

## Application of Forensic Wood Science to Supply Chain Integrity and Product Claim Verification—Fiber-Testing Wood Products Certified by the Forest Stewardship Council

The Forest Stewardship Council (FSC) has more than 456 million acres (nearly 714,000 square miles, or an area almost the size of the American Midwest) certified to its standards in 80 countries, and FSC-certified wood products can be found in trade across the world, with more than 40,000 forest products companies participating in their certification system. To improve its quality control measures and enhance its supply chain integrity, FSC has partnered with the USDA Forest Products Laboratory (FPL) to develop and apply forensic wood scientific approaches to product claim verification and supply chain integrity within their forest product certification program.



Traditional and developing forensic wood scientific methods are employed across the supply chain. (Photo on the right courtesy of Gary Dodge.)

### Background

Market acceptance and desirability of certified forest products is in part based on the assurance that every product on the shelf is exactly what it is supposed to be. Failures of the supply chain are powerful threats to consumer trust and increased value associated with certified products. Therefore, robust and ever-improving supply chain integrity measures are needed, especially with increasing public awareness of the social, economic, and environmental impacts of unsustainable practices and illegal logging.

### Objective

This project will investigate, quantify, and improve supply chain integrity of FSC-certified wood products, assist in the development of additional quality assurance measures, approximate risk in various supply chains, apportion effort according to risk, and help develop standards for quality assurance and chain of custody applicable to forest products industries more broadly.

## Approach

Techniques of forensic wood science are employed in the laboratory for every product that is assessed. Products are submitted for testing by FSC, and FSC retail products are purchased directly by FPL in the open market for evaluation. The primary scientific approaches are standard fiber testing methods—traditional wood identification and traditional pulp identification. Nontraditional, experimental, and emerging technologies (including machine-vision wood identification, molecular methods in wood identification and provenancing, and development of methods for analysis of composite products including particleboard and fiberboard) are being evaluated for use.

## Expected Outcomes

In addition to improved supply chain and chain of custody practices within FSC, the broader applicability of lessons learned from this research will be the topic of one or more research publications on the efficacy of forensic wood science as a tool for supply chain verification in forest products supply chains and an understanding of general principles for effective supply chain monitoring in forest products industries.

## Timeline

This project began September 2011 and will be completed by December 2016.

## Cooperators

USDA Forest Service, Forest Products Laboratory  
FSC International

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