CFLRP 5-Year Ecological Indicator Progress Reporting
EXPERT PANEL GUIDANCE

In passage of the Omnibus Public Land Management Act of 2009, Congress required Collaborative Forest Landscape Restoration (CFLR) projects to submit a 5-Year Report assessing whether, and to what extent, the CFLR program is fulfilling its purposes. Following a 2011 meeting facilitated by the National Forest Foundation (NFF) to develop a suite of national indicators for the 5-Year Report, five indicators were developed to cover the purposes of the Act, including one covering ecological impacts. Guidance for the ecological indicator was released in 2012.

In July 2014, Forest Management of the U.S. Forest Service and the NFF hosted a webinar on "Reporting Ecological Outcomes."[1] During the webinar participants and speakers discussed the need for a panel to answer questions related to the reporting requirements. The discussion spurred Forest Management and the NFF to convene an *Ecological Indicator Expert Panel.*

Panel members include:
- Amy Waltz, Northern Arizona University Ecological Restoration Institute & Four Forests Restoration Initiative
- Micah Thorning, Acting National Wildlife Program Manager, Washington Office, U.S. Forest Service
- Dan Kipervaser, Coconino National Forest & Four Forests Restoration Initiative Monitoring Coordinator
- Tom DeMeo, Regional Ecologist, Pacific Northwest Region, U.S. Forest Service
- Susan Roberts, Dinkey Landscape Restoration Project Monitoring Coordinator

John Crockett, Acting Assistant Director of Forest Management, and Roberta Willis, Acting National Restoration Planning Team Leader, have been instrumental in establishing the panel. NFF staff coordinate panel discussions.

The panel developed the attached guidance between August and September of 2014. The guidance is intended to "anchor" ecological indicator progress reporting, and addresses many high-level questions and concerns heard by panel members.
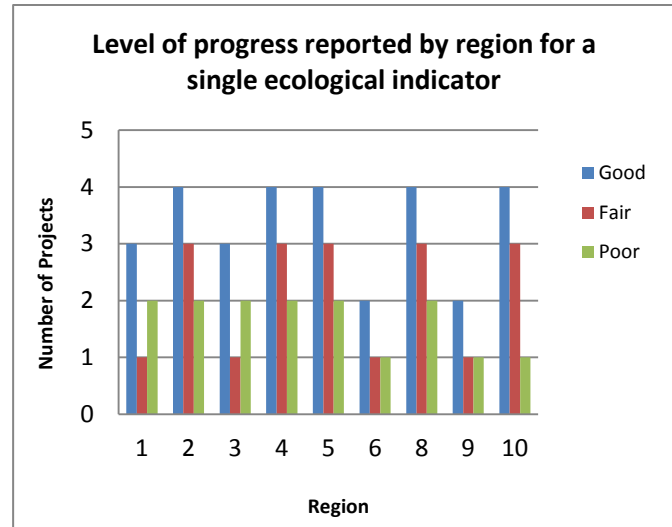
If you have additional questions or would like to set up an individual meeting with a panel member, please feel free to contact Emily Olsen (eolsen@nationalforests.org/406-830-3369) or visit http://www.nationalforests.org/CFLRP/monitoringandreporting. Panel members have kindly given their time to help you successfully report ecological outcomes, and look forward to hearing from you.

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[1] A recording of the peer learning session is available at
http://www.nationalforests.org/conserve/peer/collaborative-forest-landscape-restoration-program

EXPERT PANEL GUIDANCE

1. **How will the ecological indicator information be used at the national level**?

The "good," "fair," and "poor" assessment is the information that will be used in the national report to Congress. Furthermore, the specific values of percent change and percent of landscape affected will not be aggregated or compared between projects. The good, fair, poor assessment should be determined by the individual project based on the progress made towards achieving desired conditions, compared with expected progress as outlined in the original proposal and/or work plan.

Level of progress reported by region for a single ecological indicator

2. **What is the audience for this report?**

The results in this report are very general and should be presented concisely since the report is actually only a feeder document to the WO report that will be submitted to congress. Congress is the primary audience for the 5-Year Report and the local stakeholders and general public are secondary audiences. It may be necessary to create a different report for local stakeholders that will explore detailed monitoring results.

3. **How are the "percent change" and "percent of the landscape area" template components different from one another?**

We will begin with a definition of percent change and percent of landscape and then explain how these can actually vary depending on **how you integrate all of your outputs into outcomes.**

Definitions:

Percent of landscape: The proportion of the area within your landscape where you expect your management actions to have had an impact on the ecological indicators. Your full CFLR landscape may be 500,000 acres, but you only expect to improve 50,000 in the first 5 years or the "by date." Then your "percent of the landscape" value should be 10%.

Percent change: A value that captures your progress towards internally defined desired conditions with respect to ecological indicators. Progress can be represented in a

number of ways; there is no strict definition, but it should be related to some reasonable measurements that can describe ecological characteristics. You can define full progress as setting the landscape on the path towards full restoration at some later date. **You** are defining progress and your definition will not be compared to another project.

In order to provide a better understanding of the flexibility built into this definition, consider the following approaches, each of which is valid. Your data can be based on empirical data or your best understanding of treatment effects (e.g., modelling through Forest Vegetation Simulator, other modelling programs, best available science, etc.).

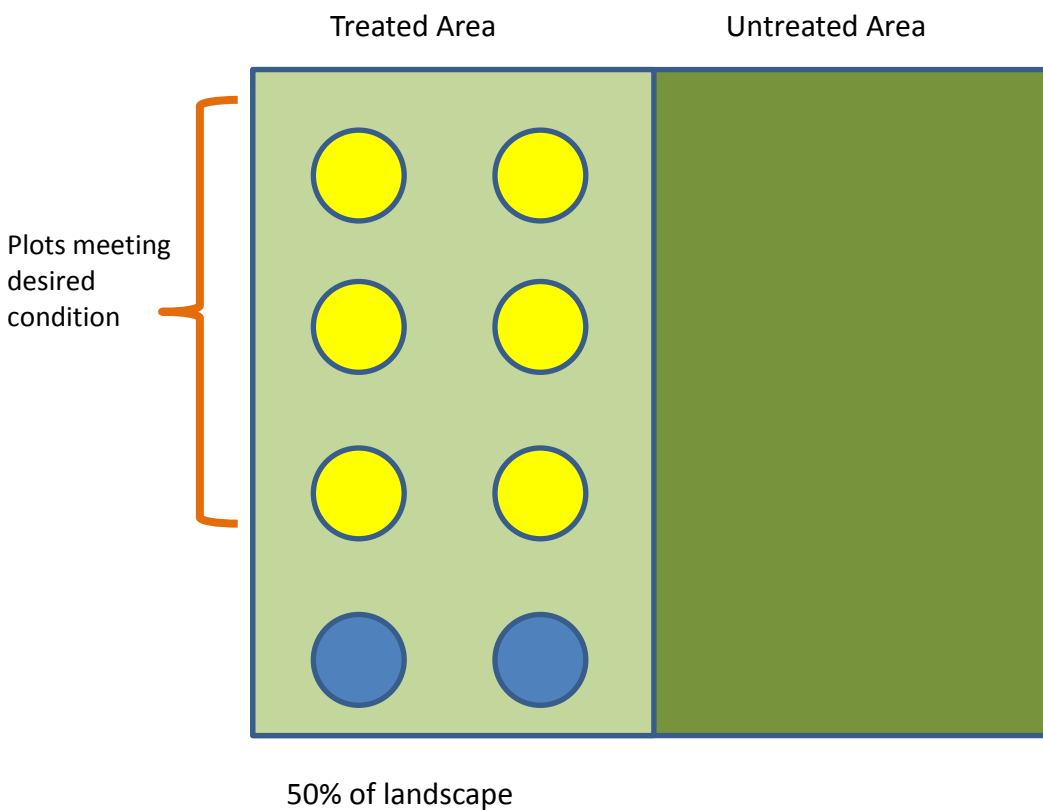a.   *To Capture Temporal Component of Restoration* (Outcome)

   i.   Restoration for a forest stand requires three treatments, each of which is accomplished during a separate entry. After the first entry, that stand can be considered to have made 33% change (1/3 of the total progress).

   ii.   Same scenario as above, but there are two equal sized stands. One has had one entry (33% change) and one has had all three entries (100% change). In this scenario, the result is 66% progress.

$$\frac{(100\%\ Change + 33\%\ Change)}{2\ stands} = \frac{133\%\ Change}{2\ stands}$$

$$= 66\%\ average\ change$$

b. *To Capture Plot-Based Effects of Treatment* (Outcome)

This example uses flame length thresholds, modeled from plot-collected variables. The measured change can be based on a percent of the total plots or the average effects across all plots. Assume you conducted treatments on 10,000 acres of a 20,000-acre landscape (50% of the landscape). You collect plot data across all 10,000 treated acres. When you model your plot data, the fire models show that 75% of your plots achieved your desired flame length. So you can report that you have a 75% change across 50% of your landscape.
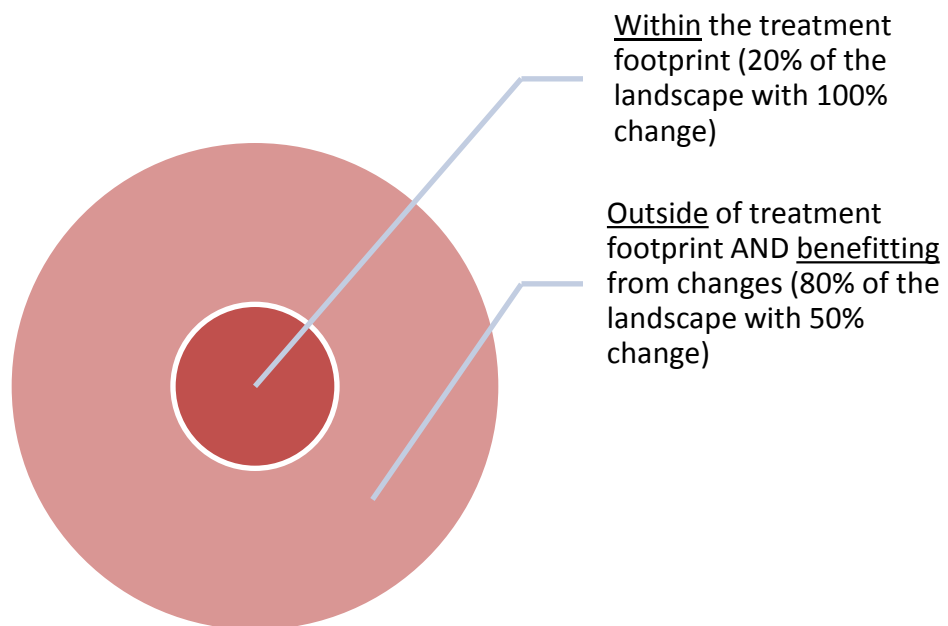
Treated Area   Untreated Area

Plots meeting desired condition

50% of landscape

c. *To Capture the Landscape Effect of Restoration* (Outcome)

The effect of your restoration treatment may go beyond the simple footprint of your treatment activities. Suppose a restoration treatment makes a stand less likely to burn **and** it also makes the surrounding area less likely to burn (even though you did not treat it). Now, suppose you treated 20% of your landscape, but the remaining 80% of the total landscape also gets some lesser benefit. You will have to develop your best estimate of the effect in the untreated area. In this case, you have decided that the area surrounding the treatment gets a 50% benefit. So the average change across the total area is calculated as demonstrated below:

$$[(100\% \ change) \ \times \ (20\% \ of \ landscape)] + [(50\% \ change) \ \times \ (80\% \ of \ landscape)] \xrightarrow{yields}$$

$$(100 \ \times 0.2) + (50 \ \times 0.8) = 60\% \ change$$

Within the treatment footprint (20% of the landscape with 100% change)

Outside of treatment footprint AND benefitting from changes (80% of the landscape with 50% change)

4. What does the statement of desired condition mean?

Some have reported difficulties differentiating between the "desired conditions target" and the "desired condition statements upon which the above target is based." The desired conditions target is a high-level synthesis statement that is intended to capture many different things the CFLRP is tracking, and it is understood that it will not be able to provide much detail. The "desired condition statement" is more specific and measurable, but may also represent a summation of multiple underlying indices or metrics. They can be specific (e.g. canopy base height is greater than 15 feet) or can represent a synthesis of multiple factors (e.g. hydrologic processes are near normal).

If you have multiple "desired condition statements" under a single "desired condition target," then you will have to decide how to weight them against each other to determine your "% change" value. In all cases, the "target value" that you set should ideally be based on your proposal (if your proposal established specific progress benchmarks) or should be based on what you reasonably expect to achieve. You may have a broad landscape goal of full restoration across your entire landscape, but your target should be based on the number of acres that you actually expect to restore (don't set an artificially low target to show success, but don't set yourself up to fail either).

See the scenarios below for additional examples of dealing with multiple "desired condition statements."

a. A fully restored stand will take 50 years to achieve; however, by removing 30% of the midstory trees and creating canopy gaps right now, you will set the stand on course to achieve the desired condition down the road. A single entry created the appropriate starting structure; now you have to wait. You have made 100% of your progress based on your defined, measurable goal (it is your goal, you define it) that links to the broad desired condition.

b. There are three characteristics found in a stand when it is fully restored. Canopy base height (CBH) must be above 10 feet, 20% of the trees must be larger than 18" diameter at breast height (DBH), and there must be more than 50% canopy cover. A single entry raises CBH and you have 60% cover, but you will just have to wait for the largest trees in the stand to keep growing to exceed 18". Even if you did not achieve all of the characteristics, the one remaining cannot be created right now, because it simply requires time. So the change is 100% (as above, the collaborative sets this as the measurable goal).