Joint Fire Science Program
Fire Science First Look
RESEARCH SUPPORTING SOUND DECISIONS
October, 2007

Biomass Removal from Fuel Treatments
Funded Synthesis Projects

The JFSP held a roundtable and subsequent reviews with managers from throughout the country focused on biomass removal from fuel treatments. As a result, the need for synthesis was highlighted as the first objective for research funding.

In June of 2007 the JFSP solicited synthesis proposals in the following areas:

1. Biomass estimators,
2. Biomass removal case studies, and
3. Economic and financial effects of biomass removal as a fire hazard treatment.

We received 27 proposals and funded four projects in early August. We expect results from these new efforts to be available within 18 months of funding.

Biomass Estimators

Managers do not have confidence in the estimation tools they use for calculating biomass especially from noncommercial species. Dr. David C. Chojnacky of the US Forest Service and Dr. Jennifer C. Jenkins of the University of Vermont will examine the existing literature and produce a synthesis and accompanying DVD or web page with guidance to use the equations for fuel managers. The work is titled ***Literature synthesis and meta-analysis of tree and shrub biomass equations in North America.***
For more information: dchojnacky@fs.fed.us

Biomass Removal Case Studies

Because biomass removal is such an adaptive process, managers highlighted the need to compile and share lessons learned from biomass removal case studies. We funded two proposals and the principal investigators are coordinating their work to achieve nationwide coverage of projects.

The case studies selected will examine the key challenges and barriers and effective strategies for addressing those barriers. One component of these studies will be capturing the insights of managers and local partners. Our hope is that these case studies will become a cornerstone for increased use of biomass as a fuel treatment option and provide managers with a rich collection of lessons learned about the types of approaches used to implement biomass removal treatments.

Dr. Alexander Evans of the Forest Guild is the Principal Investigator for ***Inventory and Evaluation of Case Studies to Produce a Guide to Effective Biomass Removal Strategies.***

Dr. Dennis Becker of the University of Minnesota is the Principal Investigator for ***Characterizing Lessons Learned from Federal Biomass Removal Projects.***

Economic and Financial Effects of Biomass Removal as a Fire Hazard Treatment
This study addresses the pressing need for information through:

- Synthesis and evaluation of existing economic and financial information and tools available to managers
- Identification of managers' information needs and their disconnects with available information
- Providing concise information to managers to help quantify the direct and avoided costs of fuel treatments, including
    1. the location and characteristics of biomass-utilizing facilities in several western states;
    2. the types, tree sizes, and volumes of wood fiber these facilities purchase;
    3. the value of wood fiber delivered to these facilities;
    4. GIS data depicting mill locations and biomass-utilizing facilities;
    5. carbon and particulate matter emissions from utilizing forest biomass compared to on-site burning, and associated fossil fuel offsets for carbon credit trading.

Todd Morgan, Assistant Director of Forest Industry Research at the University of Montana is the Principal Investigator for ***Enhancing Western Managers' Knowledge and Use of Available Economic and Financial Biomass Information and Tools.***

Estimating the Biomass of Hand-piled Fuels for Smoke Management Planning
Land managers need a tool to accurately and efficiently estimate the biomass of hand-piled fuels as pile burning becomes a common method for treating high fire hazard areas with heavy accumulations of surface fuels, especially in the wildland urban interface. This study will measure and weigh hand-constructed piles to determine the relationships between pile composition, pile size, and pile biomass. Conifers, hardwoods, and shrubs will be sampled. The results of the research will lead to better smoke production estimates, improved burn scheduling, and more accurate compliance with emissions limits in state smoke management plans.

Clinton S. Wright of the Pacific Northwest Research Station, Pacific Wildland Fire Sciences Laboratory is the Principal Investigator for ***Estimating Biomass for Hand-Piled Fuels for Smoke Management Planning.***

As results from these projects become available in the next 18 months, the JFSP Governing Board will assess where to make additional investments in studies to support biomass removal as a fuel treatment option. Please also read the additional documents under our Focused Lines of Research – Biomass Removal on our website http://www.firescience.gov