Colorado Uncompahgre Plateau Collaborative Forest Landscape Restoration Project:

2013 Social and Economic Monitoring Report

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Executive Summary

The Uncompahgre Plateau in western Colorado holds significant social, economic, and ecological value across the region. The Colorado Uncompahgre Plateau Collaborative Forest Landscape Restoration Project (UP-CFLRP) intends to protect these values through forest restoration projects spanning 572,000 acres within a 1.0 million-acre collaboratively identified landscape. The UP-CFLRP is overseen by the USDA Forest Service's (USFS) Grand Mesa, Uncompahgre, and Gunnison (GMUG) National Forests in conjunction with the Western Colorado Landscape Collaborative (WCLC). This report presents the findings from the social and economic monitoring assessment of the UP-CFLRP for calendar year 2013. This project-level assessment identifies the local economic contributions and summarizes the wood utilization associated with the UP-CFLRP task orders.

UP-CFLRP Funding and Accomplishments

Each Regional Forester is required to prepare an annual report describing the work accomplished and the sources of funding of the CFLR projects (USDA Forest Service, 2013). This section provides an overview of the information provided in the annual report for FY2013 to provide readers an improved understanding of the funding, as well as the collaborative accomplishments the group has achieved.

The primary source of funding toward the CFLR projects is the Congressional appropriations. A total of $504,996 was appropriated to the UP-CFLRP by Congress for FY2013. These appropriated funds were supplemented by $310,400 in carryover funds from the previous year. The resulting $815,396 total of CFLR and supplemental funds went to contracts to complete work in the UP-CFLRP project area in FY 2013, with a total of 2,134.27 acres treated on National Forest System land.

A total of $1,482,208 in matching funds was also used to complete work for the UP-CFLRP in FY2012. This included: 1) $1,125,572 in USFS matching funds, which were primarily used for USFS salary related to contract preparation and work associated with the UP-CFLR project; 2) 'Funds contributed through agreements' with partner organizations to implement and monitor efforts within the CFLR project area totaling $212,148; 3) 'Partner in-kind contributions' totaled $139,218, which included volunteer in-kind contributions and cash donations through agreements and grants; and 4) 'Service work accomplishment through goods-for services funding…', were equal to $5,270 for work completed through stewardship contracts in FY2013.

Additionally, leveraged funds, which are funds used by partners to accomplish restoration activities on non-National Forest System lands associated with the UP-CFLRP project area, totaled

$50,000 in FY2013. The Western Colorado Landscape Collaborative (WCLC), which has been a partner with the Grand Mesa, Uncompahgre and Gunnison National Forests, received the 2013 Colorado Collaboration Award. The WCLC was recognized for their work with state and federal agencies, local utilities, and other non-profit organizations to improve ecosystem health, wildlife habitat, and reduce severe fire risk throughout Western Colorado. Much of the WCLC's work has been completed on the Uncompahgre Plateau. The award included a $50,000 prize, which was used by the WCLC to continue their collaborative efforts.

Although the annual report identifies over two dozen performance measures for the CFLRPs, four significant accomplishments include:

- 7,438 acres of terrestrial habitat restored or enhanced;
- 225 miles of roads maintained or decommissioned; and
- 1,017 acres of wildland-urban interface high priority hazardous fuels treatment.
- 412 acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions.

Economic Contributions

Creating jobs and supporting local economies is a high priority for the UP-CFLRP. An analysis of the contract-level economic contributions in calendar year 2013 was used to identify the extent these economic goals were met. It should be noted that the economic impact estimates in this analysis contrast with the estimates reported in the FY2013 CFLRP Annual Report (USDA Forest Service, 2013) due to differences in methodologies and data assumptions (Appendix C). This report focuses on solely on UP-CFLR funded task orders.

One contractor worked on two task orders associated with the UP-CFLR project in 2013. One task order initiated in 2012 and was completed in 2013. The second task order initiated in 2010 was also completed in 2013.

The economic effects of these restoration activities were identified using Input-Output (I-O) modeling of operational expenditure and labor information obtained from the contractor. Our analysis estimates the restoration activities in 2013 contributed approximately $46,275 in labor income and $100,021 in GDP to the local economy (Table 1). In addition, a total of 1.16 full- and part-time jobs were calculated. All company employees reside within Colorado and are able to commute to work. The UP-CFLRP primary commercial contractor subcontracted two other companies from Colorado to assist with

mechanical forest management operations. The primary contractor also subcontracted one company from out-of-state who hired crews locally in Colorado to complete the work.

Table 1. Economic Contributions of UP-CFLRP Task Orders in 2013

Employment (Full and part time jobs)	Labor Income (2013 US)	Value Added (2013 US)
1.16	$46,275	$100,021

Recommendations for Future Monitoring – Economic Contributions

1. The 2013 UP-CFLRP monitoring of local economic impacts used labor and operational expenditures obtained directly from the contractor. This analysis adds to the national fiscal year report by providing a more locally-based understanding of the project's social and economic impact. This locally-based analysis should be completed on an annual basis.
2. Additional labor and operational expenditures should be collected for other project activities under the UP-CFLR project. This could include labor and expenditures related to the monitoring efforts and service contracts related to additional restoration activities (e.g. invasive weed mitigation or road decommissioning). This would provide an improved understanding of the labor and economic impacts of the UP-CFLRP project.

Wood Utilization

A total of 323.8 acres were treated through task orders under the UP-CFLRP in 2013. The primary commercial contractor removing material on the project reported that all (100 percent) of the materials removed on the GMUG were through mechanical treatments. Most of the materials removed (99 percent) were available for value-added use, while 1 percent was either piled and burned or left for wildlife habitat. This is due to the types and quality of materials removed through these treatments. These treatment prescriptions were identified to meet the restoration goals outlined by the UP-CFLR collaborative and the Grand Mesa, Uncompahgre, and Gunnison National Forest plans.

Two businesses purchased the available value-added materials from the UP-CFLRP commercial treatments in 2013. All of the businesses that purchased material were located in Colorado, either in the same county or a county near where the work was being done. All (100 percent) of the value-added material was sold as sawtimber. All (100 percent) of the sawtimber removed from the project area was used for dimensional lumber.

Recommendations for Future Monitoring – Wood Utilization

1. The 2013 wood utilization monitoring for the UP-CFLRP used data obtained directly from the contractors. This analysis adds to the national fiscal year report by providing a more locally-based understanding of the project's social and economic impact. This locally-based analysis should be completed on an annual basis.

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Goals and Indicators

The Colorado Uncompahgre Plateau Collaborative Landscape Restoration Project (UP-CFLRP) is one of 23 projects funded nationally under the Collaborative Forest Landscape Restoration program of the USDA Forest Service (USFS). It is intended to accelerate ongoing forest restoration treatments that provide long-lasting ecological, social and economic benefits across a 1.0 million-acre landscape covering parts of the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG) in Colorado. This project will facilitate additional treatment of approximately 160,000 high-priority acres on National Forest System (NFS) lands within the Western Colorado Landscape Collaborative's designated 1.0 million acre restoration zone and will be enhanced by existing and future treatments on adjacent federal and non-federal lands.

The forests (both federal and non-federal) within this proposed area exhibit a high to very high degree of ecological departure from historic norms and are susceptible to uncharacteristic high intensity wildfire and insect and disease infestations. These conditions increasingly threaten human health and well-being, as well as critical ecosystem services throughout the region. Through strategic placement of

treatments, the UP-CFLRP plans to restore historic fire regimes, including low intensity wildland fires, with a goal of reducing risks to the ecosystem and communities and lowering suppression costs. Much of the area is deemed important for protecting communities and critical watersheds from the impacts of uncharacteristic fire.

Opportunities for job creation, business support and development, and meaningful biomass utilization to support local industry are emphasized in the design and implementation of treatments. The goal of the CY2013 socioeconomic monitoring was to measure the economic contributions of the UP-CFLRP project study area and to develop a baseline measure for future monitoring efforts. The socioeconomic monitoring plan is based upon: 1) topics and indicators identified by the Western Colorado Landscape Collaborative, and 2) national CFLR program monitoring outcomes and indicators. The monitoring plan identifies two key objectives for the 2013 social and economic assessment:

1. Determine the economic contributions associated with the UP-CFLRP project funded task orders
2. Measure the types and amounts of wood utilization that occurred as a result of these funded task orders.

The remainder of this report presents the findings associated with these objectives. Subsequent appendices provide background information to the Collaborative Forest Landscape Restoration program and the Western Colorado Landscape Collaborative, as well as the methods used to obtain and analyze this data.

Findings

The following subsections outline the UP-CFLRP funding and accomplishments, and present results from analyses of economic contributions, employment, and wood utilization associated with the UP-CFLRP.

UP-CFLRP Funding and Accomplishments

This section reviews the sources of funding and key accomplishments identified in the *Uncompahgre Plateau CFLRP Fiscal Year 2013 Annual Report* (USDA Forest Service, 2014). The USDA Forest Service's Regional Foresters are required to prepare an annual report describing the work accomplished and an evaluation of progress for each Collaborative Forest Landscape Restoration Project (CFLRP) within their region. The annual report records the sources of funding and the accomplishments of the CFLR project.[1] Additional detail and insight on these funds, accomplishments, and the annual reporting were obtained through interviews with the USFS UP-CFLRP representative: Clay Speas, Wildlife, Fish and Rare Plants Lead Officer, on the Grand Mesa, Uncompahgre, and Gunnison National Forests (GMUG). Each CFLRP has six funding sources which are documented in the CFLRP annual report. These sources include the appropriated funding, four types of matching funds, and leveraged funds. The GMUG received $2,297,604 in total funding for the UP-CFLRP in FY 2013. The following subsections outline the sources of this funding and the resulting accomplishments.

[1] The annual report records: the sources of funding; how the CFLR work has contributed toward meeting performance measures outlined in the USFS 10 year Comprehensive Strategy Implementation Plan (2006); the assumptions used to generate numbers and/or percentages entered into the TREAT model; A description of other community benefits achieved; a description of the multiparty monitoring efforts; the Fiscal Year accomplishments; a description of the total acres treated during the CFLRP process; the fire management activities which have occurred in the project area; a description of challenges associated with implementing the CFLRP; and anticipated management activities for the following fiscal year.

Collaborative Forest Landscape Restoration Funds

The Collaborative Forest Landscape Restoration funds (CFLN) are the appropriated funds designated by Congress on an annual basis to each of the CFLR projects. A total of $504,996 was appropriated to the UP-CFLRP by Congress for FY 2013. These appropriated funds were supplemented by $310,400 in carryover funds. The resulting $815,396 total of CFLN and supplemental funds went to contracts to complete work in the UP-CFLRP project area in FY 2013.

Matching Funds

The matching funds are defined as any non-CFLR funds from within the USFS and/or external partners used to conduct work on national forest system lands associated with the CFLR project. In FY 2013 the UP-CFLRP reported a total of $1,482,208 in matching funds. The report identifies four types of matching funds – the Forest Service matching funds, funds contributed through agreements, partner in-kind contributions, and service work accomplishments through goods-for-services contracts. The Forest Service matching funds are defined as any non-CFLR funds that are used to complete work in the CFLR project area. There was a total of $1,125,572 in Forest Service matching funds in FY 2013 used to accomplish UP-CFLRP work.[2] The majority of these funds were used for USFS salary related to contract preparation and work associated with the UP-CFLRP.

The second type of matching funds reported is 'Funds Contributed through Agreements.' These are funds provided under agreements with partner organizations to implement projects and monitoring efforts within the UP-CFLRP area. The total amount of funds contributed through agreements with the

[2] USFS matching funds came from the following budget line items (BLIs): Hazardous fuels reduction - $460,723; Capital Improvement and Maintenance-Roads - $29,639; Reforestation trust fund - $55,941; Capital Improvement and Maintenance-Trails - $18,454; Forest products - $245,751; Salvage Fund - $65,892; Vegetation and watershed management - $35,332; and Wildlife and fisheries habitat management - $213,840.

GMUG in FY 2013 was $212,148 in FY 2013. These agreements included the following partner contributions:

- The Tri-State Energy Association contributed $1,810 toward 392 acres of weed treatment;
- Trans Colorado funded $6,110 toward 392 acres of weed treatment;
- Thunder Mountain Wheelers provided $12,000 toward the maintenance or improvement of 93.4 miles of trails;
- Colorado Parks and Wildlife provided three OHV grants used for the maintenance or improvement of 93.4 miles of trails – $58,853 to Grand Valley, $65,259 to Ouray, and $26,469 to Norwood;
- $5,171 of Title II Rural Schools Act funding was used to build a ford on the lower Dominguez Stream;
- Colorado Parks and Wildlife contributed a $4,212 parallel Trail grant for the maintenance or improvement of 93.4 miles of trails;
- Trans-Colorado contributed $6,110 toward 392 acres of weed treatment;
- Western Area Power Authority provided $6,154 in funding toward 392 acres of weed treatment;
- Colorado Parks and Wildlife contributed $20,000 from their Habitat Partnership Program grant

The third type of matching funds reported is 'Partner In-Kind Contributions' and totaled $139,218; these include both volunteer in-kind time contributions and cash donations through agreements and grants. Volunteer time was contributed by 11 local organizations and individuals and totaled $60,945.[3] Donations made through grants and agreements were contributed by four organizations and totaled $78,273.[4]

The fourth type of matching funds reported is 'Service work accomplishments through goods-for-services funding within a stewardship contract'. These funds are the stewardship credits a contractor receives for completing service agreement work within a stewardship contract. The matching fund amount recorded equals the amount of stewardship credits the contractor reimburses the national

[3] This includes: Delta County Joint School District ($2,375); Montrose High School ($6,000); Norwood High School ($5,900); High School student volunteers ($13,929; 630 hours); Citizens Group Monitoring volunteers ($7,075; 320 hours); COPMOBA Unc trails volunteers ($1,018; 46 hours); Western Slope ATV Club ($18,509; 836 hours); Bookcliffe Rattlers volunteers ($1,282; 58 hours); Jeff Price ($1,857; 84 volunteer hours); Rocky Mountain Elk ($1000); and Oxbow Mining ($2,000).

[4] This includes: Uncompahgre Partnership ($1,500); the Colorado Forest Restoration Institute ($20,073); Southwest Conservation Corps ($46,200); Mule Deer Foundation ($500); and Colorado Parks and Wildlife ($10,000)

forests for in return for timber product removal (i.e. trading goods for services). In FY2013 the stewardship credits reimbursed totaled $5,270 for work completed through the Sanborn Hanks Stewardship contract, conducting ponderosa pine treatments on 498 acres.

Leveraged Funds

The Colorado Parks and Wildlife Native Seed Warehouse that opened in 2012 in cooperation with several federal agencies non-profit organization continues to expand their operations. Several species of native seed were collected and propagated by private growers and are being stored in the warehouse. The Forest and many other state and federal agencies are working with the Western Colorado Landscape Collaborative (WCLC -formally the Uncompahgre Partnership) as a broker to purchase seed at bulk rates. The Forest is also finalizing out-year native seed mixes and quantities.

The Western Colorado Landscape Collaborative, who has been a primary partner with the Grand Mesa, Uncompahgre and Gunnison National Forests for nearly 20 years, received the Colorado Collaboration Award for 2013. This award recognizes successful collaborations in Colorado. The WCLC was recognized for its partnership with state and federal agencies, local utilities and other non-profits to improve ecosystem health and wildlife habitats and reduce fire danger in Western Colorado. Much of their work has been completed on the Uncompahgre Plateau in Western Colorado and Eastern Utah. The award included a $50,000 prize that will be used by WCLC to continue their collaborative efforts in Western Colorado.

Neiman Enterprises, Inc. of Hulett, WY purchased a saw mill in Montrose, Colorado in 2012. The mill is now fully operational employing over 500 people. Engelmann spruce that is being harvested from the Uncompahgre Plateau is sold to the mill for processing. Having a local timber industry has greatly enhanced the GMUG's ability to carry out forest restoration efforts.

The Forest continues to accomplish a large percentage of road maintenance using Schedule A Agreements with Mesa, Montrose, Ouray and San Miguel Counties.

FY2013 Accomplishments

This section provides a brief overview of the UP-CFLRP accomplishments reported in the USFS "Uncompahgre Plateau Project CFLRP Annual Report" for FY2013 (USDA Forest Service, 2014). The report provides a detailed review of the UP-CFLRP accomplishments through 19 performance measures (USDA Forest Service, 2014). The accomplishments reported include all work completed by the USFS and partner organizations on the national forests within the UP-CFLRP area. It therefore includes work funded through each of the categories identified above except for leveraged funding. Four of the UP-CFLRP's significant accomplishments for FY2013 include:

- 7,438 acres of terrestrial habitat restored or enhanced;
- 225 miles of roads maintained or decommissioned; and
- 1,017 acres of wildland-urban interface high priority hazardous fuels treatment.
- 412 acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions.

Economic Contributions

The CFLR program funding proposal requirements sent to Regional Foresters identified multiple topics to be addressed. The investments section specifically asks: "Will jobs be created? If so, what kind, how many, and for how long?" The following analysis estimates the economic effects resulting from the implementation of CFLR program funded restoration treatments on the Grand Mesa, Uncompahgre, and Gunnison National Forests in 2013.

One contractor worked on two task orders associated with the UP-CFLR project in 2013. One task order initiated in 2012 and was completed in 2013. The second task order initiated in 2010 was also completed in 2013.

The economic effects of these restoration activities were identified using IMPLAN® (IMpacts for PLANing), a regional economic impact analysis system originally developed by the USFS to model pertinent operational expenditure and labor information obtained from the primary contractor. Our analysis estimates the restoration activities in 2013 contributed approximately $46,275 in labor income and $100,021 in value added (i.e. Gross Domestic Product or GDP) to the local economy (Table 2). These contributions to the local economy were stimulated by the contractors' operational expenditures as well as labor income.

Table 2. Economic Contributions of UP CFLR Task Orders in 2013

	2013
Employment (Full and part time jobs)	1.16
Labor Income	$46,275
Value Added (GDP)	$100,021

Labor income includes all forms of employment income (wages, benefits, and proprietor income). The value-added contributions consist of: (1) employee compensation – wages and salaries plus benefits paid by local industries; (2) proprietor income – income from self-employment; (3) other property income – corporate income, rental income, interest and corporate transfer payments; and (4) indirect business taxes – sales, excise, fees, licenses and other taxes paid, including non-income based payments to the government.

A total of 1.16 full- and part-time jobs were calculated for the UP-CFLRP in 2013. These estimates are lower than those reported in the 2013 USFS Uncompahgre Plateau CFLR annual report because this analysis focuses on forest treatment task orders (USDA Forest Service, 2014). All two of the task orders were for commercial contracts, which resulted in value-added product removal. Lower employment calculations also result from both of the task orders being completed through mechanical treatments, which generally require fewer employees than manual treatments. Mechanical treatments involve the use of heavy machinery and are less cost prohibitive and less labor intensive than the manual treatments which involve individual sawyers removing trees and brush designated by the USFS prescription.

Photo: Pam Motley

Jobs reported in IMPLAN are annual averages of both full- and part-time total wage and salary employees, as well as self-employed jobs. This method of counting employment is a standard convention and consistent with methods used by the U.S. Bureau of Labor Statistics. However, one cannot discern the number of hours worked or the proportion of work that is full-time time vs. part-time. It is also important to reiterate the employment contributions calculated are reported simply as jobs, not full time equivalents (FTEs). The impacts include both full- and part-time employment; therefore a person with more than one job could show up more than once in the data. This prohibits comparisons to population data and inferences about the effect on unemployment rates. It is also important to note that IMPLAN is a static model representing a snapshot in time.

In addition to the economic contributions data, the primary contractor supplied information concerning the location of their employees and subcontractors. The primary commercial contractor implements most of the contract work but also subcontracted with three other companies to assist in forest management and trucking operations. Three of the four companies are based in Colorado. The primary contractor's employees all reside within Colorado and are able to commute to work. The company based out-of-state hired crews locally in Colorado to complete work

Wood Utilization

The following section reports the number of acres treated by treatment type, the types of materials sold, the products produced from those materials, and the number and location of the businesses to which the materials were sold. The 2013 USFS Uncompahgre Plateau CFLR annual report indicates that all funding sources contributed to the treatment of a total of 4,124 acres in 2013 (USDA Forest Service, 2014). This report focuses on CFLR-funded task orders, which contributed to the mechanical treatment of 323.8 acres.

In 2013, none of the treatments were completed through non-commercial task orders with the objectives of regenerating aspen stands, improving wildlife habitat, reducing fuels, and preparing stands for future prescribed fire treatments (Table 3).

All 323.8 acres were completed by one primary contractor through commercial contracts which removed value-added materials (Table 3). The amount of material available for wood utilization largely depends upon the type of forest treatment used – mechanical or manual – with mechanical treatments resulting in a greater availability of value-

Table 3. Number of acres mechanically treated in 2013 by treatment type and task order

Task Order	Location (County)	Non-commercial Treatment Acres	Commercial Treatment Acres
Monitor Mesa	Montrose		186.8
Uncompahgre Mesa	Montrose		137.0
		0	***323.8 acres***

added materials. The contractor reported that all (100 percent) of the materials removed on the GMUG were through mechanical treatments. In addition, of the material that was removed through mechanical treatments, 99 percent was available for value-added use, while 1 percent was piled and burned (not a prescribed burn) or left for wildlife habitat. These treatment prescriptions were identified to meet the

restoration goals outlined by the UP-CFLR collaborative and the Grand Mesa, Uncompahgre, and Gunnison National Forest plans.

Two businesses purchased the available value-added materials from the UP-CFLRP commercial treatments in 2013. All of the businesses that purchased material were located in Colorado, either in the same county or a county near where the work was being done. All (100 percent) of the value-added material was sold as sawtimber. All (100 percent) of the sawtimber removed from the project area was used for dimensional lumber.

Estimates of the types of products developed from these materials were provided by the contractor (Table 4). The value-added material included dimensional lumber. 100 percent of the material from the Grand Mesa, Uncompahgre, and Gunnison National Forests went to sawtimber.

Table 4. Wood products created in 2013

	Percent of total material sold	Product Value
Dimensional Lumber	**100%**	High

Appendix A – The Collaborative Forest Landscape Restoration Program

The Collaborative Forest Landscape Restoration (CFLR) Program was established by Congress under Title IV of the Omnibus Public Land Management Act of 2009. The primary purpose of the CFLR program is to support collaborative science-based restoration of priority forest landscapes, while encouraging ecological, social, and economic sustainability. It provides a mechanism to promote wood utilization as a way to offset treatment costs and to benefit local rural economies while improving forest health. It also promotes the reduction of wildfire management costs by reducing the risk of uncharacteristic wildfire and re-establishing natural fire regimes. This is meant to be accomplished by leveraging local, national and private resources. For additional information on the CFLR program see: www.fs.fed.us/restoration/CFLRP/index.shtml.

Appendix B – The Western Colorado Landscape Collaborative

The Western Colorado Landscape Collaborative is a coalition of representatives from state and federal agencies, local governments, environmental and conservation organizations, the academic and scientific communities, industry, and user groups. The convening force of this coalition is a commitment to forest health and fire risk mitigation along Colorado's Western Slope.

The Western Colorado Landscape Collaborative convened for the first time in 2001 under the name Uncompahgre Plateau Project. This precedent-setting meeting included representatives from the Colorado Division of Wildlife, Bureau of Land Management, Western Area Power Administration, and policymakers, all of whom wanted to engage communities and foster support for the implementation of forest management goals that help protect communities and restore forest health across all jurisdictions. In 2011, the partners in this endeavor agreed to expand their efforts beyond the Uncompahgre Plateau and reorganized as the Western Colorado Landscape Collaborative.

The Collaborative now encompasses five working groups focused on community engagement, native species, public lands, economics, and policy. These groups developed information and data to foster discussion and support for the adoption and implementation of a Western Slope vision focused on community protection and forest health. This vision document was the result of a rigorous, science-based process during which the WCLC (as the Uncompahgre Partnership) identified a 1.0 million acre area for treatment on Colorado's Western Slope. This area consists of 572,000 acres where treatment is needed to both protect communities and restore forest ecosystems, to include 55,000 acres of prescribed burning, 68,000 acres of collaborative 'Citizen Scientist' multi-party monitoring, 9,200 acres of noxious weed treatments, and 3,500 acres of reseeding with key native plants. Since the publication of this document the WCLC has focused its efforts on promoting treatment on these collaboratively identified areas in need of treatment and on pursuing additional policy and economic solutions to ensure these goals can be accomplished.

After the Collaborative Forest Landscape Restoration Program was established under the Omnibus Public Land Management Act of 2009 the WCLC partners were introduced to this opportunity and agreed to submit a proposal. The Uncompahgre Partnership, a sub-group of the WCLC, developed a draft proposal for the CFLRP using the 2006 vision document. The proposal was circulated to the full WCLC for revisions and submitted by the Grand Mesa, Uncompahgre, and Gunnison National Forests. For additional information on the Western Colorado Landscape Collaborative, see: http://westcolc.org, and for the Uncompahgre Partnership, see: http://upartnership.org

Appendix C – Methods

A key component of the UP-CFLR project proposal was to measure the associated social and economic impacts of the UP-CFLR project. The social and economic monitoring component of the UP-CFLRP project was further developed through a multi-party monitoring effort after the proposal was accepted. Implementation of the social and economic monitoring has been conducted by a collaborative team from the Forest Service's Rocky Mountain Regional Office (Julie Schaefers) and Washington Office (Kawa Ng) and the Colorado Forest Restoration Institute (Tony Cheng, Torsten Lund Snee, and Kathie Mattor) since 2011.

The following sections outline the methods used by the social and economic monitoring team to measure the economic contributions and the levels of wood utilization related to the UP-CFLRP project.

Economic Contributions Analysis

This analysis estimated the economic effects resulting from the implementation of CFRLP funded vegetation restoration treatments on the Grand Mesa, Uncompahgre, and Gunnison National Forests in 2013. The economic contributions to the regional economy in terms of employment, labor income and value added are estimated with an Input-Output model using primary data provided by the contractor. The following paragraphs briefly describe the estimation methodology and results.

Economic effects of the UP-CFLRP were analyzed in terms of employment, labor income and value-added resulting from vegetation restoration treatment activities on National Forest system lands. It was therefore important to model these effects from the amount of expenditures and labor actually required to carry out the task orders[5] during the 2013 calendar year, instead of relying on the amount of

[5] "A 'Task order contract' means a contract for services that does not procure or specify a firm quantity of services (other than a minimum or maximum quantity) and that provides for the issuance of orders for the performance of tasks during the period of the contract." (U.S. Federal Acquisition Regulation (FAR), https://www.acquisition.gov/far/).

funding distributed[6]. Pertinent operational expenditure and labor information was collected from the contractor to appropriately model the economic contributions using an Input-Output model. The contractor was provided with a list of questions, which were reviewed with the team and the contractor before and after providing expenditure and labor information (See Appendix D). These reviews helped the contractor better understand what information the team was requesting and how the results would be used, as well as helping the team understand how the contractor interpreted the questions and reported the information. The UP-CFLR project utilized one primary contractor in CY2013 to carry out vegetation treatment task orders, and the results in this report have been aggregated to not disclose any detailed or sensitive information collected during the modeling process. Rather than assuming all expenditures for a project are incurred in the same location, the pertinent information collected to model inputs included: the location (county) where task orders are performed, where operational expenses are incurred, where labor hours and costs required for each task orders, and non-labor expenses such as equipment and fuel are incurred.

The Input-Output Model

This analysis used Input-Output (I-O) modeling in order to estimate the economic effects of restoration activities. The U.S. Forest Service routinely uses I-O models to estimate local economic contributions of agency activities as part of the social and economic impact assessment in the environmental impact assessment required by NEPA. The I-O model used in this analysis is built using IMPLAN® software and its 2011 county-level data. IMPLAN® (IMpact analysis for PLANing, Minnesota IMPLAN Group, Inc.) is a regional economic impact analysis system. It is capable of determining the

[6] Unlike the Colorado Uncompahgre Plateau Project FY2013 report compiled by the National CFLRP team (available at: http://www.fs.fed.us/restoration/CFLRP/results.shtml#annualreports), which estimates the economic impact based upon the funding distributed, our analysis focused on detailed expenditure and operational data obtained from the contractors. Our analysis therefore focuses on just one component of the distribution of UP-CFLR funding. The calendar year was used because this is the method used by the contractors we obtained information from.

extent to which a given activity such as logging contributes to the local economy in terms of jobs, income, output and value-added. The model accomplishes this by tracing interactions among different sectors within the local economy and calculates the economic effects resulting from a direct impact on the economy. In this analysis, the direct impacts refer to both labor and non-labor operation expenditures incurred by the contractors.

Study Area

The first step in building the I-O model is to select the counties to be included (i.e. the Study Area). The relative size of the economy plays an important role in the estimate of contributions on jobs and income; include too many counties and the results may be washed out, include too few counties and the full impact of the activity may not be accounted for in the model area. The study area for this analysis includes only counties that were identified by the contractor as locations where vegetation treatment task orders/expenditures have occurred. This includes one county in Colorado: Montrose County.

Calculating economic effects with the IMPLAN model

In order to estimate the economic effects of contractor expenditures, IMPLAN is used to generate "response coefficients" for a range of expenditure categories. Response coefficients, or more intuitively 'the rates of economic activity', represent how that activity would ripple through the economy and impact employment and income levels. They are expressed in term of the impacts to jobs, income and value-added per a specified unit of an activity (for example the dollar amounts in final demand). Based on data collected from the contractor, twelve categories[7] of response coefficients are generated[8]:

[7] The categories correspond to IMPLAN sectors which are based on NAISC (North American Industry Classification System) sectoring.

1. commercial and industrial machinery equipment (including repair and maintenance service),
2. petroleum refineries,
3. agriculture and forestry support activities (edited Industry Spending Pattern),
4. broadcast and wireless communications equipment manufacturing,
5. retail stores,
6. hand tools and vehicle parts,
7. other crop farming products, and
8. commercial trucking

In addition to the industry sector coefficients, four separate groups of response coefficients representing different household income groups were also generated using IMPLAN. These response coefficients are used to track how direct labor income (paychecks received by laborers hired by contractor) can be re-circulated through the household spending patterns causing further local economic activity. The groups are based on the estimated annual salaries for different types of workers in the contractor's firm, including office administration, project manager, forester, mechanic, trucking, manual hand crew, and equipment operator. Similar designations were made to distinguish between salary types for workers employed in monitoring activities. Direct labor hour requirements for the task orders were also collected from the contractors, and were used to calculate the total direct jobs.

[8] Based on information collected from the contractor, additional adjustments have been made by editing the activities in IMPLAN in order to further refine the model. For example, if only a proportion of the expenditure occurred in the study area, the LPP (local purchase percentage) in the IMPLAN model is adjusted accordingly.

The Colorado Model

It should be noted that the economic impact estimates in this analysis contrasted with the estimates reported in the FY2013 CFLRP Annual Report for the Uncompahgre Plateau (USFS 2013) due to differences in methodologies and data assumptions.

The FY2013 CFLRP Annual report employed an Excel-based tool called 'Treatments for Restoration Economic Analysis Tool' (*TREAT*) for its analysis of all CFLR projects (USFS 2010). The Excel tool *TREAT* relies on existing response coefficients from IMPLAN and therefore is also able to estimate jobs and income. *TREAT* was designed to streamline data entry and preparation for the generation of economic impact tables to be used in the CFLRP proposals. The goal for this tool is to assist teams with estimating the economic impacts of restoration activities while providing a standard approach during the development of CFLR project proposals (USFS 2010).

Since this social-economic analysis aims to serve as part of a monitoring reporting effort, *TREAT* was not used to complete this analysis. Instead, a customized IMPLAN model was built using data inputs from the contractors. This customized IMPLAN model will be referred to as *'The Colorado Model'* henceforth. The following section highlights the major dissimilarities between *TREAT* and *The Colorado Model*.

IMPLAN model study area: *The Colorado Model* was built using counties where contractor expenditures have occurred, with linkage to the county where office operation expenditures occurred via the Single-Region Input-Output (SRIO) modeling technique. *TREAT*, on the other hand, used counties where task orders are proposed to occur (excluding the contractor's home office county).

Model / data year: *The Colorado Model* is based on IMPLAN data from calendar year 2011 (the latest available), using contractor's expenditure information from calendar year 2013 as inputs. All figures

adjusted with GDP deflator. *TREAT* is based on IMPLAN data from calendar year 2009, while using the total awarded funding amount from fiscal year 2013 as inputs.

Economic impacts from matching funds and USFS employee salaries: *The Colorado Model* focused exclusively on impacts derived from CFLR funded task orders. *TREAT* on the other hand, included impacts derived from matching funds, as well as induced effects from USFS force salary by assuming a fairly substantial Forest Service FTEs allocated to CFLR responsibilities.

Modeling restoration activities: *The Colorado Model* obtained detailed expenditure and operational data from the contractor. These include the dollar amounts spent on various non-labor expenditures such as equipment maintenance or daily use rates, gasoline, office, tools, seeds and other operation costs. For labor, information on salaries and hours worked for different types of workers in the contractor's firm were collected, including office administration, project manager, forester, mechanic, trucking, manual hand crew, and equipment operator. Next, using the above information, analysis-by-parts modeling method was used to estimate impacts from various IMPLAN sectors. The *TREAT* model begins with the total awarded funding amount, and then estimates the impacts to the logging and supporting forestry sectors, by proportioning a percentage of the award that is going to be used for contracted work by Regional firm(s).

Impacts from Wood utilization: A detailed account on the amount and types of materials removed by task orders, as well as the number and location of businesses purchasing these forest product materials was provided in this report (see the 'Wood Utilization Analysis' section). Since we were unable to obtain data on the volume of timber harvested in terms of CCF/MBF/dry ton for calendar year 2013 alone, we did not use *The Colorado Model* to identify the economic impacts from forest products. Nevertheless, *TREAT* was able to estimate the jobs and income effects from forest products, by assuming that over six thousand CCF (cubic feet) worth of saw timber entered the regional economy in 2013.

Conclusion

It is worth noting that both methods utilized IMPLAN at one point during the analytical process and that any multipliers IMPLAN produced are simply projections of impacts from various economic activities based on static models. While a genuine attempt at modeling the impacts from implementation (actual expenditures and labor entering the economy as outlined in this *Colorado Model)* should be taken at the project monitoring stage rather than projecting impacts from the total funds awarded, it is evident that the customized *Colorado Model*, constructed using expenditure data from the contractor, required greater commitments of time and effort. Considering these increased commitments, *TREAT* is by far a more streamlined and easy-to-use tool based out of Excel. *TREAT* is unquestionably the tool of choice when the extra effort of a customized model (such as *The Colorado Model*) proves unwarranted given the time, budget and expertise constraints being faced.

References

USDA Forest Service (USFS). 2010. Treatments for Restoration Economic Analysis Tool: User Guide. *An internal technical guide*. United States Forest Service.

USDA Forest Service (USFS). 2013. Uncompahgre Plateau CFLRP Annual Report, FY2012. Available online at: http://www.fs.fed.us/restoration/CFLRP/results.shtml (last accessed July 25, 2014).

Wood Utilization Analysis

The goals of the wood utilization analysis were to:

1. Identify the types of materials taken off of the National Forest according to the UP-CFLRP vegetation treatment task orders.
2. Determine the number and location of businesses purchasing these forest product materials.
3. Identify the types and values of wood products produced.

We provided the contractor with a list of questions to collect wood utilization data and reviewed these with the contractor before and after providing wood utilization information (Appendix E). These reviews helped the contractor better understand what information the team was requesting and how the results would be used, as well as helping the team understand how the contractor interpreted the questions and reported the information. The data from the contractor was then compiled and analyzed using basic statistical analyses.

Appendix D –

Economic Impacts of Restoration: Questions for Contractors

1. **Name of the restoration site and the project(s) you worked on:**
   Please list all task orders associated with CFLR during calendar year 2012
   (if more than one forest, please indicate; add more lines as needed)

Forest 1:_____	Ranger District	County	Mechanical Acres	Manual Acres	Date signed	Date started
Project	*_____Ranger District*		###	###		
____ NF Total			_____	_____		

2. **Check if you are responding for all of the work conducted on the restoration site or for specific site-related project(s) within a restoration site:**

   _____ Entire restoration site
   _____ Site-related restoration project(s)

3. **Site/project(s) and firm location:**
   Use the following table to list the location of the site/project(s) that you worked on and any off-site locations for your firm that worked on ***this restoration site/project(s)***. If there are more than two off-site locations, please choose the top two locations.

Site/Project(s) Location	State	County
Off-site Location 1		
Off-site Location 2		

4. **What type of restoration work did this site/project(s) include *(check all that apply)*:**

   _____Ag/grazing
   _____Air quality
   _____Fresh surface water
   _____Groundwater
   _____Sediments
   _____Shoreline
   _____Wetland/marsh
   _____Woodland/forest
   _____Bird habitat/populations
   _____Fish habitat/populations
   _____Mammal habitat/populations
   _____Reptile/amphibian habitat/populations
   _____Other_____
   _____Other_____
   _____Other_____
   _____Other_____

5. **Did the site/project(s) have any chemical disturbance (e.g. oil spill, Superfund site)?**

_____Yes
_____No

6. **Which of the following roles did your firm play in this restoration project *(check all that apply)*:**

_____Project management
_____Management consulting
_____Restoration planning/design
_____Site Surveying
_____On-site construction
_____Other project implementation
_____Monitoring
_____Product vendor
_____Other_____
_____Other_____

7. **Please describe your role in the project:**

8. **Subcontracting:**

   a. **Did you contract out any tasks to subcontractors? Yes_____ No_____**

   b. **If yes, please provide:**
      i. **the name(s) of the subcontractor(s):**
      ii. **a description of the work performed by the sub-contractor(s):**
      iii. **where the sub-contractor(s) are based:**

   c. **If necessary, can we have your permission to contact the subcontractor(s)? If yes, please provide the appropriate contact information.**

9. **Direct employment for this project:**

   Please indicate the total number of labor hours (including employees and managers) that worked on ***this restoration site/project(s)*** in each location (please refer to the locations identified in Question #2)***.***

Task Order	Number of **Acres completed** for this task order:	Number of labor hours for employees working primarily at the **Site/Project(s) Location:**	Number of labor hours for employees working primarily at **Off-Site Location 1:**	**Total** number of labor hours for this restoration project:
				(Sum)
Total:				

a. Do the above labor hours include work done by subcontractors?

_____Yes
_____No

b. If yes, what is the total number of labor hours billed by the subcontractor(s)? _____

10. Overall breakdown of costs:

Use the following table to identify the percent split between labor and non-labor costs for **this restoration site/project(s)**. Labor costs include benefits, wages, and proprietor's income. Non-labor costs include all other expenses including overhead, administration and subcontracting.

Expenditure Category	**% of total site/project(s) cost**
Labor Costs	
Non-Labor Costs	
	100%

Breakdown of non-labor costs:

Use the columns in the table below to answer the following two questions about non-labor expenses for ***this restoration site/project(s).*** If you are unable to provide exact percentage breakdowns, please use your professional judgment to provide best-known estimates.

Column 1: What percentages of total non-labor expenses were spent on the following types of expenses for this project? This column should add to 100%.

Column 2: What percentages of these non-labor expenses were purchased within the local area surrounding the project location? ***(Note: the local area is defined as a reasonable commuting distance).***

***Note:** Equipment refers to durable goods such as vehicles and machinery. Materials refer to goods purchased as inputs specifically for this project (e.g. gravel, fencing, office supplies, etc.)

Non-Labor Costs	**Column 1** Percentage of total non-labor expenses:	**Column 2** Percentage expended within the local area surrounding the site/project(s) location:
Equipment rental / leasing / daily use rates		
Equipment maintenance and repair		
Materials		
Travel		
Overhead /Administration		
Other (please describe)		
	100%	

11. Breakdown of travel costs:

If you had travel costs for this project, use the columns in the table below to answer the following two questions about travel expenses for ***this restoration site/project(s)***. If you are unable to provide exact percentage breakdowns, please use your professional judgment to provide best-known estimates.

Column 1: What percentages of total travel costs where spent on the following types of expenses for this project? This column should add to 100%.

Column 2: What percentages of these non-labor expenses were purchased within the local area surrounding the project location? ***(Note: the local area is defined as a reasonable commuting distance).***

Travel Costs	**Column 1** Percentage of total travel costs:	**Column 2** Percentage expended within the local area surrounding the site/project(s) location:
Per diem		
Car/truck rental (for travel)		
Gas (for travel)		
Other (including airfare)		

100%

12. Breakdown of materials costs:

Please use the table on the following page to indicate the types of materials used for ***this restoration site/project***. Place a check mark next to all materials that were used in the project. **Please complete columns 1 and 2 *only* for the materials used in the project.**

Column 1: Please indicate the percent of total material costs spent on each material. This column should add to 100%. If you are unable to provide exact percentage breakdowns, please use your professional judgment to provide best-known estimates.

Column 2: Please use the check boxes to indicate if the material was purchased from a retailer.

Materials	**Column 1** Percentage of total materials cost:	**Column 2** Purchased from a retailer? **Yes**	**No**
___General retail merchandise (e.g. food, clothes, work gloves)			
___Office Supplies			
___Gasoline			
___Tools and Parts (for equipment and vehicles)			
___Seeds			
___Communications equipment			
___Other_____			
___Other_____			
___Other_____			
___Other_____			
	100%		

13. **Breakdown of labor costs:**

What percentage of total labor costs (direct wages and non-payroll) typically go to the following types of workers? The column should add to 100%.

Type of Worker	**Percentage of total labor costs that go to labor for the following worker types:**
Project Managers	
Forester/ Biologists/ecologists/other	
Engineers and other planners/designers	
Mechanics	
Administrative Staff	
Machine and equipment operators	
Truck drivers	
Manual laborers	
Technicians	
Others (please describe)	
Others (please describe)	
	100%

Appendix E – Wood Utilization Survey

1. **Name of the restoration site and the project(s) you worked on:**
   Please list all task orders associated with CFLR during calendar year 2012
   (if more than one forest, please indicate; add more lines as needed)

Forest 1:_____	Ranger District	County	Mechanical Acres	Manual Acres	Date signed	Date started
Project	*_____Ranger District*		*###*	*###*		
____ NF Total			**_____**	**_____**		

2. **What percentage of the total amount of material harvested is:**

   ***Manual* (out of 100%)**

   a. Available for value-added use? _____%

   b. Piled and burned (not for prescribed burn) _____%

   c. Left for wildlife habitat? _____% or _____ tons/acre

   ***Mechanical* (out of 100%)**

   a. Available for value-added use? _____% (Sawtimber, POL and biomass)

   b. Piled and burned (not for prescribed burn) _____%

   c. Left for wildlife habitat? _____% or _____ tons/acre

3. **How many businesses purchase material from you (specifically related to this project)?**

   Forest 1: _____ (Copy for additional forests)

   a. Total businesses: _____

   b. Colorado businesses: _____

   c. Other states: (please specify state and number of businesses): _____

   Overlap?

   If there are two or more forests associated with this project, are there any businesses that purchase from multiple forests? If yes, how many businesses? _____

4. **What types of materials did you sell from the restoration site and project(s)? Where did these materials go?**

Forest 1: _____ (Copy table for additional forests)

Materials Sold			**Locations material was sold to:** (please identify locations)		
	Amount (Green Tons)	The county the project was located in	County in CO	State outside of CO	County outside of CO (if available)
Sawtimber *(Specs? _____)*					
Small diameter timber *(Specs? _____)*					
Blue stain					
Products other than logs (POL)					
Limbs/ brush					
Bark Fines					
Other *(please specify):*					
Total:					

5. **What percentage of the materials removed from the site went to each category of products? Where are the purchasers located? What is the value of the product?**

Forest 1: _____ (Copy table for additional forests)

Products created	**Column 1** Percent of total material sold:	**Column 2** Product Value (low, medium, high)	**Column 3** Locations material was sold to: (please specify location and percentage across row)				
			The county where the project was located:	Other county in CO:	State outside of CO:	County outside of CO:	
example: firewood	*10%*	*Low*	*Larimer, 5%*	*Moffat, 2%; Montrose 3%*	*n/a*	*n/a*	*100%*
Wood Fuel Pellets							100%
Biomass Electricity							100%
Firewood							100%
Pallets & Crates							100%
Dimensional lumber							100%
Logs - log homes							100%
Logs - other							100%
Beams & Timbers							100%
Trusses							100%
Posts/ poles							100%

Products created (continued)	**Column 1** Percent of total material sold:	**Column 2** Product Value (low, medium, high)	**Column 3** Locations material was sold to: (please specify **location** and **percentage** across row)				
			The county where the project was located:	Other county in CO:	State outside of CO:	County/ town outside of CO:	
Flooring & Paneling							100%
Doors							100%
Windows							100%
Veneer							100%
Custom Cabinets							100%
Mass produced cabinets							100%
Mass produced furniture							100%
Custom furniture							100%
Siding & Decking							100%
Molding							100%
Holiday trees & transplants							100%
Paper products							100%

Products created (continued)	**Column 1** Percent of total material sold:	**Column 2** Product Value (low, medium, high)	**Column 3** Locations material was sold to: (please specify **location** and **percentage** across row)				
			The county where the project was located:	**Other county in CO:**	**State outside of CO:**	**County outside of CO:**	
Shavings							100%
Soil Fertilizer/ Biochar							100%
Animal Bedding							100%
Landscape ties							100%
Chips							100%
Mulch							100%
Compost							100%
Fencing							100%
Other - specify							100%
	100%						

About the Colorado Forest Restoration Institute

The Colorado Forest Restoration Institute (CFRI) was established in 2005 as an application-oriented program of the Department of Forest & Rangeland Stewardship in Warner College of Natural Resources at Colorado State University in 2005. CFRI's purpose is to develop, synthesize, and apply locally-relevant science-based knowledge to achieve forest restoration and wildfire hazard reduction goals in Colorado and the Interior West. We do this through collaborative partnerships involving researchers, forest land managers, interested and affected stakeholders, and communities. Authorized by Congress through the Southwest Forest Health and Wildfire Prevention Act of 2004, CFRI is one of three Institutes comprising the Southwest Ecological Restoration Institutes, along with centers at Northern Arizona University and New Mexico Highlands University.

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The Full Report is available at: http://coloradoforestrestoration.org/

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