Collaborative Forest Landscape Restoration Program
National Outcomes & Indicators Process & Proposal
July 2011

Don't let the perfect be the enemy of the good.
--- *Voltaire*

Overview

Representatives from the 10 CFLR projects, the Washington Office of Forest Management, and others met June 7-8, 2011 in Denver to work toward creating a draft proposal for a national CFLR framework of outcomes and indicators. The workshop was coordinated and facilitated by the National Forest Foundation.

Process

An initial draft of a national framework was developed by a small group of invited individuals who were either engaged in CFLR projects or offered a national perspective, and represented diversity across geography, Forest Service and partners. The small group consisted of:

> Greg Aplet, Phil Chang, Rob Harper, Laura McCarthy, Micah Thorning, Meg Roessing, and Diane Vosick (with assistance from other individuals).

The draft proposal developed by the above group was used as the starting point for discussion at the workshop. The meeting attendees included at least two participants from all 10 projects (1 FS, 1 partner), representatives of the CFLR Advisory Panel committee, the Western Governors Association, and others.

The intent of the workshop was to use the draft proposal to develop a national framework with the CFLR project representatives that would:

- Work for the diversity of the ten current CFLR projects as well as landscapes selected in the future,
- Meet several basic criteria, including being simple and affordable,
- And allow for the roll-up of data across the sites to assist in communicating the results of CFLR to Congress and national audiences.

The meeting objectives were:
- To work towards identifying a small set of national-level outcomes and indicators that all CFLR projects will use. The data measured by the common indicators will be compiled to report to Congress and other audiences about the comprehensive impact of CFLR. The indicators will be:

    o Simple
    o Affordable

- o Responsive to the direction of the Act
- o Supported as much as possible by existing sources of data
- o Maximize individual project autonomy
- o Minimize additional reporting requirements

- To provide an opportunity for peer learning amongst the existing CFLR projects to share lessons, challenges, and individual project-level approaches to monitoring.

Following the June 7-8, 2011 workshop, several small groups of participants met via teleconference to further develop the draft outcomes and indicators. On June 29, 2011, the NFF hosted a web conference to present the indicators to people who were unable to participate in the Denver workshop. After this web conference, the NFF emailed out the package of draft indicators to the CFLRP collaborators list of 330 people involved in specific CFLR projects, the regional CFLRP Coordinators for the Forest Service, and members of the CFLRP Advisory Panel. In addition, the NFF sent notices out to its listserv and created a web page where all of the relevant documents are available at http://www.nationalforests.org/conserve/learning/cflrp. The NFF solicited input on the draft outcomes and indicators through July 15, 2011.

Purpose of national framework

What the national framework of outcomes and indicators *is* about:

- The ability to tell part of a national story about CFLR
- Measure outcomes and indicators consistently across projects so there is valid national data
- The regular collection and reporting of data to track work accomplished and results achieved
- A 30,000 foot level, coarse-scale picture of CFLR's impacts

What the national framework of outcomes and indicators *is not* about:

- Answering research questions
- Informing adaptive management
- The "be all and end all" of monitoring or reporting
- Telling the *entire* CFLR story
- Replacing individual CFLR site monitoring plans

The Draft Framework Structure

The initial small group used the following structure for developing the "strawman" outcomes and indicators.

Outcome:
Indicator:
Target:
Baseline:

"Test" for indicators

- SIMPLICITY: Is this indicator simple to understand, measure and report on?
- AFFORDABLE: Is it inexpensive in time and resources to collect the data for this indicator?
- TIERS TO ACT: Does this indicator respond to the purposes of the CFLR Act?
- EXISTING SOURCES OF DATA: Is this indicator supported by existing sources of data?
- INDIVIDUAL PROJECT AUTONOMY: Does this indicator interfere with the autonomy of individual project monitoring plans?

The outcome of the workshop was "agreement" on five national outcome and indicators that met the above criteria. The five indicators include:

- Ecological
- Fire costs
- Jobs/Economics
- Leveraged Funds
- Collaboration

The proposed detail on these outcomes and indicators are contained in the rest of this document.

The agenda is attached in Appendix A. The list of participants is attached in Appendix B.

ECOLOGICAL INDICATOR

Outcome: CFLR activities result in a positive restoration trajectory in the project area.

Indicator: The change in rating on the eight ecological outcome measures (landscape scale and project scale for fire regime restoration, fish and wildlife habitat condition, watershed condition, and non-native invasive species, or NNIS severity) based on desired conditions established by the CFLR collaborative.

Target for Landscape Scale Fire Regime Restoration*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Project Scale Fire Regime Restoration*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Landscape Scale Fish and Wildlife Habitat Condition*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Project Scale Fish and Wildlife Habitat Condition*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Landscape Scale Watershed Condition*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Project Scale Watershed Condition*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Landscape Scale NNIS Severity*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Target for Project Scale NNIS Severity*: ____* change (relative to the desired condition) occurs across ___% of the project area by ___ date.

Tools: See attached guidance document.

Responsible: Forest Service staff and CFLR project monitoring committee members and staff

Use: A "snapshot" picture of changes relative to the articulated, project-based desired conditions for communication with Congress and other national audiences.

ECOLOGICAL OUTCOME & INDICATOR
INSTRUCTIONS

1) Each CFLR project will establish a total of eight (8) landscape and project level Desired Conditions related to fire regime restoration, fish and wildlife habitat condition, watershed condition and non-native invasive species severity.
2) Using the Desired Conditions statements, the project will establish a target (as outlined in the Outcome & Indicator).
3) Projects will assess the landscape's progress toward the Desired Conditions. The first assessment will be completed in FY12 (year 3 of the project period).
4) Each CFLR project will repeat this process in years 5, 7, 10 and potentially 15 of the project period (FY14, FY16, FY19 and FY24).
5) The project level Desired Conditions will be measured and reported in years 3, 5, 7, 10 and potentially 15.
6) The landscape level Desired Conditions will be measured and reported in years 5, 10 and potentially 15.

A Proposal for National Tracking and Reporting Ecological Outcomes of the Collaborative Forest Landscape Restoration Act

Goal

To develop a system for tracking the ecological outcomes of projects funded under the Collaborative Forest Restoration Act that provides an efficient means for U.S. Forest Service reporting to Congress and provides each Collaborative with a meaningful way of tracking progress towards objectives.

Challenge

The Collaborative Forest Landscape Restoration Act provides support to projects with diverse sets of stakeholders that occur across a number of different ecosystems throughout the United States. This diversity is reflected in the ecological objectives that each project has chosen to address within their respective proposals. This situation makes it unlikely that any single metric or index value will be sufficient for describing the ecological impacts of the Act. This necessitates an approach that reflects the values and ecological restoration objectives of each Collaborative while maintaining the ability to provide a national summary of the Act's impacts. In addition, this approach should allow a person with limited resource background to determine how each Collaborative is moving forward in achieving their stated ecological objectives with the benefit of matching, leveraged, and CFLR funds. In other words, this approach should provide a simple and transparent method of accounting for **each Collaborative's activities, the objectives for those activities, and the resulting response of the landscape,** throughout the 10 year CFLR funding period.

Proposed Solution

We propose using a set of indicators (See Figure 1) that are evaluated based on each individual Project's progress towards its Desired Conditions (DCs), as reflected by a set of key objectives, within the four ecological categories explicitly identified within the Act. This maintains each Project's ability to be evaluated on the basis of its own unique objectives while providing a set of metrics that tiers directly to the Act and the proposals that were submitted for funding under the Act. Progress towards each DC will be evaluated based on the standardized scoring system described

Figure 1. Conceptual diagram of the four components of the CFLR Ecological Outcome Measure. Each component is reported individually.
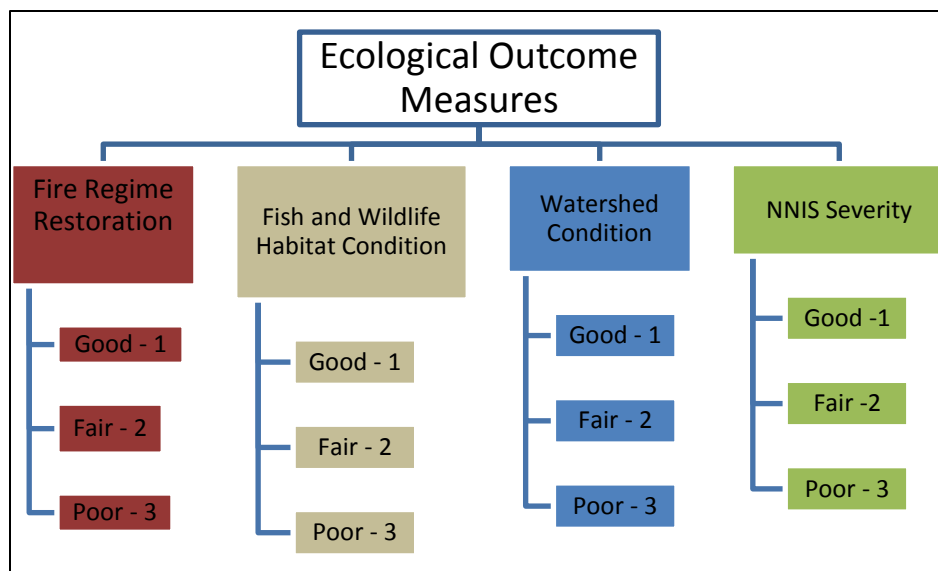
below. Scores are assigned at the Landscape (defined by the area in the CFLR proposal) and the project (referring to individual management actions) level to allow Projects to report on both short-term and long-term progress. Assuming multiple Desired Conditions within each outcome measure category, these scores can be averaged to provide a summary of a Project's progress within that outcome measure. Basing these scores on a uniform scale with standardized criteria allows scores to be averaged across Projects to provide a national summary of progress towards the ecological objectives of the Act. This information in conjunction with the Collaborative Forest Landscape Restoration Performance Measures will provide both the outputs (as summarized by the performance measures) and the outcomes (as summarized by the indicators) for the purpose of national reporting.

A Note on Examples
The examples contained in this document are meant to illustrate Desired Conditions stated in an explicit, quantifiable manner. Furthermore, they are meant to illustrate how discrete project-level Desired Conditions relate to broader landscape objectives. The metrics, scales, and thresholds are hypothetical; each Collaborative will need to work to identify the metrics, thresholds, and scale for their Desired Conditions that are appropriate for their individual projects.

It is important to stress again that the examples provided below in all four ecological categories are just that, examples. Each CFLR Project will collaboratively develop their own Desired Conditions based on the approved proposal they submitted.

Ecological Outcome Measures 1: Fire Regime Restoration

From the Act: …*a collaborative forest landscape restoration proposal shall-- describe plans to—*

(A*) reduce the risk of uncharacteristic wildfire, including through the use of fire for ecological restoration and maintenance and reestablishing natural fire regimes, where appropriate;*

Description and Justification
Implementing forest restoration treatments should reduce the risk of uncharacteristically severe fire and facilitate a more natural fire regime within the various Project areas. Desired Conditions under this Indicator should identify objectives for reduction of fire behavior that is considered uncharacteristically severe and/or objectives for returning more "natural" fire regimes to the project area. In addition, objectives for forest structure and understory composition designed to restore the natural range of variability (NRV; i.e., those conditions that existed when natural fire regimes were functioning) would be included within this indicator.

Guidance on Specifying Desired Conditions for Use in National Reporting
(Note: This is not meant to be an exhaustive list. The list is to help frame how Desired Conditions should be specified, not restrict what they can include.)
- Objectives within the DC should be quantifiable.

- Desired Conditions related to NRV should identify which components of NRV they are addressing.
- The DC statement should clearly identify the metric that will be used to determine its status (i.e., changes in Fire Regime Condition Class vs. changes in Flammap predicted fire behavior).
- The spatial scale (e.g., treatment, landscape, etc.) of the DC should be explicitly identified.
- The temporal scale (e.g., FY, 3 year, 5 year, etc) of the DC should be explicitly identified.

Scoring for National Reporting

Landscape-scale scoring
Few (if any) CFLR-funded projects propose to achieve landscape scale objectives through the mechanical treatment of every acre within their project boundary. Rather, the use of strategically placed mechanical treatments should facilitate meeting these broader objectives. Scoring at this level reflects the degree to which individual projects are resulting in Desired Conditions at broader spatial extents.

- Good = Expected progress is being made towards Desired Conditions across 66 – 100% of the CFLR project area.
- Fair = Expected progress is being made towards Desired Conditions across 33 – 66% of the CFLR project area
- Poor = Expected progress is being made towards Desired Conditions across 0 – 33% of the CFLR project area

"Expected progress" for landscape-scale reporting will be defined using 5- and 10-year benchmarks for each DC based on a percentage of the 10-year outcome specified in each Project's proposal. Landscape-scale scoring will be reported on the above timeline.

Project-scale scoring
Each management action funded through CFLR will have its own project-level objectives that are designed to contribute to achieving Desired Conditions at larger scales. Project-scale scoring should reflect how well the results of an individual management activity met the objectives for that activity. As such project-scale scoring is conducted only completed management activities.

- Good = 75% or more of implemented treatments result in measurable progress towards individual project-level Desired Conditions
- Fair = 50% of implemented treatments result in measurable progress towards individual project-level Desired Conditions
- Poor = 25% or less of implemented treatments result in in measurable progress towards individual project-level Desired Conditions

Project scale scoring will be reported on a 3-, 5-, 7-, and 10 year timeline.

Example Desired Conditions and Scoring

- **Landscape Scale Desired Condition:**
    - **Active crown fire behavior (as predicted by FlamMap using 90th percentile conditions) is reduced by 30% -50% across the entire project area by the end of year 10.**
- **Scoring**
    - **Good =**
        - At year 3 active crown fire behavior is reduced by 10% -17% across the entire project area OR active crown fire is reduced by 30% - 50% across 33% of the project area
        - At year 5 active crown fire behavior is reduced by 15% -25% across the entire project area OR active crown fire is reduced by 30% -50% across 50% of the project area.
        - Etc.

- **Project Scale Desired Condition:**
    - **Implemented treatments result in surface fire behavior (as predicted by FlamMap using 90th percentile conditions) across the entire treated area immediately following treatment**
- **Scoring** (Assuming 4 thinning projects implemented in a year)
    - **Good** = 3 or more projects result in the above condition upon completion
    - **Fair** = 2 projects result in the above condition upon completion
    - **Poor** = Only 1 (of the 4) projects results in the above condition upon completion

Example Indicators

- Change in Fire Regime Condition Class
- Change in Flammap predicted fire behavior
- Change in Canopy Base Height
- Change in Canopy Cover

Ecological Outcome Measure 2: Fish and Wildlife Habitat Condition

From the Act: *…a collaborative forest landscape restoration proposal shall-- describe plans to—*
(B) improve fish and wildlife habitat, including for endangered, threatened, and sensitive species;

Description and Justification

Alteration of forest structure through restoration treatments is likely to impact wildlife species in a variety of ways. National Forest Land Management Plans as well as the Endangered Species Act identify a suite of species whose habitat requirements and population dynamics are often of concern when implementing any management action. In addition, some stakeholder groups have identified additional species of concern or focal species that they believe should respond to forest restoration. Desired Conditions under this Indicator should identify objectives for those species of concern (e.g.,

Threatened or Endangered Species, Sensitive species, focal species, or Management Indicator Species) in terms of habitat and/or population status.

Guidance on Specifying Desired Conditions for Use in National Reporting

- Objectives within the Desired Condition statement should be quantifiable.
- Desired Conditions should specify whether the objective is population or habitat-specific.
- Population-based Desired Conditions should identify what population metric will be assessed (e.g., abundance, density, occupancy, fecundity, etc.)
- Habitat-based Desired Conditions are species-specific
- Habitat-based Desired Conditions should identify the specific habitat component that management will be affecting.
- Habitat-based Desired Conditions should explicitly identify what type of habitat (e.g., nesting, foraging, roosting, etc.) management will be affecting
- The spatial scale (e.g., treatment, landscape, etc.) of the DC should be explicitly identified.
- The temporal scale (e.g., FY, 3 year, 5 year, etc.) of the DC should be explicitly identified.
- Desired Conditions related to diversity and richness of either species or habitats should explicitly state how that will be assessed.

Scoring for National Reporting

Landscape-scale scoring

- Good = Expected progress is being made towards Desired Conditions across 66 – 100% of the CFLR project area.
- Fair = Expected progress is being made towards Desired Conditions across 33 – 66% of the CFLR project area
- Poor = Expected progress is being made towards Desired Conditions across 0 – 33% of the CFLR project area

"Expected progress" will be defined using 3-, 5-, and 7-year benchmarks for each DC based on a percentage of the 10-year outcome specified in each Project's proposal

Project-scale scoring

- Good = 75% of implemented treatments result in measurable progress towards individual project-level Desired Conditions
- Fair = 50% of implemented treatments result in measurable progress towards individual project-level Desired Conditions
- Poor = 25% of implemented treatments result in in measurable progress towards individual project-level Desired Conditions

Example Desired Conditions and Scoring

Single Species Approach:

- **Landscape Scale Desired Condition:**

- o **At least 30% of the landscape is considered to have a high probability of occupancy (greater than 60%) for focal species x after year 10 based on expert-generated models of habitat suitability.**
- **Scoring**
  - o **Good =**
    - At year 3 the probability of occupancy for focal species x is at least 20% across the entire project area OR probability of occupancy for focal species x is 60% or greater across 33% of the project area.
    - At year 5 the probability of occupancy for focal species x is at least 30% across the entire project area OR probability of occupancy for focal species x is 60% or greater across 50% of the project area.
    - Etc.
- **Project Scale Desired Condition:**
  - o **Implemented treatments result in a forest structure that leads to an increase in the probability of occupancy for focal species x by 25 – 50%**
- **Scoring** (Assuming 4 thinning projects implemented in a year)
  - o **Good** = 3 or more projects result in the above condition upon completion
  - o **Fair** = 2 projects result in the above condition upon completion
  - o **Poor** = Only 1 (of the 4) project results in the above condition upon completion

Habitat Based Approach

- **Landscape Scale Desired Condition:**
  - o **To provide a diversity of habitats for wildlife species, at least 60% of the forested landscape within the CFLR area is composed of open canopy forested habitat (as defined by a Forest Plan), 10% - 20% of the CFLR area is composed of closed canopy forest (as defined by a Forest Plan), and 10% - 20% of the CFLR area is composed of transitional forested habitat (as defined by a Forest Plan).**
- **Scoring**
  - o **Good =**
    - At year 3 the above distribution of habitats occurs on 30% of the CFLR project area
    - At year 5 the above distribution of habitats occurs across 50% of the CFLR project area.
    - Etc.
- **Project Scale Desired Condition:**
  - o **Treatments implemented to create open canopy forested habitat should result in 10 -20% post-treatment canopy cover.**
- **Scoring** (Assuming 4 thinning projects implemented in a year)
  - o **Good** = 3 or more projects result in the above condition upon completion
  - o **Fair** = 2 projects result in the above condition upon completion
  - o **Poor** = Only 1 (of the 4) projects results in the above condition upon completion

Example Indicators

- Abundance of Focal Species X

- Probability of Occupancy of Focal Species X
- Acres of Habitat for Species or Guild X
- Species richness or diversity

Ecological Outcome Measure 3: Watershed Condition

From the Act: *…a collaborative forest landscape restoration proposal shall-- describe plans to—*
(C) maintain or improve water quality and watershed function;

Description and Justification

This indicator will rely on the Watershed Classification and Assessment Tracking Tool (WCATT) to provide information on watershed response to forest restoration treatments. WCATT is an existing database that has already assigned a watershed condition score for **every** 6th Order HUC in your CFLR Project Area. We recommend stating Desired Conditions such that progress can be evaluated based on WCATT scoring to take advantage of an ongoing effort by the Forest Service. For some CFLR projects WCATT may not adequately represent all of the Desired Conditions with respect to watershed condition. In that event we recommend stating watershed condition Desired Conditions in the same manner as those in the other Outcome Measures (i.e., specific, quantifiable, etc.). This decision should be made in conjunction with Agency partners as it would involve additional work beyond that required for WCATT reporting. Finally, it should be noted that the Act requires "plans to maintain or improve water quality". Only in cases where a Project's proposal did not address water quality or watershed function should Projects fail to address this indicator.

Guidance on Specifying Desired Conditions for use in National Reporting

- Desired Conditions should explicitly identify the relevant watershed and its relative priority.
- Desired Conditions should clearly identify which watersheds will be improved and which will be maintained in their current state.
- The DC statement should clearly identify the metric that will be used to determine its status (i.e., the raw WCATT score, change in raw numerical WCATT score over time, etc.).
- The spatial scale (e.g., treatment, landscape, etc.) of the DC should be explicitly identified.
- The temporal scale (e.g., based on reporting requirements for project and landscape) of the DC should be explicitly identified.

Scoring for National Reporting

Landscape-scale scoring

- Good = Expected progress is being made towards Desired Conditions across 66 – 100% of the watersheds within the CFLR project area.
- Fair = Expected progress is being made towards Desired Conditions across 33 – 66% of the watersheds within the CFLR project area.
- Poor = Expected progress is being made towards Desired Conditions across 0 – 33% of the watersheds within the CFLR project area.

"Expected progress" will be defined using 5- and 10-year benchmarks for each DC based on a percentage of the 10-year outcome specified in each Project's proposal.

Project-scale scoring
- Good = 75% or less of watersheds treated within a year maintain or show improvement in WCATT status score
- Fair = 50% or less of watersheds treated within a year maintain or show improvement in WCATT status score
- Poor = 25% or less of watersheds treated within a year maintain or show improvement in WCATT status score

Example Desired Conditions and Scoring
- **Landscape Scale Desired Condition:**
  - **At least 60% of watersheds within the CFLR project area maintain or achieve a "Fair" or better rating as assigned by the WCATT decision matrix.**
- **Scoring**
  - **Good =**
    - At year 3 20% of watersheds within the CFLR project area achieve a Fair or better rating
    - At year 5 30% of watersheds within the CFLR project area achieve a Fair or better rating.
    - Etc.
- **Project Scale Desired Condition:**
  - **Restoration treatments implemented within Watershed A should increase the WCATT Indicator Rating by 0.5 through activities affecting the Terrestrial Biological Indicators portion of WCATT.**
- **Scoring** (Assuming 4 watersheds receive restoration treatments in a year)
  - **Good =** 3 or more watersheds achieve in the above condition upon completion
  - **Fair =** 2 watersheds achieve the above condition upon completion
  - **Poor =** Only 1 (of the 4) watersheds the above condition upon completion

Example Indicators
This Outcome Measure is based on the WCATT framework and relies on its method of scoring; however, additional Desired Conditions may result in alternative indicators.

Ecological Outcome Measure 4: Invasive Species

From the Act: *...a collaborative forest landscape restoration proposal shall-- describe plans to—*

(D) prevent, remediate, or control invasions of exotic species

Description and Justification

The presence of non-native invasive species (NNIS) on the landscape poses a serious risk to native ecosystems. If left untreated, NNIS can alter hydrological systems, degrade habitat, overtake native groundcover, and alter fire behavior and severity, ultimately leading to an undesired ecological trajectory. In addition, forest management activities that create disturbance through the use of mechanical devices and unintentionally provide a conduit for the transport and introduction of NNIS within the Project Areas. Accounting for both management actions taken on existing infestations as well as new infestations that emerge during the life of the Project will be critical to assessing whether a Project has met its objectives with respect to NNIS. Desired Conditions under this indicator should address either the exotic species themselves or ecological conditions that preclude invasion by exotic species (e.g., increases in native understory species cover or diversity).

Guidance on Specifying Desired Conditions for use in National Reporting

- If the objective is management or control, the particular NNIS should be identified within the DC statement.
- If the objective is "Early Detection and Rapid Response", the DC should explicitly state how "early detection" will be defined (e.g., size of infestation, new species, etc.)
- Desired Conditions should clearly identify what level of infestation is appropriate (i.e., management vs. eradication)
- The DC statement should clearly identify the metric that will be used to determine its status (e.g., foliar cover, number of infestations, rate of spread, etc.).
- The spatial scale (e.g., treatment, landscape, etc.) of the DC should be explicitly identified.
- The temporal scale (e.g., based on reporting requirements for project and landscape) of the DC should be explicitly identified.

Scoring for National Reporting

Landscape-scale scoring
- Good = Expected progress is being made towards Desired Conditions across 66 – 100% of the CFLR project area.
- Fair = Expected progress is being made towards Desired Conditions across 33 – 66% of the CFLR project area
- Poor = Expected progress is being made towards Desired Conditions across 0 – 33% of the CFLR project area

"Expected progress" will be defined using 5- and 10-year benchmarks for each DC based on a percentage of the 10-year outcome specified in each Project's proposal

Project-scale scoring
- Good = 75% of implemented treatments result in measurable progress towards individual project-level Desired Conditions
- Fair = 50% of implemented treatments result in measurable progress towards individual project-level Desired Conditions

- Poor = 25% of implemented treatments result in in measurable progress towards individual project-level Desired Conditions

Example Desired Conditions and Scoring

Species-specific invasive management example
- **Landscape Scale Desired Condition:**
  - **Canada thistle, spotted knapweed, and leafy spurge foliar cover is reduced by 30% - 50% across the CFLR project area by the end of the CFLR project period.**
- **Scoring**
  - **Good =**
    - At year 3 foliar cover for at least one of the three species is reduced by 30% - 50% OR foliar cover for all three species is reduced by 10% - 16% across the CFLR project area.
    - At year 5 foliar cover for at least two of the three species is reduced by 30% - 50% OR foliar cover for all three species is reduced by 15% - 25% across the CFLR project area.
    - Etc.
- **Project Scale Desired Condition:**
  - **Invasive species control techniques should reduce foliar cover for Canada thistle, spotted knapweed, and leafy spurge by 80% within actively managed areas.**
- **Scoring** (Assuming 4 invasive control projects implemented in a year)
  - **Good** = 3 or more projects result in the above condition upon completion
  - **Fair** = 2 projects result in the above condition upon completion
  - **Poor** = Only 1 (of the 4) project results in the above condition upon completion

Early-Detection Rapid Response Example
- **Landscape Scale Desired Condition:**
  - **Less than 10 new infestations (infestations = populations larger than 500 ft^2) of NNIS occur within areas treated as part of the CFLR project area.**
- **Scoring**
  - **Good =**
    - At year 3 less than 3 new infestations (as defined above) of non-native species occur within restoration treatment areas.
    - At year 5 less than 5 new infestations (as defined above) of non-native species occur within restoration treatment areas.
    - Etc.
- **Project Scale Desired Condition:**
  - **NNIS control within recently restored areas will eradicate 100% of infestations smaller than 500 ft^2**
- **Scoring** (Assuming 4 thinning projects implemented in a year)
  - **Good** = 3 or more projects result in the above condition upon completion
  - **Fair** = 2 projects result in the above condition upon completion
  - **Poor** = Only 1 (of the 4) project results in the above condition upon completion

Example Indicators

- Number of new infestations of NNIS within treated areas
- Number of newly treated areas that are not invaded by NNIS
- Reduction of percent cover of NNIS within existing infestations
- Native species percent cover

Implementation, Indicators, and Potential Next Steps

All 10 of the Collaborative Forest Landscape Restoration projects identified broad ecological goals in their initial proposal. We envision that many if not all of the Collaboratives are in the early stages of trying to identify the quantifiable targets that management must achieve to realize these broad ecological goals. We also recognize that setting these targets may be an iterative process (due to extraneous circumstances, budget cuts, wildfires, etc.); however, the outcome measure framework can continue to function even if the targets must be altered. Once the Collaboratives are able to set these targets, this outcome measure is based on the monitoring data that is being collected to assess whether management is meeting expectations.

The development of explicit, quantifiable Desired Condition statements that capture the ecological objectives of each Project provides a strong foundation for developing a robust ecological monitoring program. The next major step in the process is selecting the appropriate indicator for assessing each Desired Condition. We have provided several examples to illustrate the types of measurements that could occur within each Outcome Measure. The decision of what to monitor will depend on the Desired Conditions and the available resources for each Project. There are a variety of publications available for use in developing ecological indicators and that provide standardized protocols for their measurement. While it is not expected that each Project will measure the same indicators for the purpose of reporting the benefits of the Act (assuming the above framework), there are significant benefits to coordinating these measurements across Projects. In the coming months we hope to evaluate the Desired Conditions that will be used within the above framework to identify potential synergies among indicators and work towards a broad-scale monitoring effort.

FIRE COSTS OUTCOME & INDICATOR

Outcome: CLFR project facilitates the reduction of wildfire management costs, including through re-establishing natural fire regimes and reducing the risk of uncharacteristic wildfire.

Indicator: Modeling indicates that fire costs will be reduced under X fire scenarios as a result of the project's planned or implemented treatments

Target: More than X% of fire costs are reduced under X fire scenario as a result of the CFLR project's fuel treatments.

Baseline: An R-CAT simulation bases on the fuel treatments in the CFLR proposal

Tools: R-CAT

Responsible: CFLR FS Project staff and the developers of the R-CAT model

FIRE COSTS OUTCOME & INDICATOR
INSTRUCTIONS

1) Each CFLR project will work with the R-CAT designers to use the R-CAT model to estimate avoided fire suppression costs, beginning in FY12 (year 3 of the project period).
2) Each CFLR project will report R-CAT scenarios in years 3, 10 and potentially 15 of the project period (FY12, FY19 and FY24).
3) The R-CAT User's Guide can be found at: http://www.fs.fed.us/restoration/CFLR/documents/R-CAT/CFLRPWildifreR-CATUsersGuide01192011.pdf.
4) The Deschutes Collaborative is currently working with R-CAT designers to input data from the project into R-CAT. In August 2011, the National Forest Foundation will hold a web conference in conjunction with the Washington Office of Forest Management to enable Tom Mafera to share information about the time and information needed for this process.

JOBS/ECONOMIC INDICATOR

Outcome: CFLR projects benefit local rural economies.

Indicator: The number of jobs created as a result of CFLR project activities, estimated using the TREAT model

Target: X number of jobs created within the project impact area (to be defined by each CFLR project) annually

Baseline: The original TREAT estimate of jobs to be created as a result of CFLR project activities

Tools: TREAT model

Responsible: Forest Service project staff in cooperation with the developers of TREAT.

Use: A reasonable measure of CFLR project benefits to local rural economies.

JOBS/ECONOMIC OUTCOME & INDICATOR
INSTRUCTIONS

1) The intent of this indicator is to learn if the local economic contribution of the CFLR project as expressed by job maintenance and creation goes up or down over the project period.
2) Each CFLR project will use the TREAT model to estimate jobs that are created as a result of CFLR activities, beginning in FY12 (year 3 of the project period).
1) Each CFLR project will report jobs created using the TREAT model in years 5, 7, 10 and potentially 15 of the project period (FY14, FY16, FY19 and FY24).

Notes
- There is a desire amongst CFLR projects to help "calibrate" the TREAT model by testing its accuracy using actual job counts to the extent possible. Several CFLR projects are planning to do socioeconomic assessments and there was an interest in inviting coordination amongst those projects to support sharing of approaches and to see if it's possible to align the questions for consistency.
- This indicator will need to be supplemented with local stories of economic impact to fill out the picture, since the job count is just a piece of a much bigger picture overall.

LEVERAGED FUNDS INDICATOR

Outcome: CFLR projects leverage non-Forest Service resources with other Federal, State, Tribal and private funds and in-kind support.

Indicator: Dollar value of the non-CFLR resources (funds and in kind support) invested in the CFLR priority landscape (including Forest Service, Bureau of Land Management, Bureau of Indian Affairs or other Federal, State, Tribal or private land), which is defined as *leverage* (based on language in the Act)*, plus the sources and uses of the investments.

Please note the definition of *match* is different than the *leveraged* resources addressed in this outcome and indicator. *Match* is all Forest Service CFLR, partner match and other funds expended during the Fiscal Year to implement and monitor a CFLR project on National Forest System lands. *Leverage* is those funds invested off NFS lands that help to support the project within the defined landscape, plus the matching fund total.

Target: $_____ of non-CFLR resources (funds and in kind support) were invested in the priority landscape (including Forest Service, Bureau of Land Management, Bureau of Indian Affairs or other Federal, State, Tribal or private land), which is defined as *leverage,* in FYs _____. Upward reporting also documents the sources and uses of the investments.

Baseline: No baseline

Tools: Attached reporting spreadsheets

Responsible: CFLR FS project staff (match), collaborative leadership (additional leverage)

Use: Demonstrate the impact of CFLR funds in attracting investment from other sources

<div align="center">

LEVERAGED FUNDS OUTCOME & INDICATOR
INSTRUCTIONS

</div>

Each CFLR project will use the attached two spreadsheets to track funds and in-kind contributions that are considered match (direct match to CFLRP funds used in the project area on Forest Service lands) and secondly, to track funds which are leveraged (invested off NFS lands that help to support the project within the defined landscape plus the matching funds), beginning in FY12 (year 3 of the project period).

Match

- Each CFLR project will report the total matching funds and value of in kind contributions in the annual report.
- The attached spreadsheet can be used to track matching funds throughout the target fiscal year.
- When an entry is made, record the date and the Forest Service code if appropriate. Documentation is required; indicate whether documentation of the investment or in kind contribution to the project has been obtained and filed. Record the total amount of the match and the various source(s). Record a description of the contribution and the treatment it was applied to, if appropriate.

Leverage

- Each CFLR project will report the total cumulative leveraged funds in years 5, 7, 10 and potentially 15 of the project period (FY14, FY16, FY19 and FY24).
- The attached spreadsheet can be used to track leveraged funds throughout the life of the project.
- When an entry is made, record the date. Documentation is required and must clearly describe how the investment occurred because of the CFLR project. Indicate whether documentation of the investment or in kind contribution to the project has been obtained and filed. Record the total amount of the leverage and the source(s). Record a description of the contribution and the treatment it was applied to, if appropriate.
- Each CFLR project will report leveraged funds and leveraged in kind contributions in years 5, 7, 10.
- Non-Forest Service leadership is essential for data collection relevant to this outcome and indicator. Tracking leveraged funds off Forest Service land is the responsibility of non-Forest Service partners.

COLLABORATION OUTCOME & INDICATOR

*Outcome***:** CFLR participants (Forest Service and partners) are fully engaged from project development through implementation and monitoring.

*Indicator***:** XX percent of participants indicate the collaborative process is effective at implementing CFLR objectives.

*Target***:** At the required reporting intervals (years 3, 5, 7, 10 and potentially 15), XX percent of participants indicate the collaborative process is effective at implementing CFLR objectives.

*Baseline***:** Each project will develop its own baseline through the implementation of the attached evaluation tool.

*Tools***:** Attached evaluation tool. Each CFLR collaborative would ask its membership to fill out the evaluation tool anonymously, then a neutral party would compile the results and present them to the full group for discussion.

*Responsible***:** Each collaborative's leadership

*Use***:** To measure the effectiveness of the collaborative process as perceived by those involved.

COLLABORATION OUTCOME & INDICATOR
INSTRUCTIONS

1) Each CFLR project will ask active participants in their collaborative to respond to the attached evaluation tool to track the transparency and openness of their collaborative process, beginning in FY12 (year 3 of the project period).

2) Each CFLR project will repeat this process in years 5, 7, 10 and potentially 15 of the project period (FY14, FY16, FY19 and FY24).

Collaborative Forest Landscape Restoration Program Evaluation Tool Regarding Collaboration

Statement	Strongly Disagree 1	Disagree 2	Neutral 3	Agree 4	Strongly Agree 5
Organizations that we need to be members of this collaborative group are engaged or have been invited.	1	2	3	4	5
People in our collaborative are willing to work toward agreement on important aspects of our project.	1	2	3	4	5
People in this group communicate openly with one another.	1	2	3	4	5
The people who lead this collaborative group communicate well with all of the members.	1	2	3	4	5
Our CFLR project is up to date on how implementation is progressing.	1	2	3	4	5
Implementation of treatments is in alignment with our CFLR project objectives.	1	2	3	4	5
Project implementation is moving the landscape toward more resilient ecosystems.	1	2	3	4	5
More restoration is happening on the ground as a result of the collaboration.	1	2	3	4	5
CFLR project participants do a good job of following through on collaborative agreements.	1	2	3	4	5
The collaborative's participation improves the Forest Service's decision-making process and implementation.	1	2	3	4	5

Appendix A

Collaborative Forest Landscape Restoration
National Level Monitoring Indicator Workshop
AGENDA
June 7 – 8, 2011
Denver, CO

"Don't let the perfect be the enemy of the good."
~ Voltaire

Workshop objectives

- To work towards identifying a small set of national-level outcomes and indicators that all CFLR projects will use. The data measured by the common indicators will be used to report to Congress and other audiences about the comprehensive impact of CFLR. The indicators will be:

  o Simple
  o Affordable
  o Responsive to the direction of the Act
  o Supported as much as possible by existing sources of data
  o Created with the participation of representatives of the ten CFLR projects

  The indicators are unlikely to reflect or respond to research questions. The national framework of indicators is not meant to replace individual CFLR site monitoring plans

- To provide an opportunity for peer learning amongst the existing CFLR projects to share lessons, challenges, and individual project-level approaches to monitoring.

A Note on the Agenda – We will be fluid with this agenda if necessary in order to be the most productive.

Draft Agenda

June 07, 2011

8:30 a.m.   Welcome and agenda review
                 Rob Harper, US Forest Service
                 Mary Mitsos, National Forest Foundation

9:00 a.m.   Introductions

9:30 a.m.   Development of the draft framework

10:15 a.m.	Ecological outcome and indicator discussion
12:00 p.m.	Lunch
1:00 p.m.	Peer learning session
2:30 p.m.	Break
3:00 p.m.	Fire costs outcome and indicator discussion
4:30 p.m.	Wrap-up for the day and review of tomorrow
5:00 p.m.	Adjourn

June 08, 2011

8:00 a.m.	Jobs and economy outcome and indicator
9:15 a.m.	Biomass utilization outcome and indicator
10:30 a.m.	Break
11:00 a.m.	Collaboration outcome and indicator
12:00 p.m.	Lunch
1:00 p.m.	Peer learning session (break incorporated)
3:30 p.m.	Wrap-up and next steps
4:30 p.m.	Adjourn

Appendix B

Collaborative Forest Landscape Restoration Program
Outcomes & Indicators Workshop
June 7-8, 2011
Denver, Colorado

Participants:

Ethan Aumack, Western Governors Association Forest Health Advisory Committee
Gali Beh, Colorado Front Range
Anne Bradley, Southwest Jemez Mountains
Jenny Briggs, Colorado Front Range
Dana Carter, Uncompahgre Plateau
Phil Chang, Deschutes Forest Collaborative
Jennifer Cramer, Southwest Jemez Mountains
Cory Davis, Southwestern Crown of the Continent
Joyce Dearstyne, Selway-Middle Fork Clearwater
Karen DiBari, National Forest Foundation
Dennis Dwyer, 4 Forest Restoration Initiative & Southwest Jemez
Krista Gebert, Region 1, Forest Service
Hal Gibbs, Colorado Front Range
Greg Hagan, Accelerating Longleaf Pine Restoration
Rob Harper, Washington Office, Forest Management (FS)
Dale Harris, Selway-Middle Fork Clearwater
Amber Kamps, Southwestern Crown of the Continent
Jodi Leingang, Tapash Sustainable Forest Collaborative
Paige Lewis, CFLR Advisory Panel
Reese Lolley, Tapash Sustainable Forest Collaborative

Tom Mafera, Deschutes Forest Collaborative
Laura McCarthy, Small Group Participant
Marc Meyer, Dinkey Landscape Restoration Project
Mary Mitsos, National Forest Foundation
Pam Motley, Uncompahgre Plateau Collaborative
Bob Parmenter, Southwest Jemez Mountains
John Potyondy, Rocky Mountain Research Station (morning only)
Megan Roessing, Washington Office, Forest Management
Courtney Schultz, Observer
Gary Severson, CFLR Advisory Panel
John Shaw, Rocky Mountain Research Station
Ed Smith, 4 Forest Restoration Initiative
Jim Thinnes, Colorado Front Range and Uncompahgre Plateau Collaborative
Micah Thorning, Accelerating Longleaf Pine Restoration
Stan Van Velsor, Dinkey Landscape Restoration Project
Ann Walker, Western Governors Association
Amy Waltz, small group participant
Mike Ward, Selway-Middle Fork Clearwater
Travis Warziniak, Rocky Mountain Research Station
Matt Williamson, 4 Forest Restoration Initiative