in Europe, Australia, and New Zealand may become a reality in the United States, or forest land and associated opportunity may simply be lost when the economics of ensuring timber supply diminishes relative to development. Because of the pressure to produce wood and fiber to meet demands, nonfederal lands in the United States will become more intensively managed while the national forests will be managed for other objectives with timber a byproduct of those efforts. Also at issue is whether a reduction in managerial activity on public lands will necessarily retain environmental values as there are risks associated with any form of management.

3. Issues in Forestry Research

With the state of forestry knowledge and technology available in the US, we are not ready to deal with these scenarios of change. Trying to do so will invariably lead to economic and environmental losses. As a consequence, FRAC has identified a list of forestry research areas that need new and improved knowledge and technology to ensure:

- Sustainable intensive timber production on private lands (more wood from fewer acres)
- Managing public lands for environmental outcomes
- Understanding diverse social values and tradeoffs
- Sustainable human capital through training and development
- Reconciling the objectives of forest managers and financial interests
- Common understanding of sustainable forest management parameters
- Efficient forest assessment (inventory) and monitoring (FIA)
- Incorporating forest sciences in the "big science" arena
- Political support for forestry research
- Providing tools for science-based risk assessment
- Strategies and techniques for holistic landscape management
- Motivating and providing incentives for private forest management
- Restoration and enhancing low-quality eastern forests
- Efficient and effective technology transfer

4. Research Priorities

The above issues are not listed in any order of priority. Rather, we used this listing to distill three research priorities deemed of highest importance to FRAC. These are listed below together with important associated and illustrative research areas. The length of this list is also instructive about the issues and research needs in society across diverse regions:

- ***Sustainable Intensive Timber Production:***

  Synergy silvicultural treatments
  Identifying management alternatives by species and regions
  Hardwood genetic improvement
  Nutrition and soil productivity
  Environmental issues related to intensive management and setaside lands
  Sustainability of other resources
  Low-impact conifer regeneration
  Utilization of various certification schemes
  Modeling as a tool to assist management decisions
  Determination of desired outcomes

Insects, diseases, and exotics related to intensive management
Genetic improvement for growth, productivity, and resistance to insects and diseases
Genetic selection for environmental variability

➤ ***Forest Assessment (inventory) and Monitoring:***

Remote sensing technologies
Annual update, analysis, and modeling capability
Geographic Information Systems (GIS) technology
Forest Inventory and Analysis (FIA) design alternatives
Sustainability and environmental attributes
Timely "state of the forest" reporting
Forest health measurements, criteria, and indicators
Integration and coordination of FIA with agricultural counterpart (NRI)
National consistency
Updating of field techniques

➤ ***Social Values and Tradeoffs:***

Understanding social values, what they are, what are shared, range of opinions, etc.
Modeling management options, assessing public acceptance
Factors that influence values and decisions. What could change once they have been made?
Diffusion of technologies and adoption of forest practices by private land owners
Review of current key forest policies to meet their intent and success
Behaviors and willingness to change
Organization of forestry agencies and linkages between them

Finally, we note these findings of research issues and needs are consistent with those identified by the recent National Research Council report *Forested Landscapes in Perspective: Prospects and Opportunities for Sustainable Management of America's Nonfederal Forests.*

5. FRAC Recommendations

1. We urge the Secretary to give forestry research a high priority within USDA and to work toward elevating the visibility of the subject in the "big science arena." The economic and environmental importance of forests to our society support such attention.

2. We urge the Secretary to continue, and as appropriate, augment support for the McIntire-Stennis and Forest Service R&D programs. As opportunities arise to strengthen and build in needed emphasis areas, we strongly recommend investing in the three priority areas noted below:

   - ***sustainable intensive timber production on private lands*** to address issues of national competitiveness and economic growth,

   - ***forest assessment (inventory) and monitoring*** with emphasis on new technologies for improving capabilities and rapid analysis and reporting, and

   - ***social values and tradeoffs*** between conflicting values and used to facilitate the understanding of policy options and informed decisions in federal, state, and local contexts.

   We further see these priorities as including research on the underlying basic science and technologies and commensurate support to extension education efforts.

3. We urge improvement in collaboration and mutual support in developing initiatives in forestry research, education, and technical assistance within USDA, especially among CSREES, Forest Service R&D and Forest Service State & Private Forestry. This is especially important given that two sets of Congressional committees are involved (Interior and Agriculture).

4. We urge the Secretary to seek linkages with other agencies who fund forestry-related research, notably the National Aeronautics and Space Administration, the Department of Energy, the Department of Interior, the Environmental Protection Agency, and the National Science Foundation, to foster competitive grant or other programs that bolster efforts to address the above priorities.

As the futuring activity of FRAC has indicated, the time to act on these recommendations is now.

Finally, we are committed to help the USDA with implementation of these ideas, so please call upon us.

Acknowledgments

The FRAC gratefully acknowledges the support provided by both the USDA Forest Service and CSREES in planning and conducting the business of the Council.

Membership

Ms. C. Ann Aagaard, League of Women Voters
Dr. Alan R. Ek, University of Minnesota, Chair
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Mr. Jami E. Nettles, Weyerhaeuser Company
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Dr. Stephen D. Blackmer, Northern Forest Center
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