



Sierra Institute

for Community and Environment

Monitoring Socioeconomics within Collaborative Forestry Projects: Trends in Practices and Challenges

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Executive Summary

Rural forested communities in the American West have historically relied upon natural resources, particularly timber, as a source of industry and economic vitality. The decline of the forest products industry over the last several decades has greatly reduced the economic vitality in a vast majority of these communities.

Established by Congress in 2009, the *U.S. Forest Service Collaborative Forest Landscape Restoration Program* (CFLR Program) advances collaborative, science-based ecosystem restoration of priority forest landscapes. The program mandates collaboration among diverse stakeholders in order to restore forest ecosystems. Restoration work is to produce triple-bottom line outcomes, including the creation of jobs within rural forest-dependent communities. There are 23 federally funded CFLR Programs (CFLRs) nationwide, all of which are required to monitor their restoration's impact on ecological, social, and economic conditions throughout their ten-year project life.

This study seeks to understand how CFLRs are navigating the largely uncharted waters of CFLR socioeconomic monitoring. We examined individual CFLR's socioeconomic monitoring strategies to identify each program's 1) overall status and progress; (2) primary party responsible for conducting monitoring; (3) indicators and measures used; (4) assessment methodology; (5) unit of analysis; and (6) challenges.

Results from this study show that limited experience with socioeconomic monitoring in the context of forestry projects and an absence of clear direction in the literature has stalled the implementation of a comprehensive methodology across CFLR Program projects. Therefore, there are varying degrees of understanding across CFLRs regarding which indicators to monitor, how to define the local area of impact, and how to determine an appropriate and efficient methodology for carrying out the monitoring.

However, the underlying social science concepts behind socioeconomic monitoring present an opportunity for increased inter-project learning and the development of standardized socioeconomic monitoring practices for the CFLR Program. Results from this study highlight opportunities to improve the understanding of the connection between natural resource management and community socioeconomic health, as well as ways that information can be organized to track such projects' influence on their local communities.

Compared to ecological monitoring, there is less agreement regarding socioeconomic monitoring indicators and protocols. Consensus regarding how to best monitor socioeconomic conditions within the context of the CFLR program does not exist. The absence of direction regarding how to design and implement socioeconomic monitoring is a barrier to achieving CFLR consistency on the topic. In this paper, we identify trends in socioeconomic monitoring plans, shared challenges, and mitigation strategies that can strengthen CFLR socioeconomic monitoring programs.

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Introduction

Timber harvesting on federal lands began declining in the western United States in the 1990s due to changes in public preferences and values, increased wildlife legislation, and shifts in forest management policy by the U.S. Forest Service (Hoover 2015). Furthermore, the closure of smaller, inefficient sawmills further compounded the loss of in-the-woods jobs. Local commodity production declined as federal forest contributions to rural communities diminished, along with many of the associated services and opportunities (Charnley et al. 2008).

Recognition of this decline and local economic impacts led to passage of legislation such as the Secure Rural Schools and Community Self Determination Act of 2000.¹ More recently, the synergistic solution of “forest restoration economies” as a means to simultaneously promote economic redevelopment and restore forests² has gained national attention. In 2011, U.S. Forest Service (USFS) Chief Tom Tidwell made the statement to the Senate Committee on Natural Resources that “building a forest restoration economy will create new jobs in rural communities and help diversify the forest products industry to support the sustainability of local communities and the forest contractor infrastructure needed to perform restoration work” (Tidwell 2011). Although the decline of resource extraction has often corresponded with economic hardship, improved forest health should not automatically be associated with poor or declining socioeconomic conditions. Instead, improving forest health can spur economic activity and improve both rural community and ecosystem health (Baker 2004; Nielsen-Pincus and Moseley 2012).

History suggests that forest restoration can both promote and hamper local socioeconomic well-being. It is therefore important to acknowledge and analyze the link between community well-being and forest health when making natural resource management decisions (McDonald and McLain 2003). Land managers cannot assume that forest restoration work will always have positive socioeconomic outcomes, and nor should they assume the opposite. Only rigorous monitoring can evaluate a given project’s progress towards triple bottom line outcomes.³ Therefore, in order to assess the progress toward such goals, socioeconomic measures need to be developed and implemented (Moseley and Davis 2012).

The Collaborative Forest Landscape Restoration (CFLR) Program, established by Congress in *Title IV of the Omnibus Public Land Management Act of 2009*, is designed to “encourage the collaborative, science-based ecosystem restoration of priority forest landscapes” (U.S. Forest Service). This legislation calls for the USFS to take an all-lands approach to forest restoration by supporting the formation of Collaborative Forest Landscape Restoration projects (CFLRs). CFLRs, selected via a competitive selection process that began in 2009, are ten-year initiatives that enable USFS-stakeholder collaboration to pursue triple bottom line focused forest restoration projects.

¹ Secure Rural Schools and Community Self Determination Act of 2000 is a temporary program of payments to counties with high levels of federal lands following the decline of the timber industry. Payments are based on historic rather than current revenues (Hoover, 2015).

² Forest restoration in this context refers to the act of restoring unhealthy, overstocked, fire-suppressed forests to pre-settlement conditions.

³ Triple bottom line refers to the environment, economy, and community (or equity).

Because of its triple bottom line focus, the CFLR program is intended to simultaneously restore forest health, reduce the risk of catastrophic fire, and improve local socioeconomic well-being. Section 4001 of the Title IV CFLR Program legislation details the purpose of the program (Section 4001, page 1):

The purpose of this title is to encourage collaborative, science-based ecosystem restoration of priority forest landscapes through a process that (1) encourages ecological, economic, and social sustainability... (4) demonstrates the degree to which... (B) the use of forest restoration byproducts can offset treatment costs while benefitting local rural economies...

Benefitting local economies through job creation is also a CFLR Program requirement (Section 4003, page 4):

...(7) benefit local economies by providing local employment or training opportunities through contracts, grants, or agreements for restoration planning, design, implementation or monitoring with (a) local private, nonprofit, or cooperative entities; (b) Youth Conservation Corps crews or related partnerships, with State, local, and non-profit youth groups; (c) existing or proposed small or micro-businesses, clusters, or incubators; or (d) other entities that will hire or train local people to complete such contracts, grants, or agreements....

The CFLR Program requires monitoring of restoration projects' influence on ecological, social, and local economic and community conditions. All projects are required to use a "multiparty monitoring, evaluation, and accountability process to assess the positive or negative ecological, social, and economic effects of projects implementing a selected proposal" (Section 4003, page 8).

To assist with the process of monitoring socioeconomic conditions in local communities, USFS economists developed the Treatments for Restoration Economics Analysis Tool (TREAT). TREAT provides a standardized approach to estimating the number of jobs and the amount of labor income associated with restoration efforts. The modeling tool estimates the economic effects of CFLR Program restoration activities, and its use is required in annual CFLR reports (TREAT User Guide 2011). The modeling tool was built using information from the Bureau of Business and Economic Research, IMPLAN software (an input-output model that represents the activity within an economy), and other economic data. However, TREAT outputs provide limited results in the larger scope of socioeconomic monitoring, so it is common for the CFLRs to assess beyond the TREAT model.

For several decades, there have been ongoing efforts to define and monitor the health and well-being of societies, economies, communities, and biophysical environments (Beckley, T.M., Burkosky, T.M. 1999). However, inter-CFLR collaboration and USFS Region 5 dialogue identifies that for a variety of reasons, including the fact that the majority of USFS scientists possess backgrounds and experience with biophysical sciences, rather than with social sciences, many CFLRs are challenged to develop and implement comprehensive, complete socioeconomic monitoring programs (Sierra Institute 2014).⁴

⁴ The Sierra Institute's Sierra Cascades All-Lands Enhancement (SCALE) project is an effort to increase collaboration between seven of California's USFS Collaborative Forest Initiatives. SCALE facilitates the identification of key issues that act as barriers to all-lands restoration. One of the initial barriers to success that SCALE identified was that the participating CFLRs struggle to design and implement a socioeconomic monitoring program. This paper is a first step in resolving that challenge.

In this study, we conducted an assessment to identify commonalities and differences among the federally funded CFLRs' socioeconomic monitoring programs.

Methods

The 20 original CFLRs⁵ were initially considered as case studies, and efforts were made to contact informants⁶ and collect documents from each CFLR. If there was neither a response from the CFLR informants nor sufficient socioeconomic monitoring documentation online,⁷ a group was not included in this study. Two groups did not respond and had no information available online, leaving our case study pool at 18.

Data were collected using semi-structured phone interviews and email exchanges,⁸ and through the review of monitoring plans, monitoring reports, and group meeting minutes. Representatives from 11 CFLRs provided information through phone interviews. Data regarding the other CFLRs were collected from email exchanges and publically available, online documents.

A total of 18 groups are included in the study and are listed below. Those CFLRs involving informant interviews are denoted by an asterisk (*).

- Accelerating Longleaf Pine Restoration Project (Florida)
- Amador Calaveras Consensus Group Cornerstone Project (California)
- Burney Hat Creek Basins Project (California)
- Colorado Front Range Landscape Restoration Initiative (Colorado)*
- Deschutes Collaborative Forest Project (Oregon)*
- Dinkey Landscape Restoration Project (California)
- Four Forest Restoration Initiative (Arizona)*
- Grandfather Restoration Project (North Carolina)*
- Kootenai Valley Resource Initiative (Idaho)
- Lakeview Stewardship Project (Oregon)
- Selway-Middle Fork Clearwater Project (Idaho)
- Southern Blues Restoration Coalition (Oregon)*
- Southwest Jemez Mountains (New Mexico)*
- Southwestern Crown of the Continent Collaborative (Montana)*
- Tapash Sustainable Forest Collaborative (Washington)*
- Uncompahgre Plateau Collaborative Restoration Project (Colorado)*
- Weiser-Little Salmon Headwaters Project (Idaho)*
- Zuni Mountain Project (New Mexico)*

Data collected from each of the 18 CFLR's socioeconomic monitoring programs includes the: (1) status of their socioeconomic monitoring program; (2) individuals or groups responsible for conducting the

⁵ There are currently 23 CFLRs; this study only included the initial 20 in its analysis.

⁶ Informants were CFLR monitoring coordinators or other members knowledgeable of the CFLR's monitoring efforts as identified in the CFLR's original proposal, online, or through snowball sampling.

⁷ Data for this study was collected from February to March of 2015.

⁸ Either phone or email interviews were conducted, based on the informant's preference.

monitoring program; (3) indicators and measures assessed; (4) monitoring methodology;⁹ (5) unit of analysis¹⁰ or level of indicator assessment; (6) and monitoring plan design and implementation challenges.¹¹

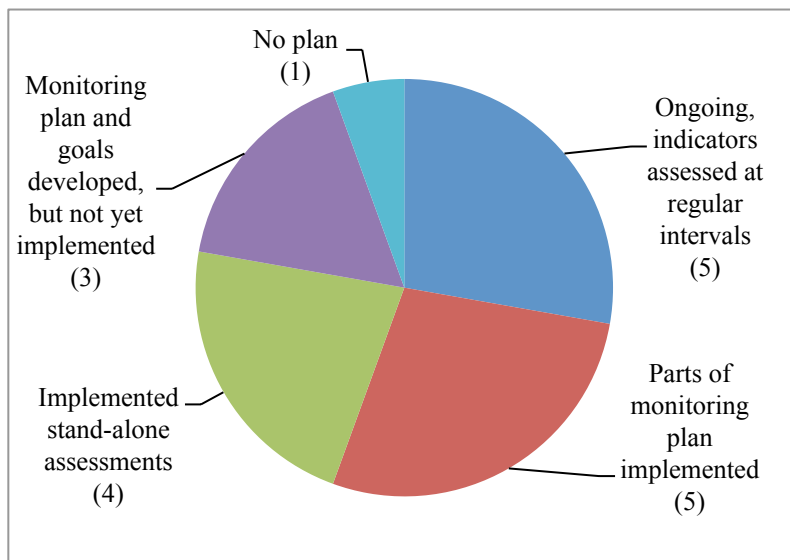
This review captures the results of CFLRs’ socioeconomic monitoring implementation progress and challenges as of the spring of 2015. This assessment does not capture plans to change nor assesses changes that have taken place since the time of the study. Development and implementation of monitoring plans is a dynamic process and we expect some of the programs will have already implemented modifications and improvements to their work, and we hope this work will inform and lead to additional improvements of all CFLR socioeconomic monitoring.

Results

Status of Socioeconomic Planning and Implementation

All CFLRs must submit annual reports to the USFS regarding their achievements; these reports require collection of information about CFLR job creation through TREAT. This study examines what additional socioeconomic information is collected. Figure 1 highlights the stages of implementation of a socioeconomic monitoring program among CFLRs in this study.

Figure 1. Status of Socioeconomic Monitoring Efforts



Of the 18 CFLRs included in this study, one has yet to develop a socioeconomic monitoring plan, three have developed a monitoring plan (or have identified goals and indicators to assess) but have yet to implement it, and 14 have implemented one of more components of a socioeconomic monitoring program.

Of the 14 that have launched a socioeconomic monitoring program, five groups have identified indicators that they are assessing at regular intervals. These groups have an ongoing USFS

agreement with a third party to conduct monitoring. For example, the Colorado Forest Restoration Institute that is annually implementing the Colorado Front Range Landscape Restoration Initiative socioeconomic monitoring plan. CFLRs anticipate that these agreements will last until the end of the ten-year CFLR Program.

⁹ For the purposes of this study, indicator is defined as a more specific category that works to establish the state or condition of a particular aspect of a community; a measure is the unit used to express the amount, size, or degree of areas of particular interest in the study.

¹⁰ Unit of analysis, in this instance, refers to how the CFLR defines local and therefore to what geographic extent the socioeconomic monitoring program is applied.

¹¹ Challenge-oriented data were only available in interviews, so the challenges listed in this study’s results are limited to the data set of the 11 CFLRs for which informants were interviewed.

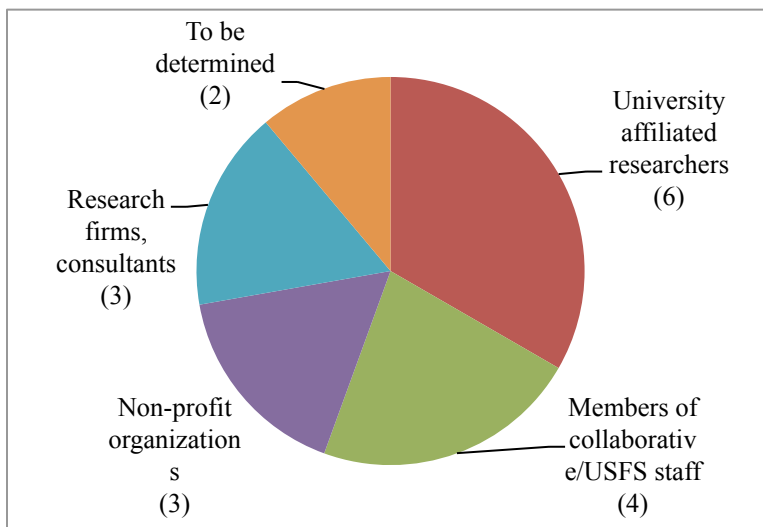
Four of the 14 that have launched socioeconomic monitoring have contracted third party groups for a baseline data study of the CFLR Program in the first few years but do not have a current agreement in place for further assessment. For example, the Accelerating Longleaf Pine Restoration Project in Florida contracted a consulting firm to conduct an assessment of the socioeconomic conditions of the area shortly after the launch of the CFLR. This assessment was a one-time snapshot of socioeconomic conditions; they group reported that the next assessment will be done toward the end of the CFLR Program.

The remaining five of these 14 that have implemented parts of a socioeconomic monitoring plan have encountered implementation obstacles. For example, researchers for the Southwestern Crown of the Continent started interviewing informants and tracking jobs, but were unable to complete other parts of their socioeconomic monitoring program that required surveys. Survey distribution was halted, pending approval from the federal Office of Management and Budget (OMB). OMB must review and clear survey use with the public because of the federal nature of the CFLR program.¹²

Party Responsible for Socioeconomic Monitoring

CFLRS are using a variety of organizations to design and implement their socioeconomic monitoring program. Figure 2 shows a breakdown of the types of organizations. Six CFLRs selected research groups affiliated with universities to design and conduct their socioeconomic monitoring program. For example, the Southern Blues Restoration Coalition in Oregon has contracted researchers from the Ecosystem Workforce Program, a research group based at the University of Oregon specializing in researching and monitoring community-based forestry and the ecosystem management, to implement its program. Both the Colorado Front Range and Uncompahgre Plateau CFLRs enlisted the Colorado Forest Restoration Institute at Colorado State University to conduct all ecological, economic, and social monitoring for both CFLRs. Universities are typically in partnership agreements with the USFS to do this work.

Figure 2. Type of Group Responsible for Monitoring



Four groups have not engaged an outside group to take on monitoring efforts; rather, members of the collaborative group associated with the CFLR and/or USFS employees are implementing a socioeconomic program. The Weiser-Little Salmon Headwaters Restoration Project in Idaho has a monitoring committee made up of a variety of stakeholders and USFS employees. This committee is working in collaboration with other agencies to implement its socioeconomic monitoring program.

Three CFLRs have recruited non-profit organizations to advance their socioeconomic monitoring program. The Southwest Jemez

¹² The Paperwork Reduction Act of 1995 requires agencies to submit requests to collect information via surveys from the public to the OMB for approval.

Mountains and Zuni Mountain Project (NM) have both enlisted the Forest Stewards Guild, an organization that promotes ecologically, economically, and socially responsible forestry, to conduct its socioeconomic monitoring program. The Sierra Institute for Community and Environment conducted a socioeconomic assessment for the Dinkey Creek Collaborative (CA) in 2013. Similar to universities, these nonprofits perform monitoring through a USFS partnership agreement.

Non-university affiliated research firms and consultants are also performing monitoring for CFLRs. The Clearwater Resource Conservation and Development Council¹³ contracted the Ecosystem Research Group, an environmental consulting company based in Montana, to perform an assessment in 2012 for the Selway-Middle Fork Clearwater Project (ID). Mottek Consulting, a firm that specializes in social science research associated with forest management issues, developed Four Forest Restoration Initiative's (AZ) socioeconomic monitoring program and is also responsible for its implementation.

Two California CFLR groups, the Amador Calaveras Consensus Group and the Burney Hat Creek Basins Project, have yet to determine the organization that will design and implement their socioeconomic monitoring program. The four groups that have had one snapshot analysis completed have also yet to establish long-term socioeconomic monitoring program arrangements.

Indicators and Subsequent Assessment Strategies

Indicators commonly included in CFLRs' socioeconomic monitoring plans are typically assembled in an "indicator matrix," which demonstrates the socioeconomic conditions of importance to the CFLRs. Table 1 shows the most commonly used indicators and measures in CFLR monitoring plans. Not every indicator assessed by all CFLRs is included, nor does it include the annual reporting requirements of modeling jobs and other economic indicators with TREAT, the tracking of federal funds, and fire cost savings with R-CAT.¹⁴ While most monitoring work focuses on jobs and economics and wood utilization, some groups are looking more broadly at general trends over time in their local area, including community poverty and overall industry employment.

Jobs and Economics

Socioeconomic monitoring plans among CFLRs vary in the degree to which they measure the effects of restoration treatments on socioeconomic conditions. The most commonly assessed indicators among the 18 CFLRs are job creation, job income, and other associated employment details, in part because job creation is a CFLR Program annual reporting requirement. While four groups are relying on TREAT outputs to estimate employment, 14 are pursuing alternative methods of assessing job creation, such as interviewing and/or distributing surveys to contractors and USFS employees. Out of the 14, two Oregon groups, the Deschutes Collaborative Forest Project and the Lakeview Stewardship Project, are still using TREAT to model jobs and economics, but are refining its inputs based on interviews with local businesses so the model's outputs more accurately reflect the local economic context and impact area.

¹³ The Clearwater Resource Conservation and Development Council is a fiscal sponsor of the Clearwater Basin Collaborative—the collaborative group under the Selway Middle Fork CFLR.

¹⁴ Risk and Cost Analysis Tool (R-CAT) package was developed by USFS economists and fire modelers as a tool for estimating wildland fire management cost savings. It uses the analysis outputs and other information on treatment costs and revenues.

Table 1. Frequently Used Indicators and Common Data Sources

| Indicators and Measures | Common Data Source(s) Used | # of CFLRs |
|--|---|-------------------|
| <u>Jobs and Economics</u> | | |
| Jobs created/income | Contractor/business surveys and interviews, Bureau of Labor Statistics, US Census data, economic models | 14 |
| Local economic benefit (revenue generated/captured, economic activity from CFLR projects) | Contractor/business surveys and interviews, Bureau of Labor Statistics, US Census data, city reports, economic models | 11 |
| Contractor location (for CFLR task orders/projects) | Contractor surveys/interviews, review of contracts, review of USFS records | 10 |
| Type of work offered | Contractor surveys/interviews, review of contracts, review of USFS records | 9 |
| <u>Wood Utilization</u> | | |
| Type and value of wood products produced, type of wood utilized | Contractor surveys/interviews, review of contracts | 11 |
| Capacity of industry (available infrastructure/equipment, contractor capacity) | Contractor surveys/interviews, review of contracts | 3 |
| <u>Social Well-being</u> | | |
| Impacts to recreation usage/opportunities, accessibility of recreation sites | Review of USFS and USFWS reports and records | 8 |
| Workforce training offered locally, employment of youth/minority groups/people of lower income | Surveys, focus groups | 6 |
| Protection of cultural/heritage resources, tribal values | Review of USFS reports | 5 |
| Poverty levels (food assistance, poverty) | US Census data | 2 |
| <u>Other</u> | | |
| Public perception and attitudes | Surveys, interviews with focus groups | 7 |
| Collaboration | Surveys | 6 |

Note: Data were collected in the spring 2015, and do not capture changes that have been made since then.

Eleven CFLRs are monitoring local economic benefit and associated economic activity by measuring total dollars generated from CFLR Program contracts and agreements, as well as economic activity stimulated from the CFLR Program and/or value-added contributions. Economic activity analyzed includes the amount of work associated with projects and indirect business taxes paid.

A total of 10 CFLRs are tracking contracts to see if they are awarded to a local contractor and if employees are hired locally. Nine CFLRs are monitoring the types of jobs (full time, seasonal, etc.) offered by the CFLR Program over time.

Most economic-related indicators are measured through contractor interviews or surveys, USFS contracts, USFS reports, collecting economic data from existing data sources (such as Bureau of Labor

Statistics, Bureau of Economic Analysis, Census data), and using customized versions of the input-output economic modeling program IMPLAN.

Wood Utilization

A total of 11 CFLRs are assessing the level of harvesting and utilization of wood products. Three CFLRs are analyzing this further by assessing the overall capacity of the forest products industry, including infrastructure availability and contractor capacity to perform the work. Indicators of wood utilization include: species of wood harvested, type of product produced, value of wood products, and total dollars generated from production of wood products. Similar to economic data, information on the level of wood utilization and forest products produced is obtained through surveying contractors and resource managers, as well as through the review of USFS contracts and records.

Social Well-being

Generally, CFLRs focus on monitoring economic indicators more than indicators of social well-being. Social well-being, or quality of life indicators, include but are not limited to: poverty levels, public health, graduation rates, higher education rates, crime rates, and home ownership (Kusel 2001). Eight groups are assessing CFLR effects on recreation use and opportunities, as well as recreation accessibility. This includes tracking revenue received from visitor fees, hunting tags and fishing permits sold; as well as tourism jobs created and miles of trail maintenance performed. Six CFLRs are monitoring workforce training offered locally, skill development, and involvement of lower income groups, minority groups, and youth. The Selway-Middle Fork Clearwater Project in Idaho assessed these outcomes by distributing surveys to organizations that received funds from the CFLR Program.

Five groups are monitoring the number of cultural and heritage resources protected or designated; this includes the number of heritage sites receiving protection and the maintenance of tribal values, such as access to huckleberry fields for tribal harvesting.

Only two groups are monitoring poverty levels of local communities.

The Dinkey Creek Collaborative in California assessed community capacity during its 2013 socioeconomic baseline assessment. These data were collected during two workshops involving local community experts, using a methodology first developed during the Sierra Nevada Ecosystem Project (Doak and Kusel, 1996). In this project, expert participants independently and collectively assessed financial, human, social, cultural, and physical capital to determine overall community capacity.

Stakeholder Assessment Indicators

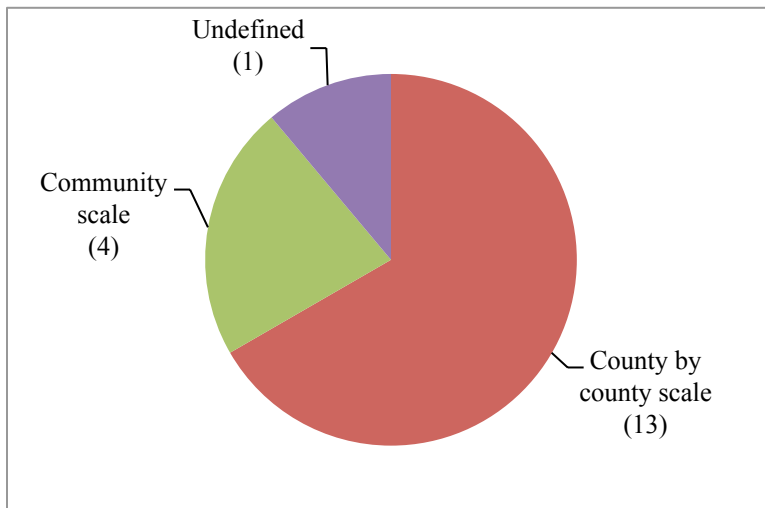
Beyond the scope of traditional socioeconomic assessment, six groups are monitoring CFLR group collaboration over time, and six are assessing public perceptions and attitudes on restoration projects. CFLR group collaboration and public perception are assessed through surveys and interviews with the public. These characteristics are considered to be aspects of a stakeholder assessment rather than a socioeconomic condition, so they have been listed as “other” indicators in this study (Kusel et al. 2015).

Unit of Analysis to which Measures are Assessed

Determining the scale at which to measure the effects of a CFLR project is an important aspect of geographically and contextually framing a socioeconomic monitoring program. Among the CFLRs sampled in this study, the most popular unit of analysis (13 CFLRs) is the county-by-county level (see **Figure 3**). For example, the Southwestern Crown of the Continent (MT) considers “local” to be the five

counties that make up its CFLR boundary. Selway-Middle Fork Clearwater Project in Idaho also considers the three counties part of, or in closest proximity to the CFLR landscape, to be the primary local area. Selway-Middle Fork Clearwater Project also established a secondary local area, which consists of additional counties receiving a higher flow of goods and services from the two largest cities closest to the project area. For the Colorado Front Range Landscape Restoration Initiative, any county within Colorado where employment, income, and economic impact from the project has been measured is considered local, as there are only a few counties where forestry work has an economic impact due to a tight labor market in the state. The Amador Calaveras Consensus Group in California has defined local as it relates to USFS service contracts and is using the county scale for this delineation.

Figure 3. Unit of Analysis Used to Measure Effects of CFLR Projects



Four CFLRs assess or plan to assess projects impacts on specific communities, applying the principle that a county-by-county scale can be too all-encompassing for their project area. The Tapash Sustainable Forest Collaborative Project in Washington, a 1.6 million acre CFLR, plans to monitor project effects on major communities in close proximity to the CFLR landscape (within multiple counties) that have historically been dependent on the timber industry or where the infrastructure for performing CFLR work is. Tapash is still developing a strategy for how to select communities. The Four Forest

Restoration Initiative in Arizona, covering 2.4 million acres, also performs assessments of socioeconomic impact within specific communities across several counties in the 4FRI landscape.

The Burney Hat Creek Community Forest and Watershed Group in California has yet to identify the unit of analysis, but a preliminary assessment of the area focused on key communities in and near the CFLR area.

Figure 3 demonstrates the scale to which CFLRs are performing socioeconomic monitoring. Findings and recommendations of the Sierra Institute’s *USFS Collaboratives and Local Benefit: What’s Local Anyways?* provide a case study analysis regarding the process of defining local; that report is available on [Sierra Institute’s website](#).

Challenges

Informants collectively identified seven main challenges concerning the development and implementation of socioeconomic monitoring plans; they are described below.

Lack of Social Science Capacity

Informants reflected that a lack of Forest Service capacity to develop and implement socioeconomic management program has hindered progress. Many groups have strong ecological monitoring plans, but resource management agencies do not employ substantial natural resource social scientist expertise.

Informants often identified a need for outside help from social scientists to develop a socioeconomic management program. One informant shared:

Our restoration strategy is strong, but we lack capacity to carry out socioeconomic monitoring. We need to bring people back into the picture of landscape restoration and need to make people realize the importance of people (Anonymous CFLR Informant 2015).

Similarly, three representatives shared that there is not much of a push for socioeconomic monitoring from their collaboratives. One shared that “the Forest Service places a lower premium on monitoring, so it’s challenging to get people to take it seriously” (Anonymous CFLR Informant 2015). Another expressed frustration with the lack of attention directed toward socioeconomic monitoring:

With these groups, you have a ton of ecologists, and no social scientists [. . .] every group really needs a [social science] champion; without that, this work would not get done. But in reality [. . .], the reason why we’re all sitting at the table and talking to each other is socially based. So I find it disheartening to see the lack of interest and/or specialized force in the collaborative to move this along (Anonymous CFLR Informant 2015).

In addition to the lack of recognition regarding the importance of socioeconomic monitoring, one informant suggested that determining a relevant audience with whom to share socioeconomic monitoring results is a challenge:

A big challenge we are dealing with is the notion that we haven’t yet been able to clearly define the constituency for the monitoring results. Who cares and what would they do with that information if they had it? How would this information change decisions? We are generating great information, but we kind of get lost with making an argument and justification for why socioeconomic monitoring is important (Anonymous CFLR Informant 2015).

Recruiting an outside organization, such as a university, nonprofit, or consulting group, appears to be a common mitigation strategy for this change. Unfortunately, using federal funds to support this work can result in socioeconomic management program delays.

Inaccuracies with TREAT

Informants from six CFLRs stated that they have found the outputs from TREAT to be inaccurate for their areas and that the unit of analysis used by TREAT does not measure the local economic benefit at an appropriate scale. Additionally, informants mentioned that TREAT model outputs are grossly overestimated. Consequently, 14 of the CFLRs are utilizing alternative modeling programs or manual data collection strategies to mitigate this problem. Other group, such as the Tapash Sustainable Forest CFLR in Washington, identified that low social science capacity is delaying the development of another assessment strategy.

Defining Local

Setting boundaries for socioeconomic management programs and defining the scale at which monitoring is conducted has challenged a number of CFLRs. An informant from Colorado shared that both of Colorado’s CFLRs consider the counties around the CFLR landscape to be local and that although this definition feels too vast, the limited industry capacity at a more “local” level justified this coarse

delineation. The Amador Calaveras Consensus Group in California assembled a working group to define local. This group spent a year developing a definition of what constitutes local. The Dinkey Landscape Restoration Project (CA) contracted the Sierra Institute to delineate its local areas in 2013. The ACCG and Dinkey definitions of local were revisited in 2015 in Sierra Institute's *USFS Collaboratives and Local Benefit: What's Local Anyways?* That study's recommended delineations were slightly different from the 2013 Dinkey assessment as well as the ACCG's working group definition in that it used a combination of interview data and social science principles to formulate delineations. That report outlines pathways to mitigate the challenge of delineating appropriate scale, as well as how to effectively respond to the industry capacity challenge outlined by the Colorado CFLRs.

Sensitive Information

Contractor confidentiality is a barrier to tracking wood products market conditions. For example, both Colorado CFLRs have yet to determine the full extent to which CFLR forest products benefit the local economy due to the challenge of what they described as "getting into what they described as contractor's trade secrets." More specifically, market outlets relate to a competitive advantage, hence, the location of wood products businesses is protected and these CFLRs have been unable to get related information. The sensitive nature of this information makes it difficult to track whether or not CFLR wood products are benefitting local mills and/or wholesale outlets.

Delayed Timelines: OMB Survey Requirements

A socioeconomic management program that uses federal dollars and involves the distribution of surveys requires approval by the Office of Management and Budget (OMB).¹⁵ The OMB application is lengthy, complex, and can take up to 12 months to secure approval. As a result, it has stalled implementation of assessments for two CFLRs. To address this barrier, Southwestern Crown of the Continent in Montana developed a joint application with the Four Forest Restoration Initiative in Arizona to the OMB to improve efficiency. Other CFLRs have managed to move forward by performing socioeconomic monitoring through interviews and circumscribed surveys without facing this delay.

Delayed Timelines: Survey Responses

Some CFLRs using contractor surveys to collect economic data have had difficulty with securing completed surveys. An informant from the Southwest Jemez Mountains in New Mexico explained that many contractors are unaware that they are working under a CFLR Program task order, and therefore do not recognize the relevancy of completing the surveys. Additionally, gathering data on contracts and outlets for wood can be difficult, as the Forest Service keeps much of this information confidential. "[Obtaining these data] really depends on the relationship with the local contractor," shared another informant.

Delayed Timelines: Large Project Areas and Associated Compliance Delays

An informant from the Tapash Sustainable Forest Collaborative in Washington identified that delays in implementing restoration treatments, be it from project size area or the staff capacity standpoint, stalls the CFLR's ability to monitor the effects of planned treatments. Hence, a socioeconomic management program challenge is linked not only to staff limitations associated with the social science work itself, but also large planning and environmental compliance workloads that ties up workers and stalls projects.

¹⁵ See footnote 6

Discussion and Recommendations

The vague requirements in the CFLR Program legislation combined with the challenges described above have generated inconsistency, but also innovation, among the CFLRs' socioeconomic monitoring programs. In order to confirm successful achievement of CFLR Program goals, it is imperative that thorough and comprehensive methodologies continue to be developed to track socioeconomic impact over time.

This study identified various aspects of CFLRs' socioeconomic monitoring programs in order to demonstrate the variation in approaches that occurs among the case studies, and to create a public resource for other triple bottom line focused efforts. Our recommendations are summarized below.

Trends in Indicators and Methodologies

Economic Indicators and Methodologies

Across the CFLRs included in this study, there is high overlap both in terms of what is monitored and how indicators and measures are assessed beyond the annual USFS CFLR Program reporting requirements. Aside from required indicators, the most commonly tracked indicator is job creation and subsequent job details, such as the associated income and benefits. This is likely due to the three reasons: (1) job creation is a simple way to assess the degree to which forest restoration benefits rural economies; (2) informants are frustrated with TREAT's inaccurate outputs, and (3) jobs matter- this is something everyone involved in the CFLR Program seems to acknowledge.

The type and value of wood products produced from CFLR wood forest material is the next most tracked indicator. The extent of wood products manufactured from CFLR wood is interpreted as an indicator of how much restoration work is being done.

Distribution of surveys to contractors and businesses is one of the most common methods of gathering economic and contracting data among CFLRs. While it may not be the most time-efficient strategy due to the turnaround time, these grant direct access to qualitative and quantitative data of interest and appear to be a popular method for gathering accurate information.

Social Indicators and Methodologies

In contrast, there is little consistency in the type of indicators CFLRs select to monitor social conditions, nor in what CFLRs perceive social well-being to encompass. There is some overlap in the use of indicators such as recreation usage and opportunities; the amount of workforce training offered; and employment of youth, minority groups, or people of lower income. However, eight CFLRs are primarily monitoring economic indicators, while seven consider group collaboration and public perception to be social effects of CFLR-related projects. Two are tracking poverty levels. Overall, only four are tracking social indicators that reflect quality of life.

Rationale for the In-balance between Social and Economic Monitoring

Eight CFLRs have solely focused on the economic effects of the CFLR Program, such as local job market, economic expenditures, or strength of the forest products industry. Reasons for this typically include they are close to what TREAT assesses and is called for in the enabling legislation, there is agreement about what the measures reflect, and there is lack of agreement and no specific direction about other socioeconomic measures to include.. The term "socioeconomic" is not defined in the Omnibus Bill and

therefore is left up to interpretation to the CFLR groups that have self-described as lacking social science capacity.

Mitigating Challenges

Increasing Social Science Capacity

Sierra Institute recommends that CFLRs struggling internally increase their social science capacity by reading the literature cited in this paper and establishing their own economic **and** social goals as outlined above. Beyond building internal capacity, this study finds that the most common way to build a CFLR's social science capacity is to acquire the services of an external social science expert through a USFS contract or agreement. Should CFLRs have difficulty accessing USFS funds for these services, Sierra Institute recommends that groups contact other CFLR representatives that have successfully leveraged USFS support for these services (See Appendix A: CFLR Socioeconomic Monitoring Contact List).

TREAT

Given the unanimous disappointment with TREAT's accuracy and relevancy, the Sierra Institute recommends that the USFS remove this process from the annual CFLR reporting requirements and instead rely upon economic indicator measurements as produced by the CFLR socioeconomic monitoring programs.

Defining Local

A socioeconomic monitoring program should strike a balance between socially meaningful units of analysis and units for which good data are available, and the ease/simplicity of collection at a coarse scale should not automatically trump the delineation of a more accurate, finer "local" area (Kusel 2001). Defining the unit of analysis, or determining what constitutes the "local" area at which socioeconomics are to be monitored, is imperative in order for results to capture relevant and useful information. The area considered to be local is relative to the specific CFLR as physical, social, and economic conditions vary from project area to project area.

17 of the 18 CFLRs included in this study have identified their unit of analysis and either plan to or are actively tracking indicators within those delineated areas. How the groups define local seems to mirror pre-existing (primarily county) boundaries, which other social science studies indicate are not a socioeconomic-relevant scale (Doak and Kusel 1996).

Based on the socioeconomic monitoring programs that the Sierra Institute has implemented, community-level local delineations and increased social indicators augment the cost of socioeconomic monitoring programs. The result, however, is a less coarse, more locally relevant and accurate analysis (Kusel et al. 2015). Sierra Institute recommends that CFLRs refer to the delineation recommendation outlined in its *USFS Collaboratives and Local Benefit: What's Local Anyways?* report for more information (Sierra Institute 2015).

Building Trust with Informants

Creating a level of trust with informants is another important aspect for effective socioeconomic monitoring programs, and has been recognized as an important goal for social science research (Reason 1994, Everett 2001). The collaborative process itself should generate some level of trust if all relevant stakeholders are invited to CFLR project meetings. Additionally, it is important to hold meetings in a location which is accessible and feels familiar to participants. If interviews are conducted, they should also take place where the informant feels at ease.

A second critical element to trust building is offering and maintaining confidentiality for all informants. This is a standard practice in social science research and also important for the design and implementation of socioeconomic monitoring programs (Oppenheim 2002, Johl and Renganathan 2010).

Delayed Timelines: Training in & Streamlining OMB

While some CFLRs socioeconomic monitoring programs are significantly delayed by the OMB process, others did not report this challenge. To generate more consistency, it is recommended that (1) the USFS and OMB collaborate on a training regarding the OMB process as it relates to CFLR socioeconomic monitoring programs, and that (2) the USFS and OMB collaborate on opportunities to streamline CFLRs' compliance applications. At the individual CFLR-level, we recommend that CFLRs begin the OMB approval process as early as possible.

Delayed Timelines: Improving Survey Timelines

There are a number of courses of action that can be pursued to address the timeline of low or untimely survey responses. First, alternative methods of gathering information may be employed including focus groups or workshops for less sensitive information. This enables a large amount of information to be gathered and refined by the participants as a whole.

Having a distinct deadline can also be useful for tracking surveys and receiving responses in a timely manner. The typical survey response rate is only 35% for organizational surveys, and so expecting a "high" response rate is not realistic (Baruch and Holtom 2008). A final strategy is to include pre-addressed, stamped envelopes for the survey return, decreasing the costs and obstacles for survey respondents.

Delayed Timelines: Streamlining Compliance

USFS Collaboratives are exploring mechanisms to expedite compliance processes (USFS Sustainable Landscape Management Board of Directors meeting, 2015). Potential avenues to expedited compliance include obtaining more categorical exclusions, combining federal and state compliance reports (in the example of California, this would be a join NEPA/CEQA report), and identifying opportunities for projects to be considered for additional categorical exclusions under the Healthy Forests Initiative and Healthy Forests Restoration Act (2003). Sierra Institute recommends that CFLRs request a USFS Compliance Specialist to share what they do know and seek training on areas with which they are less familiar.

Developing More Social Indicators and Associated Methodologies

Similar to economic monitoring, indicator approaches are useful for measuring community well-being and when establishing baselines. In the context of forest community well-being, Beckley and Burkosky (1999) define an indicator as a tool for monitoring variables relevant to the sustainability of human community that depend on their surrounding forest resources. This report defines an indicator as a specific category that works to establish the state or condition of a particular aspect of a community.

As described in the results section of this report, there is a range in CFLR approaches to defining and measuring community well-being. This range is partially accounted for by the notion that indicators and monitoring goals will vary from project to project based on community characteristics and priorities. The majority of this variation, however, appears to be related to falsely categorizing stakeholder analyses as socioeconomic conditions.

Regarding the development of social indicators, Bliss et al (2001) suggest that indicators should reflect the goals and interests of the group that selected them, and that it is important for projects to choose indicators based on the understanding of how they will be used to evaluate progress toward restoration goals. In a guide produced by the U.S. Environmental Protection Agency, social scientists offer potential strategies and tools for defining and understanding the human dimension of environmental issues. The guide recommends that in order to develop community-based indicators, defining the issue and goals to be measured, identifying the audience for the indicators, evaluating indicator options, and identifying appropriate data sources in order to develop community-based indicators are all necessary (Environmental Protection Agency 2002). Based on the suggestions in the literature, and because collaboration is a key requirement of the CFLR Program, we believe it is important that individual CFLRs, and other groups striving to generate triple-line-benefits, collaboratively identify socioeconomic goals prior to selecting indicators.

Conclusion

The Collaborative Forest Landscape Restoration Program brings a new approach to forest restoration and management by requiring collaboration and community participation in setting goals and objectives for landscape management (Schultz et al. 2012). The CFLR Program encourages an “all-lands approach” to land management along with adaptive management through comprehensive monitoring. With its triple-bottom line emphasis, one of the essential program goals of the CFLR Program is to improve socioeconomic conditions in forest communities. This requires monitoring local socioeconomic conditions to learn not only about baseline conditions but also to determine how and if CFLR actions affect local these conditions.

Results from this study highlight what is being done to monitor local socioeconomic conditions in CFLRs across the U.S., and identifies who is conducting the monitoring and the scale at which it is being done. These steps are necessary to improve understanding of the linkage between natural resource management and community socioeconomic outcomes and, more specifically, how CFLR programs across the country are implementing this work.

This study shows that, while recognized as an important component of CFLR work and for assessing socioeconomic impacts of forest restoration projects, monitoring socioeconomic and community well-being in CFLRs has been launched unevenly. Many of those who are developing protocols lack social science backgrounds, and lack the needed guidance about how to conduct comprehensive socioeconomic monitoring efforts. This has resulted in varying degrees of understanding of how to appropriately implement monitoring efforts, which indicators to select in order to thoroughly assess both economic and social conditions of interest to the collaborative group, and how to define the local area of impact. Circumstances differ from site to site, hence, good socioeconomic assessment will also involve measures that vary somewhat from project to project.

The overlap of individual indicators used, the limitations of the most commonly used indicators, and identified challenges all present the opportunity for learning, not only among CFLRs but also for other collaborative efforts. This work demonstrates the need for the development of more standardized socioeconomic monitoring practices for the CFLR Program. This work is important not only because of its focus on the new CFLRs, but because triple-bottom line work and assessment is a cornerstone of other Forest Service initiatives, including new forest planning.

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Appendix A: Indicators Most Commonly Identified as a Measure of Socioeconomic Impact Among CFLRs (as of May 2015)

| Indicators and Measures | Common data source(s) | # of CFLRs | ACCG | BHC | CFR | DCFP | DLRP | 4FRI | GRP | KVRI | LSP | LPR | S-MF | SBRC | SJM | SWCC | TSFC | UP | W-LS | ZM |
|---|---|-------------------|-------------|------------|------------|-------------|-------------|-------------|------------|-------------|------------|------------|-------------|-------------|------------|-------------|-------------|-----------|-------------|-----------|
| Jobs and Economics | | | | | | | | | | | | | | | | | | | | |
| Jobs created/income (collected through methods other than TREAT) | Contractor/business surveys and interviews, Bureau of Labor Statistics, US Census data, economic models | 14 | x | | x | x | x | x | | x | x | x | x | x | x | | | x | x | x |
| Local economic benefit (\$\$ generated/captured, economic activity from CFLR projects) | Contractor/business surveys and interviews, Bureau of Labor Statistics, US Census data, city reports, economic models | 11 | x | | x | | | x | | x | x | | | x | x | | | x | x | x |
| Contractor location (for CFLR task orders/projects) | Contractor surveys/interviews, review of contracts, review of USFS records | 10 | x | | x | | | x | x | | x | | | x | | | x | x | | |
| Type of work offered | Contractor surveys/interviews, review of contracts, review of USFS records | 9 | x | | | | | x | | x | x | | | x | x | x | | | | x |
| Biomass Utilization | | | | | | | | | | | | | | | | | | | | |
| Type and value of wood products produced, type of wood utilized | Contractor surveys/interviews, review of contracts | 11 | x | | x | | | x | | x | | | | x | x | x | x | x | | x |
| Capacity of industry (available infrastructure/equipment, contractor capacity) | Contractor surveys/interviews, review of contracts | 3 | x | | | | | x | | | | | | | | | | | | |
| Social Well-being | | | | | | | | | | | | | | | | | | | | |
| Impacts to recreation usage/opportunities, accessibility of recreation sites | Review of USFS and USFWS reports and records | 8 | x | | | x | x | x | | | | | | | x | | | x | | x |
| Workforce training offered locally, employment of youth/minority groups/people of lower income | Surveys, focus groups | 6 | x | | | | | x | | x | | | | | x | | | | | x |
| Protection of cultural/heritage resources, tribal values | Review of USFS reports | 5 | x | | | | x | | | | | | | | x | | | | | x |
| Poverty levels (food assistance, poverty) | US Census data | 2 | x | | | | x | | | | | | | | | | | | | |
| Other | | | | | | | | | | | | | | | | | | | | |
| Public perception and attitudes | Surveys, interviews with focus groups | 7 | | | x | | | x | x | | | | | | x | | | x | | |
| Collaboration | Surveys | 6 | | | x | x | | | | | | | | | x | | | x | | |
| Notes: | | | | | | | | | | | | | | | | | | | | |
| 1. This list does not account for every indicator assessed by all CFLRs, it is only a compilation of the most common. | | | | | | | | | | | | | | | | | | | | |
| 2. LSP and DFCP rely on TREAT but still conduct interviews/surveys of contractors and businesses to determine if TREAT inputs accurately reflect local impact | | | | | | | | | | | | | | | | | | | | |

Appendix B: CFLR Monitoring Contacts

| CFLR | Monitoring Contact | Position | Email |
|---|---------------------------|---|--------------------------------|
| Amador Calaveras Consensus Group Cornerstone Project | Kendal Young | CFLR Cornerstone Coordinator, Stanislaus National Forest | kendalyoung@fs.fed.us |
| Burney Hat Creek Basins Project | Michelle Coppoletta | Ecologist, USFS Sierra Cascade Province | mcoppoletta@fs.fed.us |
| Colorado Front Range Landscape Restoration Initiative | Tony Cheng | Director, Colorado Forest Restoration Institute | tony.CHENG@colostate.edu |
| Deschutes Collaborative Forest Project | Vernita Ediger | Natural Resources and Environment Program Administrator, Central Oregon Intergovernmental Council | vediger@coic.org |
| Dinky Landscape Restoration Project | Sarah LaPlante | Deputy District Ranger, Sierra National Forest (High Sierra Ranger District) | slaplante@fs.fed.us |
| Four Forest Restoration Initiative | Anne Mottek-Lucas | Principal, Mottek Consulting | mottekconsulting@infomagic.net |
| Grandfather Restoration Project | Lisa Jennings | Project Coordinator, Grandfather Restoration Project | lisajennings@fs.fed.us |
| Kootenai Valley Resource Initiative | Patty Perry | Facilitator, Kootenai Valley Resource Initiative | patty@kootenai.org |
| Southern Blues Restoration Coalition | Mark Webb | Executive Director, Blue Mountains Forest Partners | bmp06@gmail.com |
| Southwest Jemez Mountains | Eytan Krasilovsky | Southwest Region Director, Forest Stewards Guild | eytan@forestguild.org |
| Southwestern Crown of the Continent Collaborative | Cory Davis | Monitoring Coordinator, Southwestern Crown of the Continent | cory.davis@cfc.umt.edu |
| Tapash Sustainable Forest Collaborative | Jodi Leingang | Tapash CFLR Coordinator, Okanogan Wenatchee National Forest | jleingang@fs.fed.us |
| Uncompahgre Plateau Collaborative Restoration Project | Tony Cheng | Director, Colorado Forest Restoration Institute | tony.CHENG@colostate.edu |
| Weiser-Little Salmon Headwaters Project | Becky Johnstone | Monitoring Committee Chair, Weiser-Little Salmon Headwaters Project | Becky@secesh.net |
| Zuni Mountain Project | Eytan Krasilovsky | Southwest Region Director, Forest Stewards Guild | eytan@forestguild.org |