

Report to the Secretary of Agriculture

Forestry Research Advisory Council¹

October 2010²

America's forestland is a vast resource that covers 745 million acres or one-third of our nation. Our forests have sustained our society for centuries and have great potential to address societal issues that will have increasingly significant impacts in the future. Our citizens receive a myriad of benefits from our forests including wood products; environmental services, such as water, clean air, and aesthetics; wildlife habitat; and recreation. As our population increases, the demand on our forests will also increase.

However, our nation's forests are at risk as they are subjected to ever-increasing threats that could negatively impact their productivity and viability in the future. Threats such as climate change, urban sprawl and forest fragmentation, exotic invasive plant and animal species, demand for new products such as biofuels and bioproducts among others will place additional strains on these forest ecosystems. To address the myriad of issues that will impact the lives of our citizens for multiple generations, we recommend that USDA forest research efforts focus on the following:

1. Insure that research is fully integrated with **technology transfer** efforts. Engage outreach expertise early in the development of the request for application (RFA) process and insure that research projects include the transfer of information and knowledge to the end user in a user-friendly form. Provide incentives for scientists to engage Cooperative Extension, forestry schools, other agency and NGO's to extend the knowledge gained from research to landowners and managers. Include methodology to integrate research findings into primary-secondary education curricula for fundamental forest management and ecological concepts.
2. **Integrate social sciences** with biophysical sciences in research projects to strengthen the capability to study coupled ecological, and social systems. Complex issues such as climate change mitigation and adaptation, biomass utilization, wildfire, land use and land management decisions among many others require the inclusion of a diversity of social sciences, in addition to economics, from research problem formulation to science delivery.
3. **Develop the supporting science to sustainably manage competing demands** on forests and agroforests to produce biofuels, fiber, and water and ecosystem services in concert with measured biological objectives. The integration of biological objectives with social and economic objectives of biofuels research and development is essential to enhance understanding of the interactions of growing, managing, and harvesting biomass for biofuels and the functioning of ecosystems to ensure sustainability of both rural and urban ecosystems. Because baseline data to measure this sustainability is essential, **Forest Inventory Analysis (FIA)** support must also be continued to monitor the changes occurring in our nation's forest resource.
4. Maintain intellectual capacity in **fundamental forest sciences**. Currently there is a loss of scientific expertise and institutional capacity in fundamental areas such as pathology, entomology, silviculture, botany, field biology, etc. Loss of this expertise and capacity will reduce the ability to respond to future forest issues such as climate change, forest pests and pathogens, and other emerging issues and opportunities. Incorporate the need for these disciplines in RFAs; support graduate education efforts in these areas; evaluate joint agency/academy appointments to facilitate graduate education, including mentoring and teaching graduate level coursework, and prioritize these disciplines in filling new agency positions.

The Council requests that the USDA Forest Service R&D and the National Institute of Food and Agriculture (NIFA) prepare a report for our 2011 meeting on progress made to address these recommendations.

¹ The members of the Forestry Research Advisory Council (FRAC) are: Richard W. Brinker (Chair), Auburn University; Masood Akhtar (Chair-elect), Bioenergy Deployment Consortium; John D. Alexander, Klamath Bird Observatory; Bov B. Eav, USDA Forest Service; David J. Flaspohler, The Ornithological Council; J. Keith Gilliss, University of California, Berkley; Jason Grabosky, Rutgers University; John M. Hagan, Manomet Center for Conservation Sciences; Scott Josiah, Nebraska Forest Service; Cassandra Moseley, University of Oregon; Robert W. Taylor, Alabama A&M University; Mark Tjoelker, Texas A&M University; Eric Vance, National Council for Air and Stream Improvement; Charles Vandersteen, Louisiana Forestry Association; Theodore Wegner, USDA Forest Service.

² The Council met in Washington, DC on September 8 – 9, 2010.