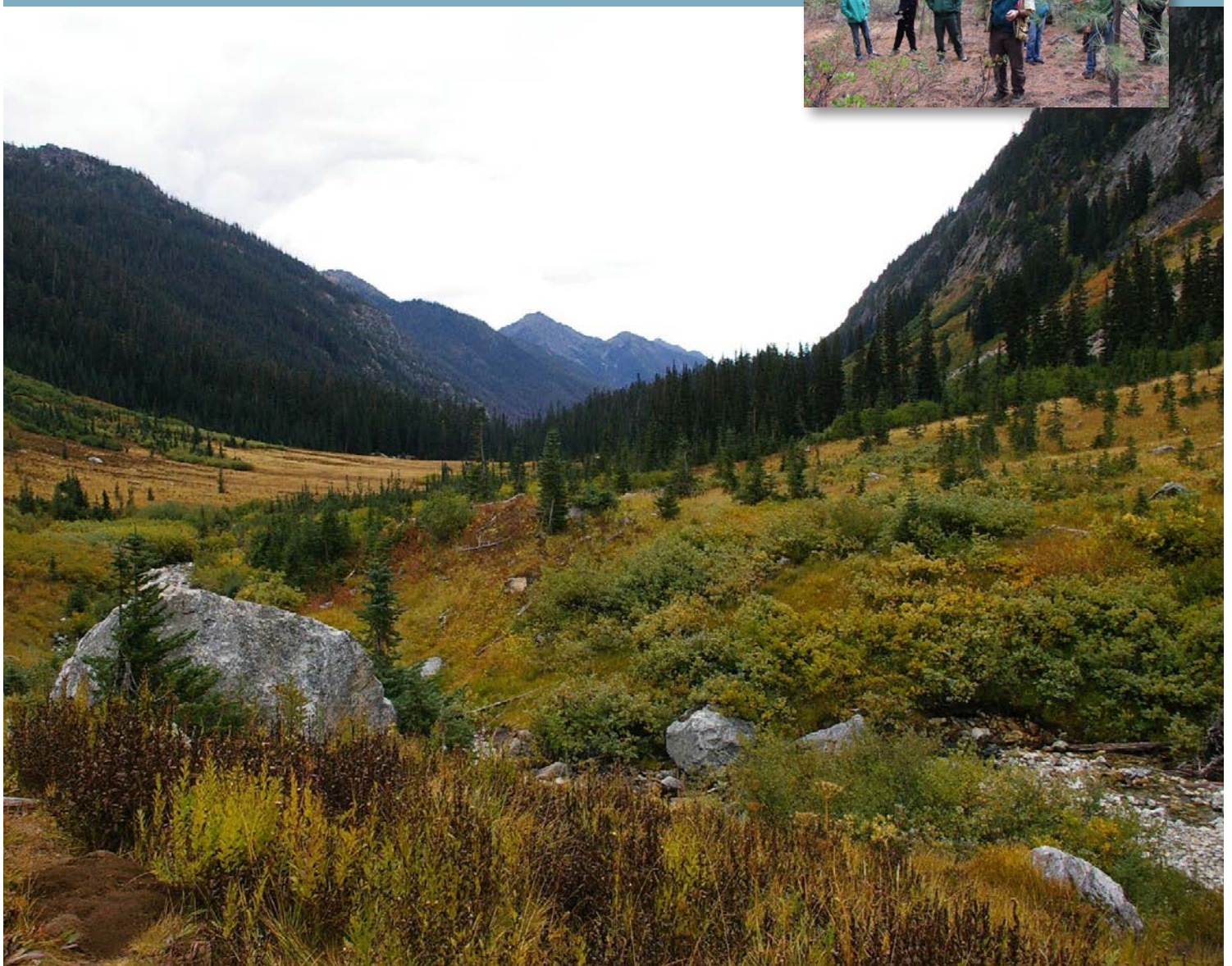


# Piloting Restoration-Related Social and Economic Measures on National Forests

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## Executive summary

**F**orest and watershed restoration on national forests and grasslands has ecological, social, and economic objectives. Forest Service performance measures have largely focused on outputs associated with land treatments, rather than ecological, social, and economic outcomes, in part because outputs are much more easily measured than outcomes. Over the past several years, the Forest Service has undertaken several initiatives to develop performance measures that are broader in scope and more outcome-oriented. This working paper summarizes key findings from an effort to pilot social and economic performance measures associated with watershed restoration..

### Approach

Our goal was to pilot performance measures (rather than to conduct monitoring), and we developed strict criteria for the candidate measures. To develop proposed performance measures, we reviewed social and economic monitoring literature and conducted focus groups with Forest Service staff and stakeholders. We then modified the draft performance measures based on additional Forest Service input and lessons learned about available data, and piloted these measures on three anonymized national forests in three different regions.

We developed two major types of measures: 1) those that could be derived from existing Forest Service data; and 2) self-assessments at the forest level. The measures derived from existing data involve: local business benefit; community capacity; local economic benefit from restoration; restoration jobs;

and investments in socially vulnerable watersheds. The self-assessments guided national forests to consider their efforts to date around local business opportunities; investments in community capacity building; government-to-government collaboration; all lands restoration; and collaborative engagement

### Key findings

- Pilot performance measures using existing Forest Service data have potential to track economic outcomes from restoration projects with limited additional forest-level staff effort.
- Because the social context of forests is so different, to be effective, any targets associated with performance measures should be measured as change over time against a baseline.
- Developing specific business rules or criteria needs to precede adoption of any pilot measures.
- The self-assessment measures helped forests to take stock of collaborative and community engagement and identify strengths and opportunities for improvements, but would be difficult to consolidate into regional or national measures.
- Echoing criticisms of existing output measures, Forest Service staff found the social and economic performance measures piloted to be too output-oriented.

This pilot effort suggests that measures that may be effective for local monitoring and assessment do not readily convert to performance measures. Moreover, effective performance measures are difficult to develop and virtually always require significant compromise between the simplification required for measurement and the complex context in which the Forest Service operates. This is equally true in the ecological and social and economic realms.





Performance tracking is a major component of federal agency management. The US Forest Service has numerous output and outcome performance measures that tie to its strategic plan. For the National Forest System, most of these are focused on on-the-ground accomplishments and resource outputs. More recently, the agency has developed some measures for ecological conditions, especially pertaining to watersheds.<sup>1</sup> However, with a motto of “caring for the land and serving people,” the goals of the Forest Service are not only ecological but also social and economic. This is true throughout the agency, from youth engagement to creating a diverse workforce. It is also true for the restoration focus of the Forest Service; in this arena, there are economic and social objectives that drive these programs. However, the Forest Service has few performance measures that can help the agency track social and economic dimensions of forest and watershed restoration.

The purpose of this document is to report on a pilot project in which we tested a number of social and economic performance measures related to forest and watershed restoration. This builds on an earlier phase of work in which we worked with Forest Service and nongovernmental organizations to propose socioeconomic performance measures associated with forest and watershed restoration.<sup>2</sup> These proposed socioeconomic measures were used in the second phase of this work, to inform the piloting of measures. This pilot involved an iterative process of working to operationalize indicators and measures, seeking data for those measures, and getting feedback from Forest Service staff at the forest and national levels. We also conducted pilots with three national forests, where we sought to apply the measures in diverse geographical locations to assess their potential to work across regions and be utilized at a broader national level.

The Forest Service actions significantly affect not only the land and resources it manages but also nearby communities and society at large. For example, when the Forest Service employs people directly or through contracts for restoration work to local businesses, it helps provide local

jobs, support business vitality, and increase the amount of money flowing in to the local economy. It can also help improve the social conditions in a community. However, achieving social and economic benefits requires deliberate action.

This pilot is informed by, and is expected to inform, both the short-term and long-term strategic actions the Forest Service is undertaking to improve socioeconomic conditions. These measures have a strong focus on local benefits because of the Forest Service’s longstanding commitment to support local economic development, and in light of concerns that restoration projects may fall short at providing local economic benefits (Nielsen-Pincus and Moseley, 2013; Moseley and Reyes, 2008). The measures have been developed to relate to high-priority goals and objectives and require minimal new reporting requirements at the unit level. Measures described below are focused on measuring continual progress as well as complex and integrated outcomes.

The working paper presents information in the following sections:

1. **Overview of piloted performance measures:** Description of the proposed indicators and associated measures and their purpose and a brief explanation of the methods we used to calculate the measures.
2. **Evaluation of performance measures:** Summary of the viability of the measures, including a discussion of their strengths and weaknesses and recommendations regarding the use of the proposed indicators. This includes, in several instances, the recommendation that certain measures not be adopted.
3. **Results of piloting measures on national forests:** Presentation of the application of these measures to three anonymous pilot forests.
4. **Conclusion:** Discussion of overall lessons learned in the creation and piloting of performance metrics, as well as the project approach more broadly.
5. **Details of methods and analyses** used for measures, including a revised version of the socioeconomic scorecard (Appendices A and B, pages 24 and 28).



## I. Overview of piloted performance measures

We developed two types of measures. The first set of five measures used existing Forest Service data and we expected that they would require minimal new reporting requirements at the unit level. We call these “numerical measures.” We also developed and tested a self-assessment tool using measures on a scorecard (akin to the Forest Service’s Climate Change Performance Scorecard<sup>3</sup>), which provides qualitative assessment of the effectiveness of restoration investments in cultivating social and economic benefits. We call these the “scorecard measures.”

When developing the initial measures with agency and non-governmental stakeholders, we used the following criteria:

- Use existing data the Forest Service is already authorized to collect, or data that are relatively easy to collect;
- Use data where relatively clear “business rules” (establishing criteria for making decisions) for calculation are possible to develop;
- Use data that protect the privacy of businesses and individuals; and
- Use data that are of high quality and that tell a compelling story.

For all measures, we define “local” to be the counties touching a given national forest. For example, local businesses or communities are those located within a county that contains land of the national forest of interest. The indicators selected for numerical measures are shown in Table 1, below.

### Numerical measures

**Measure 1: Community capacity** in the context of national forest management is the capacity of a community to engage with the Forest Service and other partners to pursue mutual goals. The Forest Service depends on strong partners to accomplish its work, so the number of organizations to which grants and agreements were awarded over the time period can show if, where, and how the Forest Service is building and sustaining capacity to get work done. The diversity of partners with which a national forest engages can show the extent to which the agency is contributing to community capacity in a given region. For the purposes of performance management, community capacity was measured as the number of local organizations awarded restoration-related grants and agreements over three-year time periods. This measure included all organizations included in the grants and agreements database as holding an agreement with the Forest Service during the relevant time period, so did not necessarily include businesses with contracts or that were awarded timber sales (different databases and purposes).

**Measure 2: Local business capacity** is the ability of the local business community to engage in the work of national forest management, especially forest and watershed restoration and associated value-added and support functions. Local business capacity is important because: 1) it facilitates the local national forest unit in accomplishing its work;

**Table 1 Initial numerical measures**

Indicator	Measure
Community Capacity	Number of local organizations awarded restoration-related grants and agreements over last 3 years
Local Business Capacity	Number of local contractors awarded restoration-related contracts, timber, or stewardship contracts over the last 3 years
Local Business Benefit	Percent of restoration-related service, stewardship, and timber sale contract value awarded locally
Jobs	Number of direct jobs created or retained through restoration-related timber sales, Service contracts, Stewardship contracts and agreements, agreements (including Job Corps), federal permanent and seasonal employment
Investments in Socially Vulnerable Watersheds	Percent of dollars from restoration-related budget line items invested in watersheds with medium/high social vulnerability

and 2) it is the central driver of local economic benefit from national forest management. Without local business capacity, local communities will struggle to capture the opportunities generated from national forest management. We measured local business capacity as the number of local contractors awarded restoration-related contracts and timber contracts over three-year time periods.

**Measure 3: Local business benefit** is a national forest’s restoration and timber sale work that local businesses were able to capture. We measured local business benefit as the percent of restoration-related service and timber sale contract value awarded locally. In this measure, stewardship contracts are integrated into the service or timber sale data, depending on the particulars of contract.

**Measure 4: Local jobs** are the jobs created directly through forest and watershed restoration, timber sales, as well as through indirect activities that are occur as the money flows through the local economy. These jobs can be created or sustained through a variety of pathways including contracts, grants and agreements, permits as well as direct federal employment. Due to data availability, we piloted only the component associated with service contracts and timber sales. Local job figures cannot be calculated directly and must be estimated, due to a lack of available data. We estimate restoration and timber sale jobs using the revised Forest Service TREAT (Treatments For Restoration Economic Analysis Tool).<sup>4</sup>

**Measure 5: Restoration investments** in socially vulnerable watersheds focuses on understanding the extent to which the Forest Service is investing in restoration work in watersheds that are high poverty or otherwise face socio-demographic challenges that may make these communities at particular risk from disturbance, whether it be natural or human-caused. In addition, communities facing demographic challenges such as high poverty rates or low education rates may have limited resources to organize and engage with national forests, and therefore it may be more difficult for the national forest to work in these areas. In these instances, there may be inadvertent underinvestment in high-vulnerability geographies.

To measure the social vulnerability of particular watersheds, we built an index using data from the US Census for educational attainment, income, poverty, unemployment, non-English language use, and single-mother households, following methods in the social vulnerability literature. We binned watersheds on each national forest into quartiles based on the local social vulnerability scores. We then calculated the percentage of these composite Forest Service restoration performance measures performed in these watersheds. Details of the methods can be found in Appendix A (see page 24). We were not able to connect expenditures to this measure.

## Socio-economic scorecard measures

Recognizing that factors such as collaboration and capacity building are difficult to measure numerically, we also developed and piloted a socioeconomic scorecard. The goal of the scorecard process was to allow national forests to assess in a qualitative manner their efforts to support “local capacity building” and “outreach and collaboration” (see Appendix B, page 28, for a copy of the scorecard). The scorecard indicators include:

### Local capacity building:

- Local business benefit and opportunities for restoration service contracts, stewardship contracts, and stewardship agreements
- Investment in capacity building

### Outreach and Collaboration

- Government-to-government collaboration on both a project and programmatic level
- All lands restoration
- Collaborative engagement in project scoping, project planning, project implementation, project monitoring, and adaptive learning.

Completing the scorecard involved convening a multi-stakeholder team including both agency and non-agency (e.g., nongovernmental organization) stakeholders to score answers for several attributes for each indicator.

## II. Evaluation of performance measures



This section provides a synthesis of the evaluation of each of the performance measure piloted in this project, including strengths, challenges, and recommendations on what to adopt or not adopt as a performance measure.

### Evaluation of numerical measures

We first compiled data for the numerical measures using readily available Forest Service data, and then sought input from two of the three pilot national forests as well as Washington Office staff. This information, combined with own analysis of data quality and utility in particular contexts, provides the basis for our analysis of the strengths and weaknesses of the five measures. Our findings are summarized in Table 2 (see page 7).

#### Measure 1: Local Community Capacity

The number of local organizations awarded restoration-related grants and agreements over three-year time periods. “Local” organizations are those that are located in a county that contains land in the respective national forest.

#### Strengths:

- The three-year windows of time captured the number of organizations working in the community without showing year-to-year outliers.
- The three-year rolling total can track underlying organizational capacity, not annual partnership activity. The rolling total can also account for agreement modifications or other annual changes affecting how agreements are entered and accounted for.

#### Challenges:

- Using a three-year rolling total was not intuitive to interpret. Another approach would be simply to measure this performance measure annually. However, this would shift it from a measure of underlying community capacity to a measure of annual financial partnership engagements.
- This measure depended on understanding available grant money in the time period and showed this more than it reflected a national forest’s engagement with community organizations. There may be more capacity (more organizations) that received grants or agreements



in certain fiscal years not reflected in analysis, and there were likely more organizations in a given area that have engaged with the Forest Service in a formal agreement. Thus, this measure was not about underlying community capacity but rather a measure of Forest Service support of organizational capacity.

- It did not include any measure of the size or capacity of individual organizations or the number, size, or duration of agreements they

hold with the agency. This could miss important details, such as where there are a few very strong local organizations or many weak ones.

- Since this measure only documented formal agreements, the measure did not include organizations that bring financial or human resources to restoration efforts through other venues, which is a vital component of community capacity in many places.

**Table 2 Summary findings of piloted social and economic measures**

Indicator	Measure Tested	Strengths	Challenges	Recommended revised measure
<b>Local Business Benefit</b>	Percent of restoration-related service, stewardship, and timber sale contract value awarded locally	Helps identify extent to which local businesses are benefiting from restoration.	In places with significant use of partnerships, local economic benefit is likely under estimated; need to incorporate grants & agreements data into this measure. Including timber not appropriate when timber harvest is not restoration-oriented. Does not consider subcontracts or hiring of local crews.	Percent of restoration-related agreements, service and stewardship contract value awarded locally. Not a measure of capacity, more about how agency engages with businesses.
<b>Restoration Jobs</b>	Number of direct jobs created or retained through restoration-related service contracts, timber sales, stewardship contracts, and agreements (jobs from agreements and federal employment was not tested)	Helps identify local economic impact of federal activity.	Timber sales are not always restoration-oriented. Creating firm lines between restoration and non-restoration oriented activities is challenging. Measuring local jobs from timber is complex and not easily generalized. Information in grants and agreements database is not adequate to calculate economic impact from agreements.	Number of direct jobs created or retained through restoration-related service contracts, timber sales, stewardship contracts and agreements, grants and agreements, and federal employees.
<b>Community Capacity</b>	Number of local organizations awarded restoration-related grants and agreements over last 3 years	Helps identify extent of FS engagement with partners via formal partnership agreements.	Conceptually confusing when measured using a 3-year rolling average. Does not measure relationships that do not involve formal financial agreements or importance of relationships.	Not recommended. Not a measure of community capacity, more about how agency engages with community.
<b>Local Business Capacity</b>	Number of local contractors awarded restoration-related contracts, timber, or stewardship contracts over last 3 years	Helps identify extent of FS engagement with local business partners.	Conceptually confusing when measured using a 3-year rolling average. Provides limited information given effort involved to create measure.	Not recommended
<b>Investments in Socially Vulnerable Watersheds</b>	Percent of dollars from restoration-related budget line items invested in watersheds with medium/high social vulnerability.	Conceptually useful to understand issues of equity, inclusion, and vulnerabilities of communities to natural hazards and other shocks.	Developing a nationally relevant social vulnerability index is problematic, as types of demographic features that may lead to vulnerabilities vary widely across the country. Spatially explicit financial information for restoration projects does not currently exist.	Not recommended. But it may be beneficial for understanding social vulnerabilities to environmental hazards and adaptive capacities of communities near national forests.

- The Forest Service Grants and Agreements database made analysis cumbersome and inexact. The database did not allow for clear interpretation of whether an agreement was restoration-related. Clear business rules would be needed to clarify what would be included/excluded in this list. Similarly, this measure required a large amount of manual data editing to identify and find addresses for each organization to assign local or non-local status. This information about the organization was not always linked to the agreement or included in the grants and agreements database, which could lead to more manual data cleaning and editing than could likely feasibly be done for the number and scale of grants and agreements for all national forests. Organization names were not listed consistently (e.g., “State of Oregon” versus “Oregon, State of” versus “OR state” falsely created three different organizations). In many cases, the database listed an organizational headquarters (e.g., an organization based in Washington, DC, rather than the local field office of that organization actually conducting the work), which further confounded the complexity of assigning local and nonlocal status.
- Defining “local” in ways that make sense for particular national forests and associated communities was difficult, especially as county size varies considerably across the country. For example, some communities near a national forest but just across jurisdictional boundaries might be considered local in a given context but might not match the definition of local utilized in this case.

**Recommendations:**

We do not recommend adopting this measure because it was unintuitive, difficult to explain, and required an unreasonable amount of manual data manipulation. Even if this measure were to be revised to be calculated on an annual rather than rolling basis to make it more intuitive, it does not include vital non-financial partnerships with community organization volunteers. In addition, these data do not reveal any local organizations

involved in subawards, which is a critical part of how the agency accomplishes work with partners. It also does not provide a view into the relative importance of particular partnerships for conducting restoration activities, or of the size or type of agreements in place.

**Measure 2: Local Business Capacity**

The number of local contractors awarded restoration-related service contracts, timber, or stewardship contracts over three-year time periods. “Local” businesses are those that are located in a county that contains land in the respective national forest.

**Strengths:**

- This measure tracked the amount of underlying local business capacity engaged in contracts with the national forest.

**Challenges:**

- Similar to measure 1, using a three-year rolling total was not intuitive to interpret. Another approach would be simply to measure this performance measure annually. However, this would shift it from a measure of underlying community capacity towards an understanding of Forest Services business engagement.
- This measure did not include subcontractors or businesses engaged through subawards of grants and agreements. For some national forests, this may underrepresent local capacity, especially of very small businesses or large nonlocal businesses that tend to subcontract locally.
- This measure was, to some extent, more a reflection of the budget available for contracting in any given year than of underlying business capacity. This would be particularly true if the measure were to be tracked annually. Similar to Measure 1, this measure focused on understanding available contracting and sales in the time period more than it reflected a national forest’s engagement with businesses. There may be more capacity (more businesses) that were awarded restoration-related service contracts, timber sales, or stewardship contracts



in certain fiscal years not reflected in analysis, and there were likely more businesses in a given area performing related work than just those that engaged with the Forest Service through awarded work. Thus, this measure did not capture underlying community capacity; rather, it was a measure of Forest Service support of organizational capacity.

- The current system for recording service and timber sale contracts did not consistently identify stewardship contracts. Creating new rules about this would make it easier to identify who is participating in stewardship contracts.
- The measure did not identify the number of businesses in given area, nor the size or capacity of the individual businesses. Similarly, types of contractors were not reflected (e.g., manual labor, machine-intensive work), which typically represent different contractor types, skill sets, and capacities for forestry work.

- Similar to measure 1, defining local for this measure was challenging, although the location of businesses was less problematic in the contracts and timber sale databases (which tend to contain zip codes of business locations) than with grants and agreements.

**Recommendations:**

For reasons similar to Measure 1, we do not recommend adopting this measure. This measure was unintuitive, difficult to explain, and required an unreasonable amount of manual data manipulation. Even if this measure were to be revised to be calculated on an annual rather than rolling basis, which could make it more intuitive, it would not include vital subcontracts that are often with small and/or local businesses. It also did not provide a view into the relative importance of particular contracts (size, duration, type) for conducting restoration activities.



### Measure 3: Local Business Benefit

Percent of restoration-related service and timber sale contract value awarded locally. “Local” businesses are those that are located in a county that contains land in the respective national forest.

#### Strengths:

- Measure tracked the extent to which national forests were providing economic benefits to local businesses.
- Service contract and timber sale data were relatively high quality; small improvements in data management could further strengthen the reliability of this measure.
- Measure was relatively straightforward to calculate and intuitive to understand.

#### Challenges:

- This measure did not include dollars that might flow to local businesses via subcontracts, sub awards, or other restoration-related partnerships (e.g., grants and agreements).
- Defining local for this measure had the same challenges as with measures 1 and 2.

#### Recommendations:

We recommend adopting this measure while considering some changes for a more comprehensive measure:

- Develop data systems that would allow for the incorporation of grants and agreements information into this measure to better capture other restoration-related partnerships.
- Consider revisions to the definition of ‘local’ (counties that touch a given national forest). The current definition might not be most useful definition nationwide (although it is a definition that provides clear rules for cutoffs, which is needed for these types of analyses).
- We used Product-Service Codes (PSC) to identify restoration-related service contracts and associated businesses. PSCs are generalized categories and are not used consistently across national forests. Adopting this as a performance measure would require new direction to contracting officers about using PSCs consistently.

### Measure 4: Restoration Jobs

Number of jobs created or retained through restoration-related service contracts, timber sales, stewardship contrast and agreements, other agreements, and direct federal employment.

#### Strengths:

- Measures estimated number of jobs created or retained over time in an easily digestible manner.
- The calculation system was built based upon the economic impact analysis system developed by Ecosystem Management Coordination staff, which is regularly used in environmental analysis. This means that it is a standard that the Forest Service has already tested and adopted, and jobs impacts could be tracked from planning to implementation.

#### Challenges:

- Jobs were dependent on both local awards of contracts and the underlying local economy, so that some places would inherently create more jobs than others because of the size of the local economy. Consequently, jobs numbers should not be compared across national forests, but rather as a trend over time for any given national forest.
- Jobs measures were modeled numbers, not the actual number of jobs that have been created. Actual jobs data are not collected.
- Including timber sales was not appropriate for all national forests, as some national forests’ timber sale programs were not restoration-related.
- As with measures 1-3, the definition of local needed additional consideration.
- Available data allowed for job estimation based on the year of the contract award, which might not correspond to the year when the work was actually done. This was a larger issue for timber sales, where work might occur several years after the actual sale is recorded.

#### Recommendation:

We recommend adopting this measure, with some modifications:



- Work to develop a viable system to include restoration jobs associated with agreements and direct federal employment to provide a more comprehensive picture of restoration-related jobs.
- Either exclude timber sales or create a system that indicates which timber sales have restoration-related objectives.
- Keep in mind the limitations of the restoration jobs measure for interpretation and communication purposes, especially since data are not available on the actual number of jobs created.
- The same improvements in PSCs would need to occur for this measure to be adopted as with the local business benefit measures.

### Measure 5: Investments in Socially Vulnerable Watersheds

Percent of accomplishments associated with restoration-related budget line items invested in watersheds with medium to high social vulnerability. “Social vulnerability” uses attributes from the census such as poverty, income, ethnicity, and educational attainment to create a social vulnerability index.

#### Strengths:

- Social vulnerability was a useful concept for focusing attention on areas that may have social challenges that are in some way similar to ecological measures of risk and hazard.
- This measure offered the potential to link Forest Service actions to particular social landscapes.

#### Challenges:

- There is debate in the natural hazards literature around the utility of the concept of “social vulnerability” as a demographically defined concept. While some scholars use “social vulnerability,” others focus on “adaptive capacity,” which is conceptualized as a community’s ability to respond to natural and human-caused disturbance.
- It was difficult to create an index that worked nationally for all communities near national forests. Although other agencies use vulnerability indexes such as the USDA’s StrikeForce Initiative for Rural Growth and Opportunity in 2010 (which exists only in selected states), it was not clear that those indices could be used in the context of national forests.
- To pick up variation in vulnerability of communities near a given national forest, this measurement needed to be done at a fairly fine geographic scale. However, there were significant challenges with linking demographic data from the Census to communities in and around national forests, where there are few or no people living. In addition, there was no clear alignment (or simple conversion) between Census block groups (the smallest publicly available Census geography) for social data and the Forest Service’s common geography unit of analysis of watersheds.
- While the spatially explicit information in FACTS is improving over time, there were still challenges with data accuracy in some measures, and only a limited number of years of data available.



**Recommendation:**

We recommend that the Forest Service not adopt this as a performance measure at this time. However, we encourage the Forest Service to further explore the utility of the social vulnerability concept more fully and conduct additional analysis for its potential use in planning and analysis. For future analysis, we offer a few considerations:

- Social vulnerability, while a conceptually useful topic, can be difficult to implement. Developing an index that is appropriate nationally for the national forest system context requires more resources than were available in this project. A more comprehensive literature review and data analysis might lead to construction of a more viable index.
- Because of scale issues associated with the demographic data in low population areas, this sort of tool may be more useful for planning and analysis than for performance management to evaluate risks and opportunities at larger landscape (e.g., multi-forest or regional) scales. For example, as part of the ten-year monitoring of the Northwest Forest Plan, a plan-area analysis of changing community conditions near national forests was conducted that provided valuable insights.<sup>5</sup>
- The continued improvements in the spatially explicit nature of FACTS (gPAS) data could help improve the utility of a measure such as this. Additionally, this measure depended on the full implementation of the spatially explicit nature of FACTS. If there were future improvements that could connect expenditures to on-the-ground treatments, this could further help make economic connections between Forest Service actions and vulnerable communities.
- Given the move away from connecting performance measures and particular budget line items and the investments in improving data quality in FACTS and gPAS, it would make sense to focus on the relationship between watershed condition class, social vulnerability, and accomplishment location and move away from a focus on budget line items as originally envisioned.

## Evaluation of socioeconomic scorecard measures

**Scorecard measures**

Piloting the performance measures was an iterative process that included conversations and coordination between the Ecosystem Workforce Program, the Washington Office, and the pilot forests. After each conversation, we modified the scorecard based on input received. At the Forest level, we walked through the scorecard in person on two ranger districts with ID team members. After significant revisions of the scorecard, we engaged two other national forests to undertake the scorecard process. We asked the national forests to both complete and provide feedback on the scorecard. We received written feedback and then had phone call debriefs with our chief contacts on each forest to identify additional feedback. Through these multiple sources of feedback, we were able to triangulate notes and capture all of the comments, concerns, and suggestions for revisions. We revised the scorecard again based on feedback from these pilot processes (see Appendix B, page 28, for the last version of the scorecard.)

**Strengths:**

- The scorecard was useful in facilitating a conversation between stakeholders and agency staff, or amongst staff around social and economic engagement and performance. For example, pilot groups engaged in meaningful dialogue around local benefit, what it meant, and to what degree they were intentionally working to increase the benefits in surrounding communities.
- The scorecard discussions provided a good platform to discuss strategies and next steps for improving in areas where the unit agreed there was room for improvement.

**Weaknesses:**

- Given the inherent complexity of the concepts embedded in the scorecard and the subjective nature of the scoring, the scorecard did not appear to be a particularly useful tool for formalized performance management. In fact,





the reason that we created the scorecard in the first place was that these concepts defy simple quantification.

- There was difficulty in defining key concepts such as “collaboration” and “underrepresented groups.” Although we edited the scorecard many times in an effort to reduce ambiguity, many of the terms that staff found difficult are inherently multifaceted and are appropriately used differently in different contexts. Given this, creating clear rules that reduced ambiguity about such terminology would be difficult at best, and more likely would create unintended consequences by narrowing the strategies that national forests are pursuing their work in ways that could negatively affect innovation as well as community and ecological outcomes.
- The scores were subjective in nature. Although we defined what each score meant, whether or not a national forest or district actually met any given score was difficult for staff to determine, especially because there was considerable variability across resource areas in whether and how the unit was engaging with any given indicator. In some cases, this resulted in wide-ranging interpretations of the indicator questions in order to get the “best” answer. Finally, staff told us that if these were

real performance measures against which the national forest were being evaluated, they would be concerned that the subjective nature of the scorecard measures would allow staff to “game the system.”

- The Forest or district level was too large and complex to assign one score for a time period. Staff suggested that the scorecard might work better on a project by project basis, as a post-project assessment, so that the scores and feedback could be more specific and tangible, and not run the risk of generalizing multiple projects over a large area or timeframe. It was also difficult for staff to remember the nuances of all work conducted over the forest in a way that was adequately reflected in assigning just one score per category.

**Recommendation:**

We do not recommend the use of the scorecard process as set of performance measures. Instead, we recommend that it be a self-assessment tool that forest can use periodically (perhaps annually, or at the beginning and end of major initiatives) to set goals, track progress and identify opportunities for improvement. Appendix B, page 28, contains a revised scorecard and directions for using the tool in this recommended manner.

### III. Results of piloting measures on national forests

Below we provide some general characteristics about the pilot forests, to show the range of sizes, populations and locations of the forests. We then present each of the numerical measures showing results for all three pilot forests measure by measure. It is important to note that, due to the different report formats (including some variable years) each pilot forest provided, the information we are able to report on may differ from forest to forest and measure to measure.

#### Background information on Pilot Forests

##### Pilot Forest A

General location: Eastern United States  
Combined population of counties touching the forest: Less than 200,000  
Visitor use: Very high  
Forest Acreage: Small

About 10 percent of land is designated as wilderness areas and none of the watersheds in the forest are designated as highly impaired under the Watershed Condition Framework. According to national forest staff, with few exceptions, timber sales do not have restoration objectives.

##### Pilot Forest B

General location: Western United States  
Combined population of counties touching the forest: Less than 100,000  
Visitor use: Medium to high  
National Forest area: Very large

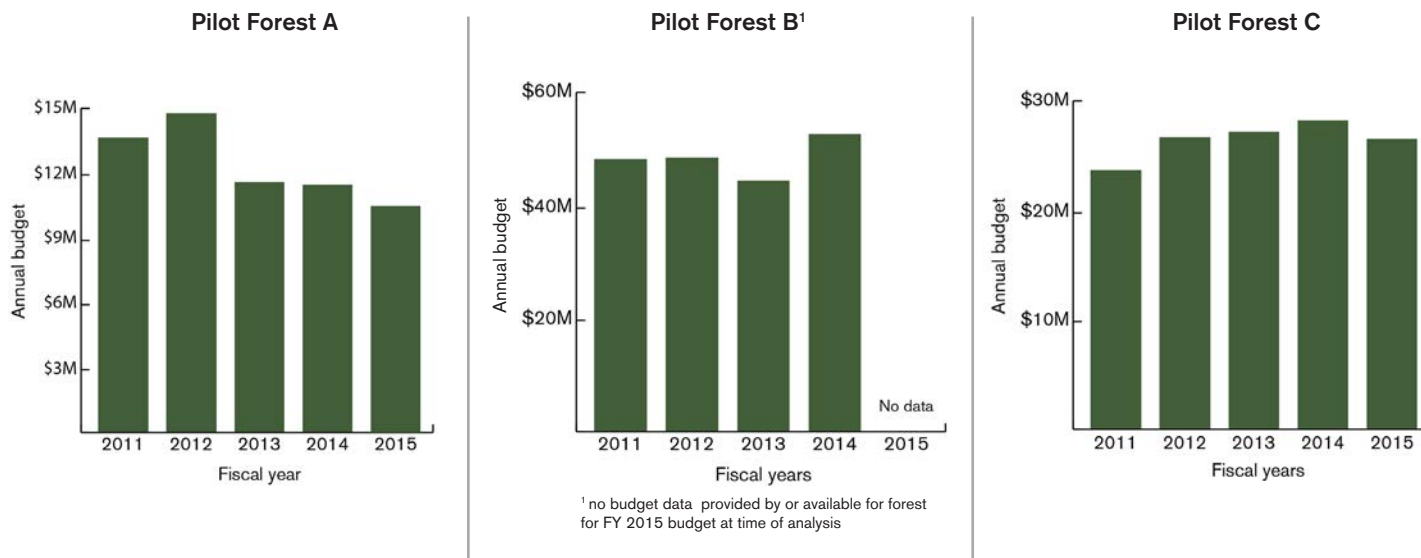
Approximately one third of the forest is designated as wilderness and none of the watersheds in the forest are designated as highly impaired under the Watershed Condition Framework. According to national forest staff, timber sales do not typically have restoration objectives.

##### Pilot Forest C

General location: Western United States  
Combined population of counties touching the forest: Less than 100,000  
National Forest area: Large  
Visitor use: Very low to moderate, depending on district.

Less than one-eighth of the forest is designated as wilderness and none of the watersheds in the forest are designated as highly impaired under the Watershed Condition Framework. Virtually all timber sales have restoration objectives.

**Figure 1 Annual budget for Pilot Forests FY 2011-2015**





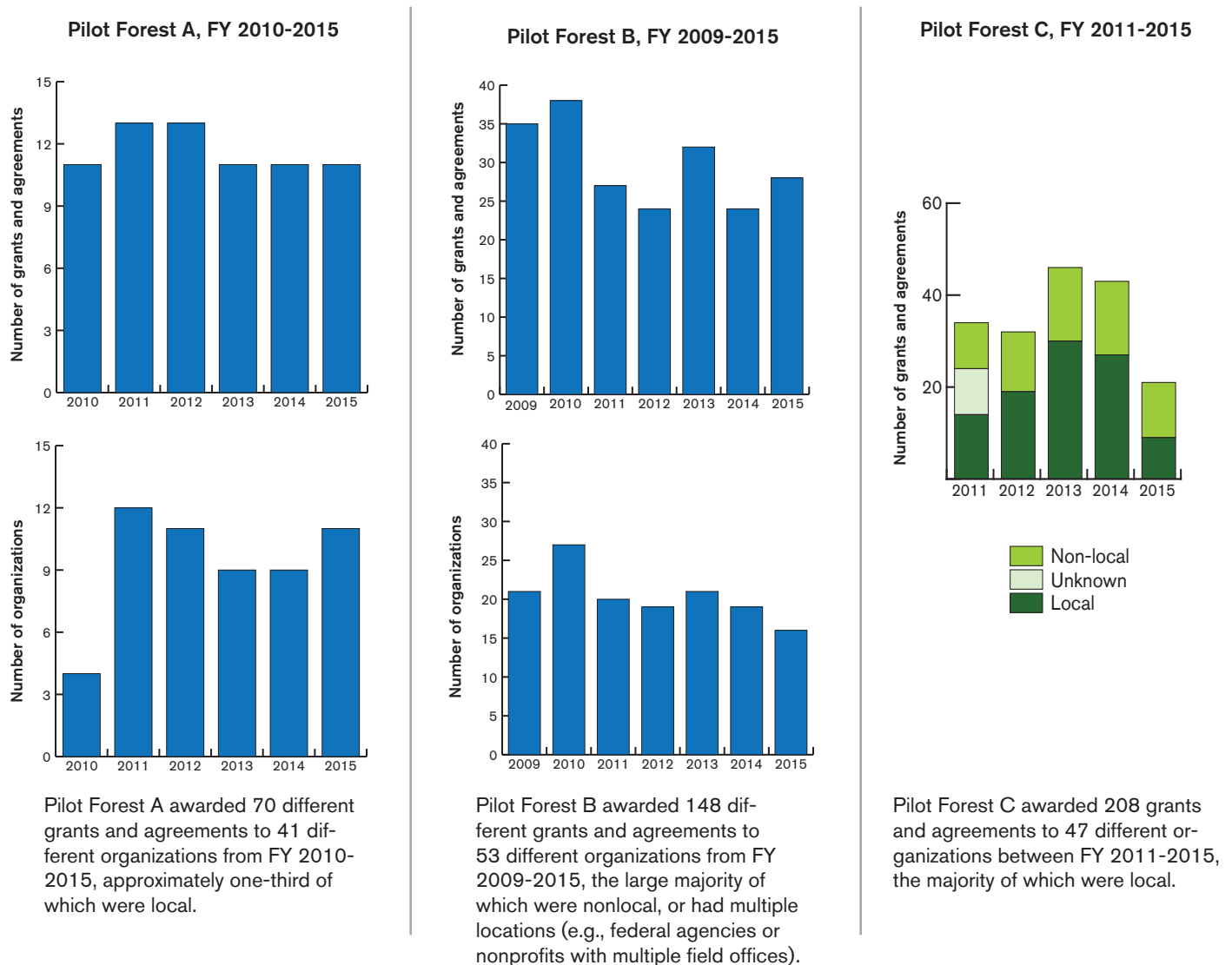
### Measure 1: Community capacity

The number of local organizations awarded restoration-related grants and agreements over three-year time periods. “Local” communities are those in counties containing land belonging to the respective national forest.

Because of how information was reported in the Grants and Agreements database, we could not separate restoration-related and non-restoration related agreements. For organizations with multiple locations (e.g., The Nature Conservancy), the location closest to the national forest was manually selected rather than the national or state headquarters for that organization. Due to the different re-

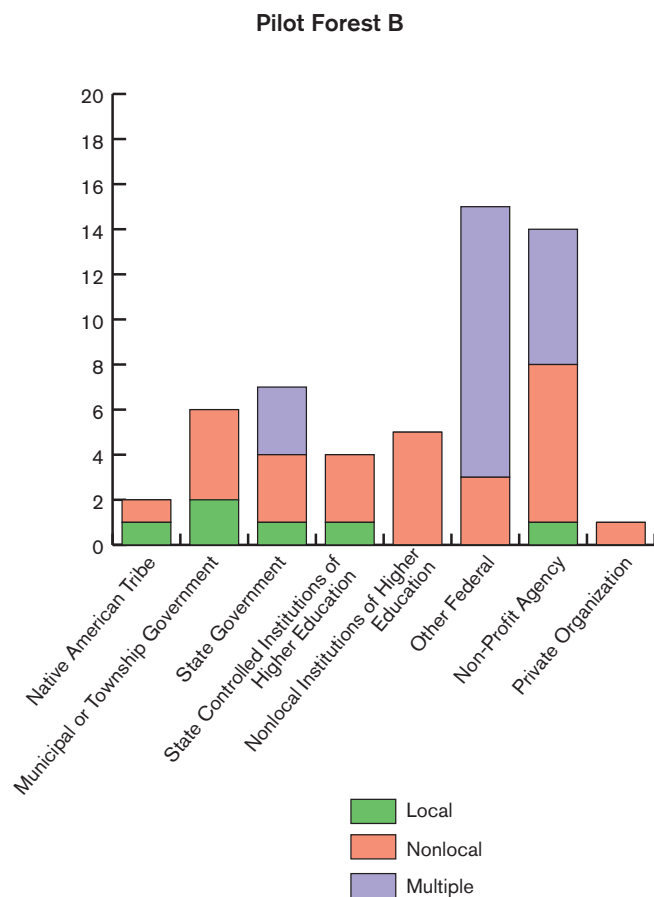
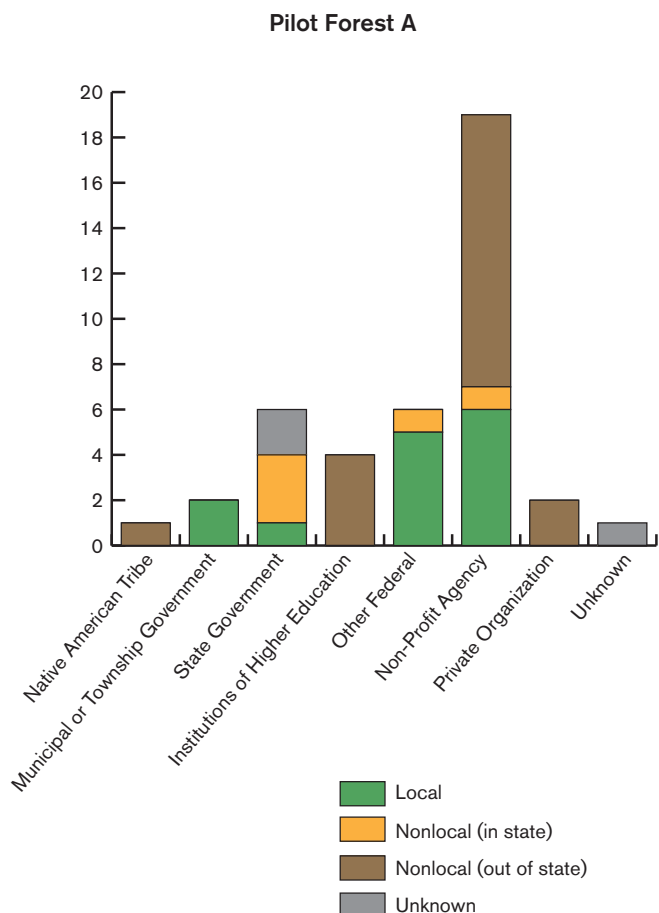
port formats each pilot forest provided, the results of what we could display for this measure for each forest differs (e.g., some forests provided award amounts, others did not). Below we show different ways we experimented with this measure, from looking at the number of grants and agreements awarded, to the number of unique organizations awarded, to other ways we could break out local, nonlocal, unknown, and organization type. These visualizations vary by forest, depending on what we were provided or able to obtain. We show these different variations here to demonstrate the variety of ways we tried to use grants and agreements data to inform this measure.

**Figure 2** Number of grants agreements and unique organizations awarded by forest by year



**Figure 3 Types of organizations awarded grants or agreements from FY 2010-2015<sup>1</sup>**

<sup>1</sup> These data were not available for Pilot Forest C at time of analysis



In response to feedback from Pilot Forest A, we tried assigning organizations to categories other than just local and nonlocal, which included local, nonlocal but still in the same state where the national forest was located, and nonlocal defined as only those organizations located outside the state. Figure 3a shows the different types of organizations awarded grants or agreements by sector type, and shows that local organizations included federal agencies, local and state government and nonprofits, and nonprofits, higher education institutions, tribal and private business. Local / nonlocal in-state / nonlocal out-of-state status was assigned and coded manually.

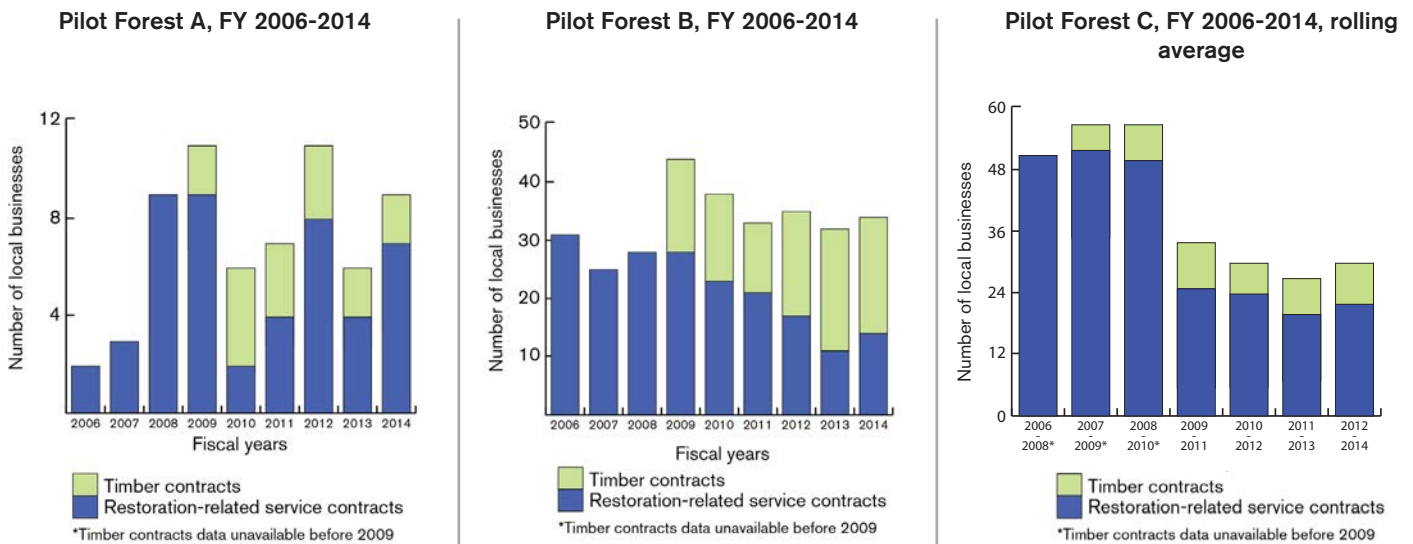
In another iteration of refining this measure, we assigned three types of location to organizations: local, nonlocal, and multiple. Multiple referred to organizations with multiple locations, such as state and federal agencies or nonprofits with multiple field office locations. We assigned multiple to an organization when the address listed in the database was unclear or listed as nonlocal but we knew there was a field office near the forest. This was assigned and coded manually: most organization types were determined by the provided G & A data (those that provided specific location information), but 100 of 324 entered were manually decided and entered based on each individual organization's main website information. This is far too labor intensive for a national-level measure and would need to be addressed with new business rules. Figure 3b shows that the majority of organizations were multiple or nonlocal, with nonprofits and state and federal agencies as the multiple organizations. The few local organizations were state or local government, nonprofit or tribal entities.

### Measure 2: Local Business Capacity

The number of local contractors awarded restoration-related service contracts, timber, or stewardship contracts over three-year time periods. “Local” businesses are those that are located in a county that contains land belonging to the respective national forest.

Because the intent of this measure was to show capacity over multiple years, for Pilot Forest C, we reported the findings that were calculated using rolling three-year time periods to attempt to better capture trends around how and when the Forest Service was engaging with local contractors.

**Figure 4 Local business capacity as measured by 3-year rolling number of businesses awarded timber sales and restoration-related service contracts**



The number of local businesses awarded restoration-related service contracts by Pilot Forest A was fairly consistent over the years with fewer service contracts and more timber sale contracts going to local businesses from 2009-2013.

The number of local businesses awarded restoration-related service contracts by Pilot Forest B was relatively steady between 2006-2010, with a slight downward trend in more recent years. At the same time, the number of local businesses awarded timber sale contracts increased in later years.

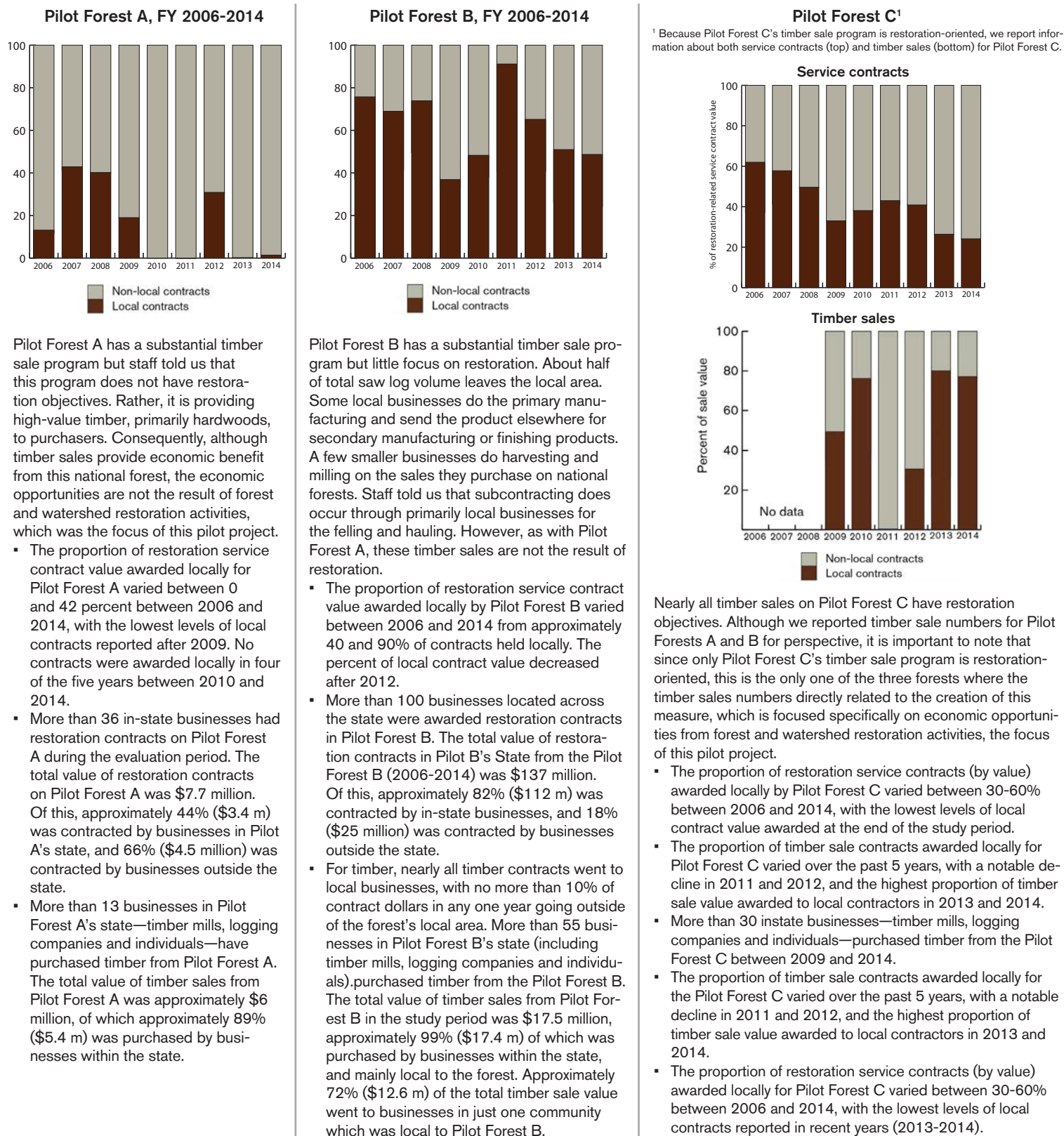
The number of local businesses awarded restoration-related service contracts by the Pilot Forest C decreased after 2008, while the number of timber sale contracts grew very slightly over time.



### Measure 3: Local Business Benefit

Percent of restoration-related service and timber sale contract value awarded locally. “Local” businesses are those that are located in a county that contains land belonging to the respective national forest.

**Figure 5 Percentage of contract value for restoration service contracts awarded to local businesses**



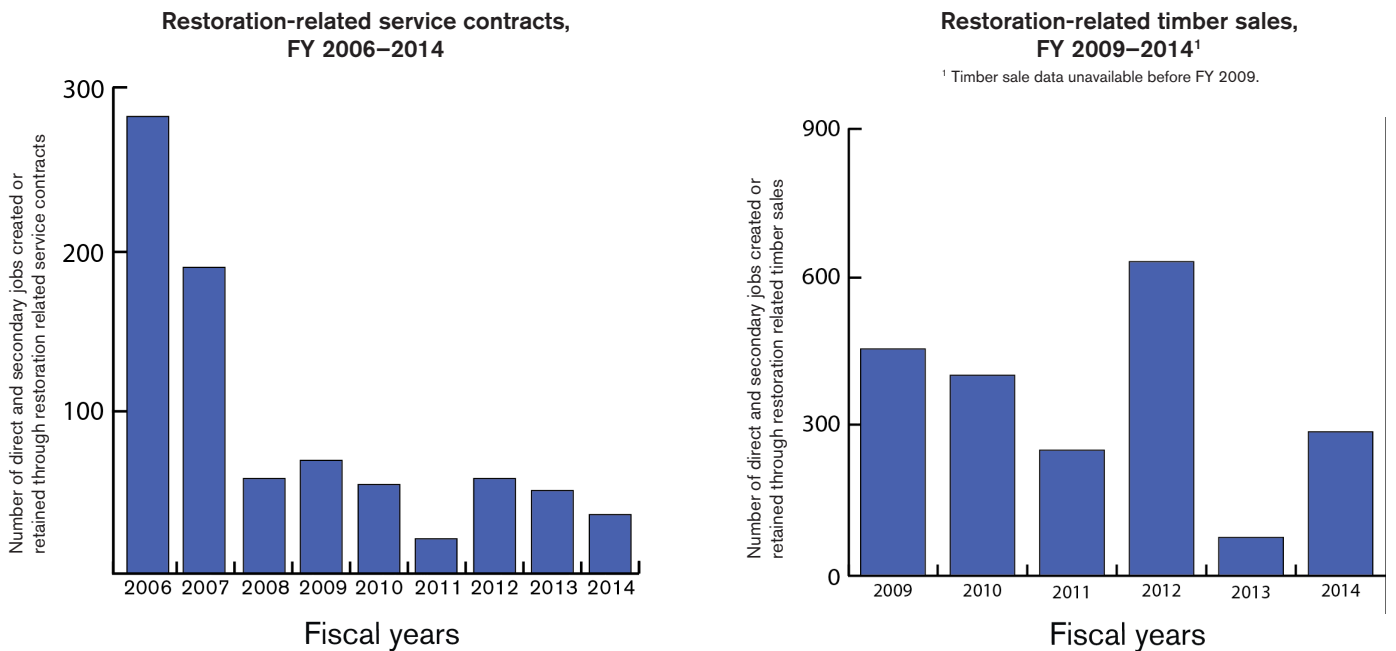
**Measure 4: Restoration Jobs**

*Number of jobs created or retained through restoration-related service contracts, timber sales, stewardship contrast and agreements, other agreements, and direct federal employment.*

This measure was promising but required more calculation effort than was possible for the scope of this project. Below we offer the restoration jobs numbers associated with restoration-related service contracts and timber sales on one of the pilot national forests. This calculation used TREAT and new systematic reporting about the types of work

involved in the restoration service contracts, stewardship contracts, and restoration-related timber sales. In future work, TREAT could be expanded so that the economic impact of restoration-related Forest Service employees could be included in these numbers. Finally, the grants and agreements impacts should be included in these numbers to capture a more comprehensive picture of relevant jobs but this would require some substantial investment in the data included in the G&A database before this could occur, as well as some additional expansion of TREAT.

**Figure 6 Annual jobs created or retained from restoration service contracts and restoration-related timber sales for Pilot Forest C, FY 2006-2014**



- The restoration-related service contracts jobs estimate for Pilot Forest C shows that the number of local jobs created or maintained through restoration-related service contracts has varied over time, with the highest numbers of jobs in 2006 and 2007, and a general decline from 2012 through 2014.

- The timber-related jobs estimate shows that local jobs created or retained (based on the volume of timber sold to local businesses) has decreased since 2009, with an upward trend in 2014.

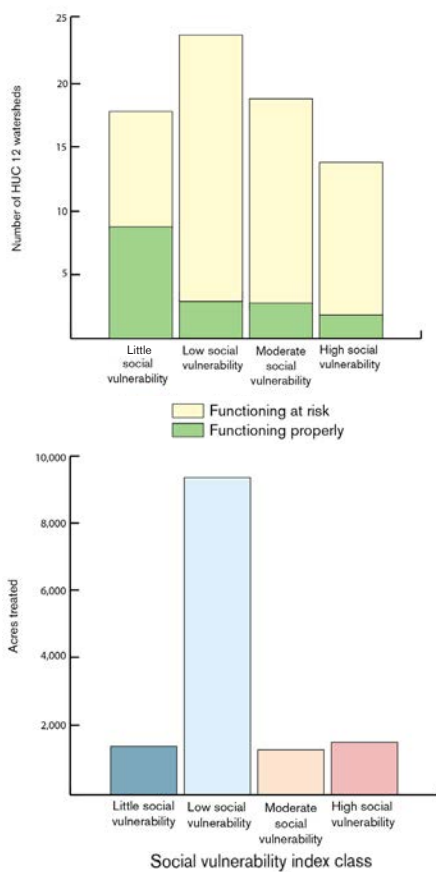
### Measure 5: Investments in Socially Vulnerable Watersheds

Percent of accomplishments associated with restoration-related budget line items invested in watersheds with medium to high social vulnerability. “Social vulnerability” uses attributes from the census such as poverty, income, ethnicity, or educational attainment to create a social vulnerability index.

In piloting this measure, we were able to identify the watershed condition profile of each national forest, as well as develop a forest-specific social vulnerability profile. We then connected that information to the composite restoration-related performance measures. We were not able to connect these three pieces of information to expenditures on these restoration activities. Before this kind of measure could be considered further, significant additional work around social vulnerability indexes would have to be undertaken.

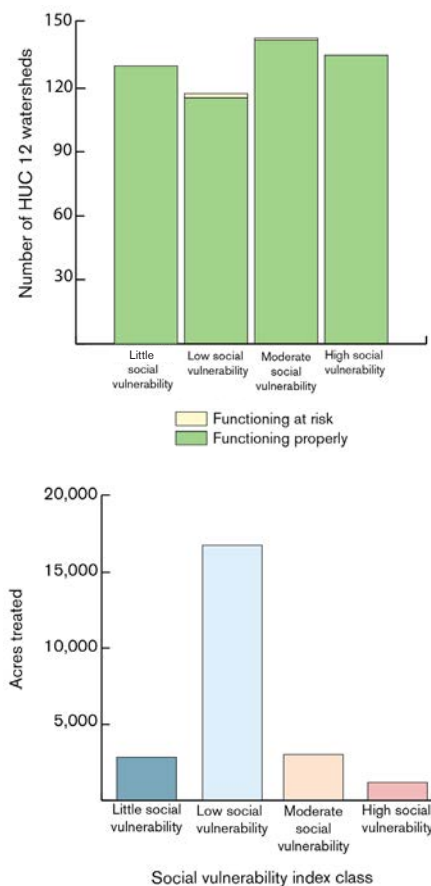
**Figure 7 Watershed condition, and acres treated on Pilot Forests, by social vulnerability classification**

**Watershed condition, and acres treated on Pilot Forest A, by social vulnerability classification, FY 2015**



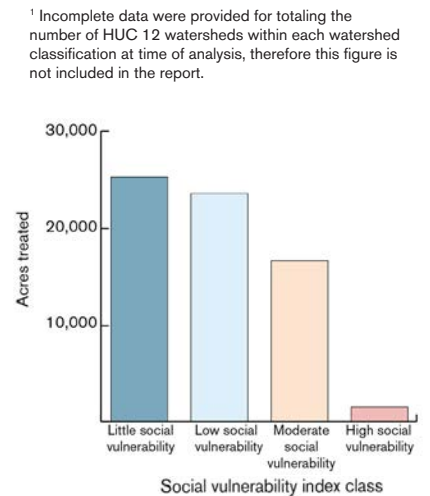
All watersheds connected to Pilot Forest A are either functioning properly, or functioning at risk. Pilot Forest A contains lowest social vulnerability in the north-eastern portion of the forest, and highest vulnerability in the south and southwest portions. The largest number of watersheds functioning at risk are in the low social vulnerability group. In FY 2015, the vast majority of acres treated on Pilot Forest A occurred in low social vulnerability watersheds. Less than 2,000 acres each were treated in watersheds with little, moderate, or high social vulnerability.

**Watershed condition, and acres treated on Pilot Forest B, by social vulnerability classification, FY 2015**



Only three watersheds are functioning at risk in the Pilot Forest B, while all other watersheds are all functioning properly. In FY 2015, the majority of acres treated on Pilot Forest B occurred in low social vulnerability watersheds, which accounted for over half of the acres treated in the forest. Less than 3,000 acres each were treated in watersheds with little social vulnerability, or moderate social vulnerability. Areas of high social vulnerability contained the smallest amount of acres treated.

**Acres treated on Pilot Forest C, by social vulnerability classification, FY 2015<sup>1</sup>**



<sup>1</sup> Incomplete data were provided for totaling the number of HUC 12 watersheds within each watershed classification at time of analysis, therefore this figure is not included in the report.

All watersheds connected to the Pilot Forest C are either functioning properly, or functioning at risk. The watersheds in Pilot Forest C are mainly low to moderate social vulnerability, with the most vulnerable areas being the far western and southeastern watersheds touching the forest. In FY 2015, the majority of acres treated on Pilot Forest C occurred in little to low social vulnerability watersheds (approximately 50,000 acres), followed by moderate social vulnerability watersheds, and the fewest acres treated in high social vulnerability watersheds.





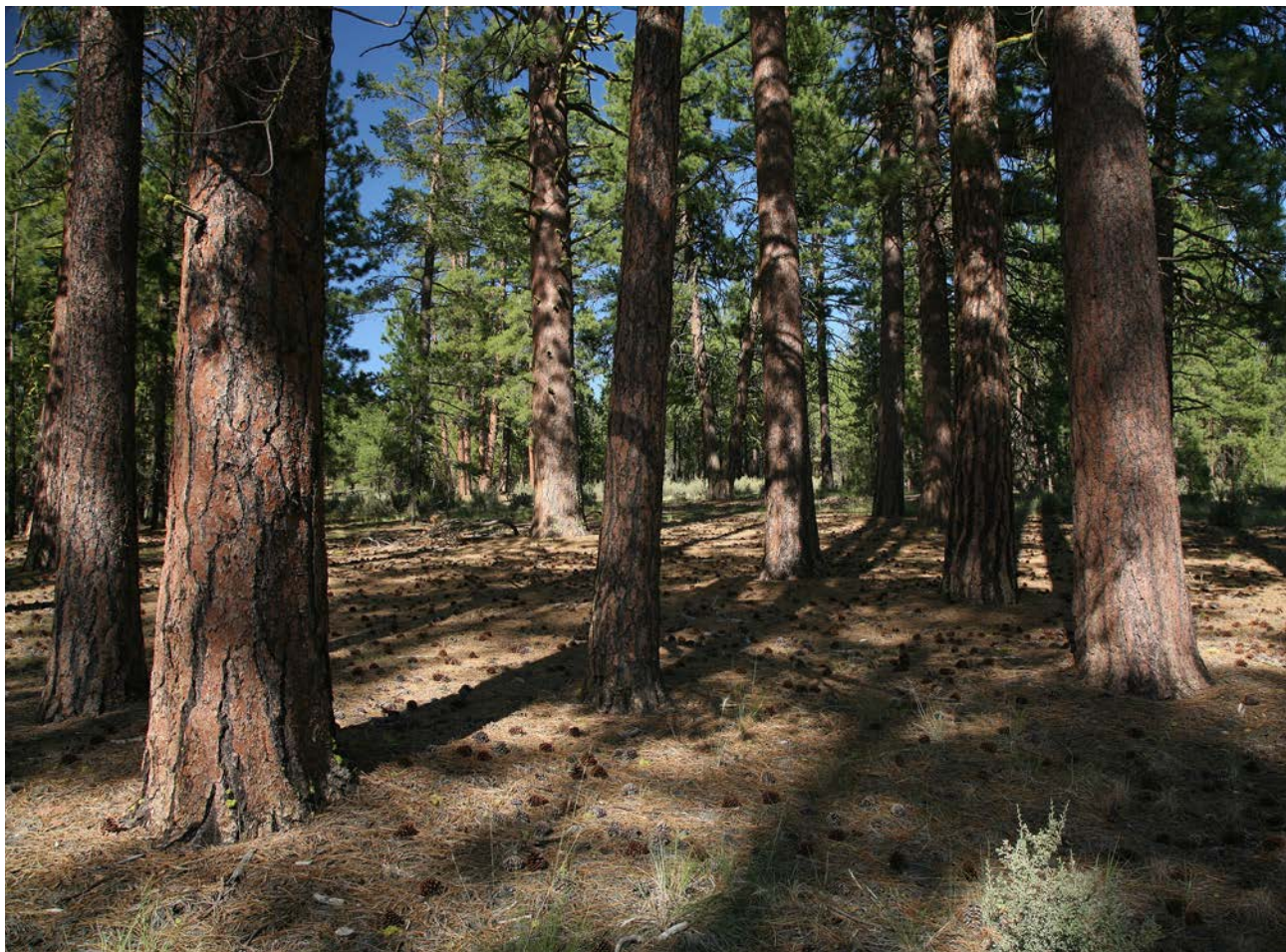
## IV. Discussion and conclusion



This pilot project was fruitful in that it helped identify a handful of measures that, with additional work around data quality and business rules, could be used to expand the economic performance measures related to forest and watershed restoration. The most promising measures piloted here were the local benefits and restoration jobs measures. Several other piloted measures were problematic, and cannot realistically be used at this time. One main challenge is that we are left with no measures of the social dimensions of restoration, such as the social-economic wellbeing of communities and impacts to communities from restoration work (e.g. local capture of work, direct and indirect impacts to community economies). The scorecard, which was most effective at including social dimensions, did not prove robust enough to become a national performance measure, even though it could be used as a self-assessment tool at the forest or program level. Beyond the measures that we tested, pilot forests suggested other measures that they would like to see tested such as (1) the number of appeals and litigation as a measure of support/opposition for the management actions of the national forest; (2) ecosystem services measures such as monetizing the value of the forest headwaters to multiple communities or other ecosystem benefits provided to socially vulnerable watersheds. The amount of appeals and litigation is relatively easy to measure as this are tracked in a Forest Service database. We did not include them, based on lessons from prior monitoring efforts with other national forests and their stakeholders that found that the measure provided less revealing information than they had hoped.

This pilot effort revealed limitations in the utility of available grants and agreements data, particularly with regards to organizations with multiple offices statewide or nationwide, as well as limitations with contracting and timber data in regards to issues of subcontracting. The current form in which contracting, agreements and timber sale data are tracked presents challenges in determining how work and economic benefits are distributed spatially. Another set of challenges relates to scaling up a set of measures to a nationwide level; given wide variability in things such as county size and distance to national forests, dominant activities on various national forests, and different business and organizational profiles, what works in one geography may be inappropriate in another. This process also revealed some challenges that plague not only social and economic measures, but ecological measures as well. For example, it is much easier to identify output measures than it is to measure outcomes. In addition, social and economic measures are additionally challenging because the Forest Service is but one of many actors in a given social or economic context given the interconnectedness of different land ownerships across the nation. With these challenges in mind, it is nevertheless important to continue to work toward instituting clear, robust measures for the social and economic outcomes of restoration on national forests to complement ecological outcome measures. The measures detailed here represent a first step, and more work is needed to develop and refine additional measures going forward.





## Endnotes

- 1 USDA Forest Service, Watershed Condition Framework: a framework for assessing and tracking changes to watershed condition. FS-977. Washington, D.C., 2011, p. 1, available at [https://www.fs.fed.us/sites/default/files/Watershed\\_Condition\\_Framework.pdf](https://www.fs.fed.us/sites/default/files/Watershed_Condition_Framework.pdf)
- 2 Moseley and Davis. (2012). "Developing socioeconomic performance measures for the Watershed Condition Framework." Ecosystem Workforce Program, University of Oregon. Working Paper No 36. [http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP\\_36.pdf](http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_36.pdf).
- 3 Performance Scorecard for Implementing the Forest Service Climate Change Strategy. Online at: <https://www.fs.fed.us/climatechange/advisor/scorecard.html>.
- 4 Treatments for Restoration Economic Analysis Tool (TREAT) is a Forest Service tool developed originally to "assist in the estimation of the economic effects (jobs and labor income) of restoration activities tied to the CFLRP (Collaborative Forest Landscape Restoration Program)" (USDA Forest Service, 2015). For the purposes of this project, TREAT can be used to estimate the effects of restoration activities on local employment.
- 5 Donoghue, E. and Sutton, L. (2006). Socioeconomic change in planning provinces of the Northwest Forest Plan region. *Northwest Science*. 80(2): 73-85 <https://www.fs.usda.gov/treearch/pubs/27205>.
- 6 White, Davis and Moseley. (2015). "Socioeconomic monitoring plans for the U.S. Forest Service's Eastside restoration efforts." Ecosystem Workforce Program, University of Oregon. Working Paper No 52. [http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP\\_52.pdf](http://ewp.uoregon.edu/sites/ewp.uoregon.edu/files/WP_52.pdf).



## Appendix A. Methods

### Measure 1 Community Capacity

To measure community capacity, we used the Forest Service's grants and agreements (G&A) database. Initially, we had hoped to use the G&A data at the publicly available [usaspending.gov](https://www.usaspending.gov) but that proved to be too inaccurate, excluding many agreements. Consequently, we asked each national forest to provide the data. In one case, we received the data from the region rather than the forest. In another case, the forest curated the data to include only those agreements the staff considered relevant, and only selected information about each of those agreements (e.g., no dollar amounts or locations of organizations). In this case, we do not have a complete picture of what grants and agreements that forest has, so these data are not comparable across national forests.

This measurement of community capacity was a very manual process of data cleaning and organization. Fully detailed step by step data processing steps can be provided upon request, but the steps will vary depending on what G & A report(s) are generated and used for analysis. Some key data cleaning steps and considerations included:

- Matching mailing label reports with specific agreements (agreement numbers did not always link between reports which required additional cleaning and manual line by line processing) to obtain agreement holders' addresses. The most time consuming steps were manually entering City, State, County, Zip on all rows that did not have a match. This included looking up each organization's individual website and finding where their offices were located, then manually entering this information on each row.
- Assigning local, nonlocal, or other labels to organizations based on their zip code.
- Manually assigning organization type (e.g., NGO, local government, school) to each agreement holder.

Data provided did not always explicitly include additional modifications or SPAs each year (i.e., supplemental agreements to Regional or national agreements to cover work with local chapters of national organizations). As such, we could not ac-

curately account for all organizations involved and their local or nonlocal status.

### Measures 2 and 3

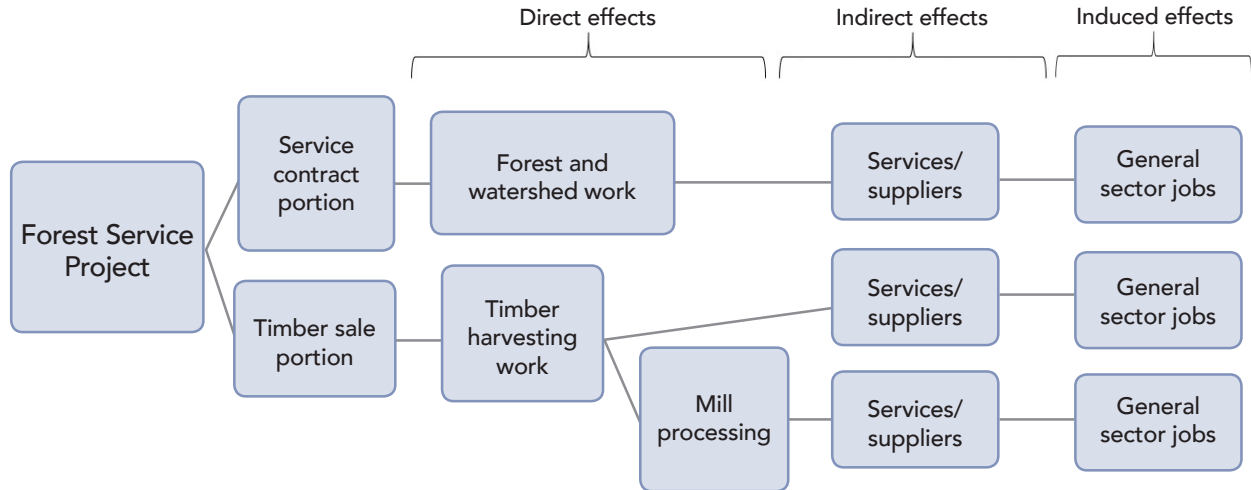
Measures 2 and 3 use the same databases and general methods. For service contracts, we used the Federal Procurement Data system (via [USAspending.gov](https://www.usaspending.gov)), whereas for timber sales we used TIM (Timber Information Management) data, which we obtained from either the region or the national forest. We selected restoration-related service contracts using a standard list of Product-Service Codes that we developed in prior projects. We measured local business opportunity as the percent of restoration-related service and timber sale contract value awarded locally. In this measure, stewardship contracts are integrated into the service or timber sale data, depending on the particulars of contract. We used the same methods for calculating local benefit and restoration-related service contracts as we have established for the Ecosystem Workforce Program's Forest Service data analysis in the past. See full methods in White, Davis and Moseley (2015) and White et al (2015).

### Measure 4 – Restoration Jobs

This measure calculates direct, indirect, and induced job impacts of Forest Service projects (see Figure A1, page 25).<sup>6</sup> Direct effects include those people employed in forest restoration and timber harvesting work. These jobs require services and supplies, such as chainsaw sharpening and hand tools, which come from indirect jobs. Those employed through both direct and indirect effects spend money on items such as groceries, health-care, and lodging, which create induced effects.

The local jobs measure estimates local jobs created or maintained through (1) timber harvest-related jobs and (2) restoration-related service contracting for direct, indirect, and induced jobs. Local jobs associated with Grants and Agreements and Forest Service employment jobs are not calculated in this pilot effort but should be included in future versions of this measure, due to the substantial economic impact that they can provide, especially in rural communities surrounded by public lands.

**Figure A1 The direct, indirect, and induced economic contributions of restoration<sup>6</sup>**



**4a. Restoration-related Service Contracts Jobs**

**Measure:** This measure estimates local jobs created or retained through restoration-related contracts. These estimates are drawn from contracts with local businesses, based on the type of work that was done and average wages for each of those job types, using the standard EMC jobs estimators. “Local” businesses are those that are located in a county that contains land belonging to the respective national forest. Note that the non-timber portions of IRCS stewardship contracts are included in these numbers.

**4b. Timber-related Jobs Measure:** Estimates local jobs created or retained using data on the volume of timber sold to local businesses. “Local” businesses are those that are located in a county that contains land belonging to the respective national forest. Employment is estimated by volume of different types of timber products sold (sawtimber, plywood, etc.) and average pay for such jobs in these locations. Note that the timber portions of stewardship contracts are included in these numbers.

**Measure 5 Methods – Investments in Socially Vulnerable Watersheds**

**Creation of the Social Vulnerability Index**

Measure 5, “investments in socially vulnerable watersheds” is a spatially explicit measure, cre-

ated from a “social vulnerability index” to classify watersheds within national forests by their levels of social vulnerability. Over the past few decades, research on natural hazards, climate change, and other natural and social disturbance has identified “social vulnerability” as affecting the ability of both individuals and communities to prepare for, respond to, and recover from natural disasters (Blaikie et al. 1994). These vulnerability factors are similar to those linked to other social inequalities (e.g., information, political power, social capital, see Cutter et al. (2003)). Depending on the pilot forest, we used either 2013 US Census data (American Community Survey 5 year estimates) or 2000 US Census data. We started our analysis using variables described by Ojerio et al. (2011) for which Census data were available, including:

1. Nonwhite (percent of population not white)
2. Single mothers (percent of households headed by a single mother)
3. English speaking (percent of population that speak only English or English well or very well)
4. Education (percent of population 25 or older with at least a high school degree)
5. Unemployment (percent of labor force unemployed)
6. Income (median household income)
7. Poverty (percent of families below the federal poverty threshold)

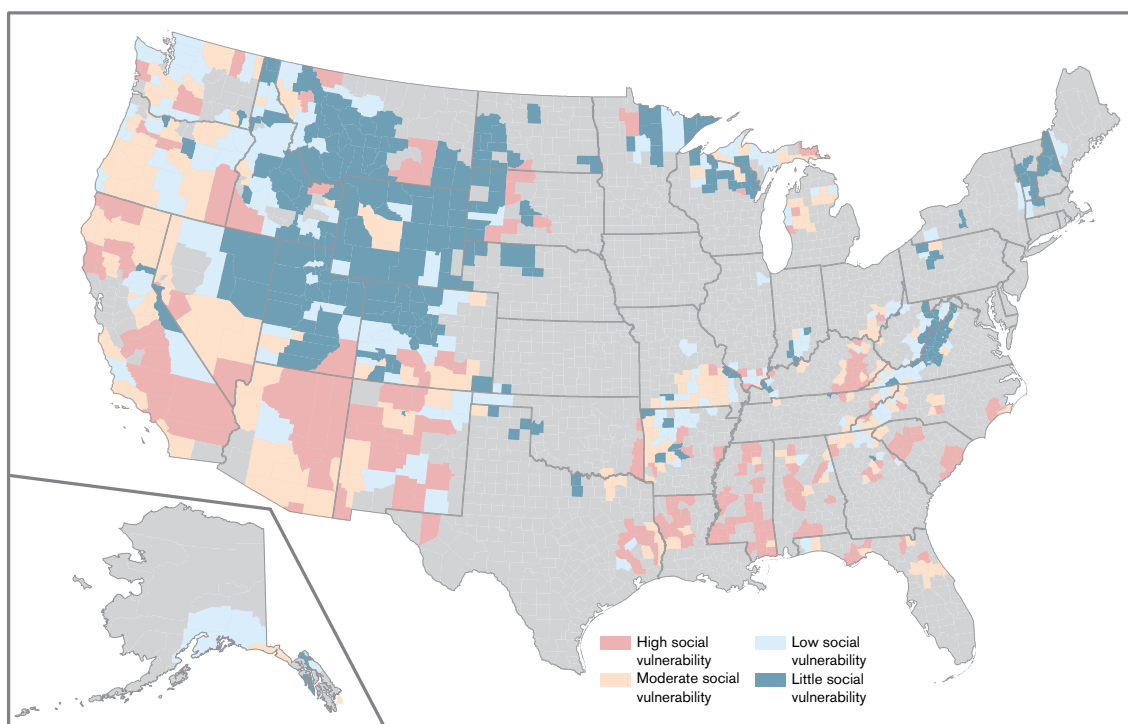
We ran analyses of these variables for all counties in the United States that contained national forest. We used factor analysis to find variables that were measuring a similar phenomenon, in this case social vulnerability. The results of the analysis indicated that unemployment, poverty, percent of population as a non-white race, and percent of households with a single mother all loaded well together into a single factor. Consequently, we used these variables to create the social vulnerability index in which we equally weighted all of the measures. One lesson learned was that equal weighting is probably not an appropriate way to build this index, and that a more in-depth literature review and index testing would be needed before this sort of approach could be adopted. At this point, we created a national map of social vulnerability at the county level for every county that contained national forest land (See Figure A2, below). We binned counties based on their social vulnerability score into equally sized quartiles.

We then used the index to calculate a social vulnerability score for every HUC 10 watershed associated with the three pilot forests using census

data at the census block level. To transfer census data from each census block to watersheds in the index, we used the proportion of each block within a watershed to calculate the index of each watershed. The Watershed Condition Framework data is conducted at the HUC (Hydrologic Unit Code) 12 level. Our creation of the social vulnerability index was conducted at the HUC 10 level because census data are not well scaled to the HUC 12 level. This method assumes a uniform population distribution throughout block groups and watersheds. Clearly, this is a problematic assumption given the public lands context, but it was the only practical approach given the data at hand.

This process resulted in social vulnerability indices for each watershed, which we binned into quartiles specific to each of the three pilot forests, based on local conditions. If we had kept the same low-high vulnerability bins that we created at the national level, we would have seen very little variation near each individual forest. However, localized binnings masks differences between national forests. Given that the goal here was to

**Figure A2** Social vulnerability at the county level for counties containing national forest





understand forest-level investments, our localized binning approach was more appropriate than a national binning approach.

**Linking social vulnerability to accomplishments data**

We linked the spatially explicit vulnerability data to accomplishments data in those same watersheds to understand where and how work was being conducted in watersheds of different levels of social vulnerability. We used the rolled-up restoration treated performance measure as it has been developed for use in the Integrated Resource Restoration pilot as our measurement of Forest Service accomplishments by watershed. By do-

ing this, we were able to see on a watershed-by-watershed basis how work reported by the Forest Service aligned with different levels of social vulnerability of communities living in or near those same watersheds. We excluded the noxious weed acres treated data point from the Integrated Resource Restoration performance measure because it not reliable in its spatially explicit format. We analyzed FY 2015 only for this pilot as only a few years of spatially explicit data were available. Table A1, below, lists identified IRR measures and our ability to include them for “acres treated.” Table A2, below, lists other IRR measures that could be included in future development.

**Table A1 “Acres Treated” accomplishments components, from IRR performance measure WTRSD-RSTR-ANN (number of acres treated annually to sustain or restore watershed function and resilience)**

Measure	Code	Database	Use in Measure 5
Acres of forest lands treated during timber sales	TMBR-SALES-TRT-AC	FACTS	Used in Measure 5 “acres treated”, FY15
Improved forest vegetation	FOR-VEG-IMP	FACTS	Used in Measure 5 “acres treated”, FY15
Establish forest vegetation	FOR-VEG-EST	FACTS	Used in Measure 5 “acres treated”, FY15
Improve rangeland vegetation	RG-VEG-IMP	FACTS	Used in Measure 5 “acres treated”, FY15
Acres of water or soil resources protected maintained or improved to achieve desired watershed conditions	S&W-RSRC-IMP	Workplan	Used in Measure 5 “acres treated”, FY15
Acres of terrestrial habitat restored or enhanced	HBT-ENH-TERR	WFRP	Used in Measure 5 “acres treated”, FY15
Acres of lake habitat restored or enhanced	HBT-ENH-LAK	WFRP	Used in Measure 5 “acres treated”, FY15
Manage noxious weeds and invasive plants	IN-VPLT-NXWD-FED-AC	FACTS	Not usable. Available but spatially inaccurate.

**Table A2 Other IRR performance measures not included in Measure 5**

Miles of stream habitat restored or enhanced	HBT-ENH-STRM	WFRP	Could be created into an individual performance measure of miles of stream. Would need to calculate miles of stream in watersheds within each SVI class.
Miles of roads decommissioned	RD-DECOM	RAR	Could be created into an individual performance measure of miles of roads. Would need to calculate miles of road in watersheds within each SVI class.
Watershed condition class	WTRSHD-CLS-IMP-NUM	WorkPlan	Used as background for measure 5 “watershed condition class”. Once data is collected for multiple years, tracking changes in watershed condition class over time could be an additional measure.

## Appendix B. Socioeconomic Scorecard

Based on our recommendation that the scorecard be used as a self-assessment tool for stocktaking instead of the basis for performance measures, we have modified the directions and scorecard that we used so that it can be more readily used in this manner.

### Instructions for Use of Socioeconomic Scorecard

The Forest Service actions significantly affect not only the land and resources it manages but also nearby communities and society at large. For example, when the Forest Service employs people directly or through contracts for restoration work to local businesses, it helps provide local jobs, support business vitality, and increase the amount of money flowing in to the local economy. It can also help improve the social conditions in a community. However, achieving social and economic benefits requires deliberate action.

Factors such as collaboration and community capacity-building are difficult to measure numerically. The socioeconomic scorecard is designed to assess less quantitative dimensions of the effectiveness of restoration investments in cultivating social and economic benefits, and to share the story of these often-overlooked benefits.

The purpose of this scorecard is to provide a rubric allow Forest Service staff and partners to assess their efforts at engaging in the social and economic dimensions of forest and watershed restoration. This tool can be used in any number of ways, such as in strategic planning processes, annual collaborative process monitoring efforts, or other moments where a national forest wants to take stock of their efforts, celebrate successes, and identify opportunities for improvement. The scorecard can be used to evaluate its organizational capacity and readiness to perform collaborative forest restoration. It also provides a benefit for the National Forest System and their partners to review progress and develop plans and priorities for the coming year.

### Who should complete the scorecard?

This depends on the particular purpose it is being used for. Ideally, a multi-stakeholder team including both agency and non-agency stakeholders will complete the scorecard. We suggest a small group of unit staff from multiple resource areas work to complete the scorecard, including a contracting officer if possible. In addition, we recommend including non-agency stakeholders that work on forest restoration with the unit. However, this scorecard could be effectively used by staff from a particular resource area for a more focused assessment. Part of the process of completing this scorecard should include a collaborative discussion of current scores and plans for improvement.

### What is the appropriate scale to use this scorecard?

This scorecard can be used at the forest, district staff level, or initiative level. Its it not really designed to be effective at the individual project level.

### How do we get started?

1. Read the report *Developing Socioeconomic Performance Measures for the Watershed Condition Framework*. This report explains the rationale and provides the context for the performance measures. Note that the draft scorecards in the appendices of the report have been changed significantly over time.
2. Identify relevant team members. These should include Forest Service staff involved in restoration planning and decision-making in your area of focus. Optimally, it would also include a contracting officer. Depending on your purpose, it might include non-agency stakeholders as well.
3. Schedule a time for the team to fill out scorecards. Allow enough time not only to fill out the scorecard but also to discuss the results and identify opportunities for improvement.
4. Designate a facilitator and a note taker.
5. As a group, complete the scorecard. For each indicator, compute the total. Also, compute the total for the scorecard.
6. For each subsection, discuss explain your answers below the numerical scores. If there are scores you are not satisfied with, identify opportunities for improvement and steps you might take to improve.

**How do we complete the scorecards?**

Completing the scorecard involves going through the scorecard and scoring the unit 0 to 4 on each attribute. A score of “2” indicates the unit would sometimes answer yes to the statement, a score of “4” indicates the unit would always answer yes to the statement, and the unit should score “0” if it does not engage in the activity stated. Please use the full range from 0-4 to capture any variability between never and always. For each indicator, the attributes are cumulative.

**Is there a target or perfect score?**

There is no pre-determined target score for your forest. The prevailing social, political, and economic characteristics are different for each forest as are the restoration needs. Achieving a perfect score is neither expected nor possible. Rather, through the process of completing the scorecard the intention is for each forest to take stock of current efforts and discuss the most appropriate steps to improve.

**Key definitions**

*Collaborative process* – a collaborative process includes multiple interested persons representing diverse interests and is transparent and nonexclusive.

As defined by the Agricultural Act of 2014, Section 603(b)(1)(C): “Be developed and implemented through a collaborative **process** that:

- includes multiple interested persons representing diverse interests and is transparent and non-exclusive;
- or meets the requirements of a resource advisory committee under subsections (c) through (f) of section 205 of the Secure Rural Schools and Community Self-Determination Act.”

A collaborative process is characterized as more than outreach or public involvement processes as required by NEPA.

*Historically underrepresented populations* – populations that may have a history of exclusion or under representation among Forest Service stakeholders. This may differ across the United States based on local histories and demographics.

*Non-agency stakeholders* – persons that are not employed by the Forest Service that have some interest or stake in how national forests are managed. These may be private individuals, or employees businesses or non-governmental organizations, as well as employees of other government agencies.





**Section 1. Local capacity building**

	Scale of 0-4 Where 0 is never and 4 is always		
<b>Local Business Opportunities and Business Capacity Building</b>	<b>Restoration Service Contracts</b>	<b>Stewardship Contracts</b>	<b>Stewardship Agreements</b>
1. The unit systematically uses local benefit criteria in the weighting for...			
2. In best value criteria, local benefit carries enough weight to make a difference in awarding...			
3. The unit offers opportunities that vary in size, duration, and type to enable local contractors to competitively bid on...			
<b>Subtotals</b>			

	Scale of 0-4 Where 0 is never and 4 is always
<b>Investment in Capacity Building</b>	
4. The unit has partnered with other organizations to indirectly provide funding for non-agency training and capacity building	
5. The unit provides funding directly from appropriated budget for non-agency training and capacity building	
6. The unit receives match funding from non-agency entities for capacity building activities	
7. The unit strategically provides capacity building resources and assistance for communities that are low capacity or socially vulnerable (e.g. high poverty)	
<b>Subtotals</b>	

<b>Capacity Building Subtotal (1-7)</b>	
What are the key strengths? What are opportunities for improvement?	

**Section 2. Outreach and Collaboration**

	<b>Scale of 0-4 Where 0 is never and 4 is always</b>	
<b>Government-to-Government Collaboration</b>	Project-level	Programmatic
8. Collaborate with other federal agencies on an ongoing basis		
9. Collaborate with state agencies on an ongoing basis		
10. Collaborate with local government on an ongoing basis		
11. Collaborate with tribal entities on an ongoing basis		
<b>Subtotals</b>		

	<b>Scale of 0-4 Where 0 is never and 4 is always</b>	
<b>All Lands Restoration</b>		
12. Forest analysis includes conditions and effects on private lands		
13. The unit has made efforts to reach out to private landowners		
14. Private landowners or landowner groups are included in a collaborative process		
15. Forest restoration work is performed across private-public and jurisdictional boundaries		
<b>Subtotals</b>		

<b>Scale of 0-4 Where 0 is never and 4 is always</b>					
	<b>(8) Project Scoping and Prioritization</b>	<b>(9) Project Planning</b>	<b>(10) Project Implementation</b>	<b>(11) Project Monitoring</b>	<b>(12) Learning</b>
16. Conduct outreach and seek input from multiple and diverse peoples in...					
17. A multi-stakeholder collaborative process is utilized through the duration of...					
18. Contributed funding for a collaborative process to facilitate...					
19. Historically underrepresented groups participate in ...					
<b>Subtotals</b>					

<b>Collaboration and Outreach Subtotal</b>	
<p>What are the key strengths? What are opportunities for improvement?</p>          	

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