

Attachment: Core CFLRP Monitoring Questions and Indicators

Questions are standardized across all CFLRPs nationally. Indicators are standardized within each Region.

Region 6 specific indicators in red as example of one Region’s approach. Ecological indicators for 5, 10, 15-year reports in blue.

Question	Indicator	Discussion	Capacity Needed	Reporting Mechanism/Tool	Scale	Short term (1-5 years), Medium term (5-10), or Long term (10+) outcomes?	Frequency of reporting
What is the reduction in fuel hazard based on our treatments?	1. Fire intensity (predicted flame lengths) from IFTDSS 2. Probability of crown fire based on Firesheds work. Generate FLAMMAP runs and then create patch size distribution of resulting probabilities of crown fire.  As listed here.	These two indicators are metrics of the effectiveness of our treatments. Using FLAMMAP to see before and after treatments is a useful metric.	Regional database coordinator/analyst	1. IFTDSS 2. Firesheds technique: Use FLAMMAP run to get probability of crown fire, then patch size distribution with probabilities	Landscape  (Project scale accomplishments reported in annual reports.)	Short term	Annually
What is the effect of the treatments on moving the Forest landscape toward a more sustainable condition that includes scale and intensity of historical disturbances?	1. Vegetation departure OR Missed fire cycle OR Fragmentation metric OR extrapolation from plots. <i>This is the ecological departure metric.</i> 2. Tally acres burned by wildfire and by prescribed burning annually. Report by fire regime and compare to what would be expected in the natural range of variation.  Ecological indicator for fire regime.	TCA metrics will be a pilot of this nationally, but an effort within Regions is also needed.  Discussions with the CFLRPs show much training and education on landscape ecology is still needed.	Regional capacity to determine for all CFLRPs  For TCA pilot, need GTAC to run this for all CFLRPs, so some funding will be necessary.	To be standardized within each Region	Landscape	1. Medium term 2. Short term	Indicator 1: Every five years, to coincide with Ecological Indicator report. Indicator 2: Keep running tally and report annually.

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	Departure metric (acres treatment needed) from Haugo/DeMeo method.	Using LANDFIRE is an option for indicator #1.  R6 will provide Regional capacity to run the metric (for R6).					
What are the specific effects of restoration treatments on focal species and species at risk habitat across the CFLR Project Area?	<p>1. Acres treated to move towards desired condition (HRV/current departure) for focal species and species at risk. Panel lead by Regional wildlife ecologist and other Regional technical specialists as necessary to verify acres being treated are benefiting these species</p> <p>AND/OR</p> <p>2. HSIs for focal species and species at risk identified through the Forest monitoring plan</p> <p>Ecological indicator for <a href="#">habitat</a>. As listed <a href="#">here</a>.</p>	<p>Acres-focus on desired vegetation condition for focal species and species at risk.</p> <p>HSI: focus on focal species and species at risk to answer questions identified in forest monitoring plans</p>	<p>Local wildlife expertise, Regional panel.</p> <p>Same as above, plus research/academia, GIS/DRM</p>	<p>Tally of acres, value verified by Regional panel.</p> <p>Will need some kind of metric to show how HSI is informing monitoring question. Is it acres of suitable acres that have either been improved or maintained as defined through the model or what?</p>	<p>Landscape  (Project scale accomplishments reported in annual reports.)</p> <p>Planning Unit</p>	<p>Short term</p> <p>Short to medium</p>	<p>Annually</p> <p>Every two years</p>

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<p>What is the status and trend of watershed conditions in the CFLR area, with a focus on the physical and biological conditions that support key soil, hydrologic and aquatic ecosystem processes?</p>	<p>1. For all subwatersheds</p> <ul style="list-style-type: none"> <li>per Watershed Condition Framework (WCF) Step A, assess the status and trend of overall watershed condition class and of each of the 12 separate indicators that compose that classification (every 5 years);</li> <li>summarize active restoration accomplishments, including miles of streams/acres of lakes enhanced; number of fish passage barriers removed or remediated; miles of roads decommissioned or closed roads; miles of road with durable, long-term improvements (not annual maintenance) in drainage and erosion control; and other soil and water resource improvements (annually and every 5 years).</li> </ul>	<p>Follow the 6-step WCF process (Steps A-F), specified in this <a href="#">document</a>.</p> <p>For Step A (assessment and classification), follow detailed technical guidance specified in this <a href="#">document</a>.</p> <p>Shared Stewardship opportunity</p>	<p>Local hydrology, soils and fisheries expertise and familiarity with Watershed Condition Framework. Broader interdisciplinary capacity in silviculture, botany/invasives, engineering, etc.</p>	<p>Watershed Classification and Assessment Tracking Tool (WCATT).</p> <p>Watershed Improvement Tracking (WIT) database. FACTs.</p>	<p>Project, Subwatershed and Landscape</p>	<p>Outcomes are expected over short, medium, and long-term.</p> <p>Annual accomplishments, for example, are short-term outcomes.</p> <p>Improvements in watershed conditions are medium to long-term outcomes.</p>	<p>For all subwatersheds across the CFLR area:</p> <ul style="list-style-type: none"> <li>every 5 years, for WCF assessment</li> <li>Annually and every five years for annual accomplishments</li> </ul> <p>For WCF Priority Subwatersheds</p> <ul style="list-style-type: none"> <li>Annually and every five years for status of essential projects in WRAPs.</li> </ul>

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	<p>2. For areas identified as Priority Subwatersheds per WCF Step B:</p> <ul style="list-style-type: none"> <li>• conduct a watershed assessment and develop a watershed restoration action plan (WRAP, WCF Step C) that documents all essential projects needed to protect and restore the key watershed processes and conditions that support soil, hydrologic and aquatic ecosystem functioning (as needed).</li> <li>• monitor and report implementation status of essential projects in the WRAP (annually and every 5 years).</li> <li>• per WCF, monitor and report all watersheds “improved” once all essential projects in a WRAP have been implemented (as needed).</li> </ul> <p>Ecological indicator for <a href="#">aquatic habitat</a>.  <a href="#">As described here</a>.</p>						<ul style="list-style-type: none"> <li>• As needed, for Priority Subwatersheds moved to an improved condition class.</li> </ul>

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What is the trend in invasive species within the CFLRP project area?	<p>1. Effective invasive acres treated from FACTS. Value of treatments pre-determined by risk assessment and EMDS expert panel model (provided).</p> <p>2. Number of new infestations successfully controlled. (This is outside FACTS.)</p> <p>Ecological indicators for <a href="#">invasives</a>.</p> <p><b>As described here.</b></p>	Improve training and quality control so that numbers entered into FACTS are quality data.	Capacity to do risk assessment and EMDS expert panel modeling. Model and training will be provided. Some time from EMDS developer Keith Reynolds to get started. Keith's time will be needed for each Region OR we could have a common training session..	FACTS (or data entry that populates FACTS)	Both project and landscape	Short term	Annually
How has the social and economic context changed, if at all, from the beginning of CFLRP to the end?	<p>Regions/CFLRP Projects can select from the menu of indicators which will be <u>of most value to them</u> in tracking the socioeconomic context. Data sources will be provided to assist in tracking. <b>NOTE:</b> It is likely that trends identified are <i>correlational, not causal</i>. However, tracking these changes over time will provide key context for other socioeconomic monitoring data provided.</p> <p><b>Initial indicator menu:</b></p>	<p><b>Easily accessible data sources will be provided for each "menu" option.</b> Headwaters can provide key data sources, census data, etc. The Washington Office EMC can provide data related to IMPLAN.</p> <p><b>Scale:</b> While each CFLRP collaborative will have space to define the local area for their own context, the default provided is</p>	Support for CFLRP projects, ideally at regional level, to assist in selecting indicators and reporting on socioeconomic condition. Washington Office can assist in developing a simple, adaptable template with	Every 5 years, describe changes in economic context in order to provide that key context for economic monitoring, following the menu of options provided.	Landscape	Medium to Long-term	Baseline; every 5 years

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	<p><b>Demographic trends</b></p> <ul style="list-style-type: none"> <li>- Population demographic trends (age, ethnicity, etc.)</li> </ul> <p><b>Economic Opportunity</b></p> <ul style="list-style-type: none"> <li>- Trends related to the most “connected” sectors (e.g., what are the sectors most important to local economy?)</li> <li>- What sectors do you expect CFLRP implementation to have an impact on?</li> <li>- Unemployment rate</li> <li>- Poverty rate</li> <li>- Average annual wage</li> </ul> <p><b>USFS capacity</b></p> <ul style="list-style-type: none"> <li>- Total annual budget</li> <li>- Total FTE’s</li> </ul> <p><b>Recreation and Visitation</b></p> <ul style="list-style-type: none"> <li>- NVUM data; Forest-level visitation</li> </ul> <p><b>Other context-specific options</b></p> <ul style="list-style-type: none"> <li>- Outreach and training #'s</li> <li>- Forest products capacity</li> <li>- Students eligible for free lunch</li> <li>- School enrollment</li> <li>- School dropout rate</li> <li>- Residents vs visitors</li> <li>- Second homeownership</li> </ul>	<p>counties within and adjacent to CFLRP, at minimum. Projects may provide additional data if desired.</p>	<p>options for users to complete.</p>				

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How have CFLRP activities supported local jobs and labor income?	<p>Taking <u>local data provided by the CFLRP project</u> regarding local contract capture, forest products generated, and other inputs, Washington Office economists will use IMPLAN data to model the local jobs (direct, indirect, and reduced) and labor income supported by CFLRP each year.</p> <p>Job and labor income creation and retention; direct/indirect/induced effects (TREAT)</p>	<p>Additional support will be provided to CFLRP staff and partners regarding the local inputs to the Treatment for Restoration Economics Analysis Toolkit (TREAT), which Forest Service economists can use to model local jobs and labor income and gather data to address the other indicators (see row below).</p> <p>EMC economists in the Washington Office can provide qualitative context relative to indicators CFLRP projects chose (see row above) in the template to better provide the “so what?” of the results.</p>	<p>In addition to ideally regional-level guidance and support for local data entry, capacity support for defining the “local” area, and providing a “so what?” of the TREAT results. Washington Office EMC economists who run TREAT data can provide support.</p>	<p>Complete TREAT spreadsheet annually. Define “local” collaboratively with guidance provided; can change over time if needed.</p>	<p>Landscape</p>	<p>Short term</p>	<p>Annually</p>
How do sales, contracts, and agreements associated with the CFLRP affect local communities?	<p>These are <u>actionable indicators</u> that projects have control over to an extent – with the data trends leading to offering different kinds of contracts, agreements, or tools, additional outreach, and capacity building.</p> <p><b>Local contract capture</b></p>	<p>Each CFLRP, as part of their TREAT data entry, will provide the local vs. “leaked” contracts let related to CFLRP, with guidance provided by the Washington Office and Region.</p>	<p>Regional and Washington Office support to access and interpret existing data.</p> <p>In alignment with the rows above, this indicator requires a</p>	<p>Narrative description</p>	<p>Project/Landscape</p>	<p>Medium term</p>	<p>Baseline; 2-3 years</p>

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	<ul style="list-style-type: none"> <li>- What % of timber sales, contracts, and agreements are captured by local businesses vs leakage outside local area?</li> <li>- Expenditures by location</li> </ul> <p><b>Type of work captured</b></p> <ul style="list-style-type: none"> <li>- Technical/equipment-intensive/labor-intensive/supplies</li> </ul> <p><b>Type of local business</b></p> <ul style="list-style-type: none"> <li>- What kinds of businesses benefit from local contract capture? (Size, Minority-owned, Woman-owned, etc.)</li> </ul>	<p><u>Further information will be provided by Regional and/or Washington Office staff</u> from existing databases to support monitoring:</p> <ul style="list-style-type: none"> <li>- Timber sales: Timber Information Management (TIM) database (operator size, location)</li> <li>- Service contracts: Federal Procurement Data System (FPDS) (type of work, county)</li> <li>- Grants and Agreements database</li> </ul> <p>See examples:  <a href="#">Lakeview Stewardship</a>  <a href="#">Northeast WA Forest Vision 2020</a>  <a href="#">Shortleaf Bluestem</a></p>	definition of what “local” should include.				
Did CFLRP maintain or increase the number and/or diversity of wood products that can be processed locally?	Number, size, and types of mills in an and around the CFLRP area	Can be obtained at Regional level from TPO	Regional support for pulling and accessing data from TPO. Washington Office	Provide information from TPO database	Landscape	Medium to Long Term	Baseline; 3-5 years



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	Volume and type of wood products generated in mills in and around the CFLRP area.		available to support.				
Did CFLRP increase economic utilization of restoration byproducts?	Track utilization over time, with Forest Service data	<p>Currently track only biomass utilized for bioenergy and timber volume sold. Additional tracking with data already entered into TIM. Data also available:</p> <ul style="list-style-type: none"> <li>- Harvest by county for WA, OR, CA, ID, MT (<a href="http://bber.umt.edu/FIR/H_Harvest.asp">http://bber.umt.edu/FIR/H_Harvest.asp</a>) - Timber processing capacity for CO, MT, ID (<a href="http://bber.umt.edu/FIR/H_Capacity.asp">http://bber.umt.edu/FIR/H_Capacity.asp</a>)</li> </ul>	Regional support for projects in accessing data in TIM. Washington Office available to support.	WO/RO pulls information from FACTS/TIM; CFLRP project reports as part of performance measure tracking	Landscape	Short term	Baseline; Annually
Who is involved in the collaborative and if/how does that change over time?	Individuals, organizations, and sectors represented in the collaborative over time	<p>This has been tracked in annual reports since 2018. See description of how this has been reported here: <a href="https://www.fs.fed.us/restoration/documents/cflrp/AnnualReportWorkPlan/2019/FY2019CFLRPAnnualReportInstructions.docx">https://www.fs.fed.us/restoration/documents/cflrp/AnnualReportWorkPlan/2019/FY2019CFLRPAnnualReportInstructions.docx</a></p>	CFLRP projects include in annual reports – start with proposal list (Attachment D of proposal), and report on changes if any.	Annual report	Landscape	Short term	Baseline; Annually

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How well is CFLRP encouraging an effective and meaningful collaborative approach?	Assessment instrument (for either group or individuals to complete) will be developed and disseminated nationally for use across CFLRP projects. Indicator questions to include collaborative health, function, and resilience as well as perceived outcomes of collaborative work.	<p>In first ten years of Program, National Forest Foundation developed and disseminated collaborative survey (see <a href="#">NFF CFLRP Collaborative Survey</a>)</p> <p>SWERI collaborative resilience worksheet also available (see for reference: <a href="https://cfri.colostate.edu/wp-content/uploads/sites/22/2020/08/CFLRP-Developing-and-sustaining-collaborative-resilience.pdf">https://cfri.colostate.edu/wp-content/uploads/sites/22/2020/08/CFLRP-Developing-and-sustaining-collaborative-resilience.pdf</a>)</p>	Instrument will be developed nationally. Results will be provided at project-level. Regional support for providing the “so what?” of the instrument responses encouraged.	Instrument administered to CFLRP collaboratives to complete.	Landscape	Medium	Every 2-3 years
If and to what extent has CFLRP investments attracted partner investments across the landscapes?	Use of direct CFLRP funds; matching funds provided by the agency; contributed funds by partner organizations (both funding and in-kind); leveraged funds	<p>This has been tracked in annual reports since 2010.</p> <p>See description of how this has been reported here: <a href="https://www.fs.fed.us/restoration/documents/cflrp/AnnualReportWorkPlan/201">https://www.fs.fed.us/restoration/documents/cflrp/AnnualReportWorkPlan/201</a></p>	Washington Office and Regional support for ongoing tracking/reporting with partners, especially in-kind contributions.	Annual report	Project/Landscape	Short term	Annually

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		<a href="#">9/FY2019CFLRPAnnualReportInstructions.docx</a>					