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Socioeconomic Assessment of Forest Service American Recovery and Reinvestment Act Projects: Key Findings and Lessons Learned

Susan Charnley, Pamela Jakes, and John Schelhas

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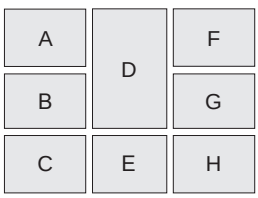

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Abstract

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The American Recovery and Reinvestment Act of 2009 (the Recovery Act) aimed to create jobs and promote economic growth while addressing the Nation's social and environmental needs. The USDA Forest Service received $1.15 billion in economic recovery funding. This report contains key findings and lessons learned from a socioeconomic assessment of Forest Service Recovery Act projects. The assessment examines how Forest Service economic recovery projects at eight case-study locations around the United States are contributing to socioeconomic well-being in rural counties affected by the economic recession of 2007–2009. It also investigates how Forest Service mission-related work can be accomplished in a manner that creates local community development opportunities. This report is a companion to general technical report PNW-GTR-831, which contains the full case-study reports. We find that Forest Service projects were successful in meeting several goals of the act. Recovery Act projects also illustrate how Forest Service investments in creating local economic opportunity can have far-reaching social and economic benefits for communities, as well as positive outcomes for the agency in meeting its goals.

Keywords: American Recovery and Reinvestment Act, national forests, rural communities, economic development, socioeconomic assessment.

Contents

Introduction

This report contains key findings and lessons learned from a socioeconomic assessment of Forest Service American Recovery and Reinvestment Act (hereafter Recovery Act) projects. It examines the contributions of these projects to the well-being of people residing in rural counties affected by the economic recession that began in the United States in 2007 and was declared over in 2009. The assessment is important for several reasons. People have been eager to know whether and to what degree the Obama administration's economic stimulus package has been effective. Although this study does not address this broad topic, it does provide insight into some of the ways the stimulus package has helped people affected by the recession. Federal agencies have been tracking the number of jobs created and retained with stimulus funding as one measure of the Recovery Act's success. But alone, the number of jobs created or retained tells a limited story. This socioeconomic assessment looks at a much wider array of social and economic benefits associated with Recovery Act jobs as a way of evaluating its contributions in communities affected by the recession.

The Recovery Act directed the Forest Service to make local community benefit a priority in implementing project work. Project decisions—including what projects to fund, where and how the benefits would be distributed, and to whom—were strongly influenced by consideration of local economic conditions and the priority placed on alleviating economic distress. This direction has created an opportunity to examine how successful the Forest Service has been in creating socioeconomic benefits for local communities while carrying out mission-related work, and what lessons might be learned about how to increase local community benefits associated with project work in the future, once recovery funds are spent. Doing so is consistent with the Secretary of Agriculture's vision for forestry:

> "Forests help generate rural wealth through recreation and tourism, through the creation of green jobs, and through the production of wood products and energy….We must work towards a shared vision—a vision that conserves our forests and the vital resources important to our survival while wisely respecting the need for a forest economy that creates jobs and vibrant rural communities" (Vilsack 2009).

findings and lessons reported here are based on research that occurred in eight case-study locations around the country (fig. 1) by a team of 11 Forest Service and university social scientists. This research focused on early projects, most of which had not been completed at the time that field work was done. The full case-study reports are available in Charnley et al. (2011). This report summarizes 10 key findings from the case studies, drawing on examples from these early cases to illustrate the findings (table 1). It also offers lessons learned for better linking Forest Service mission-related work to rural community development opportunities in the future. Because the projects were ongoing at the time of the study, the findings are based on short-term project outcomes, as well as anticipated outcomes. Documenting longer term and broader societal impacts, while likely to be significant, is beyond the scope of this research effort.

Background

The American Recovery and Reinvestment Act, passed by Congress in February 2009, made $787 billion in federal funding available to provide a stimulus to the American economy, which was suffering from a recession that began in 2007. The act had five goals:

- Preserve and create jobs and promote economic recovery.
- Assist those most affected by the recession.
- Increase economic efficiency by spurring technological advances in science and health.
- Invest in transportation, environmental protection, and other infrastructure that will provide long-term economic benefits.

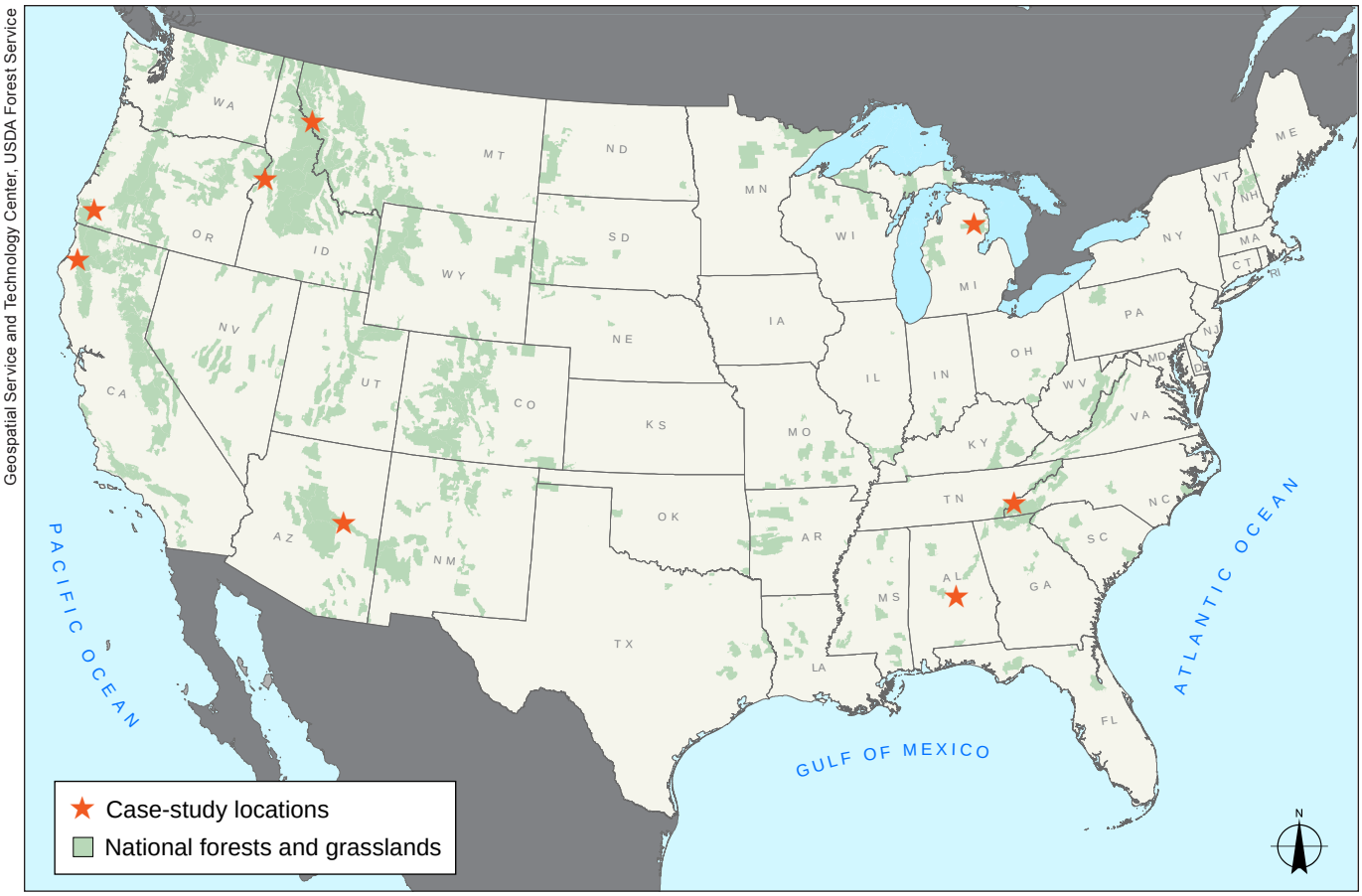

Figure 1—Location of Forest Service American Recovery and Reinvestment Act case studies where the socioeconomic assessment was conducted.

- Stabilize state and local government budgets in order to minimize reductions in essential services and counterproductive state and local tax increases.

Recovery Act funds were distributed in three categories: tax benefits, entitlements, and contracts-grants-loans. The U.S. Department of Agriculture received about $28 billion ($28,025,940,000) in Recovery Act money, of which the U.S. Forest Service received $1.15 billion, or 4 percent (fig. 2). For an agency whose annual budget has averaged around $5 billion in recent years (http://www.fs.fed.us/aboutus/budget/), this was a significant infusion of funds. To create an economic stimulus, the Forest Service identified projects around the country on the national forests and grasslands; on state, private, and tribal lands; and in communities to be supported with recovery funds. To promote rapid job creation, the deadline for obligating money for these projects was September 30, 2010; the deadline for spending all of the money and completing the projects is September 30, 2015. The range of Forest Service economic recovery funding by state is shown in figure 3.

The agency's top priority in choosing projects for funding was to help people most affected by the recent economic recession by creating jobs in economically distressed counties. On the basis of four employment indicators, every county in the United States was assigned an economic distress ranking on a scale of 1 to 10, with 10 indicating the most distress (USDA FS 2009a). Projects were targeted to those counties with the highest economic distress rankings, as well as the greatest risk of fire, insect outbreaks, and disease in forests within their boundaries. In line with Forest Service goals, selected projects were designed to retain

Table 1—Ten key findings from the socioeconomic assessment of Forest Service American Recovery and Reinvestment Act projects

Number	Key finding	Description
1	Local context matters	Projects that were aligned with community needs and community capacity were more likely to create local community benefits.
2	Short-term and seasonal jobs make a difference	Many Recovery Act jobs were short term or seasonal in nature, but were more than just a bridge or life raft to help people get through hard times; the jobs had greater social and economic benefits.
3	More jobs are created and retained than are counted	The jobs impacts of Forest Service Recovery Act projects are greater than the numbers reported.
4	Project benefits are felt in target counties and beyond	Some funding recipients were based in the counties where their projects were located, others were not; in either case, target counties benefitted.
5	Individual employees make a difference	Forest Service employees developed a number of strategies for increasing the socioeconomic benefits of Recovery Act projects to local communities.
6	The Forest Service builds on old partnerships and develops new ones	Relationship building between the Forest Service and project recipients and stakeholders has been an important outcome of the Recovery Act.
7	High funding levels create opportunities for larger and more strategic projects	Economic recovery funds made it possible to accomplish work of a type and at a scale that would not have happened otherwise, with important social and environmental benefits.
8	Tradeoffs are inevitable	The way in which Recovery Act projects were developed, administered, and implemented sometimes required making tradeoffs between maximizing local community benefits and meeting other agency objectives and requirements.
9	Expect the unexpected	Recovery Act projects had unintended and unexpected consequences for the Forest Service, with implications for local communities and the agency—some positive, some negative.
10	Projects meet Recovery Act goals, create community benefits, and help the Forest Service	Forest Service economic recovery projects helped meet the goals of the Recovery Act and demonstrated that Forest Service investments in rural wealth creation can have far-reaching social and economic benefits for communities, as well as positive outcomes for the agency in meeting its goals.

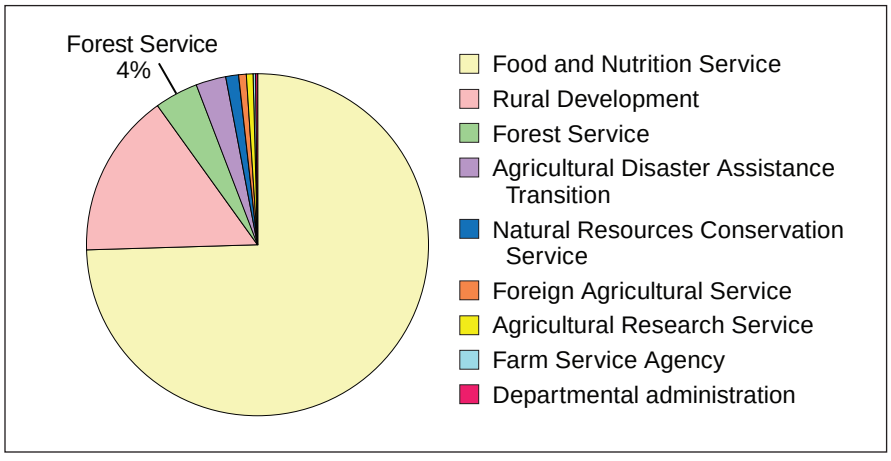

Figure 2—American Recovery and Reinvestment Act funding, U.S. Department of Agriculture, by agency. Total = $28,025,940,000 (USDA 2011).

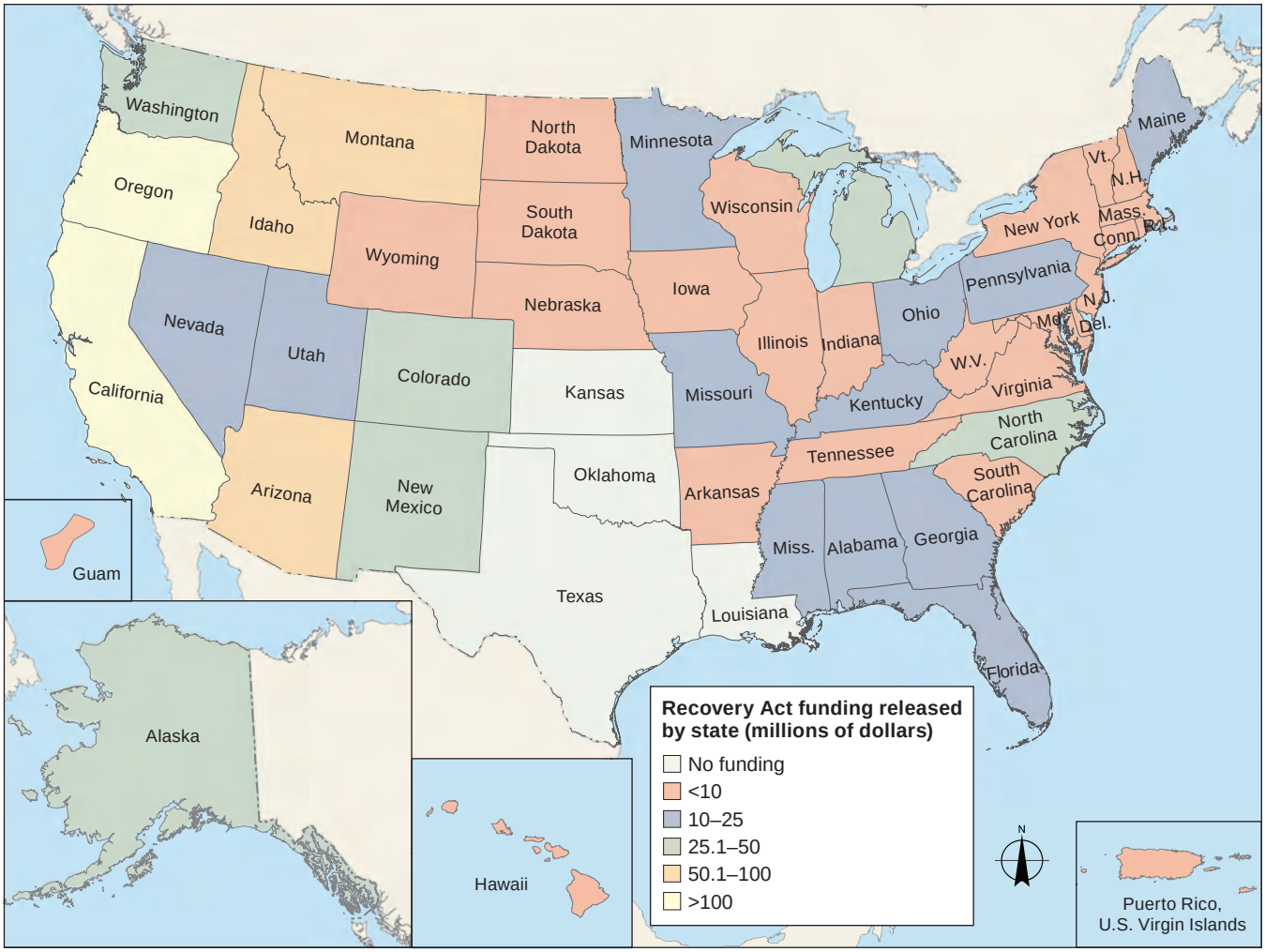

Figure 3—Forest Service American Recovery and Reinvestment Act funding amounts released by state, as of September 2009. Source: U.S. Department of Agriculture, Forest Service, Economic Recovery Team. Funding Released to Date: 9/8/09 spreadsheet.

or create jobs in priority locations and meet as many of the following criteria as possible: (1) help sustain the health, diversity, and productivity of the Nation's forests and grasslands; (2) invest in wood-to-energy or biomass projects, or other initiatives that will help transform rural and urban economies; (3) contribute to sustainable agency operations; (4) leverage other resources to create more jobs; and (5) be sustainable over the long term (USDA FS 2010).

In total, 705 Forest Service economic recovery projects were approved (USDA FS 2011a). These projects fell into two general categories—wildland fire management (WFM), including fuels reduction and forest health protection; and capital improvement and maintenance (CIM).[1] The act stipulated that half of the $500 million appropriated for WFM projects be spent on federal lands, and half on state and private forest lands. The act also targeted up to $50 million of this total for wood-to-energy grants to promote biomass utilization from federal, state, and private lands. Accordingly, 160 projects have been funded on federal lands, and 138 on state and private lands. Figure 4 shows the amount of WFM funding spent on different project types. The remaining $650 million of Forest Service economic recovery funding was appropriated for CIM projects,

[1] The Department of Agriculture's recovery plans for these funds are available at http://www.recovery.gov/Transparency/agency/reporting/agency_reporting5.aspx?agency_code=12.

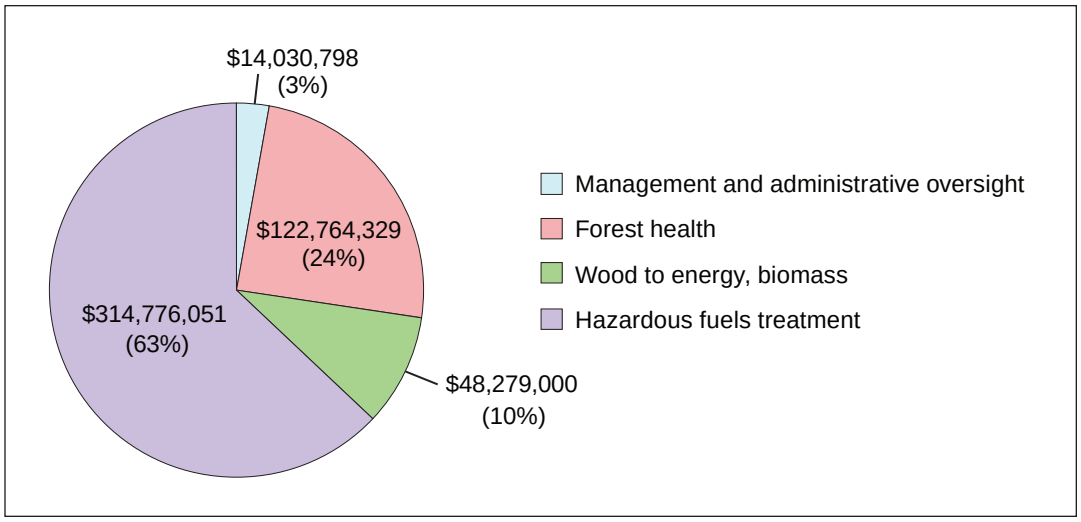

Figure 4—Wildland Fire Management funds allocated, by project type (total = $500 million).
Source: U.S. Department of Agriculture, Forest Service, Performance Accountability System.

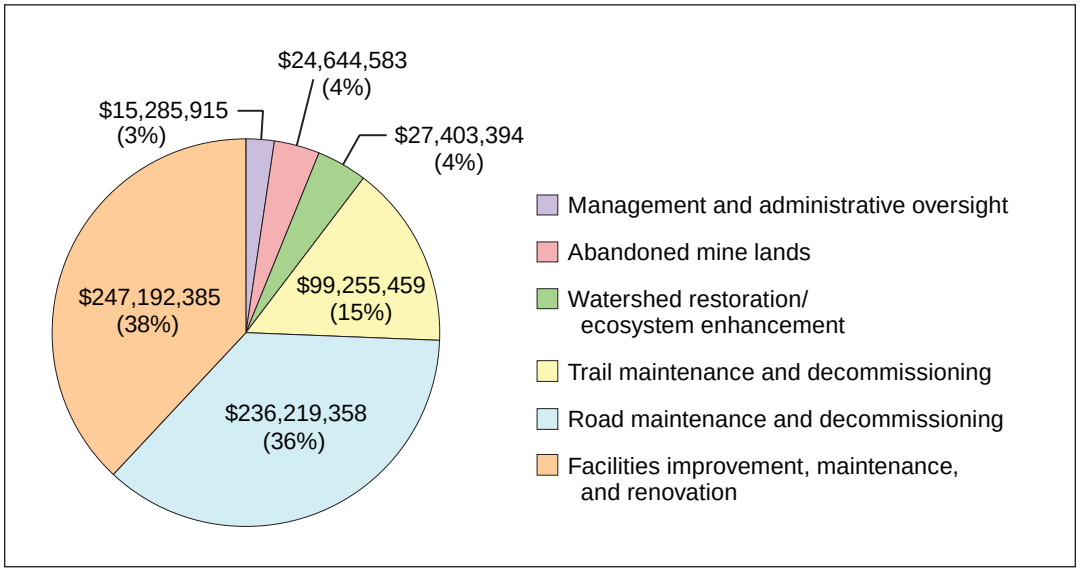

Figure 5—Capital Improvement and Maintenance funds allocated, by project type (total = $650 million).
Source: U.S. Department of Agriculture, Forest Service, Performance Accountability System.

supporting 407 of them. Figure 5 shows CIM spending by project type.

Are these projects making a difference and helping accomplish the goals of the Recovery Act? The Forest Service has been tracking some accomplishment measures associated with WFM and CIM projects. These are displayed in table 2. All of these accomplishments represent investments in environmental protection and infrastructure that will potentially provide long-term social and economic benefits while supporting jobs in the short term. The only community socioeconomic measure of success tracked by the Forest Service (and other federal agencies that received economic recovery money) is the number of full-time equivalent (FTE) jobs (created or retained) paid for with economic recovery funds. These jobs are reported quarterly by funding recipients. For example, between October and December 2010, Forest Service recovery money funded 6,172 FTEs. Figure 6 shows the number of FTEs the

Table 2—Forest Service American Recovery and Reinvestment Act project accomplishments as of January 2011

Performance measure	Accomplishment	
	Reported (12/31/2009)	Reported (1/31/2011)
Capital improvement and maintenance:		
Road maintenance (miles)	4,285	14,861
Road decommissioning (miles)	0	460
Abandoned mine remediation (sites)	1	30
Trail maintenance (miles)	934	9,101
Related watershed restoration and ecosystem enhancement (acres)	13,652	53,279
Expected annual energy savings (dollars)	$31,000	$176,730
Expected annual operation and maintenance cost change (dollars)	$0	$1,419,854
Wildland fire management:		
Hazardous fuels reduction, USFS lands (acres)	124,647	510,671
Hazardous fuels reduction, nonfederal lands (projects conducted)	310	847
Forest health protection and ecosystem improvements—invasive species treatments (acres)	18,782	162,367
Biomass utilization (green tons removed)	0	138,882
Forest vegetation established or improved (acres)	0	98,503

Note: By January 31, 2011, 203 of 705 projects had been completed, and Forest Service Recovery Act expenditures totaled $668 million, or 66 percent of the total (Carmical 2011).

Source: USDA FS 2011b.

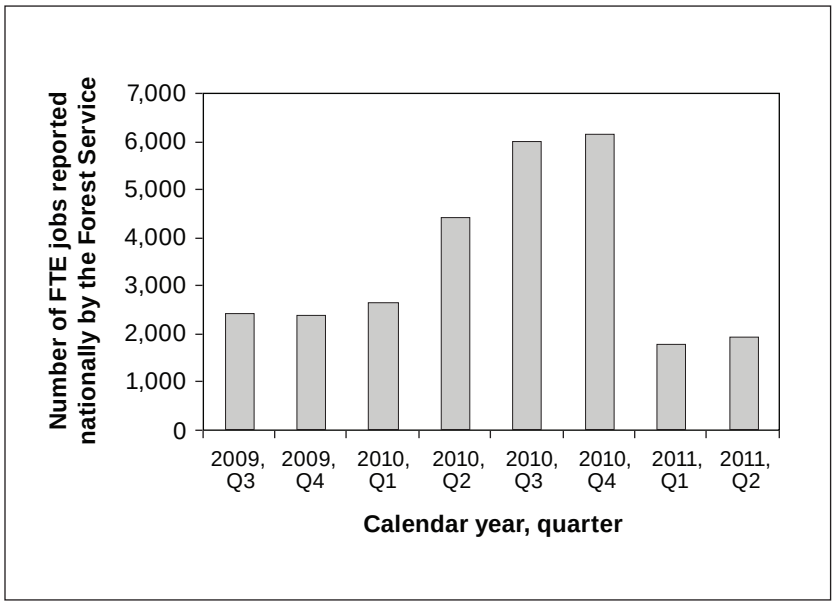

Figure 6—Jobs created with Forest Service economic recovery funds, 2009–2010. Source: Recipient reporting data, Recovery.gov. FTE = Full time equivalent.

agency funded between the time the act was passed and June 2011. In all, 27,773 FTEs were funded during this period. The drop in job numbers during the first two quarters of 2011 is likely due in part to the seasonal nature of much of the work. However, the number of jobs and other performance measures tell only part of the story of how these projects are contributing to socioeconomic well-being in economically distressed counties while meeting other agency objectives.

Recognizing this fact, in late 2009 Forest Service economic recovery executives requested that the agency's Pacific Northwest Research Station lead a socioeconomic assessment of recovery

projects using a case-study approach. Accordingly, in collaboration with researchers from two other research stations and four universities, a purposive sample of case studies of Forest Service Recovery Act projects from around the country were undertaken (Charnley et al. 2011). The goals of this assessment were (1) to develop eight case studies highlighting the contributions of Forest Service economic recovery projects to the social and economic well-being of rural counties experiencing high economic distress, and (2) to explore how to better link agency mission-related work to rural community development opportunities. Case studies were chosen based on several criteria. The cases were located in states with high levels of Forest Service recovery spending, focused on rural areas having a relatively high county economic distress ranking, and were selected to provide broad geographic representation. The cases also included diverse project types and involved different branches of the Forest Service (National Forest System, State and Private Forestry, and Research and Development). Finally, these projects were ones that would produce significant on-the-ground outcomes by summer 2010. Figure 7 shows the projects and their locations in relation to county economic distress ranking.

The research team gathered information about the recovery projects and their impacts between January and August 2010 by conducting interviews and obtaining data from secondary sources. The team interviewed 187 people, including Forest Service employees, funding recipients,

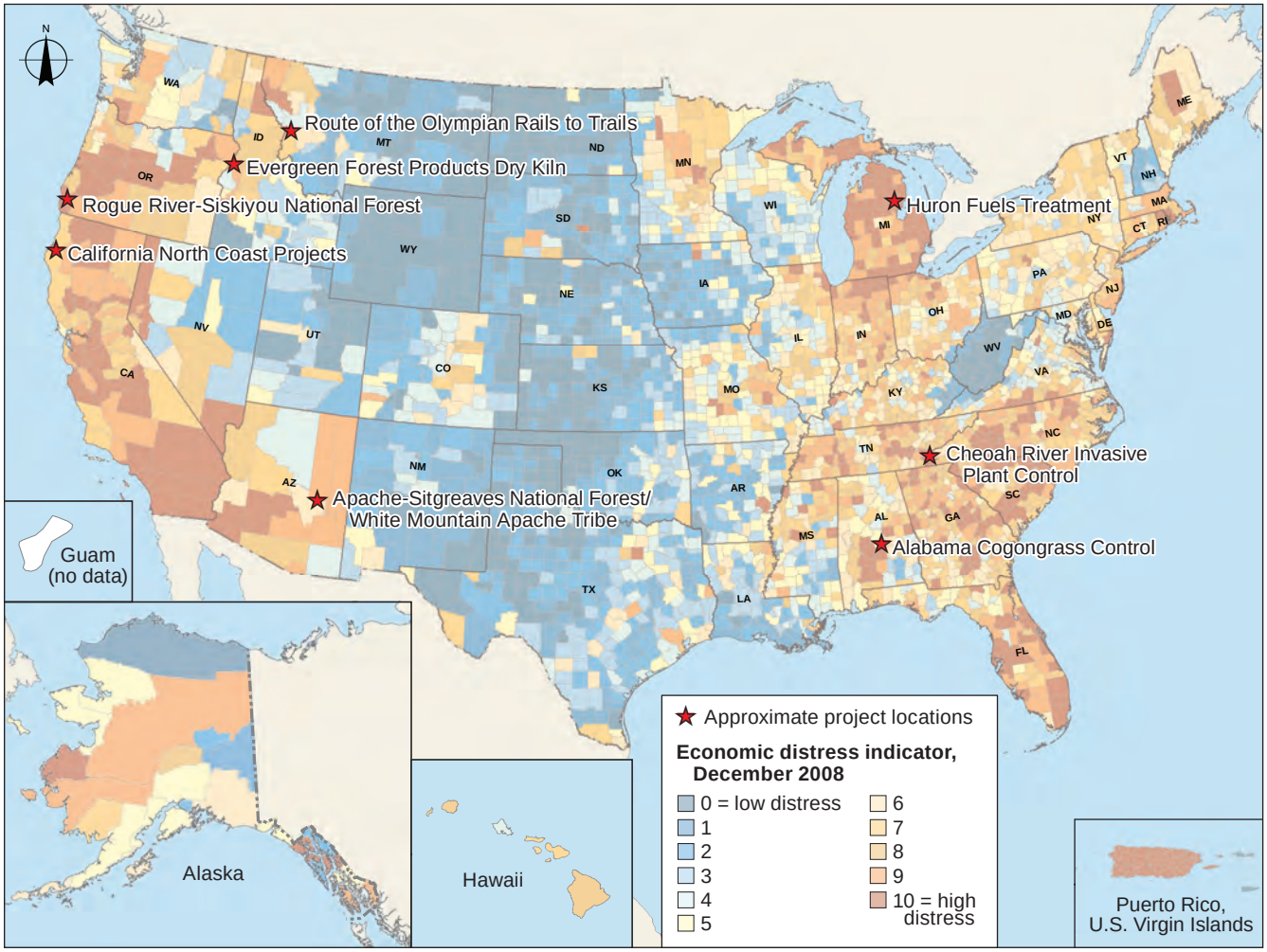

Figure 7—Location of case studies discussed in this report in relation to county economic distress rankings (as of December 2008). Source: Economic distress rankings produced by U.S. Department of Agriculture, Forest Service (See USDA FS 2009a for methodology).

workers employed by the projects, and local leaders. Economic recovery data from Web sites such as Recovery.gov and USAspending.gov, and from Forest Service databases and records, were also collected and analyzed. In addition, the team assessed county-level social and economic data from several sources, including the U.S. Census Bureau and the Bureau of Labor Statistics. The appendix describes research methods in more detail. Table 3 provides summary information about the eight case studies. These cases represent a total of $90.6 million in spending, or about 7.88 percent of the $1.15 billion received by the Forest Service for Recovery Act work.

The research team's 10 key findings, which emerged from its socioeconomic assessment of the eight Forest Service Recovery Act case studies, are described in the next section. Examples from the case studies are used to illustrate them. Lessons learned in association with each of the key findings are also highlighted.

Table 3—Case-study summaries

Case study, funding amount, and case funding as a percentage of total Forest Service recovery funding to state	Location	Project description
Alabama Cogongrass Control Center ($6,281,000; 37.85 percent)	Statewide	Map and monitor cogongrass infestations, carry out cogongrass control and eradication, educate landowners, build long-term capacity for invasive plant control.
Apache-Sitgreaves National Forest and White Mountain Apache Tribe, Arizona ($25,427,000; 47.84 percent)	Apache, Navajo, Greenlee Counties	Conduct postfire rehabilitation on federal and tribal lands, perform fuel reduction and support local wood products industries, improve recreation facilities and roads, construct tribal greenhouse.
California's North Coast ($5,765,444; 2.97 percent)	Humboldt County	Remove roadside brush and maintain forest trails, conduct invasive plant assessment, refurbish biomass powerplant, construct a pole and post mill, construct an addition to a research lab.
Evergreen Forest Products Dry Kiln and Restacker, Idaho ($2,500,000; 2.51 percent)	Adams County	Build dry kilns and wood restacker at sawmill site to increase efficiency and production and keep mill from closing.
Huron Fuels Treatment Project, Michigan ($3,800,000; 9.64 percent)	Alcona, Crawford, Losco, Oscoda Counties	Construct new fuel breaks, maintain existing fuel breaks, reduce fuels in the wildland-urban interface, improve health of federal forest land.
Route of the Olympian Rails to Trails, Montana ($1,064,742; 1.5 percent)	Mineral County	Perform trestle and tunnel repairs and restoration of abandoned railroad grades to open a 30-mile recreational trail and encourage recreation and tourism development.
Cheoah River Nonnative Invasive Plant Control, North Carolina ($332,911; 1.31 percent)	Graham County	Nonnative invasive plant control to protect federally listed threatened and endangered species.
Rogue River-Siskiyou National Forest, Oregon ($45,457,000; 25.67 percent)	Coos, Curry, Jackson, Josephine Counties	Conduct fuels reduction, promote community wildfire protection, restore habitat, maintain roads and trails, clean up copper mine, invest in communities.

Key Finding 1: Local Context Matters

Projects that were aligned with community needs and community capacity were more likely to create local community benefits.

Research tells us that regardless of how well a policy is crafted or how thoroughly policymakers think through its potential impacts, the local social context (social, cultural, and economic resources and conditions) significantly affects implementation of the policy (McLaughlin 1987). In our case studies, we found that Recovery Act projects were perceived to be more effective in terms of creating local community benefits, and more sustainable over the long term, when they aligned what was needed with what was possible by building on existing community needs and collaborative efforts, undertaking projects well suited to the local social context, and making the most of local resources. Community capacity is the term used to describe the local resources that are mixed and matched within a community to solve problems or improve and maintain community well-being (Beckley et al. 2008, Chaskin 2001). Community capacity is developed over time and includes resources such as physical infrastructure, social networks, collaborative relationships, social norms, local history, and culture. When projects built on existing community capacity, Forest Service employees were able to effectively develop and implement projects that were good fits for local communities. An awareness of local conditions and community goals was commonly observed in Forest Service employees who had a community development orientation or had spent considerable time in the community. Recovery Act case studies conducted in Arizona and Idaho illustrate the importance of aligning projects with community needs and community capacity in facilitating project implementation and realizing benefits.

Apache-Sitgreaves National Forest and White Mountain Apache Tribe, Arizona[2]

Forest Service Recovery Act projects on the Apache-Sitgreaves National Forest (ASNF) and the Fort Apache Indian Reservation drew on community capacity developed over the previous 15 years and addressed community needs and priorities by funding projects promoting rural economic development and forest restoration and rehabilitation in Arizona's White Mountain region. The White Mountain Stewardship Contract (WMSC) was one of these projects, initiated in 2004 in response to the need for fuels reduction on federal forest land made apparent by the 468,000-acre Rodeo-Chediski Fire of 2002, which was the biggest fire in Arizona history until the Wallow Fire of 2011, which consumed 538,000 acres.[3] The WMSC is the foundation of a local strategy to accomplish affordable fuels reduction and forest restoration while supporting development of a diversified wood products industry capable of utilizing small-diameter trees characteristic of the area. This industry includes wood pellet, biomass energy, pallet, lumber, furniture, molding, fertilizer, and animal bedding businesses. Drawing on community capacity that developed by implementing the WMSC, and knowledge of community priorities and local economic conditions, Forest Service employees obtained Recovery Act funding for a set of projects that complemented work being done under the WMSC to reduce fuels and restore ecosystems, support small-diameter wood products industries, and improve community economic status. Many of these projects were implemented as task orders under the existing WMSC and through its collaborative framework.

The White Mountain Apache Tribe also benefited from recovery dollars targeted to forest restoration and rehabilitation associated with the Rodeo-Chediski Fire. The White Mountain Apache Tribe's Fort Apache Reservation (fig. 8) bore the brunt of the Rodeo-Chediski Fire.

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[2] The information in this section is from Burns et al. 2011. For additional discussion of this case study, see Key Findings 7 and 9.

[3] The research for this report in Arizona's White Mountain region was conducted prior to the Wallow Fire of June 2011.

Susan Charnley

Figure 8—Fort Apache Indian Reservation, White Mountain Apache Tribe, Arizona.

Timber and recreation and tourism were the economic mainstays of the tribe, and this fire burned a significant portion of the timber on the reservation. In addition, two tribal mills have closed. An economic recovery grant to the tribe has funded a number of postfire forest rehabilitation projects on reservation lands, including hazard tree removal, reseeding, erosion control, fence building, and cultural resource protection. The tribe completed burned-area emergency rehabilitation efforts in 2005, and thus was well-positioned to plan for and undertake these recovery projects (fig. 9). For the past few years, the tribe has also worked with the ASNF to develop an agreement under the Tribal Forest Protection Act, which allows tribes to propose and carry out fuels mitigation work on neighboring national forest land. The Fort Apache Reservation borders the ASNF. The Recovery Act funded this agreement, creating jobs for tribe members to conduct hand thinning to reduce fuels and prepare sites for ecosystem restoration on the ASNF. These Recovery Act projects are providing job training and employment benefits to tribe members during the economic recession, when unemployment on the reservation has hovered around 50 percent. At the same time they are contributing to forest restoration and rehabilitation on both national forest and tribal lands greatly affected by the Rodeo-Chediski Fire.

Recreation and tourism are major sectors in Arizona's state and local economies, and were another area of investment on the ASNF using economic recovery funds. Many of the ASNF campgrounds are important socially and economically in local communities because merchants rely on associated recreation and tourism income for their livelihoods. Maintaining access to the forest's recreation facilities by keeping roads that connect local communities and campgrounds in good condition is also a local priority, because these serve as important economic pathways through the region. The ASNF staff had completed planning and design for several recreation facilities and road improvements on the forest (fig. 10), projects necessary for

A. McCabe

Figure 9—Members of the White Mountain Apache Tribe benefited from forest restoration jobs on the Apache-Sitgreaves National Forest.

James Dietrich

Figure 10—With American Recovery and Reinvestment Act funds, the Apache-Sitgreaves National Forest was able to upgrade recreational facilities, such as the bathroom facilities at Big Lake, helping to provide positive recreation experiences to visitors.

upgrading infrastructure dating from the 1960s and 1970s, but lacked funding to proceed. When Recovery Act funds were made available for these recreation projects, the ASNF staff moved quickly to allocate them. Indefinite delivery/indefinite quantity (IDIQ) contracts are used on many national forests to support ongoing work with contractors to achieve management objectives on federal land. Because contractor capacity to complete the work was available locally, and IDIQs were already in place, the forest was able to undertake the work necessary to maintain this critical infrastructure quickly. As a result, local contractors—two of whom were on the verge of bankruptcy—obtained jobs, and local tourism-dependent communities began to obtain long-term economic benefits from infrastructure improvements that should increase visitation to the region and enhance the visitor experience.

Evergreen Forest Products Dry Kiln and Restacker, Idaho[4]

In southwestern Idaho, a set of regional players including county commissioners, nongovernmental organizations, local business owners, contractors, investors, and Forest Service State and Private Forestry staff were able to use Recovery Act funds to preserve and improve infrastructure critical to regional economic development and Forest Service efforts to restore local ecosystems. They did so in a manner that built on the region's historic roots in the forest products industry, the keystone industry in the area until the early 1990s.

When the forest products industry began leaving southwestern Idaho in the late 20th century, stakeholders organized to encourage reestablishment of the industry. Groups including the Idaho Economic Development Association, Intermountain Roundwood Association, and Sustainable Northwest sought new industry that would utilize second-growth forests and encourage active management of all forest lands. This focus on rural economic development was aligned with a local culture that recognized natural resources (forests and rangelands) as the traditional source of livelihood. In 2007, commissioners in Adams, Boise, Gem, and Valley Counties brought together various interests to form the Woody Biomass Utilization Partnership. This group was tasked with identifying biomass sources and developing uses for this material that could help keep citizens fully employed in well-paying jobs, and retain youth in rural communities (Idaho Smallwood Partners 2010). One of the group's priorities was retaining Evergreen Forest Products, the one remaining sawmill in Adams County, Idaho.

Evergreen Forest Products is an essential component of the region's forest products economy, linking forest owners, managers, and industry operators in a mutually dependent economic web (fig. 11). Public and private forest owners sold their raw material to Evergreen, where it was turned into rough-cut green lumber. Mill waste was used in an onsite cogeneration plant to produce electricity that was sold to Idaho Power. Income from the sale of electricity helped support the mill during poor lumber markets. The mill's rough-cut green lumber was hauled more than 100 miles north to Clearwater Forest Industries, where it was planed, dried, and prepared for shipping to local lumber retailers. Truckers in western Idaho circulated between logging sites, Evergreen Forest Products, Clearwater Forest Industries, paper mills, and retailers, hauling raw material and finished products throughout the region. However, it was obvious to the owners of Evergreen Forest Products that they needed to become more economically efficient to remain competitive and survive, and their answer was to build three dry kilns and a restacker at the mill. These improvements would make it possible to dry lumber on site and double the amount of wood hauled per truckload to the planing mill (fig. 12). Because of the recession, the owners were unable to secure industrial bonds for the project, and sought other sources of funding to avoid closing the mill. The Recovery Act's passage was timely in that funds could be applied to maintain and develop this critical piece of infrastructure.

The Evergreen Forest Products project is an example of how Recovery Act dollars allocated to State and Private Forestry were directed to strengthen and diversify the forest products industry, including woody biomass utilization. Staff drew upon regional networks of Idaho economic development players, including the Woody Biomass Utilization Partnership, to prepare proposals that could compete for Recovery Act funding. They were successful in obtaining funding for four projects, including the dry kiln and restacker project at Evergreen Forest Products. Thus, the project built on a need identified by the community and has helped keep a mill running in a county where the forest products industry still plays an important social and economic role. The success of this project is critical to achieving several Recovery Act goals in western Idaho, including preserving jobs, promoting economic recovery, and increasing economic efficiency.

[4] The information in this section is from Sturtevant et al. 2011a. For additional discussion of this case study, see Key Finding 3.

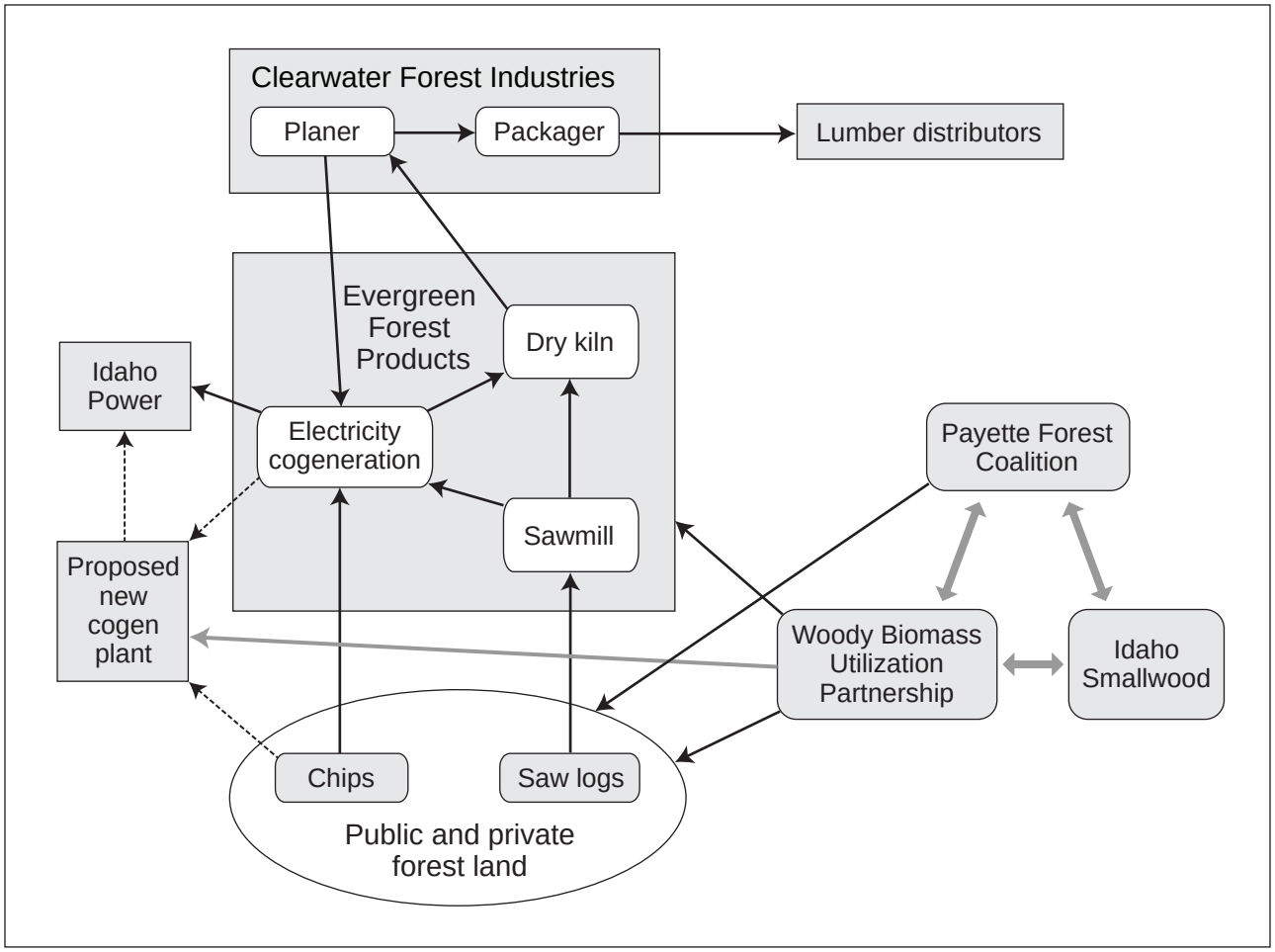


Figure 11—The Evergreen Forest Products dry kiln project kept the sawmill running and, in doing so, helped maintain a network of community social and economic relations.

Figure 12—Thanks to American Recovery and Reinvestment Act funding, Evergreen Forest Products was able to invest in dry kilns and a restacker, which enables them to double the amount of wood hauled per truckload to the planing mill.

The Evergreen Recovery Act project also supports forest management goals on the Payette and Boise National Forests by providing a market for raw material being removed using stewardship contracts awarded for fuels reduction and ecosystem restoration. The increased availability of raw material from federal lands will expand the wood supply for Evergreen Forest Products. Mill owners anticipated lower log prices, with plans to use the potential savings to further expand the mill (e.g., build a planer) and hire more workers (add another shift). Finally, the Forest Service's contribution to keeping Evergreen Forest Products operating demonstrates the agency's commitment to forest management and local communities, which could help build trust.

Lesson Learned

Projects that are appropriate to local social, cultural, and economic conditions, that address community and agency needs and priorities, and that draw on local community capacity in their implementation are more likely to create local community benefits and resilient local economies in the future.

The Arizona and Idaho case studies provide good examples of economic recovery projects that were designed to be appropriate to local social, cultural, and economic conditions. They also addressed community and agency needs and priorities, and drew on local community capacity in their implementation. Projects like these are likely to lead to a more resilient local economy in the future. Taking a holistic, integrated approach to community development and national forest and tribal natural resource management increases the chances that project investments will create local benefits.

Key Finding 2: Short-Term and Seasonal Jobs Make a Difference

Many Recovery Act jobs were short term or seasonal in nature, but were more than just a "bridge" or a "life raft" to help people get through hard times; the jobs had greater social and economic benefits.

Many Recovery Act jobs have been short-term or seasonal jobs, lasting only a few weeks or months until a one-time project is complete. Nevertheless, they had important benefits that helped people affected by the recession fill employment gaps and get through hard times, prepared people for future employment opportunities, and improved well-being and environmental awareness. There was no single manner in which Recovery Act projects helped people. Rather, the many different kinds of Recovery Act projects, different socioeconomic contexts in which they were carried out, and range of job types led to a great diversity of benefits for project employees. Construction jobs, often short term, helped jobless individuals stay afloat economically through the recession and kept many businesses operating. Natural resource work provided training and experience in diverse areas such as wildland firefighting, chainsaw operation, and invasive plant control. This work prepared people for other job opportunities and expanded the pool of workers available for future Forest Service and other work in these fields. Most Recovery Act funds were directed to private sector jobs, providing new opportunities to acquire job skills and employment that fit into existing work histories, completing the jobs picture for many individuals who would otherwise have experienced employment gaps. People also gained new knowledge and skills, appreciation of nature and natural resource management issues, and mental and physical health benefits from outdoor work, and they established new relationships. Examples of these benefits follow.

Huron Fuels Treatment Project, Michigan[5]

When Recovery Act-funded projects were sought in the Northern Region of the Forest Service, the Mio and Huron Shores Districts of the Huron National Forest (HNF) decided that the best approach for helping their neighbors persevere during the downturn would be to provide temporary jobs working in the woods to reduce wildfire risk and improve or restore ecosystem health. The Huron Fuels Treatment Project, which funded $3.8 million of hazardous fuels reduction and forest restoration activities on the HNF, hired 88 local residents as temporary employees over two field seasons, providing them with extensive training in forest worker skills, including chain saw operation, heavy equipment operation, and firefighting, all the while stressing safety. After classroom training, they served as apprentices in the woods before transitioning to their jobs performing critical high-priority work on the HNF and on other forests in the region. Additional training resulted in Recovery Act employees being certified for wildland-fire suppression. Employees indicated that these jobs had pay and benefits that exceeded those typical of local private sector jobs, and that the jobs kept many of them afloat economically while providing satisfying outdoor work that improved physical

[5] The information in this section is based on Jakes 2011. For additional discussion of this case study, see Key Findings 7 and 9.

fitness and provided mental health benefits (fig. 13). But the Forest Service Recovery Act jobs did more than just support people financially. The training and experience provided gave local residents new skills, making them more competitive for future forestry and natural resource-related job opportunities, potentially making a difference in people's lives for years to come. In particular, their wildfire training certified many of the local employees to work on wildland firefighting crews. These skills were used in May 2010 when recovery employees helped battle the 8,500-acre Meridian Boundary Fire. The recovery employees who volunteer with local fire departments have found that their wildland firefighting skills are benefiting these departments. Finally, recovery employees learned how to access federal job databases and apply for these jobs.

Huron National Forest

Figure 13—Recipients of American Recovery and Reinvestment Act jobs created on the Huron National Forest affirmed that the satisfying outdoor work improved their physical fitness and their mental health.

By summer 2010, 15 of the 88 people hired directly by the HNF had already moved on to other private or public sector jobs—8 of them finding permanent seasonal jobs, including positions on hot shot crews, with the Forest Service in Michigan, South Dakota, and New Mexico. In addition to providing income, this seasonal work helped local residents avoid chronic unemployment, which can make it harder to find a new job. It helped some local residents qualify for unemployment once their seasonal job ended. The jobs also sparked the interest of some student employees in the natural resource field, leading to changed majors and new career plans.

Invasive Species Control in Alabama and North Carolina[6]

The Recovery Act led to larger-than-normal investments in the control of nonnative invasive species in many states, including Alabama and North Carolina. In North Carolina, the Cheoah River Nonnative Invasive Plant Control project provided over $300,000 for invasive species control to protect federally listed threatened and endangered plant, fish, and aquatic invertebrate species. The project trained young, unemployed members of the Eastern Band of Cherokee Indians in identification and control of troublesome nonnative plant species. This work stimulated individuals' interest in natural resource fields and outdoor work, while also developing a trained cadre of tribe members who will be ready to work on invasive plant control through other contracts with the Forest Service and the National Park Service, as well as on projects on Cherokee tribal lands. Cherokee crews were supervised by botanists hired by the Western North Carolina Alliance, providing needed employment for recent college graduates while enhancing their skills in areas as diverse as chain saw operation and supervision of ethnically diverse work crews. One of these individuals has already found employment with the North Carolina State Forestry Division, and a second found off-season work with another agency.

The Alabama Cogongrass Control Center, a $6.3-million project funded by the Forest Service's State and Private Forestry branch but implemented largely through private forestry contractors, shows how seasonal and temporary work can help private businesses survive and prosper while at the same time strengthening a new niche industry in invasive plant control in the state. Cogongrass (*Imperata cylindrica* L. [Beauv.]) is one of the most problematic invasive plants in the United States. When left

[6] This section is based on Morse 2011 and Schelhas 2011. For additional discussion of the Alabama case study, see Key Finding 7, and for the North Carolina case study, see Key Findings 4 and 6.

unchecked, it forms dense, fire-prone stands that create high fire risk, eliminate native plants, diminish wildlife habitat, threaten forest plantations, and are an economic liability to hunting and forestry businesses. Forestry consultants and chemical applicators were contracted to undertake seasonal work mapping and spraying cogongrass infestations on private lands in northern Alabama (fig. 14). This contract work enabled these consultants and applicators to continue working with their existing clients while providing new work to make up for the decline in timber-related business they experienced during the recession. Contractors fit the new work into their businesses in unique ways, sometimes by devoting part of the week to cogongrass control, and other times by job-sharing with someone whose existing work schedule was countercyclical to their own. Forestry consultants and applicators are gaining experience in large-scale invasive plant control, landowners are becoming aware of the threats invasive plants pose to their forestry and wildlife operations, and landowners and consultants are meeting each other—building trust and relationships that lay the groundwork for future job opportunities. This project is expected to stimulate the growth of a niche business in invasive plant control in Alabama in the future.

USDA Animal and Plant Health Inspection Service

Figure 14—Forestry consultants and chemical applicators were contracted to undertake seasonal work mapping and spraying cogongrass infestations on private lands in northern Alabama. This work is creating long-term capacity for invasive species control, while also stimulating an economically viable, new niche industry in invasive plant control.

California's North Coast—Six Rivers National Forest Trail Maintenance[7]

In California, trail maintenance work on the Six Rivers National Forest was accomplished through agreements with three project recipients, including two youth corps groups (the California Conservation Corps and the Northwest Youth Corps). The Recovery Act directed the Forest Service to use groups serving young adults where practical. Ten- to twelve-person crews from these organizations work for 5 to 8 days at a time doing trail maintenance work under the supervision of a Forest Service employee, often camping together in the forest during this period. Working with these groups provided many benefits, both in keeping youth job corps programs operating at a time when state budgets that help support them were hurting, and by helping the youth employed by these programs. Local youth found productive and satisfying work outdoors and near their community, where jobs for young people can be scarce. Urban youth had an opportunity to experience the outdoors and gained an appreciation for nature. Working on trail projects gave youth a sense of accomplishment, helping to raise their self-esteem. Young participants also developed workforce skills such as getting along with people of diverse backgrounds, learning to work hard, and being timely and consistent in their work habits. Several eventually got seasonal jobs with the Forest Service in recreation or fire that can lead to permanent employment. And, youth job corps programs often have other resources for participants that can help them gain future employment, such as support completing their General Education Degrees if they have not finished high school, shop work, and work on farms and gardens.

[7] This section is based on Charnley 2011. For additional discussion of this project, see Key Finding 8.

Lesson Learned

Investments in short-term projects build worker skills and capacity to gain long-term employment and compete for future agency and private sector contracts. They also have many social and economic benefits (e.g., filling in seasonal gaps in employment, promoting awareness of nature and natural resource management, fostering pride and self-esteem, increasing physical fitness, and building relationships); and they make it easier for the Forest Service to accomplish work by helping maintain a local workforce.

The Forest Service can learn lessons from the projects discussed here that will help the agency accomplish its future work while providing benefits for local people and communities. Seasonal jobs are common in many rural communities and around many national forests; natural resource agencies frequently hire seasonal employees. Moreover, private-sector natural resource jobs are often temporary or contracted. Many rural residents find ways to piece together seasonal and temporary jobs to make a living. For some job types, such as botanists, forestry consultants, and chemical applicators, Forest Service contract work supplements other work, with contract work providing key business opportunities that fit in with other work to enable people to make a living or sustain a business. For other job types, such as forestry support workers, seasonal contract work for the Forest Service and other federal agencies may be the main source of employment. Short-term projects and employment not only help to sustain rural livelihoods; when sufficient opportunities are present, a pool of trained and experienced employees can be maintained locally that the Forest Service can use to get work done and meet its goals.

Key Finding 3: More Jobs Are Created and Retained Than Are Counted

The jobs impacts of Forest Service Recovery Act projects are greater than the numbers reported.

The success of the Recovery Act is often measured by counting the number of jobs that economic recovery funding directly paid to create or retain. This number is calculated by using a formula to estimate full-time equivalent positions.[8] Funding recipients must report the number of economic recovery jobs that they created or retained by using this formula on a quarterly basis; the reports are available on the economic recovery Web site http://www.recovery.gov. Our assessment found that, in addition to these direct project jobs, other associated jobs are created as a result of Recovery Act projects. These jobs are unaccounted for and not reported. Methods for estimating these additional job impacts in quantitative (number of jobs) or financial (income generated) terms exist but are unreliable and were outside the scope of this study. Consequently, it is difficult to measure the Forest Service's real success in meeting its goals of investing in projects that create jobs that are sustainable over the long term, and that contribute to rural and urban economies, thereby telling the full jobs story associated with Forest Service Recovery Act projects.

What kind of jobs are these unreported jobs? They include long-term sustainable jobs associated with the operational phase of a project investment, jobs in businesses that provide goods and services purchased for the initial project investment and during project operation,

[8] The Recovery Act requires funding recipients to report number of jobs in the form of fractional full-time equivalent (FTE) jobs. Only jobs that are funded directly by Recovery Act dollars are considered, and there is no differentiation made between existing jobs or newly created jobs. At the end of each quarter, the recipient takes the total number of hours worked and funded by the Recovery Act, and divides it by the number of quarterly hours that constitute a full-time schedule to calculate the number of FTE jobs. The number of quarterly hours constituting a full-time schedule may differ depending on job standards, but is typically 520. (This assumes that a typical full-time position is 40 hours per week. A quarter is 13 weeks; 40 × 13 = 520.) Therefore, if a recipient records that in one quarter, three employees worked a total of 1,300 hours that were paid for by the Recovery Act, they will divide those 1,300 hours by 520 and report 2.5 FTE jobs.

jobs in businesses that provide goods and services to people employed by the project during its investment and operational phases, and people employed by supporting businesses. These jobs are often called the direct, indirect, and induced jobs associated with project implementation and operation.

Funding recipients interviewed for this study sometimes expressed frustration with the Recovery Act job reporting methods because they do not take into account these greater job impacts, which interviewees considered significant. Project investments in facilities and infrastructure are particularly important in generating these kinds of jobs. Examples come from California, Idaho, and Montana.


Susan Charnley

Figure 15—American Recovery and Reinvestment Act spending made it possible for Renewable Energy Providers to leverage additional funding to open the Blue Lake Biomass Power Plant.

California's North Coast—Blue Lake Biomass Power Plant[9]

In September 2009, a company called Renewable Energy Providers (REP) received a $2 million economic recovery grant ($2,006,550) from the Forest Service Pacific Southwest Region (Region 5), State and Private Forestry for a wood-to-energy project in Humboldt County in northern California. In 2008, REP had bought and begun refurbishing an 11.5-megawatt biomass powerplant in the community of Blue Lake, but their financing for the project was lost when the main investor suffered a severe reduction in his credit line owing to the national credit crisis that accompanied the economic recession. The recovery grant made it possible for REP to leverage $8 million in additional funding from a new lender, and the Blue Lake Biomass Power Plant came online in May 2010 with a 15-year contract to sell power to the San Diego Gas and Electric Company (fig. 15). From October to December 2009 (the height of activity to complete the refurbishing) about 54 FTEs were reported by REP in their recipient reports. These were mainly short-term jobs paid for by the recovery grant to get the biomass plant up and running. Additional jobs created or retained as a result of this project will not be reported, but are numerous. Now that it is operating, 17 long-term, sustainable, local, family-wage jobs have been created to run the plant. These employees include eight workers who were laid off by a local pulp mill when it closed in 2008. The biomass plant will also support long-term jobs for biomass suppliers, including chipper operators, loader operators, and truck drivers who transport biomass to the mill. Businesses in Blue Lake benefit indirectly from these jobs. Furthermore, REP will use the profits it earns from the Blue Lake plant to invest in and develop biomass powerplants elsewhere in northern California, which will in turn create more jobs. The recovery grant to REP is helping to support the development of a forest restoration economy in Humboldt County.

Evergreen Forest Products Dry Kiln and Restacker, Idaho[10]

A $2.5-million grant to Evergreen Forest Products made it possible to construct three dry kilns and a restacker at its mill in Tamarack, Idaho—the only remaining sawmill in Adams County, Idaho—thereby increasing its economic efficiency (fig. 16). Construction took place between October 2009 and March 2010. Between October and December 2009, 80 FTEs were reported by the Tamarack mill in its recipient reports; from January through March 2010, 100.86 FTEs were reported. But the bigger jobs story, according to the mill owner, is that this project kept the mill from shutting down during the recession. Had the mill shut down,

[9] The information in this section is based on Charnley 2011.

[10] The information in this section is from Sturtevant et al. 2011a. For additional discussion of this case study, see Key Finding 1.


Jessi Kershner

Figure 16—A $2.5-million grant to Evergreen Forest Products made it possible to construct three dry kilns and a restacker at its mill in Tamarack, Idaho.

60 core, local, long-term, family-wage mill jobs would have been lost. Not only did the recovery project help retain these jobs; it made it possible to increase production at the mill, which initially added a second shift, expanding employment from 60 to 120 workers. Unfortunately, the lumber market slump in spring 2010 caused the second shift of workers to be laid off. Once the construction industry picks up again (nationally or globally), it should be possible to rehire this second shift of workers. The Tamarack mill is also part of a larger economic system that includes another mill owned by Evergreen Forest Products, contractors who supply logs and biomass, paper mills that buy their chips, a new biomass powerplant soon to be built in the community that will consume their extra biomass, and businesses in local communities where mill workers buy goods and services. This network is maintained by keeping the Tamarack mill going.

Route of the Olympian, Montana[11]

A third example comes from Montana's Route of the Olympian Rails to Trails project, which is creating a multi-use trail following the Milwaukee Road rail bed east of the Idaho-Montana border. (The Olympian was the name of the passenger train that traversed the Milwaukee Road.) Like many places in the West whose lumber and mining economic foundation has deteriorated, Mineral County in western Montana has been struggling to define a new economic and cultural identity. While some believe that traditional extractive industries can again be a major employer of choice in the county, data suggest that recreation and tourism are providing a growing contribution to the local economy (fig. 17).


Victoria Sturtevant

Figure 17—Recreation and tourism are expected to make growing contributions to the local economy as a result of American Recovery and Reinvestment Act funding that supported a 30-mile bicycle trail in Mineral County.

The $1,064,742 Route of the Olympian economic recovery project is paying for an engineering assessment, project design, repairs to the Dominion trestle and tunnel, and restoration of 8 miles of abandoned railroad grades to make possible a new 30-mile recreation trail in Mineral County. The trestle and tunnel repairs were a critical, unfunded piece of the rails-to-trails project supported by the Recovery Act. Once repairs are complete, the rest of the trail will be upgraded. It is anticipated to open to the public in 2012. Mineral County was formerly timber-dependent but is trying to diversify economically. The Forest Service manages 84 percent of the land in the county, making recreation and tourism a major draw there. The Route of the Olympian will connect to the 17-mile Trail of the Hiawatha, a bike trail that is very popular for recreation, located just across the state line in Idaho. By making possible the development of this multi-use trail, this recovery project is helping transform the rural economy of Mineral County, and represents an investment in long-term job creation in tourism-related industries.

It is too soon to be certain about the longer term economic impacts of the trail. As of September 2010, one FTE had been reported in association with Recovery

[11] The information in this section is from Sturtevant et al. 2011b. For additional discussion of this case study, see Key Findings 4 and 6.

Act funding for the project. Research undertaken on the economic impacts of trails in neighboring Idaho offer some insights into the potential future impacts of the Route of the Olympian in Montana. For example, Idaho's Trail of the Hiawatha had 32,000 visitors in 2009, and 58 percent of the visitors surveyed said they would continue riding into Montana if it were possible (McCollum and Miller 2010). Researchers estimated that each visitor averaged nearly two economic transactions per visit, with each transaction worth an average of $78. The Trail of the Coeur d'Alenes bike path is reported to be responsible for 80 percent of the business done by merchants in local communities along this Idaho trail (Schneider 2010). These findings suggest that the communities located along the Route of the Olympian will reap similar long-term economic benefits from the recreation and tourism opportunities the trail brings in the future.

Lesson Learned

It is difficult to estimate the full and long-term jobs impacts of Forest Service project investments, especially once the project money is spent; however, these can be substantial, especially for investments in hard infrastructure projects (e.g., recreation infrastructure, bioenergy facilities, and wood processing infrastructure).

A priority for the Forest Service in selecting recovery projects to fund was their potential to create jobs that would be sustainable over the long term and that might help transform urban and rural economies. The cases described in this section make evident the fact that investments in hard infrastructure development in particular can lead to long-term sustainable job creation, especially when these investments interface with existing or developing local economic sectors and are not merely stand-alone projects. Unfortunately, these long-term job impacts are not captured in Recovery Act recipient reports, nor are indirect and induced jobs. Forest Service investments in local job creation have larger economic benefits than is apparent from immediate funding expenditures associated with project implementation.

Key Finding 4: Project Benefits Are Felt in Target Counties and Beyond

Some funding recipients were based in the counties where their projects were located, others were not; in either case, target counties benefitted.

The Forest Service used county economic distress rankings to target Recovery Act funds to the counties most affected by the recession. The higher the economic distress ranking of the county in which a project was located, the more likely the project was to be chosen for Recovery Act funding, all else being equal. Although the recipients obtaining the contracts, agreements, or grants to work on recovery projects were often based in the same counties in which their projects were located, some project recipients came from other counties or states. There were two primary reasons for this. In some cases, there was no local capacity for carrying out the project because there were no local businesses or nonprofit organizations with the specialized skills and resources that were required. Over time, depressed forest industry conditions and difficulty in accessing changing federal bid mechanisms have eliminated many local businesses near large tracts of federal land. This situation has left many communities unable to take economic advantage of their nearby natural resource base. In other cases, a nonlocal company had the lowest bid or scored highest across a series of decision criteria. Because of the weak economy, there were more companies bidding on projects than usual, and many companies were bidding on projects located farther from their home base.

Nevertheless, economically distressed counties often benefitted from recovery projects whether or not the recipients were local. In a number of cases, nonlocal recipients came from other economically distressed counties. And, nonlocal project recipients often created local benefits in the counties where their projects were located by hiring workers, purchasing project materials, staying in hotels, and eating in restaurants. Furthermore, projects that created or improved local infrastructure might contribute to long-term job creation and other local economic benefits

in the future. Cases from California, Montana, and North Carolina illustrate some of the complexities involved in trying to target economically distressed counties with Recovery Act projects. They also point to the fact that counties are embedded in larger regional economies, and that the economic benefits from Recovery Act projects spread beyond the target counties to these larger regions.

California's North Coast—Redwood Sciences Lab[12]

Recovery Act funding in the amount of roughly $1 million was used to add a second floor to the Redwood Sciences Laboratory, one of the Forest Service research labs affiliated with the Pacific Southwest Research Station in Arcata, California (fig. 18). The project was a follow-on to a seismic retrofit and remodel that was paid for with other


Susan Charnley

Figure 18—American Recovery and Reinvestment Act funds made it possible to construct a second-floor addition to the Forest Service Redwood Sciences Laboratory in Arcata, California.

funds. Despite the project location in Humboldt County, the contract for the project was awarded, through competitive procedures, to a construction company based 160 miles away in Grants Pass, Oregon, the county seat of Josephine County, Oregon, which has an economic distress ranking of 9 (compared to Humboldt County's ranking of 7).[13] The construction industry was particularly hard hit in southwest Oregon, causing more companies from this region to bid on government projects, even those far from home. Three of the employees working on the project came from the home office in Oregon, and up to four local workers at any one time were employed by the project through a local temporary employment agency. The recipient company is also purchasing many supplies locally, and local subcontractors performed electrical, plumbing, and welding work. Thus, local hiring, subcontracting, and purchasing helped the Redwood Sciences Lab recovery project contribute to Humboldt County's local economy, despite the fact that the project recipient was based in Oregon.

Route of the Olympian, Montana[14]

The Route of the Olympian project involves trestle and tunnel repairs that required an engineering assessment and design plan, highly technical construction expertise, and specialized heavy equipment (fig. 19). There was no local capacity in Mineral County to do this work, so contracts were awarded to two nonlocal Montana recipients. One small engineering firm with offices in Missoula and Helena, Montana, is responsible for the assessment, design, and construction oversight. A large construction company with offices in Helena, Great Falls, and Bozeman, Montana, is


Corrine L. Kegel

Figure 19—The Route of the Olympian project involves trestle and tunnel repairs that required an engineering assessment and design plan, highly technical construction expertise, and specialized heavy equipment.

[12] The information in this section is based on Charnley 2011.

[13] Economic distress rankings were on a scale of 1 to 10, with 10 being the highest.

[14] The information in this section is based on Sturtevant et al. 2011b. For additional discussion of this case study, see Key Findings 3 and 6.

carrying out repairs and improvements. The two firms were chosen because they scored highest on four contractor selection criteria that included having an excellent safety record. The construction company will subcontract with local businesses for supplying gravel, sealing the bridge deck, and possibly other tasks. Local workers will also be hired onto their six- to eight-person crew. As detailed in Key Finding 3, most of the local economic benefits from the trail project are expected to accrue in the future with the arrival of new recreationists once the trail is complete.

Cheoah River Nonnative Invasive Plant Control, North Carolina[15]

The Forest Service used two agreements with key regional organizations to carry out the Cheoah River Nonnative Invasive Plant Control Project, located in western North Carolina on the Nantahala National Forest in Graham County (economic distress ranking = 8). One agreement was with the Western North Carolina Alliance, a nonprofit grassroots organization working in the mountain counties of western North Carolina, that provided botanical and invasive plant control expertise and crew supervision (fig. 20). The alliance is based in Asheville, N.C., several counties and about 100 miles to the east of the project location, though still in the western North Carolina mountain region. The second agreement was with the Eastern Band of Cherokee Indians, which provided work crews. The Cherokee reservation in Swain County (economic distress ranking = 6) lies mainly to the northeast of the Graham County project location. Work crews were organized by Vocational Opportunities for Cherokee, Inc., a temporary employment service that works with Cherokee people who have disabilities or barriers to employment. One crew came from the community of Snowbird, in Graham County, and one crew came from the town of Cherokee, about an hour away from the project site in Swain County. Although not all of the jobs created by this recovery project went to people living in the county where the project was located, the project did employ people who desperately needed jobs in an ailing economy, and created capacity among the Eastern Band of Cherokee Indians to engage in invasive plant control work that will likely provide long-term economic benefits to them.

Wayde Morse

Figure 20—The Western North Carolina Alliance, a nonprofit grassroots organization working in the mountain counties of western North Carolina, provided botanical and invasive plant control expertise and crew supervision for a Recovery Act invasive plant control project.

Lesson Learned

Targeting projects and associated benefits to the most economically distressed communities is a good strategy but can be difficult; measures to support and redevelop local business capacity to undertake work that fulfills long-term Forest Service needs will help communities take advantage of project opportunities, increase local benefits, and help economically distressed communities near public lands.

Targeting projects and associated work opportunities to economically distressed communities is an important rural community development strategy, but can be complicated by various factors. Needed technical skills may not be available locally, and in some cases, local capacity to perform work and bid for government contracts has eroded over time. Yet local benefits were often realized even when nonlocal contractors were selected, through employment, subcontracting, and local purchases. In the

[15] The information in this section is based on Morse 2011. For additional discussion of this case study, see Key Findings 2 and 6.

modern economy, certain types of work are often done by highly specialized companies that travel long distances to work on projects. This is unlikely to change, but projects can still provide local benefits. For other types of work, such as general construction and restoration work that can be performed by local companies and fulfill long-term Forest Service needs, measures to support and redevelop local business capacity where needed could increase local benefits and help economically distressed communities near public lands.

Key Finding 5: Individual Employees Make a Difference

Forest Service employees developed a number of strategies for increasing the socioeconomic benefits of Recovery Act projects to local communities.

When the Recovery Act passed, Forest Service units were asked to submit potential projects for funding, and regional offices and research stations sent their priority projects to the agency's national headquarters. Although decisions about what projects to fund were made by the agency's Washington office, individual Forest Service employees at the ground level played an important role in influencing how project benefits were distributed, and in turn, the nature and extent of socioeconomic benefits to local communities. A number of strategies emerged for targeting and enhancing the socioeconomic benefits of economic recovery projects in counties experiencing high economic distress. These included:

- Conducting outreach to raise awareness among potential recipients of funding opportunities.
- Helping potential recipients or project employees overcome administrative barriers to obtaining work.
- Using agreements to target specific recipients in need of work.
- Implementing projects in a manner that was labor-intensive rather than equipment-intensive, thereby creating more jobs.
- Breaking projects down into different sizes and types and using different funding mechanisms to take advantage of a range of skills and capacities in local communities.

The California and Oregon case studies provide examples of these strategies.

Rogue River-Siskiyou National Forest Hazardous Fuel Reduction, Oregon[16]

The Rogue River-Siskiyou National Forest (RRSNF) in southwestern Oregon received $45.5 million in economic recovery funds, over $30 million of which were for hazardous fuel reduction. Employees on the RRSNF made a concerted effort to distribute the fuel reduction money in a manner that would provide benefits to many of the region's economically distressed communities. They did this by planning and laying out fuel reduction projects on ranger districts so that local contractors of different sizes and with different expertise could compete. For example, projects were divided up into different sets of activities and into work at different scales. Forest Service staff also used different types of funding mechanisms to better target local businesses. These steps meant that many different organizations in the region gained access to Recovery Act funding and different communities benefited from the associated jobs.

The RRSNF has steep terrain and forest conditions that call for labor-intensive management, including hand thinning, pruning, piling, and pile burning (fig. 21). Southwestern Oregon is home to many forestry support workers. Over 20 contracting businesses in the four-county study area containing RRSNF lands have the capacity to do this type of labor-intensive work. These businesses range in size from a few to more than 200 employees. Hazardous fuel reduction projects on the RRSNF were implemented using 53 contracts and 7 agreements. Contracts ranged in size from $100,000 to $1 million. Only four of the contracts went to contractors outside the four-county area. Of the

[16] The information in this section is from Davis and Moseley 2011. For additional discussion of this case study, see Key Findings 7 and 8.

Emily Jane Davis

Figure 21—The Rogue River-Siskiyou National Forest has steep terrain and forest conditions that call for labor-intensive management, including hand thinning, pruning, piling, and pile burning.

agreements, two went to state and county agencies that were able to keep their foresters from being laid off and maintain their organizational capacity; one went to a local nonprofit organization to support work taking place under a 10-year stewardship agreement for forest restoration; and three went to a local youth job corps organization to support youth crews. Forest staff intentionally broke the work up into different types and sizes, mixing and matching arrangements to use both contracts and agreements so that many different organizations in the region could participate in the work and benefit from associated jobs.

Local contractors were not only able to keep their work crews employed because of the recovery projects, some hired additional employees to handle the work. Because this work was labor-intensive, many jobs were reported during the 2010 field season: 431 FTEs between April and June and 400 FTEs between July and September. Despite the large number of jobs involving manual labor in hazardous fuel reduction, they were generally lower paying than those entailing equipment and mechanical treatments, with job quality highly variable. Although these are rarely family-wage, year-round jobs, workers were at least earning some income, and more families were able to benefit from the labor-intensive work.

California's North Coast—Six Rivers National Forest Roadside Brush Removal[17]

The Six Rivers National Forest (SRNF) in northern California received $1,014,000 to remove brush along 749 miles of its 2,989 miles of forest roads. Brush removal increases road and fire safety, improves access to the forest, and helps prevent resource damage. The SRNF separates brush removal projects from other road maintenance projects, making it possible to award brush removal projects to businesses that lack the wide range of equipment needed to undertake more comprehensive road maintenance work. The forest awarded brush removal projects to four different recipients to accomplish the large volume of recovery-funded brush removal work quickly, spread project benefits to diverse recipients, and maximize job creation. Although the SRNF typically contracts with mechanical operators for roadside brush removal, removing brush by hand creates more jobs than does removing it by machine (fig. 22). Thus, the recovery project was awarded to two mechanical operators and two organizations that maintain hand crews for natural resource work.

Two recipients were local contractors with whom the SRNF had existing indefinite delivery/indefinite quantity contracts for mechanical brush removal. Adding task orders to these contracts allowed recovery money to be obligated quickly. The forest also put an additional contract out for competitive bid that was awarded to one of these same

[17] The information in this section is from Charnley 2011. For additional discussion of this project, see Key Finding 8.


Susan Charnley

Figure 22—Roadside brush removal being conducted by hand crews on the Six Rivers National Forest, California.

contractors, a two-person, father-son business that specializes in brush removal and has undertaken contract work for the SRNF for several years. The second contractor is a diversified construction contracting business having 15 to 20 core employees, 2 of whom worked on the project. This was its first brush removal project on the SRNF.

The forest supervisor wanted to distribute project money more widely in local counties. Therefore, the SRNF also established agreements with two small, local nonprofit organizations that have natural resource work crews with the capacity to undertake brush removal by hand. One of these is a tribal organization that offers employment opportunities and job training programs to American Indians who reside in local counties. Through this agreement, they were able to employ two six-person crews composed of local tribe members. The Recovery Act encouraged agencies to support tribes when spending recovery funds, and doing so was an objective of the forest supervisor. The other agreement was with a local Resource Conservation District that hired two six-person crews to work on the project. This was the first time either group had done brush removal work for the forest. Using agreements to undertake brush removal work is a new approach for the SRNF on this type of project. Agreements can be used to obligate money quickly and to target local groups for work opportunities.

Lesson Learned

Forest Service employees can increase the local community benefits associated with undertaking regular project work by implementing projects in ways that intentionally enhance these benefits, drawing on Recovery Act examples and experiences.

Forest Service employees can often make choices about how to implement project work on the ground, and what kind of work mechanism to use to accomplish it (e.g., in-house crews, service contracts, stewardship contracts, or agreements). They may also have leeway to choose who to give project work to, and through outreach can play an important role in making local groups aware of work opportunities and how to gain access to them. The Recovery Act prompted the Forest Service to make local community benefit a priority in implementing project work. Doing so created an opportunity for the Forest Service to develop strategies for maximizing the social and economic benefits associated with accomplishing work on the ground. A number of strategies were highlighted here. For example, implementing projects in a way that breaks them into different sizes and types, that uses a variety of funding mechanisms, and that draws on diverse ways of getting the work done made it possible to take advantage of a range of skills and capacities in local communities. The case studies described here suggest that agency employees committed to rural community sustainability could make a difference in the future by continuing to implement projects in ways that make local community benefit a priority.

Key Finding 6: The Forest Service Builds on Old Partnerships and Develops New Ones

Relationship-building between the Forest Service and project recipients and stakeholders has been an important outcome of the American Recovery and Reinvestment Act.

A children's song advises, "Make new friends, but keep the old. One is silver and the other's gold." That recommendation was put into practice in the implementation of Forest Service Recovery Act projects. Some Forest Service units, concerned about the tight timeframe for conducting the projects, built on existing partnerships while others took advantage of this funding opportunity to build bridges and partner with groups with whom they had not previously worked. Recovery Act case studies from Montana and North Carolina demonstrate how old and new partners collaborated with the Forest Service to accomplish social, economic, and ecological objectives.

Route of the Olympian, Montana[18]

As previously discussed, the Lolo National Forest's Superior Ranger District has been working for years to develop the Route of the Olympian in Mineral County, Montana, a multi-use trail that would link to Idaho's popular Route of the Hiawatha and a vast trail system in that state and Washington, with the potential to extend the Route of the Olympian all the way across Montana. The Mineral County Challenge, funded in part by the state of Montana to bring together stakeholders to define feasible new economic opportunities, identified eight economic development projects for the county, five focusing on recreation (Murray 2010). Evidence of the importance of recreation to economic sustainability can be found in neighboring counties in Idaho, where businesses have developed along bicycle trails that have earned Idaho its ranking as the No. 1 mountain biking state in the United States by the International Mountain Biking Association.

Several partners have been involved in activities related to development of the Route of the Olympian. Montana's Recreation Trails program has provided partial funding for the purchase of land along the route. The Five Valleys Land Trust has served as a broker and negotiator for many of these purchases, "loaning" the funding needed to purchase land parcels until public funding could be secured. A leader in the Trust describes their commitment to partnering on this project: "It is important to us that Five Valleys is able to assist with important acquisitions that add significantly to the rich recreational and economic opportunities in western Montana" (USDA FS 2009b). The Rails-to-Trails Conservancy, a nonprofit organization whose mission is to create a nationwide network of trails along former rail lines and connecting corridors, has been consulting on this project since its inception. The organization conducted a study describing the potential for development of the old Milwaukee Trail across Montana. Although funding has been available for acquiring land and undertaking some smaller projects, major work on the route was delayed by the inability to fund a required engineering assessment of the repairs needed on the rail bed's Dominion tunnel and trestle.

When the Forest Service's Northern Region requested proposals for Recovery Act funding, Superior District staff saw an opportunity to move forward with the Route of the Olympian. This investment allowed the Forest Service to follow up on commitments to partners who had made earlier investments in moving the trail forward, and thereby encourage these partners to continue to work with the agency on recreation projects. The project also allowed the agency to demonstrate to local communities along the trail that the agency is committed to helping them expand economic opportunities based on recreation on public lands.

Not only is the Recovery Act funding helping complete the first segment of the Route of the Olympian, but it also has opened the door for a new partnership with local community members. Because management of the trail will necessitate balancing motorized and nonmotorized needs for recreation and daily travel, the Superior District ranger formed a collaborative group to help develop the proposed

[18] The information in this section is based on Sturtevant et al. 2011b. For additional discussion of this case study, see Key Findings 3 and 4.

action for analysis required by the National Environmental Policy Act (NEPA). The benefits of the group have yet to be realized in terms of generating support for a trail management plan. However, the relationships that are developing among stakeholders as a result of the group interactions will help the agency and residents work together collaboratively in the future, benefiting both the national forest and local communities.

Cheoah River Nonnative Invasive Plant Control, North Carolina[19]

The Cheoah Ranger District of the Nantahala National Forest saw the Recovery Act funding as an opportunity to implement a significant invasive species control regime that would protect a listed species and provide temporary employment in one of North Carolina's poorest counties. A number of long-standing partners in invasives control, including those brought together under the Southern Appalachian Cooperative Weed Management Partnership, were involved in the Recovery Act project. The project was developed to complement and leverage control efforts put in place by Alcoa (an electric power company), the North Carolina Department of Transportation, and the Little Tennessee Land Trust. In addition to these long-standing partnerships, the district used participating agreements to target two new collaborators—the Western North Carolina Alliance (WNCA) and the Eastern Band of Cherokee Indians (EBCI). The WNCA was brought in to supervise and train field crews and monitor control efforts. They were well-qualified for this responsibility because of their earlier investments in invasives education, identification, and eradication. The forest also felt that by working with the WNCA they could build a shared understanding of issues that had, in the past, brought the WNCA and Forest Service to loggerheads. Another new partner was Vocational Opportunities of Cherokee, Inc., a temporary employment service working with Cherokee who have disabilities or barriers to employment; it supplied two five-person crews of EBCI workers. Although it was necessary for the Forest Service to spend time helping the EBCI learn the contracting process, they and EBCI now have valuable experience and a model for collaborating in the future. This new partnership has helped the forest establish a relationship with the tribe, provided EBCI members with experience that make them competitive for future invasive species control projects, and provided knowledge about invasive species control that could potentially improve management of Cherokee lands.

The Recovery Act invasives control project identified and treated eight species of nonnative invasive plants along the Cheoah River (fig. 23). Recognizing the success of the project, local Forest Service managers awarded additional funds to treat more acres. The work helped forge new relationships not only between the Forest Service and the new partners they targeted, but also between the two new partners themselves, and established a greater sense of community among participating individuals and organizations. As observed by a WNCA employee, "Our organization has always wanted to work with the Cherokees; many people don't know how and don't know the connections and this just provided a great opportunity to work with them."

Wayde Morse

Figure 23—American Recovery and Reinvestment Act funding helped control eight species of nonnative invasive plants along the Cheoah River in North Carolina.

[19] The information in this section is based on Morse 2011. For additional discussion of this case study, see Key Findings 2 and 4.

Lesson Learned

Working with existing partners provides a strong foundation on which to build in initiating new projects, whereas developing new partners extends and expands project impacts beyond the goals originally envisioned.

Working with existing partners is often the most expedient course when developing and implementing projects, and it can solidify or strengthen these important relationships. However, a significant infusion of funds such as that provided by the Recovery Act provides a unique opportunity to reach out to new partners. These new partners can provide access to new networks, bringing the Forest Service into contact with a broader array of stakeholders than originally envisioned. New partners can serve as conduits to new funding mechanisms, expanding a project's impacts beyond what was originally planned. Finally, new partners can aid the Forest Service in better appreciating new sets of values and better understanding others' ways of looking at natural resource issues, increasing agency experiences with diverse publics representing the broad array of perspectives held by the American people.

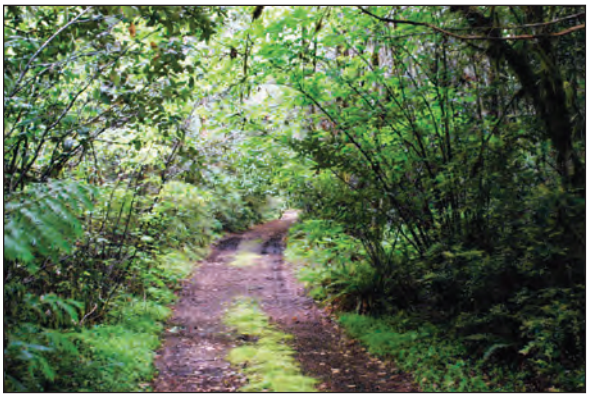
Key Finding 7: High Funding Levels Create Opportunities for Larger and More Strategic Projects

Economic recovery funds made it possible to accomplish work of a type and at a scale that would not have happened otherwise, with important social and environmental benefits.

Recovery Act funding often came at a scale that far exceeded normal annual national forest budgets in areas such as infrastructure maintenance and improvement, fuels treatments, and invasive species control. National forests and some state and private recipients took advantage of these elevated funding levels to make large and sometimes transformative investments. Ecosystem restoration projects, such as fuel reduction and invasive plant treatments, were carried out at a landscape level following strategic plans intended to shift ecosystems to healthier and more stable conditions. Invasive plant projects were designed to demonstrate success while building long-term capacity, awareness, interest, and infrastructure for control. Some funding was directed to addressing large maintenance backlogs on agency infrastructure, including roads, trails, fuel breaks, and facilities. Campgrounds, visitor centers, docks, and other recreation facilities were reconstructed, revitalizing key components of regional tourism economies. Investments were made in industrial infrastructure, such as timber processing and bioenergy, that will facilitate implementation of other forest projects (e.g., restoration timber sales) in the future. Many project activities, such as road maintenance and mapping, will make it possible to accomplish other Forest Service projects that would not have otherwise been possible.

Capital Improvement and Maintenance

Declining budgets on many national forests since the early 1990s have led to large backlogs of deferred maintenance work. For example, on the Six Rivers National Forest in California, the annual roadside brush removal budget is insufficient to pay for brush removal every 3 to 5 years, which is needed in this high rainfall area to keep many roads clear. Recovery funds supported brush removal on 749 miles of roads, or 25 percent of all SRNF roads, opening up many severely overgrown roads that hadn't been treated in years (fig. 24). Project benefits include



Susan Charnley

Figure 24—American Recovery and Reinvestment Act funds supported brush removal on 749 miles of road, or 25 percent of all Six Rivers National Forest roads, opening up many severely overgrown roads that had not been treated in years.

better visibility for safer travel, increased access for fire control and other activities, and the ability to identify and accomplish needed road maintenance and restoration projects that prevent resource damage. Recovery funding is also supporting trail maintenance at a scale not normally accomplished on the Six Rivers. The forest's annual target for trail maintenance in fiscal year 2009 was 13 miles, and 14 miles in 2010. With recovery money, the Six Rivers will be able to perform maintenance on 122 miles of trails.

In Arizona's Apache-Sitgreaves National Forest, Recovery Act funding has been directed toward major deferred maintenance projects on several campgrounds; reconstruction of 26 miles of a major all-terrain vehicle trail; reconstruction and surfacing of 3 miles of the Rim Vista Trail; and resurfacing, stabilizing, and improving drainage on roads within the national forest that are important recreation corridors connecting to local communities. Not only do these projects mitigate the environmental risks associated with aging restrooms, trail erosion, and road degradation; they will have lasting economic benefits for local tourism-dependent communities.

Chris French

Figure 25—Fuel management projects on Oregon's Rogue River-Siskiyou National Forest focused on transportation and recreation corridors, and areas near communities.

Ecosystem Restoration

Many Recovery Act ecosystem restoration projects also were implemented at a much larger scale than projects typically funded by annual national forest budgets. The ability to carry out these projects allowed managers to implement strategic approaches to fuel treatment and invasive plant control at landscape scales, thereby increasing the likelihood of long-term success and benefits. Fuel management projects on Oregon's Rogue River-Siskiyou National Forest focused on transportation and recreation corridors, and areas near communities. Recovery Act funds enabled an approach to forest restoration that went beyond the forest's normal projects of limited scope, to larger efforts designed to strategically reduce hazardous fuels at a landscape level (fig. 25). For example, one 30-acre demonstration project expanded to 800 acres with the addition of Recovery Act funds. This larger scale of work also helped solidify local capacity to undertake future restoration work by virtue of training new workers, expanding contractor capabilities, and bringing about the formation of stakeholder advisory teams. Similarly, on the Huron National Forest in Michigan, economic recovery funds are making possible treatments to reduce wildfire risk, expand wildlife habitat, and improve forest health on over 8,000 acres of national forest land through projects that are being strategically planned at a landscape scale. This approach contrasts with the piecemeal approach that forests normally must take as funding becomes available.

Recovery Act funding also enabled larger and more strategic invasive species control efforts. In Alabama, $6.281 million of Recovery Act funding was used to start the Alabama Cogongrass Control Center, which is implementing a statewide adaptive restoration plan to contain and control a particularly noxious nonnative invasive weed, cogongrass (*Imperata cylindrica* L. [Beauv.]), which threatens to transform productive timber and wildlife lands into fire-prone ecological deserts. Ad hoc and piecemeal efforts to contain extremely invasive plants like cogongrass have little chance of success. Work must be carried out strategically, at a landscape level, and over continuous periods to

significantly reduce the likelihood of recolonization. The Alabama Cogongrass Control Center has a strong outreach component that raises landowner and public awareness of invasive species and their impacts, an important ingredient for long-term control and funding. Furthermore, the project is training forestry consultants and chemical applicators in identification and control of invasive plants. This is creating long-term capacity for invasive species control while also stimulating an economically viable, new niche industry in invasive plant control. Resource managers hope that successful, large-scale, and strategic invasive plant control projects will bring more funding to address this serious ecological threat.

Lesson Learned

When resources are available, implementing larger and more strategic projects can have transformative effects on ecosystems and communities, produce long-lasting impacts, and help control future costs.

The Recovery Act funding of projects at levels beyond the normal annual funding level is enabling the Forest Service to undertake projects that have transformative effects on ecosystems and local communities. Larger and more strategically implemented projects offer the promise of reducing fuels and controlling invasive plants over larger landscapes in ways that have long-lasting impacts and therefore reduce future costs. Collaboration of nonprofit and business partners builds the capacity for future contracts that can continue and expand work begun under the Recovery Act. Significant upgrades to regional recreation infrastructure support local tourism-dependent economies. All of these projects have provided needed short-term jobs during the economic recession while at the same time developing critical infrastructure that lays the groundwork for long-term economic and ecological benefits. These examples demonstrate the benefits of larger, strategically planned projects.

Key Finding 8: Tradeoffs Are Inevitable

The way in which Recovery Act projects were developed, administered, and implemented sometimes required making tradeoffs between maximizing local community benefits and meeting other agency objectives and requirements.

Implementing Recovery Act projects sometimes compelled Forest Service employees to make tradeoffs between maximizing the socioeconomic benefits of projects (consistent with the goals of the act) and meeting other Recovery Act requirements and agency objectives. Examples described here come from the California and Oregon case studies, and illustrate tradeoffs between:

- Developing projects quickly vs. developing them collaboratively.
- Working with existing partners vs. developing new relationships and project beneficiaries.
- Awarding large contracts or agreements to a small number of recipients to ease agency administrative burdens and obligate money quickly vs. breaking projects into smaller pieces and awarding them to more recipients to spread project work.
- Creating lots of jobs quickly to create an immediate economic stimulus vs. releasing funds over a longer period at lower levels to sustain fewer but longer term jobs.
- Implementing projects in ways that would maximize local community benefits vs. ways that would maximize project efficiency and cost-effectiveness for the agency.
- Decisions about how to balance these tradeoffs were influenced by agency resources, goals, priorities, requirements, and the local context.[20]

[20] The information in this section is from Charnley 2011 and Davis and Moseley 2011. For additional discussion of the California project, see Key Finding 5. For additonal discussion of the Oregon case study, see Key Findings 5 and 7.

Developing Projects Quickly vs. Developing Them Collaboratively

The purpose of the Recovery Act was to infuse a large amount of money into the troubled economy to help end the continuing economic recession. It was important to spend this money as quickly as possible on projects that would create jobs, thereby preventing further economic downturn. The Recovery Act was signed on February 17, 2009; by March 9, 2009, the Forest Service had announced its first round of projects selected for funding. Within 5 weeks of the act's signing, the Forest Service had disbursed 10 percent of its Recovery Act funds to 21 states (Kimbell and Brown 2009). By January 2010, a complete list of projects had been announced, and by September 30, 2010, the agency's economic recovery funding had been obligated to fund projects that will be implemented through September 2015, the deadline for project completion and spending obligated funds. The Forest Service chief directed agency units to begin project implementation as quickly as possible once funds were obligated.

The rapidity with which the recovery money had to be obligated and spent meant that it was difficult to identify and recommend projects for funding in a collaborative way; there simply wasn't time. Forest Service units identified projects that were "shovel ready" (in that they had already received, or didn't require, NEPA approval) and submitted them to the Washington office within days of the Recovery Act's signing. Nearly $4 billion worth of projects were submitted for funding; decisions about which to fund were made in a short timeframe by agency executives in accordance with several criteria they had developed (see USDA FS 2010). Units were then informed of the project selections and charged with implementing them. This process and the speed with which it took place meant that projects located on Forest Service lands (capital improvement and maintenance projects, and 50 percent of the wildland fire management-funded projects) could be collaborative in terms of project implementation, but not in terms of project development and choice.

The situation was somewhat different for wildland fire management projects on state and private lands, for which Forest Service executives approved proposed programs of work. Specific project selections were left to states and tribes and were implemented through state and tribal partners, with funds administered through federal financial assistance instruments (grants and cooperative agreements) (USDA FS 2009c). Wood-to-energy projects also had the potential to be developed more collaboratively.

On Forest Service lands, selected projects were not always ones that were the top priority for the unit or its partners. Also, very few projects benefited from coordinated project investment by Forest Service units, or by Forest Service units and other agencies and partners that could leverage joint resources and improve project outcomes. Furthermore, the kinds of jobs created did not necessarily align with the kinds of jobs lost in communities. Thus, spending money quickly sometimes meant spending it less strategically and with less local collaboration.

Working With Existing Partners vs. Developing New Relationships and Project Beneficiaries

It was easiest to spend economic recovery money quickly by using funding mechanisms already in place, such as existing indefinite delivery/indefinite quantity (IDIQ) contracts, stewardship contracts, or agreements to which task orders or amendments could be added. It was more time-consuming to advertise new contracts or develop new agreements, especially with recipients the Forest Service or a specific forest or staff had not worked with before, and who were inexperienced with Forest Service administrative processes, expectations, and ways of accomplishing work. In cases in which Forest Service units had strong collaborative partnerships already established, it was possible to draw on these relationships and spend money quickly. However, one Forest Service criterion in project selection was its capacity to benefit a diverse array of workers (USDA FS 2009c). Furthermore, the Recovery Act contained direction that the Forest Service should, when practicable, carry out projects by utilizing youth job corps programs and other partnerships that serve young adults, as well as support tribes and

improve tribal lands. Thus, Forest Service personnel had to balance the direction to spend money quickly with the desire to distribute it to particular kinds of beneficiaries, and to a diverse group of recipients, both new and old.

One good example of doing this successfully comes from the Six Rivers National Forest in California (SRNF), which received nearly half a million dollars of recovery money for maintenance work on 122 miles of nonmotorized forest trails. The SRNF recreation staff distributed funding to three recipients, who were responsible for trails maintenance on different sections of trail in different locations. Two of these recipients—the Northwest Youth Corps and California Conservation Corps—serve young adults, and are organizations that the SRNF had worked with on trail maintenance projects for several years (fig. 26). It was quick and easy to use recovery money to add task orders to existing agreements between these organizations and the Forest Service Pacific Southwest Region. Doing so complied with direction in the Recovery Act and benefitted youth from all over California and the Pacific Northwest. However, forest recreation staff also wished to reach out to a new partner and spend recovery money locally, so they used part of these funds to develop a new agreement with a small, local nonprofit organization having a natural resource crew that was part of a local Watershed and Fire Safe Council. Work funded through this agreement provided jobs for 10 local residents, filling in seasonal gaps in employment for these workers, helping them develop new skills, and establishing a new relationship that will hopefully lead to more Forest Service work opportunities for the crew in the future.

Susan Charnley

Figure 26—California Conservation Corps youth crews perform trail work on the Six Rivers National Forest.

Making Large Awards to Fewer Recipients vs. Making Numerous Smaller Awards to a Greater Number of Recipients

To obligate over $1 billion in Recovery Act funds quickly, the Forest Service needed to increase its acquisitions management capacity. By the end of April 2009, the Forest Service had established four Economic Recovery Operations Centers (EROCs) around the country that were responsible for awarding Recovery Act contracts, grants, and agreements (Ernst-Ulrich 2010). These were staffed by a combination of agency employees, rehired retirees, and contractors. The EROCs faced three major challenges in accomplishing their mission: an enormous workload, a need for great speed, and a need for consistency. The EROCs were under extreme pressure to get projects awarded (Ernst-Ulrich 2010). The administrative burden of administering contracts, grants, and agreements could be eased by making larger awards to fewer recipients. As described under Key Finding 5, however, breaking projects up into different sizes and using different funding mechanisms to spread the benefits to diverse local recipients and take advantage of a range of local capacities was important for maximizing local community benefit. The four EROCs and the national forests that worked with them differed in the extent to which they sought expediency versus strategizing with forests about how to award money in a way that would benefit a range of local businesses and communities. The Rogue River-Siskiyou National Forest (RRSNF) in Oregon provides one example of a case in which the Oregon-based EROC placed high priority on maximizing benefits to local businesses. It was willing to talk through projects with the forest and work with them to broadly distribute project benefits. The RRSNF received about $45.5 million in Recovery Act funds. Between March 2009 and July 2010, the forest awarded roughly 71 contracts and 14 agreements for projects that included hazardous fuel reduction, habitat

restoration and enhancement, roads, trails, and toxic mine cleanup (fig. 27). These projects ranged widely in amount of funding, from under $100,000 to several million dollars.

Creating Many Short-Term Jobs vs. Creating Fewer Longer-Term Jobs

Because the Recovery Act was designed to stimulate rapid, large-scale job creation and quickly distribute funding, the agency's emphasis was on creating many short-term jobs rather than fewer longer term jobs (economic recovery funds can be spent up until September 30, 2015). Although short-term jobs had many benefits and helped a large number of people (see Key Finding 2), tradeoffs associated with this approach are illustrated by the work done in southwest Oregon. The RRSNF received over $30 million in recovery money to carry out hazardous fuel reduction projects. To accomplish a large volume of work quickly with a substantial influx of funds, some project recipients purchased new equipment. They worried, however, that after the surge of economic recovery work ended, they would not obtain future work at the level needed to see returns on their investment in this new equipment, and to sustain their increased capacity. This was particularly problematic because many contractors did not make much profit from the recovery work. There was fierce competition for projects in southwestern Oregon, with its high unemployment rate (around 14 percent) and concentration of contracting businesses; the RRSNF sometimes received over 13 bids per contract, especially in the beginning. Because of this highly competitive bidding environment, bid prices were very low, making it questionable as to whether contractors would be able to cover their costs; some who obtained more than one contract tried to balance losses on one job with gains on another. A second tradeoff that occurred on the RRSNF was that employers had to balance the desire to hire a large number of workers for a shorter period and accomplish fuel reduction in a cost-efficient and timely manner with the desire to hire fewer workers for longer periods, providing longer term employment and more consistent work quality.

Emily Jane Davis

Figure 27—Projects on the Rogue River-Siskiyou National Forest included meadow restoration.

In Michigan, given the high rate of local unemployment and the state's troubled economic outlook, employees hired with Recovery Act funds to work on the Huron Fuels Treatment project also questioned whether benefits to the local community might have been greater had fewer people been hired, but for a longer period. Although fewer families would have directly benefited, those that did would have had economic stability for longer. These employees now look at the amount of work that remains to be done on the national forest and consider whether longer employment might have also produced greater benefits to the land.

Maximizing Local Community Benefit vs. Maximizing Project Efficiency and Cost-Effectiveness for the Agency

Another tradeoff some Forest Service employees had to make was between accomplishing work in the most efficient and cost-effective way for the agency vs. spending money to maximize job creation and provide workers

with family-wage jobs, which might be more expensive for the agency. A good example is the SRNF roadside brush removal project described under Key Finding 5. Brush removal projects can be done by hand or by machine. Hand work is labor-intensive and increases job creation. Hand work also results in a more aesthetically pleasing outcome, so is a good approach to use on roads that receive a lot of visitor traffic. However, all agency interviewees concurred that mechanical brush removal is more efficient in time and cost. As one Forest Service interviewee put it, "…if we're given a limited amount of money and we're expected to do a maximum amount of work, we're not going to hire labor-intensive contractors. But if we're told that…we need to get the money out into the economy and here is a whole bunch of money, then that's okay…we can put a ton of people to work out there." The cost of mechanical brushing averaged $1,149 per mile, and the cost of brushing by hand averaged $2,417 per mile.

Another dimension of this tradeoff relates to how much workers should be paid. The Service Contract Act and the Davis-Bacon Act stipulate that federal contractors should be paid prevailing wages, depending on the types of work performed, which are specified. These acts do not apply to wages paid under agreements. One brush removal agreement recipient set wages for crew members that were comparable to contract prevailing wages, but as a result could not accomplish the work for the estimated bid price. Forest managers we interviewed felt it was irresponsible to expect taxpayers to pay these wages when the work could be completed by a different recipient at lower cost using a hand crew paid lower wages. This example illustrates the tradeoffs involved when creating family-wage jobs in agency efforts to promote local economic well-being.

A third dimension pertains to the use of agreements to accomplish work. Roadside brush removal typically is carried out using contracts, but agreements made it possible to obligate money quickly and target specific groups for recovery funds. Some Forest Service interviewees were frustrated by the use of agreements for brush removal because they perceived them as being less binding than contracts from a legal standpoint, and as providing a lower level of assurance that work would be accomplished according to agency specifications.

Lesson Learned

Often projects and ways of implementing them that are a win-win from an agency and community standpoint can be identified; other times tradeoffs are inevitable. Understanding the tradeoffs between maximizing agency vs. community benefits is important; decisions about how to balance tradeoffs will be influenced by agency resources, goals, priorities, and local context.

The case-study examples presented in this report demonstrate that projects can be located and implemented in ways that accomplish high-priority Forest Service goals while optimizing community social and economic benefits associated with this work. However, projects can't always be expected to produce optimal outcomes while simultaneously maximizing agency and community benefits. At times, agency requirements, direction, budgets, priorities, and other variables may necessitate making tradeoffs between what is best from an agency standpoint and what is most beneficial to communities. Even though Recovery Act projects were specifically designed to prioritize local job creation and to contribute to socioeconomic well-being in economically distressed counties, conditions and constraints sometimes made tradeoffs between priorities inevitable. Careful consideration of how to best meet the dual goals of healthy forests and healthy communities is important to promote understanding of when and how tradeoffs need to be made, for whom and for what purpose, and how best to minimize the negative impacts of these tradeoffs. It is also important to evaluate short- vs. long-term tradeoffs; for example, actions that appear to be more efficient for the agency in the short term may not be so in the long term.

Key Finding 9: Expect the Unexpected

Recovery Act projects had unintended and unexpected consequences for the Forest Service, with implications for local communities and the agency—some positive, some negative.

The Recovery Act had five goals, and the Forest Service directed staff to develop projects that would achieve these goals while addressing needs related to the agency's mission of sustaining and improving the health, diversity, and productivity of the Nation's forests and grasslands. In addition to the social and economic impacts associated with Recovery Act projects in communities, the Forest Service experienced a number of unintended or unexpected consequences, both positive and negative, as a result of implementing their Recovery Act projects. Some of these consequences have implications for community well-being, as described below.

Huron Fuels Treatment, Michigan[21]

The Huron Fuels Treatment project in Michigan's lower peninsula demonstrated both positive and negative unintended consequences. Limits on what Recovery Act funds could purchase meant that the Huron National Forest (HNF) had to expend funds from its forest accounts (annual allocations of appropriated dollars) to fully support this Recovery Act project. Recovery Act funding could not be used to buy durable goods, so the HNF had to use its annual allocation to outfit crews with basic equipment, including hardhats, radios, and chain saws. Restrictions on the use of micro-purchase check-writing authority meant that local small businesses that did not accept credit cards could not benefit from the Huron Fuels Treatment project. In addition, with no Recovery Act funds available to agency units after September 30, 2010, an unintended consequence will be further expenditures from forest accounts to manage Recovery Act contracts that extend over the next several years. This may compromise the HNF's ability to undertake other project work in the near future, and in turn to support local jobs associated with this new work.

On the positive side, staff on the HNF believe that implementation of Recovery Act projects will pay dividends in the future in the form of increased funding allocations. Staff believe that work conducted as a result of Recovery Act funding demonstrates their ability to meet increased targets. Thus, one unintended positive consequence is that Forest Service units receiving Recovery Act funds likely are enhancing their competitiveness for future agency funding.

Forest Service Recovery Act funding allowed national forests to make significant progress on NEPA-ready mission-critical work. On the HNF, staff estimated that they were able to cut in half an approximately 3 years' backlog of NEPA-approved projects. However, NEPA analyses could not be paid for with Recovery Act dollars, so forests could not use these funds to replenish their stock of NEPA-ready projects. An unintended negative consequence is that future appropriated funds will need to be used to rebuild the stock of NEPA-ready projects to maintain economic benefits to local communities while pursuing forest management priorities. Some stakeholders reported concerns that the depletion of NEPA stock could result in the unintended consequence of reduced project accomplishments in the future, thus less work for local communities until the stock of NEPA-ready projects is replenished.

In addition to moving forward on new NEPA-ready projects, Recovery Act funding allowed forests to make progress on some other projects that had been stalled by a lack of funding. Occasionally, approved forest management projects are delayed because agency funds are not available for necessary preliminary work such as surveying landlines or marking timber. On the HNF, some of these tasks were completed as part of Recovery Act projects, allowing stalled projects on adjacent land to move forward.

In most locations, Forest Service employees were told that Recovery Act projects were their top priority. For some this meant that regular tasks, such as NEPA analysis, could be temporarily set aside; but for others, such as those with fire responsibilities, this meant that Recovery Act work was added to ongoing duties. The tight timeframe and overall increased workload for recovery project planning, implementation, and oversight resulted, in some cases, in the unintended consequence of highly taxed and stressed Forest

[21] The information in this section is based on Jakes 2011. For additional discussion of this case study, see Key Findings 2 and 7.

Service employees. However, agency employees said that they would participate in a similar project in the future, just not next year.

During Recovery Act planning and implementation, some Forest Service employees on the HNF complained that the new work obliged them to give up details (temporary jobs to fill vacancies that are an opportunity to broaden their work experience) and other training opportunities that help them advance in the agency. However, by working on the Recovery Act project, Forest Service employees also gained such valuable job experience as project supervision, management, and administration (fig. 28). For example, the Huron Fuels Treatment Project was implemented using an incident command team approach that is commonly used to fight wildfires and manage other natural disasters. Working as a member of this team qualified some career employees for new positions on wildfire and other future incidents. In addition, prior to the Recovery Act project, the HNF had not used stewardship contracting to accomplish forest management goals. The experience gained using this contracting authority for the Recovery Act project, including designing and marketing sales with submerchantable material, should facilitate its expanded use in the future. Thus, an unintended consequence of the Recovery Act projects was an increase in staff skills and abilities.

Huron National Forest

Figure 28—Forest Service employees on the Huron National Forest gained supervisory and project management and administration experience that will benefit them in the future.

Apache-Sitgreaves National Forest and White Mountain Apache Tribe, Arizona[22]

In Arizona, unintended negative consequences related to funding were also seen. Partners in the White Mountain Stewardship Contract (WMSC) initially were under the impression that Recovery Act funding would supplement appropriated funding for the WMSC, increasing the number of projects undertaken beyond that originally planned prior to the Recovery Act. Partners later concluded that Recovery Act dollars had replaced some of the appropriated funding for the WMSC. They became frustrated by the missed opportunity they perceived to use a significant increase in funding (with Recovery Act dollars added to the expected WMSC allocation) to expand industrial capacity and forest restoration activities, producing further benefits for the local community. The local community is now concerned that future funding for the WMSC has been jeopardized because Recovery Act funds were substituted for some of the WMSC-appropriated funds. Promises by the agency to the local communities about WMSC funding are perceived to have been broken. Thus, an unintended negative consequence of Recovery Act funding has been some increase in mistrust of the agency by the local community. Perceived unresolved challenges or negative impacts may hurt future collaborative efforts.

[22] The information in this section is from Burns et al. 2011. For additional discussion of this case study, see Key Findings 1 and 7.

Lesson Learned

Develop policies that give local implementing units the flexibility to enhance the positive and minimize the negative unintended consequences of policy implementation.

It is not possible to foresee all of the impacts that a policy will have. Actions taken to implement policies at the local level can have unintended and unexpected consequences for agencies and communities, as described here. Flexibility and adaptive management make it possible for agencies to address any unanticipated negative consequences as they arise. The Recovery Act had stringent monitoring and implementation requirements, but nevertheless, local units were able to enhance unanticipated positive impacts to balance some of the negative. Recognizing and highlighting positive impacts and what engenders them can help agencies increase these kinds of benefits in the course of policy implementation in the future.

Key Finding 10: Projects Meet Recovery Act Goals, Create Community Benefits, and Help the Forest Service

Forest Service economic recovery projects helped meet the goals of the Recovery Act and demonstrated that Forest Service investments in rural wealth creation can have far-reaching social and economic benefits for communities, as well as positive outcomes for the agency in meeting its goals.

The Recovery Act had five goals, identified in the introduction to this report. As described in key findings one through nine, Forest Service economic recovery projects contributed to at least three of these. Our results confirm that these projects helped preserve and create jobs, which should contribute to long-term economic recovery (goal 1). In doing so, the projects typically assisted people heavily affected by the recession, especially because the agency targeted job creation in counties experiencing high economic distress (goal 2). Many Forest Service projects represent investments in environmental protection and other infrastructure that will have long-term economic benefits (goal 4). These longer term benefits are likely to be more fully realized when the economy recovers because people will be more likely to travel and take advantage of new recreation infrastructure, stimulating local economies as they spend money in communities near Forest Service lands. In addition, stronger markets for wood products and increased capital to invest in infrastructure development will help communities build on existing timber-based economies and encourage development of forest restoration economies. Economic recovery will also make it more likely that funding can be sustained to support restoration activities such as invasive species control and hazardous fuels reduction.

Forest Service economic recovery projects did more than meet the goals of the Recovery Act. The lessons learned from these projects, the Recovery Act process, and this socioeconomic assessment demonstrate that Forest Service mission-related work (including capital improvement and maintenance projects, environmental restoration projects, and wood-to-energy projects) can create significant local economic opportunities that have short- and long-term socioeconomic benefits for rural communities near Forest Service lands. How did the Forest Service generate rural wealth through its Recovery Act projects? Examples are many, as have been described in this report. One key strategy was to implement projects that created direct, indirect, and induced jobs in counties having high economic need. As figure 6 indicates (see page 6), between 2,400 and 6,200 direct, full-time equivalent jobs were created quarterly between the third quarter of 2009 and the fourth quarter of 2010 through Recovery Act money, with the number increasing over time. It is important to note that these job numbers represent full-time equivalent jobs for the quarter. Because many economic recovery jobs were short term or part time rather than full time during the quarter in which they were reported, a much higher number of individuals were actually employed by Forest Service economic recovery projects each quarter. Thus, these jobs had a wider economic impact.

Other key strategies included:

- Creating short-term jobs that helped people piece together rural livelihoods.

- Investing in long-term, sustainable job creation by developing physical infrastructure projects.
- Building the capacity of individuals and organizations to engage in work related to forest management in the future.
- Implementing projects in ways that increased the number of local people employed by them.
- Developing projects that built on local capacity and addressed local community needs and priorities.

The social benefits associated with Recovery Act job creation ranged from relationship building and improved physical fitness to increased self-esteem and heightened awareness of the natural world.

At the same time, the agency benefitted from the Recovery Act by successfully accomplishing a large backlog of projects and implementing new projects that were needed, some of which occurred on a much larger scale than would have been possible otherwise, enhancing their environmental outcomes. Moreover, by building the capacity of communities to engage in forest management, restoration, and stewardship activities, recovery projects will have positive benefits for forests and the Forest Service in the future. Thus, recovery projects also had positive outcomes for the agency in meeting its goals.

Lesson Learned

Lessons can be learned from the Recovery Act projects that will help the Forest Service design projects that place a high priority on helping rural communities thrive while contributing to forest stewardship and restoration, consistent with USDA's strategic goals.

Forest Service Recovery Act projects provide examples of different project types and the kinds of benefits they generate for local communities and for the Forest Service in meeting its mission. These projects, detailed in Charnley et al. 2011, were all intended to promote short-term job creation. Nevertheless, the projects can be divided into two broad categories—those that focused solely on short-term job creation, and those that also aimed to contribute to long-term economic development. Highlighting the kinds of benefits that different project types generate can help managers make decisions about what types of projects to fund in the future, and how to implement them.

Many projects had the principal benefit of hiring people to perform needed work in areas such as trail maintenance, roadside brush removal, fuels reduction, and nonnative invasive plant control. These projects provided short-term jobs that were often available to local people and, when larger projects were broken up into smaller contracts, were open to diverse skillsets and institutions. Although most of these jobs were short term and often seasonal, the work helped people acquire skills and experience that may enable them to find future employment with the Forest Service, as well as with other agencies and businesses. The Forest Service can also benefit from having a local work force with experience in many of the core tasks that are part of forest management. Because they involved many diverse partners, these projects often served to build new and strengthen existing partnerships between the Forest Service, nonprofits, tribes, youth conservation corps, and businesses. They also provided many long-term ecosystem health and safety benefits resulting from restoration of ecosystems.

Projects that focused on long-term economic development typically emphasized infrastructure maintenance and improvement—such as building repair and improvement, trestle repair, bike path development, improvements to sawmills and biomass facilities, and even development of "soft infrastructure" (e.g., human capacity, relationships, institutions) for invasive plant control. Such projects had a different set of benefits. Often, short-term work was highly specialized and there were no local people or firms with the appropriate skills and experience. In these cases, the contracts for this work went to companies from outside the area, although locals were often subcontracted to do some of the work. Many of the local impacts of these types of projects are expected to accrue long into the future. For example, investments in mill infrastructure created new permanent jobs and helped keep complex industrial networks operating, which maintained and created jobs that were not counted in Recovery Act reporting. Other projects strengthened tourism infrastructure that provides

the foundation for many rural communities. These long-term benefits provide critical support to local economies both through jobs created and through the multiplier effects that occur in communities and regions. At the same time, long-term economic revitalization of local economies often provides critical support to the Forest Service in carrying out its mission, including ecosystem management, recreation, and economic development.

The Forest Service can learn a great deal from Recovery Act projects that will be valuable to carrying out its mission in the future. As indicated above, different types of projects provided different kinds of benefits, spatial impacts, and timeframes. The projects that were proposed and implemented, the ways that contracts were awarded, and the efforts of individual employees and work groups in establishing partnerships all influenced the type of benefits generated, the distribution of the benefits, and the creation of long-term capacity and infrastructure. The Forest Service has multiple objectives in carrying out its work on both national forests and private lands. Careful attention to these strategic efforts to provide benefits across the full spectrum of objectives can help in carrying out the Forest Service mission.

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Metric Equivalents

When you know:	Multiply by:	To find:
Miles	1.609	Kilometers
Acres	.405	Hectares

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Appendix

This study was conducted using a case-study approach, a common research method applied when social scientists want to study the who, what, how, and why of contemporary events within a real-life context (Yin 2003). In this instance, the research team was interested in how USDA Forest Service American Recovery and Reinvestment Act (hereafter referred to as Recovery Act) projects were developed and carried out, why they were chosen, who was involved, how they affected the agency, what the environmental impacts were on lands where they were implemented, and what the economic and social effects were for project recipients, employees, and rural communities. The research team was asked by Forest Service Washington office Recovery Act staff to conduct case studies in a number of states that had received a substantial amount of Forest Service Recovery Act funding (which totaled $1.15 billion). Eight states were selected: Alabama, Arizona, California, Idaho, Michigan, Montana, North Carolina, and Oregon.

Case studies were chosen based on several criteria. The studies were located in states with high levels of Forest Service recovery spending, focused on rural areas that had a relatively high county economic distress ranking, and were selected to provide broad geographic representation. The cases also included diverse project types. Finally, these projects were ones that would produce significant on-the-ground outcomes by summer 2010. We identified sites that met as many of these criteria as possible by talking to the Recovery Act point of contact(s) in each Forest Service regional office. We then talked to the point of contact for each recommended case study to get a sense of the status of project implementation; anticipated environmental, economic, and social outcomes; and the local Forest Service unit's interest in being involved in an assessment of socioeconomic impacts. The research team met to discuss the recommended projects for each state. In consultation with Washington office Recovery Act staff, we chose case studies that best met our criteria, that represented a range of project types (e.g., fuel reduction, invasive species management, road or trail construction, biomass utilization and facility improvements), and that involved different branches of the Forest Service (National Forest System, State and Private Forestry, and Research and Development).

Qualitative data about the projects and their effects were gathered using semistructured, face-to-face interviews. We used purposive sampling to select interviewees (Lindlof and Taylor 2002). This method is appropriate when scientists need to identify key informants who have specialized knowledge about the event being studied. Working with the local point of contact, we identified Forest Service employees who had knowledge of how the project was developed and carried out, partners who had received Recovery Act funds and participated in project implementation, and individuals who benefited from jobs created or retained as a result of the project. In total, 187 individuals were interviewed. Most interviews were recorded and transcribed for analysis purposes. Additional qualitative data were collected from secondary sources such as local newspapers, existing socioeconomic studies, and Forest Service documents.

Quantitative data about social and economic conditions in the case-study locations were obtained from the U.S. Census Bureau's Population Division and Small Area Income and Poverty Estimates Program, the American Community Survey, the Bureau of Labor Statistics, the National Center for Education Statistics, the Bureau of Economic Analysis, and the Department of Agriculture's Economic Research Service to help understand the state and local socioeconomic context. Table 4 describes these sources, and the data that came from them, in more detail.

Quantitative data about Recovery Act projects highlighted in the case studies were obtained from corporate databases, including USAspending and Recovery.gov. Table 5 describes these sources in more detail. Figures for number of jobs reported came from quarterly reports submitted to Recovery.gov by award recipients.

Recovery Act investment by state was calculated by using information provided by the Forest Service

Table 4—Sources of socioeconomic data used in case study

Source	Data	Web address
Population Division, U.S. Census Bureau	Population estimates including total population, population by age group, population by race, and origin; 1990 and 2000–2009	http://www.census.gov/popest/counties/asrh
Local Area Unemployment Statistics Program, Bureau of Labor Statistics	Monthly unemployment, 1990–2010	http://www.bls.gov/lau
Small Area Income and Poverty Estimates Program, U.S. Census Bureau	Percentage of resident population living in poverty, and median household income, 1989–2008	http://www.census.gov/did/www/saipe/index.html
National Center for Education Statistics, U.S. Department of Education	School enrollment, K-12, and students eligible for free or reduced-price lunch, 1986–2008	http://nces.ed.gov/ccd
USDA Economic Research Service	Percentage of resident population who have completed high school and college, 1970, 1980, 1990, 2000. Rural Urban Continuum Codes, 1974, 1983, 1993, 2003.	http://www.ers.usda.gov/Data/Education, and http://www.ers.usda.gov/Briefing/Rurality
Regional Economic Information System, Bureau of Economic Analysis	Employment by industry, 1990–2000, 2001–2007	http://www.bea.gov/
American Community Survey, U.S. Census Bureau	Housing statistics	http://www.census.gov/acs/www/

Table 5—Sources of government spending data used in case study

Source	Description	Web address
USAspending.gov, maintained by the U.S. Office of Management and Budget	Database of all federal awards. Data include award identification numbers, project descriptions, funding, recipient information, and more.	http://www.usaspending.gov
Recovery.gov (official Web site of Recovery Act spending)	Database of American Recovery and Reinvestment Act spending, including quarterly reports filed by award recipients detailing job creation.	http://www.recovery.gov

Washington office, current through September 8, 2009. In states that received funding for multistate projects, the total investment figure is further broken down to indicate funding for both state-specific projects and the state's share of multistate projects. In calculating a state's share of a multistate project, it was assumed that every state involved in a multistate project received an equal portion of the funding. Therefore, investment figures for states that received multistate project funding are given as approximations rather than hard figures. Approximations are indicated with the use of a tilde (~).

The Recovery Act requires recipients to report number of jobs in the form of fractional full-time equivalent (FTE) jobs. Only jobs that are funded directly by Recovery Act dollars are considered, and there is no differentiation made between existing jobs or newly created jobs. At the end of each quarter, the recipient takes the total number of hours worked and funded by the Recovery Act, and divides it by the number of quarterly hours that constitute a full-time schedule to calculate the number of FTE jobs. The number of quarterly hours constituting a full-time schedule may differ depending on job standards, but is typically 520. (This assumes that a typical full-time position is 40 hours per week. A quarter is 13 weeks; 40 × 13 = 520.) Therefore, if a recipient records that in one quarter, three employees worked a total of 1,300 hours that were paid for by the Recovery Act, they will divide those 1,300 hours by 520 and report 2.5 FTE jobs.

Prior to publication, drafts of the case-study documents were reviewed by at least three individuals who participated in their development, including Forest Service employees and project recipients.

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