

Mosquito in the Tent

How a tiny, agile nonprofit helps advance the USDA Forest Service mission and benefits America's forests and people





Dear USDA Forest Service Leaders:

"Anyone who has spent the night in a tent (or any room for that matter) with a mosquito can attest to the impact that a small organism can have on a larger one."

That's how Vicki Christiansen, Associate Deputy Chief for State & Private Forestry, characterized the relationship between the U.S. Endowment for Forestry and Communities (Endowment) and the USDA Forest Service (USFS). Speaking to the Endowment's Board of Directors in 2013, she encouraged them not to underestimate how their young, six-person nonprofit could influence her agency's 35,000 employees with its 100+ year history.

This document outlines how the Endowment and the USFS collaborate to achieve results that neither could accomplish on its own. In each case the Endowment has leveraged USFS funds or coordinated USFS efforts with forest industry, the conservation community, research institutions, and other entities, including Canadian partners, to support USFS goals. In fact, one of the agency's own guiding principles reads, "*We form partnerships to achieve shared goals.*"

The results: new information, innovative approaches, and effective projects that help advance common interests and USFS priorities to sustain forests, deliver public benefits, and share knowledge. To date, a USFS commitment of \$13 million has been nearly doubled by an Endowment investment of \$25 million, matched with other direct partner cash support of \$12 million which has been leveraged by another \$54 million in investments for a total impact of \$105 million.

We hope this report will help those within and outside the agency see the power and potential of strong partnerships to benefit both our nation's people and its bountiful forests—even when the partners are far from equal in size.

A handwritten signature in black ink, appearing to read "Carlton N. Owen". The signature is fluid and cursive.

Respectfully,
Carlton N. Owen
President & CEO
U.S. Endowment for Forestry and Communities



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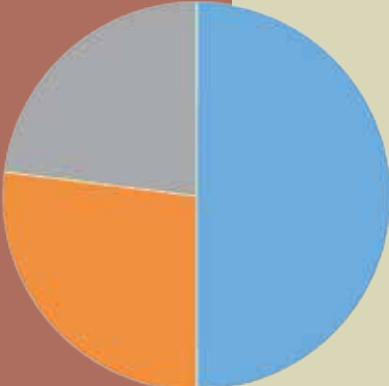
SUSTAINING FORESTS: Advancing Forest Health through Biotechnology—Forest Health Initiative

Would you go to a doctor who still prescribed leeches and sulfur drugs? 21st-century technology is a “best bet” new weapon against forest pests. The Forest Health Initiative is leading the way.

- We’re losing the battle against destructive forest insects and diseases as we respond with tools that are mostly out-of-date.
- Modern biotechnology has revolutionized agriculture, producing greater yields while reducing costs. Can such approaches offer the same potential for forests?
- A genetically modified American chestnut is the proof-of-concept that 21st-century technologies can address forest health crises.

Producing a blight-resistant American chestnut through traditional tree-improvement techniques has required decades of blind crossings with the Chinese chestnut. Our partnership zeroed in on modern genetic techniques to speed the process. In just three years, we developed a genetically modified American chestnut with blight and root-rot resistance. It’s being field-tested now.

Science is the first step. Now we are working to understand public and regulatory agency support for possible use of the technology in operational settings.

Key Results	Primary Lessons	Investments to Date
<ul style="list-style-type: none"> • Mapped Chinese chestnut genome • Identified 27 genes with potential to confer disease resistance • Reduced by 90% time required to produce trees for testing • Cut from 5+ years to <1 plant age needed to determine resistance • Addressed both blight and root rot, vs. only blight for traditional breeding • Engaged 40 conservation, governmental, and industrial collaborators • Involved all 3 federal regulatory agencies—APHIS, EPA, FDA—from start 	<ul style="list-style-type: none"> • “Braided” approach that addresses science, regulatory, social and environmental issues openly and concurrently is foundational to success • Choosing partners with established expertise vs. open RFP saves time and money • Transparency is vital for controversial topics • Endowment’s \$2M pledge leveraged public and private support • Commitment to public good—here, forest health—encourages collaboration 	<p data-bbox="1109 995 1308 1031">\$7,410,000</p>  <ul style="list-style-type: none"> ■ USFS ■ Endowment ■ Duke Energy

Core Collaborators beyond USFS and Endowment

Clemson University
 Duke Energy
 Environmental Defense Fund
 Institute of Forest Biosciences

Penn State University
 SUNY College of Environmental Science and Forestry

The Nature Conservancy
 University of Georgia
 Virginia Tech University

SUSTAINING FORESTS: Public-Private Partnership to Advance Cellulosic Nanomaterial (P³Nano)

P³Nano explores the potential of Earth-friendly products for the economy and forest health while ensuring health and safety.

- Cellulosic nanotechnology releases the physical strength of trees at the very smallest of scales. P3Nano seeks faster commercialization of this science than any individual organization could achieve on its own.
- P3Nano is using the power of markets to make forests more resilient and mitigate wildfire risk while developing family-wage jobs for the future.
- P3Nano is rooted in a commitment to prioritizing environmental and human health and safety.
- Applications for cellulosic nanomaterials—

packaging and paper products, cement, polymer composites, defense and medical technologies—need additional R&D investment to unleash potential.

Imagine a remake of the 1967 movie **The Graduate** ...
Mr. McGuire: I want to say one word to you. Just one word.

Benjamin: Yes, sir.

Mr. McGuire: Are you listening?

Benjamin: Yes, I am.

Mr. McGuire: Nanomaterials.

Benjamin: Exactly how do you mean?

Mr. McGuire: There's a great future in nanomaterials. Think about it. Will you think about it?

Key Results

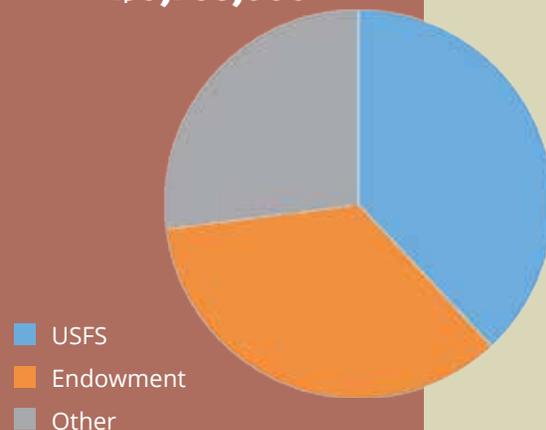
- Created science advisory committee to guide research
- Received 80+ proposals in response to initial RFP; funded 9
- Convened sustainability advisers to address environmental health and safety issues
- Conducted outreach to all sectors that might use cellulosic nanomaterial, thus building support for commercialization

Primary Lessons

- Focus on environmental health and safety will facilitate commercialization
- High-volume applications are needed to grow this new industry
- Contributions from non-traditional partners will bring innovation to both use of these materials and overall R&D
- Extending cooperation cross-border to Canada

Investments to Date

\$5,738,000



Core Collaborators beyond USFS and Endowment

American Process, Inc.
Georgia Institute of Technology
Oregon State University

Purdue University
University of Maine

Vireo Advisors
Virginia Tech University

SUSTAINING FORESTS: Consortium for Advanced Wood-to-Energy Solutions (CAWES)

A technology invented during World War II—torrefaction—could solve important forest health and green energy problems.

- Conversion of schools and businesses from fossil fuels to wood energy will help communities create jobs and markets for low-value wood.
- The colossal challenge of economically justifying the harvest of low-value wood demands new thinking and breakthrough solutions.
- Roasting wood in a low-oxygen environment yields an energy-rich product that, when densified, can be produced near the resource and shipped and stored easily.
- Liquid fuels from wood may yet be feasible, but in the near term, torrefaction is more practicable.

Until natural gas from fracking captured attention as the fix for the future, cheap, plentiful coal generated 50% of the nation’s electricity. Turning low-value wood into a coal-like substance may hold promise in extending the useful life of some of the nation’s coal-fired facilities while addressing the country’s forest health and wildfire challenges. But absent a catalyst, torrefaction will develop slowly and inefficiently.

CAWES is a \$4 million joint venture to rapidly test (in 24–30 months) and prove (or disprove) the potential of torrefied wood in commercial markets. The consortium is simultaneously pursuing two primary pathways: 1) identifying and filling knowledge gaps; and 2) pushing forward two or more production facilities that can provide needed materials to meet commercial testing needs.

Key Results

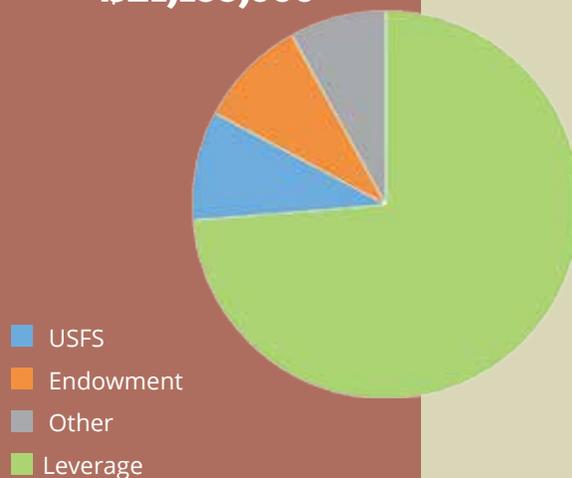
- Developed road map
- Identified 3 of 4 production partners
- Funded support partners to fill knowledge gaps

Primary Lessons

- Producers have been trying to “capture market share” before a viable market exists
- Building on lessons and successes from the Forest Health Initiative, CAWES is founded on collaboration to address common challenges in precompetitive, public domain environments

Investments to Date

\$21,155,000



Core Collaborators beyond USFS and Endowment

Georgia Southern University
Herty Center
Integro Earth Fuels

Michigan Tech University
University of Georgia

University of Louisville
University of Minnesota–Duluth

SUSTAINING FORESTS: Partnership for Southern Forestland Conservation

A common interest in keeping forests as forests brings together industry, government, and conservation interests to protect the South's large blocks of working forests for jobs, wildlife, and ecosystem services.

- The projected loss of 23 million acres of southern forest over the next five decades threatens rural jobs, energy independence, quality of life, water quantity and quality, and wildlife habitat.
- Since 2008, a consortium of agencies, conservation groups, and investment landowners has been coordinating efforts to retain the South's large, intact areas of working forests.

- The loose confederation of diverse interests has set a high bar for success: conservation of 20 million working forest acres by 2020. That's nearly 10% of all forests in the region.

Towering longleaf pine forests and productive pine plantations have defined the South, but rapid population growth threatens land-use conversion. A desire to keep forests as forests is bringing together diverse partners to work toward a common goal.

Key Results

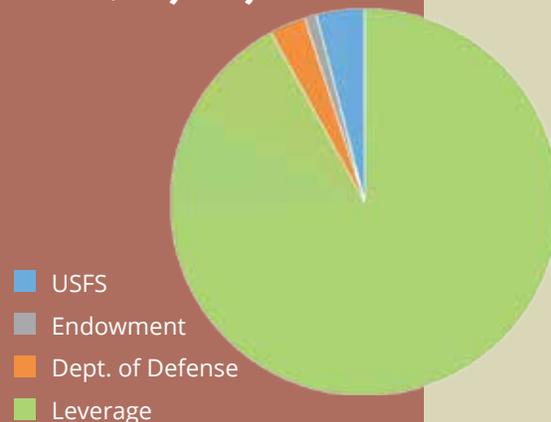
- Department of Defense Readiness and Environmental Protection Integration Initiative (REPI) has protected tens of thousands of acres of working forests with conservation easements
- Natural Resources Conservation Service Regional Conservation Partnership Program grant will protect 20,000 acres of working forest and help demonstrate compatibility of working forest practices with at-risk species management

Primary Lessons

- Finding a common interest—keeping forests as forests—is critical for attracting collaborators and ensuring commitment
- Providing a platform for regular dialogue between forest owners, particularly TIMOs and REITs, and other forest interests enhances partnerships

Investments to Date

\$25,954,000



Core Collaborators beyond USFS and Endowment

American Bird Conservancy
 American Forest & Paper Assn.
 American Forest Foundation
 Conservation Forestry
 Department of Defense
 Environmental Defense Fund
 Environmental Protection Agency
 Enviva LP
 Florida Fish & Wildlife Conser. Comm.
 Forest Landowners Association

Georgia Dept. of Natural Resources
 National Wildlife Federation
 National Woodland Owners Assn.
 NW Florida Water Mgmt. Dist.
 Open Space Institute
 Plum Creek
 Resource Management Service
 Rock Tenn
 Society of American Foresters
 Southern Forest Network

Southern Group of State Foresters
 Sustainable Forestry Initiative
 The Conservation Fund
 The Nature Conservancy
 The Trust for Public Land
 Trout Unlimited
 U.S. Fish & Wildlife Service
 U.S. Geological Survey
 Weyerhaeuser
 World Resources Institute

SUSTAINING FORESTS: National Conservation Easement Database

Implementing effective conservation projects will be easier with the nation's first comprehensive database of conservation easements.

- In 2008, the Endowment challenged the entire conservation sector to complete America's land conservation puzzle by developing the National Conservation Easement Database.
- Until the database was created, there was no single system for tracking and visualizing the location of hundreds of thousands of easements.
- Without this information, land managers could not easily determine how the tens of millions of acres of protected private lands meshed with public conservation areas and working forests.

Old maps once depicted uncharted territory with sea serpents or dragons to represent the unknown. With this database, anyone can see, for free, where easements are, who holds them, what protections they provide, and how they relate to the larger conservation picture. The National Conservation Easement Database uses modern data management tools and online mapping to aid land managers and planners by slaying dragons of the unknown ensuring that conservation of working forests and all lands is based on sound information.

Key Results

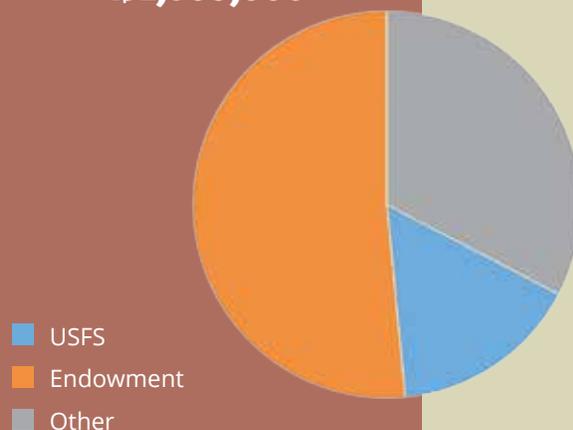
- Database records more than 100,000 easements protecting 22 million acres
- System developed and being maintained at fraction of cost for single agency database
- Compatibility of database with Public Areas Database-US, Conservation Almanac, and other systems enhances its potential

Primary Lessons

- Fears of sharing data are unfounded and only thwart sound planning
- Using collaboration of organizations to build database added strength and buy-in
- Database helps agencies, land trusts, and others plan strategically, collaborate, and advance public accountability

Investments to Date

\$1,935,000



Core Collaborators beyond USFS and Endowment

Conservation Biology Institute
Defenders of Wildlife
Ducks Unlimited
Gaylord & Dorothy Donnelley Fdn.

Geraldine R. Dodge Foundation
Graham Family Foundation
Knobloch Family Foundation
Land Trust Alliance

Natural Resources Conservation Service
U.S. Fish & Wildlife Service
U.S. Geological Survey

SUSTAINING FORESTS: Enhancing Natural Resources Planning at the State Level

Enhancing collaboration between state forest (FAPs) and wildlife action plans (SWAPs) creates synergies, makes efficient use of human and financial resources, and maximizes opportunities.

- Coordinating state FAPs and SWAPs is a sure way to enhance natural resource conservation, especially when budgets are declining and human resources are stretched thin.

- A pilot project of the USFS, U.S. Fish & Wildlife Service, and Endowment revealed opportunities for coordination and collaboration.
- Deliberate and strategic collaboration between independent agencies is vital to resource conservation and stewardship.

Key Results

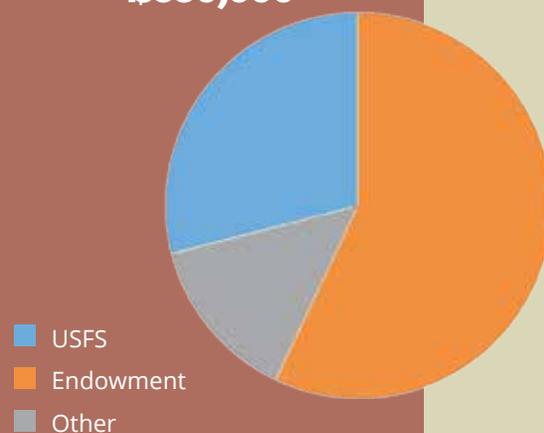
- Aligning action plans was identified as the simplest way to develop shared goals, common metrics, and coordinated action
- Good starting places are sharing priorities for fire management, invasive species control, and climate change adaptation
- Focusing on priority places for collaboration allows immediate start
- Better outcomes can be achieved with same or reduced resources—this is not collaboration for collaboration's sake

Primary Lessons

- Uncoordinated state plans are less effective and less efficient than they could be
- When sister state agencies collaborated, significant common interests emerged
- Because state and federal financial resources continue to be squeezed, coordination of planning efforts will stretch limited funds
- Fostering collaboration, rather than competition, between sister state agencies remains challenging

Investments to Date

\$350,000



Core Collaborators beyond USFS and Endowment

Open Space Institute
State of Florida
State of Georgia

State of Kentucky
State of Missouri
State of South Carolina

State of Tennessee
State of Virginia
U.S. Fish & Wildlife Service

DELIVERING BENEFITS TO THE PUBLIC:

Healthy Watersheds through Healthy Forests

Protecting and managing forested watersheds for drinking water is cost-effective. With the partnership's support, local communities are pioneering innovative approaches to raise the needed funding.

- Two of every three Americans get their drinking water from a forest.
- Much of that water is sourced from private forests whose landowners receive no compensation for this public benefit.
- Landowners who can monetize the value of the drinking water they provide are far more likely to manage their forests intentionally to yield clean, abundant water.

When drought, declining water quality, and sediment in the city reservoir threatened the prosperity of Raleigh, North Carolina, Mayor Charles Meeker and

the city council took action to protect its forested watersheds. These leaders, in conjunction with the Endowment and Natural Resources Conservation Service, set aside funding and instituted a modest monthly rate increase of 40 cents/household to work with private forest landowners. Denver, Santa Fe, and other communities are similarly demonstrating the benefits of putting a price on a formerly “priceless” resource.

With additional support from the USFS, the Endowment is now seeking to engage the water utility industry in a systematic way. The partnership aims to replicate successes like Raleigh to ensure that municipalities across the country have abundant water for the future.

Key Results

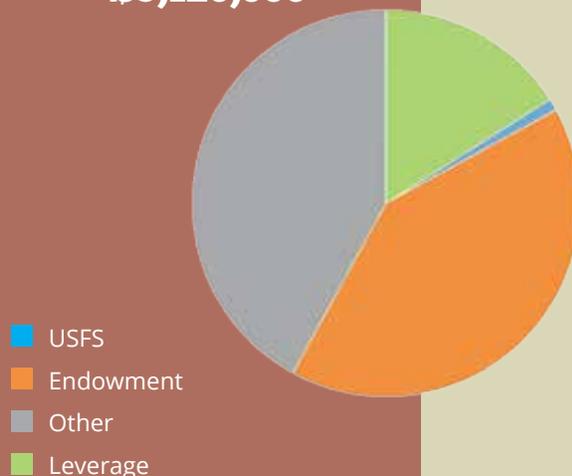
- Engaged American Water Works Association, largest entity representing water utilities, to advance forest protection programs
- Engaged Tracey Mehan, former EPA Assistant Administrator for Water, to lead watershed protection efforts
- Pilot projects for new funding sources for watershed protection are underway in 6 states
- New EPA partnership will provide significant funding for watershed assessments across country

Primary Lessons

- Forestry and water communities often don't realize their shared interests
- Water utilities are typically run by engineers; learning to speak their language is essential to securing their interest in protecting forested watersheds
- Clarifying economic benefits of watershed protection for water treatment and storage is critical

Investments to Date

\$9,120,000



Core Collaborators beyond USFS and Endowment

Electric Power Research Institute
Environmental Protection Agency

Knobloch Family Foundation
Natural Resources Conservation Service

Sustainable Forestry Initiative
Weyerhaeuser Family Foundation

DELIVERING BENEFITS TO THE PUBLIC: Forests as a Key to Gulf Health and Prosperity

In 2010 some 210 million gallons of crude oil fouled the Gulf of Mexico. Forests are an important part of the Gulf's restoration.

- As the expected billions of dollars of settlement become available, capturing some funds for forest conservation and management is essential for Gulf restoration and resiliency.
- Forested watersheds along the Gulf are essential for clean water, wildlife habitat, stormwater protection, and rural jobs.
- Lessons from the Exxon Valdez spill in Alaska suggest that coordinated, long-term responses aligned with Nature's resilience can lead to recovery.

The disastrous damage caused by the Deepwater Horizon spill will be countered with unprecedented funding—an opportunity not just to right the wrongs but to begin charting a new course in improving the health of the Gulf for decades to come. As we partner with the state foresters in the Gulf to consider Gulf-wide solutions, we began with the Deepwater Horizon Project Tracker—the only comprehensive system for mapping and cataloging each project funded under the myriad recovery efforts.

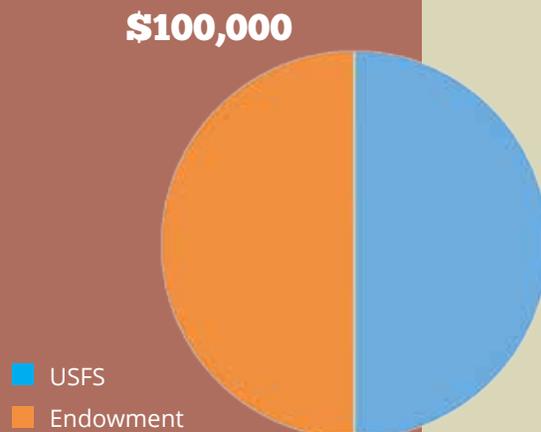
Key Results

- Our 2013 report found bald cypress-water tupelo swamps and hardwood wetlands bordering the Gulf are threatened by urbanization, rising sea levels, saltwater intrusion, invasive species, and inappropriate management
- Gulf state foresters are collaborating with USFS, American Forest Foundation, and Endowment to ensure that forests are part of solution
- With USFS Region 8 leadership, two large proposals for forest restoration and protection were submitted to RESTORE Council

Primary Lessons

- Educating settlement funders and public about forest benefits is essential
- Exxon Valdez spill experience shows that interests must come to the table early with ideas and stay for the long-term
- Many settlement terms are still being worked out; it could be years before money flows, necessitating a marathon approach

Investments to Date



Core Collaborators beyond USFS and Endowment

Alabama Forestry Commission
American Forest Foundation
Ducks Unlimited

Florida Forestry Commission
Knobloch Family Foundation
Louisiana Forestry Commission

Mississippi Forestry Commission
Texas A&M Forest Service
The Trust for Public Land

DELIVERING BENEFITS TO THE PUBLIC:

Sustainable Forestry and African American Land Retention

In our pluralistic society, forest owners of color must help shape the future of forest programs and policies.

- African American families once owned as much as 19 million acres of land across the South. Today, estimates total about 3 million acres.
- Those lands—valued at approximately \$14 billion—could provide a critical economic foundation for African American families, which have, on average, only 5% of the assets of the average white family.
- Many African American landowners hold their land without clear title and thus are largely unable to access assistance programs or leverage their assets for family needs.

In a June 2013 Google Hangout, Agriculture Secretary Tom Vilsack highlighted the Sustainable Forestry and African American Land Retention Program as an exemplary partnership. The program began with four pilot projects—two in Alabama and one each in North Carolina and South Carolina—to secure land tenure, introduce landowners to new forestry technologies and assistance, test replicable systems of outreach and support, and connect forest owners to traditional and emerging forest products markets.

When South Carolina landowner Vander Green learned about the benefits and potential of sustainable forestry, he literally took down the For Sale sign on his property and became an active forestland owner and manager.

Key Results

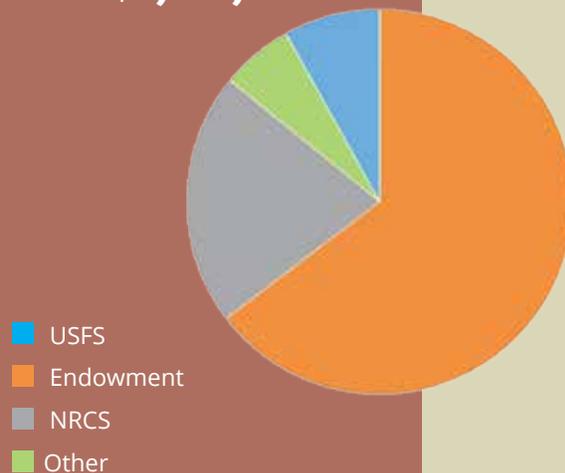
- Connected African American landowners to USDA programs
- > \$1M in EQIP funds in 18 months
- 160 forest management plans
- Supported land tenure for African American forestland owners
- 118 wills and estate plans
- 26 family agreements to resolve tenure issues
- Supported forest productivity
- 112 site prep and thinning operations underway
- Encouraged conservation
- 14 easements in progress

Primary Lessons

- Collaboration between high-functioning community organizations and USDA agencies can improve forest management on African Americans' land
- African American forestland owners become receptive to forest improvement once trust is established and support is provided
- Adaptive management of program implementation increases trust and success

Investments to Date

\$5,520,000



Core Collaborators beyond USFS and Endowment

Alabama Forestry Commission
Center for Heirs Property Preservation
Federation of Southern Cooperatives
Limited Resource Landowner
Education Assistance Network

Mary Reynolds Babcock Foundation
Natural Resources Conservation
Service
North Carolina Forest Service
South Carolina Forestry Commission

Sustainable Forestry Initiative
The Conservation Fund
Roanoke Center/Roanoke Electric
Cooperative
USDA Farm Services Administration

DELIVERING BENEFITS TO THE PUBLIC:

Wood-to-Energy Joint Ventures I and II

Community-scale uses of low-value wood as a renewable, domestic energy strengthen communities, conserve forests, and reduce wildfires.

- Small businesses in rural communities can have outsized benefits. A wood-to-energy facility in a rural county of 16,000 residents that creates 75 direct and indirect jobs is the equivalent of creating 30,000 new jobs in a city the size of Atlanta.
- Innovation in wood-to-energy could provide economic outlets for low-value and forest restoration residuals—material that is currently piled and burned at taxpayers’ expense.
- Public and philanthropic funds pale in comparison with private capital. To see rapid growth in this space, we must find ways to attract private investors.

The first wood-to-energy joint venture between the USFS and the Endowment was designed to take promising technologies from the lab to commercialization. Though we don’t have any home runs, we have made progress in hard-to-operate places. In California, our partner, Ortigalita Power Company, has the only wood-to-energy facilities that have won the right to sell to the grid. In Washington State, Greenwood Global Energy has developed a next-generation whole-house wood heat appliance that meets all *proposed* EPA air quality regulations.

This work is also where we’ve also experienced our biggest setback to date. Our planned community-scale wood-to-energy facility, in which we invested four years of effort and over \$8 million, will not move forward. We’ve learned valuable lessons and recouped much of the investment—including 100% of USFS partner dollars.

Key Results

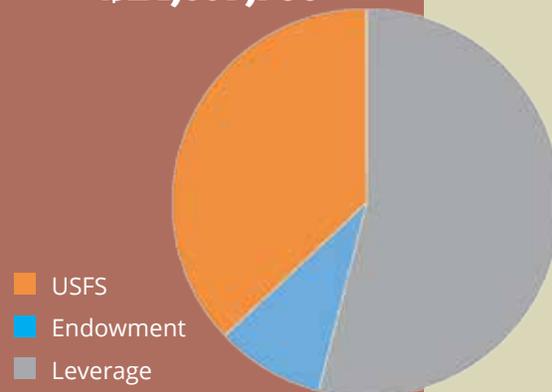
- Advanced densification technology for torrefied wood
- Supported wood-to-liquid gas tech
- Yielded biochar as a byproduct to small wood-to-electricity plant
- Launched state-based process to turn renewable energy credits into up-front capital (NH)
- Aborted promising community-scale project designed to reinvest in a minority community (GA)
- Helped refine thinking about next steps to advance solutions

Primary Lessons

- Though promising and important, one-off project investments—school conversions, small start-ups—aren’t likely to yield markets at regional scale
- Attracting private capital requires significant funding and systemization of planning and equipment
- Nontraditional vehicles—low-interest loans, loan guarantees, equity investments—offer tools to extend reach and impact

Investments to Date

\$24,697,700



Core Collaborators beyond USFS and Endowment

G4 Insights
Greenwood Global Energy

HM3 Energy
North Star Jefferson

Oregon Department of Energy
Ortigalita Energy

SHARING KNOWLEDGE GLOBALLY: Wood-to-Energy in a Modern World (Joint Ventures I and II, continued)

Keeping forests as forests and keeping them healthy requires economically viable tools for dealing with small-diameter, dead, and dying trees.

- Using wood to generate locally sourced, renewable energy, though controversial in some circles, is more important than ever to the health and vitality of the nation's public and private forests.
- The magnitude of the need—more than 80 million acres of USFS lands alone await restoration treatment—cannot be addressed without markets for that wood.
- Developing sound information on which to make policy and business planning decisions is essential.

Jim Hubbard, Deputy Chief, State & Private Forestry, is a master at pulling together people from wide-ranging interests to probe the depths of a problem and find new courses of action. Two events he hosted at USFS Headquarters helped identify pathways to address challenges for markets to advance forest restoration on both public and private lands. Reports from those sessions and nearly a dozen other targeted projects with industry, nonprofits, and leaders on both sides of the Canadian-U.S. border have helped focus our work. Among on-going projects is the first-ever attempt to develop standards for commercial wood-to-energy boilers.

Key Results

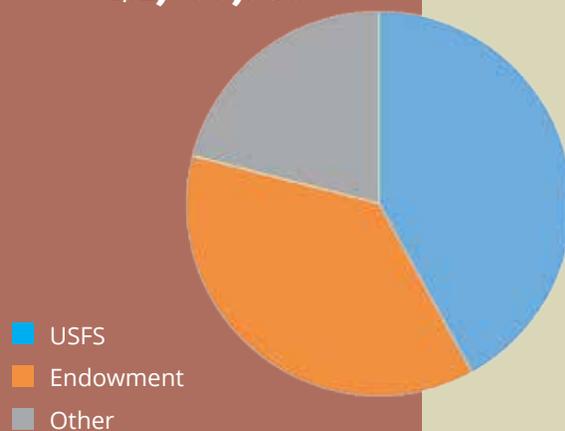
- "Woody Biomass: Report from a Session to Consider Near-Term Investment Opportunities" (2 reports, February and June 2010)
- "Wood-to-Energy Across the Northern Tier and Beyond: Barriers and Solutions" (January 2012)
- "European Power from U.S. Forests: How Evolving EU Policy is Shaping the Transatlantic Trade in Wood Biomass" (July 2012)
- "Applying Pathways to Sustainability" (November 2012)
- "The State of Information Databases Tracking Wood-to-Energy Facilities" (February 2013)
- www.Wood2Energy.org is the "go to" information source on wood-to-energy facilities

Primary Lessons

- National and global controversy over uses of wood for energy should not derail development of economic outlets to support forest health, restoration, and jobs in rural communities
- Collaboration across a range of interests—federal and state agencies, industry, academia, nonprofits, and local communities—is critical to success

Investments to Date

\$1,600,850



Core Collaborators beyond USFS and Endowment

American Forest & Paper Assn.
Biomass Energy Resource Center
Biomass Power Association
Biomass Thermal Energy Council

Canadian Forest Service
Environmental Defense Fund
Forest Products Assn. of Canada
National Assn. of State Foresters

North Carolina State University
Pellet Fuels Institute
University of Tennessee
West Penn Power Sust. Energy Fund

SHARING KNOWLEDGE GLOBALLY: Canada-U.S. Forest Health Summits I, II and III

*"The borders that separate the United States and Canada don't segregate threats to our natural resources."
—USDA Secretary Tom Vilsack*

Our two countries share common environmental concerns and must collaborate and address current and future land management challenges as partners. Scientist-to-scientist collaboration has been on-going for decades. The purpose of the summits is to enhance and deepen strategic public-private collaboration to address forest health threats at a time of increasingly limited human and financial resources. Strategic cross-border collaboration can reduce duplication of effort while more rapidly developing and deploying solutions.

The goal of the first meeting, held in Washington, D.C., in June 2012, was to explore and develop a cooperative vision and plan for science and research actions to address forest health. The two countries' federal forest agencies committed to working collaboratively above the project level and take

a shared, holistic approach to forest health threats. Participants agreed on the necessity of a systems approach for reducing duplication and capitalizing on their respective capabilities, skills, and talents to segment problems, speed learning, and achieve results.

Joe Oliver, then Canada's Minister of Natural Resources, said, "This summit is an important first step toward the creation of a Canada-U.S. forest science agenda. By identifying issues on which we can work together, we aim to maximize the value of the critical work that scientists and researchers are doing on both sides of the border to ensure the health of our forests and forest sectors."

In March 2013, a follow-up was held in Ottawa. Attendees included nearly 50 senior forestry officials from the public and private sectors in both countries. The third summit was held in DC in late June 2015.

Key Results

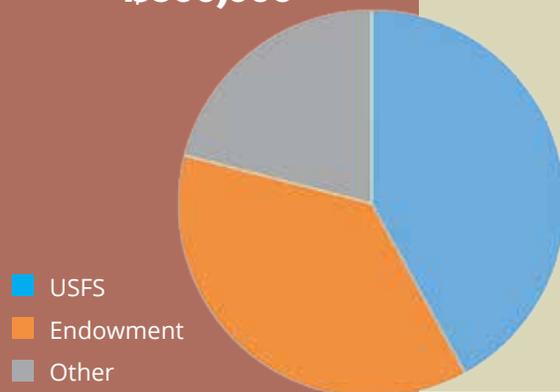
- Summit I led to shared vision and commitment to action
- Summit II resulted in specific work agendas with initial focus on forest health and research responses for specific projects
- Summit III (planned for 2015) will focus on growing markets to improve forest health and community vibrancy

Primary Lessons

- Scientists and resources professionals will collaborate with or without formal support
- Strategic collaboration requires investment of time and energy more than funds
- Support "from the top" sanctions and strengthens informal cooperation and sharing

Investments to Date

\$500,000



Core Collaborators beyond USFS and Endowment

Canadian Forest Service

SHARING KNOWLEDGE GLOBALLY: State and Future of U.S. Forestry and the Forest Industry

Since 1990, 40% of America's pulp and paper mills have closed, more than 30% of sawmills have shuttered, and 500,000 sector jobs have vanished. A bright future must be rooted in R&D and new products.

- Rapid change in the forest sector over the past two decades has made it difficult for practitioners, policymakers, researchers, and educators to plan for the future.
- Leaders from industry, government, and conservation were convened by USFS and the Endowment to seek ways to build a brighter future. The 100-plus participants discussed ecosystem services, regulation, cellulosic nanotechnology, invasive species, and competition from nonforest products.
- They then prioritized the issues and formulated recommendations that address markets, land tenure and ownership, the supply chain, the ecological health of federal lands, and forest policy.

In **American Canopy** (2012), Eric Rutkow writes that perhaps no country has been defined by its forests more than the United States. Since the mid-1980s, the formerly stable forest products industry has seen divestiture of nearly 70 million acres of land, slashing of once-robust R&D agendas, increasing foreign competition, and emergence of substitute products. Newsprint production is down more than 60% globally and printing and writing paper is off just shy of 40%. Steel and cement have taken market share in building products.

Yet with planning, investment, and a new vision, the 21st century could indeed be the sector's brightest as it produces green products for a carbon-constrained world.

Key Results

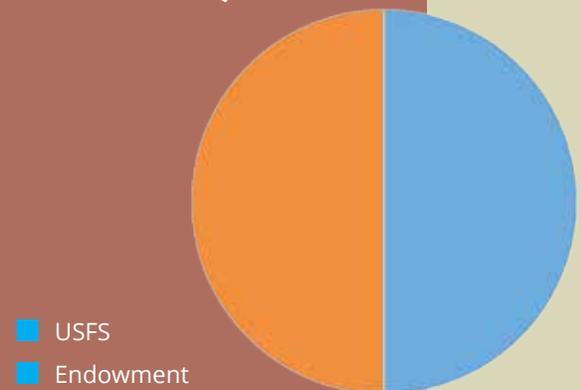
- Produced "A New Model for Forest Sector Research & Development in the U.S.," documenting declines in R&D investment
- Urged action on a wood-to-energy check-off to align interests and support with softwood lumber and paper programs
- Supported "A Forest Carbon Future" report
- Supported "Take Root," an emerging movement to identify common messages for cross-segment forest sector collaboration

Primary Lessons

- Today's forest products industry is increasingly fragmented along product lines, making cross-segment collaboration difficult
- Most segments of industry are focused on near-term policy, regulatory, and market issues, confounding long-term planning
- USFS, Endowment, and others must seek ways to forge alignment and futuristic thinking and investment

Investments to Date

\$300,000



Core Collaborators beyond USFS and Endowment

Resources for the Future Society of American Foresters



Looking Forward

By mid-year 2015, \$13 million in USFS funding and \$25 million from the Endowment had been leveraged to amass \$105 million to advance and transfer knowledge, sustain and conserve forests, and deliver economic and environmental forest benefits. The Endowment's nimbleness in identifying and funding promising forest projects allowed the USFS to mark significant progress toward several of its core goals.

In January 2014 the Endowment and USFS signed a memorandum of understanding that affirmed the importance of the partnership. The MOU "document[s] the cooperation between the parties to accomplish common goals and interest in the delivery of sustainable forest management practices that will also help[ing] sustain communities." USFS and the Endowment "share the common objectives of long-term, sustainable, healthy and productive forests and sustaining communities in and around those forests."

The parties agreed on the following approaches to future projects:

- Utilization of resources from both organizations for practices that promote more sustainable, healthy, and productive forests.
- Coordination on activities to protect and improve management of forested watersheds.
- Coordination on activities that involve wood-to-energy; traditional wood and paper products; wood-based nanotechnology; green building construction; nontraditional forest products such as ecosystem services; forest pests; biotechnologies; forest community-based investments and programs for minority landowners; cross-border initiatives that affect the U.S. and North American forest products industry; and sharing of information, best practices and models to restore forests; create jobs and revitalize local economies.
- Utilization by each organization of its respective authorities in a collaborative manner.

About the Endowment

The U.S. Endowment for Forestry and Communities is a not-for-profit public charity with two purposes: educational and charitable causes in timber-reliant communities, and educational and public interest projects addressing forest management issues that affect the full range of forest values. In short: keeping working forests as forests and advancing family-wage jobs in rural forest communities.

The Endowment was established in 2006 as part of the terms of the Softwood Lumber Agreement between Canada and the United States and funds initiatives from its perpetual endowment of \$200 million. In less than a decade it has become a significant force for systemic, transformative, and sustainable change in the nation's working forests and the rural communities nested within them.

Mission: To work collaboratively with partners in the public and private sectors to advance systemic, transformative, and sustainable change for the health and vitality of the nation's working forests and forest-reliant communities.

Vision: America's forests are sustainably managed to meet broad societal objectives such as marketable products, clean waters, wildlife habitats and other ecological services, while ensuring healthy and vibrant forest-reliant communities.

The Endowment's efforts, beyond those based on partnering with the USFS, include the following:

- Exploratory work and cofunding that led to the creation of the Softwood Lumber Board and the Paper and Paper-based Packaging Boards—two USDA research and promotion programs ("commodity check-offs") that are amassing \$15 million and \$25 million each year, respectively, to advance softwood lumber and paper markets.
- A current effort to establish a check-off for hard-wood lumber and plywood.
- A \$6M, five-year investment in three "forest investment zones"—Northern Forest Zone (ME, NH, VT, NY), Central Appalachian Zone (KY, OH, TN, VA, WV), and Dry Forest Zone (eastern CA and OR)—each with ambitious goals to advance forest health, grow markets, and invigorate forest-rich communities. Each investment zone

had strong direct interaction and support from the USFS at local levels.

- Investments with the Southern Loggers Cooperative to advance the first logger-owned system of fuel depots across the South. Each member saves at least 10 cents on each gallon of diesel fuel purchased plus a share of year-end co-op profits.
- An investment with Wisconsin's Menominee Tribe to improve its sawmill efficiency and air quality through replacement of mill boilers.
- Collaboration with the Department of Defense's Readiness and Environmental Protection Integration (REPI) challenge grant program, which allocates \$5 million annually to buffer military bases—most often with working forests.
- A study grant followed by a challenge grant to endow a Chair in Forest Economics and Policy at Resources for the Future.

The USFS played a vital role in setting up the Endowment. In 2007, Ken Arney, Deputy Regional Forester, State & Private Forestry, and Ron Hooper, Director, Acquisition Management, both of the Southern Region, participated in a national workshop to help define our initial programmatic agenda. A year later, when the Endowment was refining the plans, three former USFS Chiefs—Max Peterson, Dale Robertson, and Jack Ward Thomas—assembled to provide further guidance. The early involvement of these individuals and the involvement of hundreds of members of the USFS family helped guide the Endowment's early development. And that advice and direction continues daily ... and we are thankful for it!



To connect with the Endowment team:

Carlton N. Owen, *President & CEO*, carlton@usendowment.org

Peter Stangel, *Senior Vice President*, peter@usendowment.org

Michael Goergen, *Vice President-Innovation*, michael@usendowment.org

Alan McGregor, *Vice President-Communities*, alan@usendowment.org

Signe Cann, *Chief Financial Officer*, signe@usendowment.org

Cameron Tommey, *Director, Legal & Program Compliance*, cameron@usendowment.org

Florence Colby, *Manager, Organizational Support*, florence@usendowment.org

Headquarters

908 East North Street

Greenville, SC 29601

864-233-7646

www.usendowment.org

