2019 CFLRP Ecological Indicator Progress Report

OVERVIEW

Introduction

In 2011, the National Forest Foundation convened CFLRP participants to develop a set of national indicators. The resulting five indicators are economic impacts, fire risk and costs, collaboration, leveraged funds, and ecological condition. Data to support these five indicators comes from a number of sources, including the Treatment for Restoration Economic Analysis Toolkit, collaboration surveys conducted by NFF, and the Annual Reports.

Projects first reported on ecological indicators in 2014. Since then, the CFLRP staff in the US Forest Service Washington Office have worked with colleagues and partners to review and update to template to make improvements while maintaining a consistent protocol to 2014. The intent of the 2019 CFLRP Ecological Indicator Progress Report is to better understand your progress in advancing ecological outcomes. It is not intended to capture everything about your monitoring activities.

To aid you in filling out this report, we recommend that you read the new 2019 Guidance Document. We also recommend that you reference your past Annual Reports and your 2014 Ecological Indicator Progress Reports. For additional help, please email CFLRP@fs.fed.us.

We appreciate the time and energy you dedicate to completing this progress report. This information is critical for understanding the ecological outcomes of your work, telling the national story, supporting communication and transparency, and sharing successful approaches and practices across the nation.

Thank you!

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2019 CFLRP Ecological Indicator Progress Report

Project Name: Southwest Jemez Mountains - CFLR006 State: New Mexico

FIRE REGIME

Narrative - *Note: All boxes in this template will scroll, so you have as much space as you need.*

1. Did you make any changes to your desired condition(s) for fire regime as compared to the 2014 Ecological Indicator Report?
Please briefly describe:

Yes ☐ **No** ☑

2. Did you make any changes to your monitoring methodologies for fire regime as compared to the 2014 Ecological Indicator Report? Please briefly describe:

Yes ☐ **No** ☑

3. Did you use any new or updated baseline data for evaluating your fire regime progress for the purposes of this report?
Please briefly describe:

Yes ☐ **No** ☑

4. Did your projects experience any unanticipated developments that positively or negatively affected expected progress towards your desired conditions for fire regime? (e.g. wildfire in the project area, litigation outcome, change in collaborative participation, etc.)

The June 2017 Cajete wildfire (1,410 acres) was treated as full suppression due to dry conditions and proximity to residential areas, and burn severity was approximately 50% moderate to high. In many areas though, positive fire effects were realized

The August 2019 Conejos fire was a natural ignition, managed for resource benefits, totaling 787 acres.

A court injunction resulting from litigation by WildEarth Guardians against the Forest Service caused us to miss the burn window on the Stable Canyon Rx (1,555 ac) in September 2019. It is unlikely we will be able to execute this burn until fall of 2020.

5. What were the most difficult barriers or challenges you experienced in progressing towards your desired conditions for fire regime? If you adapted to address these challenges please provide a brief description of how.

Smoke management issues in populated areas greatly limits the burn windows we have for executing prescribed burns. A related concern is that other Forest Service units and other agencies are competing for the same "airspace" - windows under which prescribed burns can be conducted and still meet smoke management regulations. The latter is being addressed by the sharing of resources between agencies in northern New Mexico, known as "All hands, All lands", to coordinate efforts to accomplish treatments across the landscape.

Valles Caldera: Most areas with flat terrain have been thinned/burned, and the majority of the current and remaining priority areas are on steeper terrain that requires hand-crew thinning (cut-and-pile or lop-and-scatter). Large acreages with cut-and-pile treatments will require large fire crews in winter to burn piles, but fire staff are often reduced during the winter season. We have set up agreements with New Mexico State

6. Did you include the effects of treatments on areas adjacent to the active treatment area? Yes ☑ No ☐

If yes, please briefly describe your methodology for including these adjacent acres, and describe any work conducted across land ownership in support of desired conditions for fire regime.

The current plan for landscape-scale fire regime assessments will involve a post-implementation field survey of treated areas by field crews collecting Common Stand Exam data. Coupled with LiDAR data to be obtained ~2023, these data sets will be used to run fire models and compare the results with those conducted in 2009 as part of our CFLRP proposal. The modeling approach will include both (1) straight scalar percentages of treated acres that have changed in Fire Regime Class, and (2) a more sophisticated analysis that will incorporate protection benefits of fire risk reduction in stands that are downwind of treated stands. Over the SWJM landscape (SFNF and VALL), we will then be able to assess risk of active crown-fire following our CFLRP project compared to the same areas in 2009 (prior to CFLRP).

Desired Conditions

*In this report, the term "**desired conditions**" refers to landscape and resource conditions (as defined collaboratively by stakeholders and land managers) that you are seeking to achieve and maintain for your CFLRP landscape over the next 10+ years. Desired conditions are outcome-driven not output-driven, and should link to your project's CFLRP proposal while being measurable. (Note: The term "desired condition" is used somewhat differently in the Forest Service's Land Management Planning Process. In that context, it is not time bound, and often represents long-term social, economic and ecological goals, while the term "objective" is used to represent specific, measurable and time-bound benchmarks to be achieved while working toward desired conditions in a forest plan area.) In this report, the term "**landscape**" refers to the landscape identified in your CFRLP project proposal or in subsequently-approved proposal edits. See cover page for links to guidance.*

7. Project-scale Desired Conditions Target for Fire Regime:

85	% change (relative to the desired condition) occurs across	100	% of the project areas by	12/31/2024
	% change (relative to the desired condition) occurs across		% of the project areas by	

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

For areas that have been prescribed burned; 80 – 95% of the treated area meets prescription objectives as quantified in burn plan. 85% change in the Fire Regime across 100% of the frequent fire fuels types in the project area.

Example: Treatments in the project area result in a 23% reduction in potential flame length.
Example: 75% of all prescribed burn projects meet prescription objectives as quantified in burn plan.

8. Landscape-scale Desired Conditions Target for Fire Regime:

85	% change (relative to the desired condition) occurs across	60	% of the landscape area by	12/31/2024
100	% change (relative to the desired condition) occurs across	65	% of the landscape area by	12/31/2023

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

FS Lands - we plan to treat 43,000 acres of 71,426 acres of frequent fire forest within the project area
FRCC from 3 to 2 in thinning alone, FRCC from 3 to 1 in thinned and burned.
NPS VALL: We plan to have completed all high-priority forest stand treatments (~13,000 acres) with mechanical and/or hand-thinning, changing

Examples: Modeled ecological departure indicates that forest vegetation is restored to Vegetation Condition Class 1 with low fire hazard across 51% (105,183 acres) of the CFLR landscape; Fuel models indicate reduced likelihood of supporting a stand replacing fire across 8.5% of the CFLR landscape (73,000 acres); Fire-adapted landscapes transition from shrub-dominant understory fuel model to a grass/forb dominant understory fuel model across 50% of the CFLR landscape.

9. Please select the broader goals that are central to your desired condition(s) for fire regime for the Project-scale (P) and Landscape-scale (L) :

P	L	
☑	☑	Reduced risk/likelihood of uncharacteristic wildfires (high severity, widespread, high mortality, active crown fire/crown fire initiation)
☑	☐	Re-establish natural fire regimes and move landscape to historical range of variability and/or natural range of variability
☑	☐	Restore/maintain fire dependent and tolerant species
☑	☐	Restore/maintain native species
☑	☐	Restore/maintain heterogeneity (species, size classes)
☑	☐	Increase use of prescribed fires
☑	☐	Other. Please describe: Restore and maintain proper functioning condition of streams and watersheds.

10. Please select the key outcomes you are hoping to achieve on the landscape through attainment of the broader goals you selected above:

- ☑ Increase options/opportunities for managers to control/manage wildfires
- ☑ Protect communities and high valued resources/reduce risk of loss
- ☑ Protection of water quality/supply
- ☑ Public and firefighter safety
- ☑ Reduced fire supression costs and avoided costs
- ☑ Other. Please describe: Restore critical habitat for endangered species in project area (Jemez Mts. Salamander, Mexican Spotted Owl,

11. Given these goals, please state the evaluation metric(s) you are using to monitor progress towards your desired conditions for fire regime for this report. Note: This evaluation metric is something you are measuring or counting to monitor fire regime change. It has a unit of measurement attached to it.

Trees per acre, basal area, QMD, canopy cover, species composition, dead-down/litter/duff, live herbaceous layers.

Examples of fire regime evaluation metrics: basal area in square feet per acre (for tree density), quadratic mean diameter in inches (for tree sizes), litter and duff depths in centimeters (for fire hazard), percent canopy cover (for openness), fuels treatment effectiveness, tons of fuel loads removed (for fire hazard), avoided costs

Data and Methodology

12. Select the type(s) of monitoring you used to assess Project-scale (P) and Landscape-scale (L) progress towards fire regime desired conditions for this report. Select all that apply:

P	L	
☑	☑	**Baseline Data Collection** (i.e. was data collected prior to treatment to be used for later comparison?)
☑	☑	**Accomplishment Reporting** (i.e. was progress tracked using acres and miles reported?)
☑	☐	**Implementation Monitoring** (i.e. were the treatments implemented as prescribed?)
☑	☐	**Effectiveness Monitoring** (i.e. were treatments effective at meeting the stated objectives?)
☑	☐	**Effectiveness Monitoring Pilot Study** (i.e. was a trial run conducted to assess considerations of crafting an effectiveness monitoring plan?)
☑	☐	**Ecological Impacts Monitoring** (i.e. were there any unforeseen ecological consequences that could compromise treatment success?
☐	☑	**Other.** Please describe: Fire models, remote sensing data (LiDAR) - collected pre-project start, and will be repeated after project is

13. Select the methodologies used to assess Project-scale (P) and Landscape-scale (L) progress towards fire regime desired conditions for this report. Select all that apply and provide a brief description for each:

P	L		
☑	☐	Field-based sampling/plots:	Permanent repeated-measures plots across the project area; include Common Stand Exam (CSE) and other m
☑	☑	Remote sensing:	LiDAR obtained in 2010 at start of project; will be collected again after project completion for effectiveness analysis.
		☑LiDAR ☑Aerial photography ☑ NAIP ☐ Landsat ☐Other:	
☑	☐	Treatments implemented (e.g. acres or miles accomplished):	Acres tallied for treatments, project-by-project.
☑	☑	Modeling (include type and indicators used):	CSE data for LANDFIRE; analyzed for crown fire risk.
☑	☑	Measuring a reduction in the fire risk index:	LANDFIRE results.
☑	☑	Observation/expert opinion:	USFS/NPS fire and fuels managers assessments of project likely effectiveness.
☑	☐	Fuels treatment effectiveness:	Observations of natural (managed) fire behavior following treatments.
☑	☐	GIS analysis:	All treatments and fire events are documented in GIS.
☐	☐	Other:	

14. Where is the data that is being used for monitoring Project-scale (P) and Landscape-scale (L) progress toward fire regime desired conditions being stored? Select the databases categories that apply and provide a description of the specific datasets being used. Include links if available:

P	L		
☐	☐	FSVeg:	
☐	☐	Forest Inventory and Analysis (FIA):	
☐	☐	Fuels Treatment Effectiveness Report Database:	
☐	☐	GNN:	
☐	☐	VMap:	
☐	☐	Feat-Firemon Integrated Database:	
☑	☐	FACTS (please select performance measure):	
		☑ FP-FUELS-NON-WUI ☑FP-FUELS-WUI ☐ FOR-VEG-EST ☑ FOR-VEG-IMP ☐OTHER:	
☑	☑	Local database:	Monitoring data on NPS servers, with copies provided to SFNF.
☑	☐	Inspection reports/contract record:	Records kept with contracting/acquisitions officers and CORs.
☑	☐	Other:	Interagency Fuel Treatment Decision Support System: Captures wildfire interactions with previous fuels treatments

Project-scale scoring

From the beginning, CFLRP intended to shift towards desired conditions at the landscape-scale. As the disturbances and processes of interest occur at a landscape-scale, we need a landscape-scale assessment. It's a challenge to look at the impacts at that scale, given the scale itself as well as time delays (e.g. it takes more time to shift outcomes at landscape-scale than project-scale). While landscape-scale is the focus, project-scale assessments allow projects to bring in their monitoring data and look at treatment outcomes.

Each management action funded through CFLRP 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 project. Individual projects may not meet every desired condition of the CFLRP project. Project-scale scoring is conducted by the multi-party monitoring group following completed management activities.

An individual activity might not need to lead to a fully restored acre, but if it sets the landscape up for the next treatment it may still get a good rating. For example if a successful thinning doesn't restore a fire regime, but it sets up landscape for subsequent burns that might, it could still receive a "Green" rating. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across 75% or more of our CFLRP project areas.
- **Yellow** = Expected progress is being made towards desired conditions across 26% - 74% of our CFLRP project areas.
- **Red** = Expected progress is being made towards desired conditions across 25% or less of our CFLRP project areas.

Ecological Indicator	Green, Yellow, or Red score and % of the CFLRP project areas resulting in measurable progress as defined above	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Fire Regime	87% Green	Yes

Please briefly describe how you calculated your score.

For areas that have been prescribed burned; 80 – 95% of the treated area meets prescription objectives as quantified in burn plan.

Scoring for National Reporting

Landscape-scale scoring

Few (if any) CFLRP-funded Landscapes propose to meet every proposed desired condition on every acre or achieve landscape-scale objectives through the mechanical treatment of every acre within their landscape boundary. Rather, multiple projects with multiple objectives (fire risk reduction, wildlife habitat improvement, stream restoration, etc.) should facilitate meeting these broader objectives. Scoring at the landscape-scale reflects the degree to which individual Landscapes are moving towards Desired Conditions at broader spatial extent. Landscape-scale scoring is conducted by the multi -party monitoring group at each Landscape.

"Expected progress" will be defined using 10-year benchmarks for FY 2010 projects and 8-year benchmarks for FY 2012 projects for each desired condition based on a percentage of the lifetime outcome specified for the landscape in each proposal. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across [80] % of our CFLRP landscape area.
- **Yellow** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.
- **Red** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.

Ecological Indicator	Green, Yellow, or Red score and % of the landscape across which progress is being made towards desired conditions	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Fire Regime	Green 80%	Yes

Please briefly describe how you decided on the percentage thresholds used above for the scoring categories and how you calculated your score.

71,426 acres of frequent fire forest on FS lands; on VALL, completed 10,325 acres of treated forests (thinned and/or Rx burned) through 2019, of ~13,000 of high-priority forest stands identified.

2019 CFLRP Ecological Indicator Progress Report

Project Name: Southwest Jemez Mountains - CFLR006 State: New Mexico

WATERSHED CONDITION

Narrative - *Note: All boxes in this template will scroll, so you have as much space as you need.*

☐ If watershed condition is not part of your CFLRP proposal and landscape restoration strategy, please let us know by checking this box.

1. Did you make any changes to your desired condition(s) for watershed condition as compared to the 2014 Ecological Indicator Report? Please briefly describe: **Yes** ☐ **No** ☑

2. Did you make any changes to your monitoring methodologies for watershed condition as compared to the 2014 Ecological Indicator Report? Please briefly describe: **Yes** ☐ **No** ☑

3. Did you use any new or updated baseline data for evaluating your watershed condition progress for the purposes of this report? Please briefly describe: **Yes** ☐ **No** ☑

4. Did your projects experience any unanticipated developments that positively or negatively affected expected progress towards your desired conditions for watershed condition? (e.g. wildfire in the project area, litigation outcome, change in collaborative participation, etc.)

Cajete wildfire; debris flows and channel incision.
Los Pinos managed fire; higher vegetation and soil burn severity than desired resulting in erosion.
MSO litigation shut down timber, prescribed fire, fuels treatments, and riparian restoration in the project area.
Trout Unlimited and New Mexico Trout have helped (volunteers) implementing riparian restoration.
WildEarth Guardians and Los Amigos de Valles Caldera have received outside grants to implement stream and wetland restoration projects.

5. What were the most difficult barriers or challenges you experienced in progressing towards your desired conditions for watershed condition? If you adapted to address these challenges please provide a brief description of how.

MSO litigation.
Ongoing range management issues; including infrastructure failures (e.g., fences, water facilities, etc.) leading to trespass cattle incursions.
Lack of a long-term transportation plan; conflicts between resources for needing/decommissioning roads.
Lack of qualified restoration practitioners in this area (especially road decommissioning).
SFNF Forest Thinning Contract lacked specificity on methods for achieving real road decommissioning restoration.

6. Are you using the Priority Watershed(s) identified through the Watershed Condition Framework to focus CFLRP watershed restoration work and monitoring for this report? Yes ☑ **No** ☐ **Our CFLRP does not have Priority Watersheds** ☐

If no, please briefly describe why you are not using the Priority Watersheds:

If yes, is there a Watershed Restoration Action Plan (WRAP) developed for the Priority Watershed(s)? Yes ☑ No ☐

7. Our Priority Watershed(s)of focus for this report cover 7 % of the CFLRP landscape

8. Please select up to three conditions in each category for why it was chosen as a Priority (these are available in the WCATT entry):

Category 1: Resource Values
- ☐ Wilderness
- ☐ Wild and Scenic River
- ☐ Experimental Watershed
- ☐ Municipal Watershed
- ☐ Outstanding Resource Water
- ☐ Species protection area
- ☐ Class 1 Air Shed
- ☐ Other:

Category 2: Concerns and Threats
- ☑ Water Quality
- ☑ Water Quantity
- ☑ Riparian Structure and Function
- ☑ Species Habitat
- ☐ Wildfire Risk
- ☐ Invasive Species
- ☐ Other:

Category 3: Opportunities
- ☑ Improve Condition
- ☑ Maintain Condition
- ☑ Potential Partnership
- ☐ Non-NFS Land Collaboration
- ☐ Larger Scale Restoration
- ☐ Leverage FS funds
- ☐ Socio-economic
- ☐ Other:

Desired Conditions

*In this report, the term "**desired conditions**" refers to landscape and resource conditions (as defined collaboratively by stakeholders and land managers) that you are seeking to achieve and maintain for your CFLRP landscape over the next 10+ years. Desired conditions are outcome-driven not output-driven, and should link to your project's CFLRP proposal while being measurable. (Note: The term "desired condition" is used somewhat differently in the Forest Service's Land Management Planning Process. In that context, it is not time bound, and often represents long-term social, economic and ecological goals, while the term "objective" is used to represent specific, measurable and time-bound benchmarks to be achieved while working toward desired conditions in a forest plan area.) In this report, the term "**landscape**" refers to the landscape identified in your CFRLP project proposal or in subsequently-approved proposal edits. See cover page for links to guidance.*

9. Project-scale Desired Conditions Target for Watershed Condition:

75	% change (relative to the desired condition) occurs across	100	% of the project areas by	12/31/2024
	% change (relative to the desired condition) occurs across		% of the project areas by	

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

1. Riparian restoration treatments (e.g. properly functioning riparian).
2. Soil erosion: Desired conditions include no or minimal occurrence of soil erosion in areas impacted by treatments and unplanned burns.
3. Water quantity: Desired conditions include greater water retention in soils, infiltration and runoff (spring snowmelt period) in post-treatment

Examples: Over 50% of roads that will be used for activities in project areas have received or are planned for BMPs; Over 170 acres of riparian area are improved and floodplain reconnected, 2 miles of stream are restored, and dam removal results in 13 miles of fish passage.

10. Landscape-scale Desired Conditions Target for Watershed Condition:

75	% change (relative to the desired condition) occurs across	75	% of the landscape area by	12/31/2024
	% change (relative to the desired condition) occurs across		% of the landscape area by	

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

Desired Conditions: All listed "impaired" streams in CFLRP project area are de-listed by NM Environment Department (one stream, Jaramillo Creek, was de-listed in 2019).
Future fires in any watershed will be sufficiently low in severity that post-fire runoff does not result in fish kills or channel erosion.

Examples: 50% of the essential projects identified in the watershed WRAP are implemented; Watershed Condition Classification indicates that 14 of the 17 subwatersheds (82% of the CFLRP Landscape Area) are in Condition Class 1 (Properly Functioning); The Watershed Condition Classification for the fire regime and wildfire indicators are improved for 17% of the landscape (30% of the expected treatment area).

11. Please select the indicator(s) below related to watershed condition that you are trying to affect to achieve your quantifiable desired condition(s):

- ☑ Water quality
- ☑ Water quantity
- ☑ Aquatic habitat (fragmentation, woody debris, channel shape and function)
- ☑ Aquatic biota (life-form presence, native species, exotic/invasive species)
- ☑ Improve riparian/wetland vegetation condition
- ☑ Roads and trails (road density, road maintenance, proximity to water, mass wasting)
- ☑ Soils (erosion, productivity, contamination)
- ☑ Fire regime and wildfire (fire condition class, wildfire effects)
- ☑ Forest cover
- ☑ Rangeland vegetation
- ☑ Terrestrial invasive species (extent and rate of spread)
- ☐ Forest health (insects and disease, ozone)
- ☐ Other. Please describe:

12. **Please select the actions you are implementing to work towards your desired condition(s):**

- ☑ Road decommissioning
- ☑ Road maintenance and/or improvement
- ☐ Trail maintenance and/or improvement
- ☑ Mechanical thinning
- ☑ Prescribed fire/controlled burn
- ☑ Culvert replacement
- ☑ Reintroduction of native species
- ☑ Removal of exotic/invasive species
- ☑ Other. Please describe:
  beaver dam analogs, riparian planting, wetland

13. Please state the evaluation metric(s) you are using to monitor progress towards your desired conditions for watershed condition.
Note: This evaluation metric is something you are measuring or counting to monitor watershed condition. It has a unit of measurement attached to it.

Miles of road decommissioned.
Acres of wetlands restored, miles of streambank stabilized with willow plantings, # of beaver-dam-analogs installed, # of beavers re-established.
Water quality variables (dissolved oxygen, pH, turbidity, conductivity, temperature).

Examples of evaluation metrics: Fine sediment volume (mL), fine sediment weight (g), basal area in square feet per acre (for tree density), number of woody debris pieces in a specific size class per stream mile (for fish habitat), stream flow rate (liters/sec), miles of road decommissioned (miles), fish population (number of fish per sweep).

Data and Methodology

14. Select the methodologies used to assess Project-scale (P) and Landscape-scale (L) progress towards watershed condition desired conditions in this report. Select all that apply and provide a brief description for each:

P	L		
☑	☑	National BMP monitoring (protect water quality):	Monitoring standards and protocols comparable to NM Environment Department requ
☐	☐	Streambed coring:	
☐	☐	Float method (water flow):	
☑	☑	Current meter (water flow):	Stream gauges and flumes are installed on most streams in project area; ratings curves developed with flow
☑	☑	Fish occupancy/use surveys:	22 permanent reaches sampled each spring and fall for fish populations (species, abundance, body conditio
☑	☐	Ground-based photo points or photo plots:	Repeat photos to document changes.
☑	☑	Aerial surveys, aerial photography, or remote sensing:	Repeat photos and LiDARto document changes.
☑	☑	GIS analysis:	Site specific and landscape level changes in watersheds.
☑	☑	Treatments implemented (e.g. acres or miles accomplished) used as proxy for monitoring outcomes:	Treatment areas correlated to grour
☐	☐	Modelling used as proxy for monitoring outcomes:	
☐	☐	Other:	

15. Where is the the data that is being used for monitoring Project-scale (P) and Landscape-scale (L) progress toward watershed condition being stored? Select the database categories that apply and provide a description of the specific datasets being used. Include links if available:

P	L		
☑	☑	GIS database:	SFNF and NPS GIS databases.
☐	☐	County database:	
☐	☐	State database:	
☐	☐	Tribal database:	
☐	☐	Citizen Science database:	
☑	☑	Watershed Classification and Assessment Tracking Tool (WCATT):	
☑	☑	USFS database of record (e.g. FACTS, WIT, WorkPlan, etc.):	*please select performance measure from the table below*
☑	☑	Other:	National Park Service Data Servers/Database

Performance Measure Shorthand	Description	Database	P	L
BIO-NRG	Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production	TIM	☐	☐
FOR-VEG-EST	Acres of forest vegetation established	FACTS	☐	☐
FOR-VEG-IMP	Acres of forestland vegetation improved	FACTS	☐	☐
FP-FUELS-NON-WUI	Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildand fire	FACTS	☐	☐
FP-FUELS-WUI	Acres wildland/urban interface (WUI) high-priority hazardous fuels treated to reduce the risk of catastrophic wildland fire	FACTS	☐	☐
HBT-ENH-LAK	Acres of lake habitat restored or enhanced	WIT	☐	☐
HBT-ENH-STRM	Miles of stream habitat restored or enhanced	WIT	☐	☐
HBT-ENH-TERR	Acres of terrestrial habitat restored or enhanced	WIT	☐	☐
INVPLT-NXWD-FED-AC	Highest priority acres treated annually for noxious weeds and invasive plants on NFS lands	FACTS	☐	☐
INVSPE-TERR-FED-AC	Highest priority acres treated for invasive terrestrial & aquatic species on NFS lands	FACTS	☐	☐
RD-DECOM-NON-SYS	Miles of road decommissioned (non-system)	WIT	☑	☑
RD-DECOM-SYS	Miles of road decommissioned (system)	ROADS	☐	☐
RD-HC-IMP	Miles of high clearance system roads improved	ROADS	☐	☐

Performance Measure Shorthand	Description	Database	P	L
RD-HC-MAIN	Miles of high clearance system roads receiving maintenance	ROADS	☐	☐
RD-PC-IMP	Miles of road reconstruction and capital improvement	ROADS	☐	☐
RD-PC-MAIN	Miles of system roads receiving maintenance	ROADS	☐	☐
RG-VEG-IMP	Acres of rangeland vegetation improved	FACTS	☐	☐
S&W-RSRC-IMP	Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions	WIT	☑	☑
SP-NATIVE-FED-AC	Number of priority acres treated annually for native pests on Federal lands	FAD	☐	☐
STRM-CROS-MITG-STD	Number of stream crossings constructed or reconstructed to provide for aquatic organism passage	WIT	☑	☑
TL-IMP-STD	Miles of system trail improved	TRAILS	☐	☐
TL-MAINT-STD	Miles of system trail maintained	TRAILS	☐	☐
TMBR-SALES-TRT-AC	Acres of forestlands treated using timber sales	FACTS	☐	☐
TMBR-TRT	Acres of forestlands treated to achieve healthier conditions	FACTS	☐	☐
WTRSHD-CLS-IMP-NUM	# of watersheds moved to an improved condition class or sustained in properly functioning condition (Class 1)	WCATT	☑	☑

16. Please describe why the datasets or performance measures you selected in Question 15 above are <u>appropriate for assessing progress</u> towards your watershed desired conditions.

They are nationally standardized units of measure; they are assessed via available GIS data; facilitate reporting via gPAS.

Project-scale scoring

From the beginning, CFLRP intended to shift towards desired conditions at the landscape-scale. As the disturbances and processes of interest occur at a landscape-scale, we need a landscape-scale assessment. It's a challenge to look at the impacts at that scale, given the scale itself as well as time delays (e.g. it takes more time to shift outcomes at landscape-scale than project-scale). While landscape-scale is the focus, project-scale assessments allow projects to bring in their monitoring data and look at treatment outcomes.

Each management action funded through CFLRP 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 project. Individual projects may not meet every desired condition of the CFLRP project. Project-scale scoring is conducted by the multi-party monitoring group following completed management activities.

An individual activity might not need to lead to a fully restored acre, but if it sets the landscape up for the next treatment it may still get a good rating. For example if a successful thinning doesn't restore a fire regime, but it sets up landscape for subsequent burns that might, it could still receive a "Green" rating. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across 75% or more of our CFLRP project areas.
- **Yellow** = Expected progress is being made towards desired conditions across 26% - 74% of our CFLRP project areas.
- **Red** = Expected progress is being made towards desired conditions across 25% or less of our CFLRP project areas.

Ecological Indicator	Green, Yellow, or Red score and % of the CFLRP project areas resulting in measurable progress as defined above	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Watershed Condition	Green - 75% of projects meeting desired con	Yes.

Please briefly describe how you calculated your score.

Stream, wetland and riparian zone responses to treatments are manifest almost immediately, and all have shown successful outcomes except two willow-planting projects during which a drought period caused high mortality of planted willow stems. These sites are being re-planted in 2020.

Scoring for National Reporting

Landscape-scale scoring

Few (if any) CFLRP-funded Landscapes propose to meet every proposed desired condition on every acre or achieve landscape-scale objectives through the mechanical treatment of every acre within their landscape boundary. Rather, multiple projects with multiple objectives (fire risk reduction, wildlife habitat improvement, stream restoration, etc.) should facilitate meeting these broader objectives. Scoring at the landscape-scale reflects the degree to which individual Landscapes are moving towards Desired Conditions at broader spatial extent. Landscape-scale scoring is conducted by the multi - party monitoring group at each Landscape.

"Expected progress" will be defined using 10-year benchmarks for FY 2010 projects and 8-year benchmarks for FY 2012 projects for each desired condition based on a percentage of the lifetime outcome specified for the landscape in each proposal. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across [60] % of our CFLRP landscape area.
- **Yellow** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.
- **Red** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.

Ecological Indicator	Green, Yellow, or Red score and % of the landscape across which progress is being made towards desired conditions	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Watershed Condition	Green ~60%	Yes.

Please briefly describe how you decided on the percentage thresholds used above for the scoring categories and how you calculated your score.

Approximately 60% of the streams and wetlands needing restoration are being addressed, often with outside funding (grants) from the State of New Mexico. Restoration treatments are being conducted as quickly as funds become available.

2019 CFLRP Ecological Indicator Progress Report

Project Name: Southwest Jemez Mountains - CFLR006 State: New Mexico

FISH & WILDLIFE HABITAT

Narrative - *Note: All boxes in this template will scroll, so you have as much space as you need.*

☐ If wildlife habitat is not part of your CFLRP proposal and landscape restoration strategy, please let us know by checking this box.
☐ If fish habitat is not part of your CFLRP proposal and landscape restoration strategy, please let us know by checking this box.

1. Did you make any changes to your desired condition(s) for fish & wildlife habitat as compared to the 2014 Ecological Indicator Report? Please briefly describe: **Yes** ☐ **No** ☑

2. Did you make any changes to your monitoring methodologies for fish & wildlife habitat as compared to the 2014 Ecological Indicator Report? Please briefly describe: **Yes** ☐ **No** ☑

3. Did you use any new or updated baseline data for evaluating your fish & wildlife habitat progress for the purposes of this report? Please briefly describe: **Yes** ☐ **No** ☑

4. Did your projects experience any unanticipated developments that positively or negatively affected expected progress towards your desired conditions for fish and wildlife habitat? (e.g. wildfire in the project area, litigation outcome, change in collaborative participation, etc.)

Yes.
VALL: Unplanned natural lightning ignitions during 2014-2019 were managed for resource benefit, including the Big Hat Fire (217 acres), Hidden Valley Fire (585 acres), and the Redondo Canyon Fire (317 acres). Unplanned ignition fire that was suppressed: San Antonio Fire (416 acres). USFS has many unplanned natural lightning ignitions which were managed for resource benefit. Pino Fire (4,284 acres) 2014; Gucamalla Fire (1,558 acres) 2011; Bear Spring (363 acres) 2012; (Virgin Fire (96 acres), 2016; Conejos Fire (800 acres) in 2019.

5. What were the most difficult barriers or challenges you experienced in progressing towards your desired conditions for fish and wildlife habitat? If you adapted to address these challenges please provide a brief description of how.

Threatened and endangered species management restricts implementation activities; seasonal avoidance for migratory breeding birds and T&E species' activity periods reduces length of time each year that treatments can be undertaken. VALL has negotiated with US FWS to expand autumn treatment periods, and included the use of masticators for "mechanical scattering" of slash and seedling trees, and expanded use of cut-and-pile thinning in areas of steep slopes with high fuel loads.

6. Did you include the effects of treatments on areas adjacent to the active treatment area? Yes ☑ No ☐
If yes, please briefly describe your methodology for including these adjacent acres, and describe any work conducted across land ownership in support of fish & wildlife habitat.

Radio collar data of wide ranging large mammals (elk, mule deer, black bears, and mountain lions) were used to identify treatment-related resource selection on a landscape level exceeding the active treatment project areas. This information supports fish and wildlife habitat improvements on an ecologically relevant level. Results to date show that elk immediately use thinned and burned areas for grazing, mule deer have a 3-4 year lag in use of these areas (while browse species increase), and bears and mountain lions continue to use all habitats for foraging activities.

Desired Conditions

*In this report, the term "**desired conditions**" refers to landscape and resource conditions (as defined collaboratively by stakeholders and land managers) that you are seeking to achieve and maintain for your CFLRP landscape over the next 10+ years. Desired conditions are outcome-driven not output-driven, and should link to your project's CFLRP proposal while being measurable. (Note: The term "desired condition" is used somewhat differently in the Forest Service's Land Management Planning Process. In that context, it is not time bound, and often represents long-term social, economic and ecological goals, while the term "objective" is used to represent specific, measurable and time-bound benchmarks to be achieved while working toward desired conditions in a forest plan area.) In this report, the term "**landscape**" refers to the landscape identified in your CFRLP project proposal or in subsequently-approved proposal edits. See cover page for links to guidance.*

7. Project-scale Desired Conditions Target for Fish & Wildlife Habitat:

60 % change (relative to the desired condition) occurs across 100 % of the project areas by 12/31/2024

[ ] % change (relative to the desired condition) occurs across [ ] % of the project areas by [ ] *(OPTIONAL. Use if separate, additional target is needed for aquatic habitat)*

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

1. Understory development for terrestrial wildlife habitat: Desired conditions include increased grass and forb cover in forest understory for wildlife forage. Given that successional processes of understory development of herbaceous layers requires 8-10 years in the Jemez Mountains, we expect 0-10% plant cover change in the most recent year of treatment and up to 60% change in 5-year-old treatments; overall average after

Example: 50 miles of inaccessible salmon spawning habitat is made accessible by removing one dam.
Example: Stands have a basal area of 50-80 square feet/acre, which is ideal for red-cockaded woodpecker.
Example: Stands between 5,000-8,000 ft elevation are dominated by ponderosa pine, with 5-10 trees per group, and openings 0.25- 1 acre.

8. Landscape-scale Desired Conditions Target for Fish & Wildlife Habitat:

75 % change (relative to the desired condition) occurs across 50 % of the landscape area by 12/31/2024

[ ] % change (relative to the desired condition) occurs across [ ] % of the landscape area by [ ] *(OPTIONAL. Use if separate, additional target is needed for aquatic habitat)*

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

Same as above, but cumulative areas across landscape; higher percentage change reflects cumulative treatments from 2010-2014 added to treatments from 2015-present. Landscape area of ~50% includes priority forest and watershed treatment areas (e.g., excludes grasslands and previously burned areas).

Example: Slash pine is replaced by longleaf pine ecosystem across 5,000 acres of our CFLRP landscape.
Example: Coniferous forests across the CFLRP landscape have an average canopy cover at or above 50%.
Example: All identified inventoried aquatic organism passages at road/stream crossings that were found to be a barrier (10) are accessible for identified aquatic species at all life stages.

Habitat

9. Please select the categories of the broader goals related to fish & wildlife habitat that you are trying to achieve through your quantifiable desired condition(s):

- ☑ Open forest habitat (e.g. wider tree spacing, less mid-story vegetation)
- ☑ Grass/forb/shrub abundance and/or diversity (e.g. native or desired)
- ☑ Wildlife security (e.g. reduced disturbance and/or mortality to fish or wildlife)
- ☑ Rare or sensitive ecosystem protection and/or restoration (e.g. longleaf, bluestem, riparian, meadow, aspen or wetland habitat)
- ☑ Horizontal Complexity (e.g. "mosaic"/diversity of habitat types, patch sizes, and/or patterns)
- ☑ Vertical complexity (e.g. number of canopy layers)
- ☑ Forest structures (e.g. snags, downed wood, den trees)
- ☑ Mast-producing plant abundance and/or diversity (e.g. acorns, nuts, fruits, or berries eaten by wildlife)
- ☑ Sustainable flow of habitat age-classes through time (e.g. planning the proportion of early-, mid-, and late-seral stands)
- ☑ Habitat connectivity/availability (e.g. increased access to or availability of desired habitat)
- ☐ Aquatic habitat connectivity (e.g. culverts are passable to all aquatic organisms, no dams, stream diversions)
- ☑ Aquatic habitat complexity (e.g. downed wood, pools, riffles, etc)
- ☑ Aquatic sedimentation levels (e.g. suspended sediment or fine sediment in spawning gravels)
- ☑ Other. Please describe: Adding fire breaks for breaking up contiguous forest fuels to prevent landscape-level high-severity fires.

10. Please state the evaluation metric(s) you are using to monitor progress towards your desired conditions for fish & wildlife habitat for this report. Note: This evaluation metric is something you are measuring or counting to monitor habitat change. It has a unit of measurement attached to it.

10) Basal area in square feet per acre (for tree density), number of trees per acre (for tree density), quadratic mean diameter in inches (for tree sizes), litter and duff depths in centimeters (for fire hazard), percent canopy cover (for openness), percent ground cover (for forage), number of woody debris pieces in a specific size class (small mammal and salamander habitat), grass dry weight clippings used to calculate grass pounds per acre (for forage abundance), resource selection functions (for connectivity/availability), stream bed pebble counts (for aquatic habitat), water quality measures (for sedimentation levels), stream temperature and sediments (for riparian ecosystem protection and/or restoration).

Examples of habitat evaluation metrcs: basal area in square feet per acre (for tree density), number of trees per acre (for tree density), quadratic mean diameter in inches (for tree sizes), litter and duff depths in centimeters (for fire hazard), percent canopy cover (for openness), percent ground cover (for forage), seedling survival per acre per year (for reforestation), number of woody debris pieces in a specific size class per stream mile (for fish habitat), grass dry weight clippings used to calculate grass pounds per acre (for forage abundance)

Populations

11. Please select the categories of broader goals related to fish & wildlife populations that you are trying to achieve through your quantifiable desired condition(s). Then list the specific species of interest related to each category you select.

- ☑ Maintain abundance/density: reptiles and amphibians; terrestrial invertebrates
- ☑ Increase abundance/density: New Mexico meadow jumping mouse
- ☐ Decrease abundance/density:
- ☑ Maintain native species diversity: songbirds; terrestrial invertebrates
- ☑ Increase native species diversity: songbirds; aquatic invertebrates
- ☑ Translocation/reintroduction: Northern leopard frogs, Rio Grande Sucker, Rio Grande Chub
- ☐ Optimal sustained yield of game species:
- ☑ Ecosystem function/food webs: elk, mule deer, black bears, mountain lions, birds, fisheries, invertebrates
- ☑ Spatial extent of population: Rocky mountain elk, mule deer, black bear, mountain lion
- ☐ Other. Please describe:

12. If relevant for your CFLRP project, please state the evaluation metric(s) you are using to monitor progress towards your desired conditions for fish & wildlife populations. Note: This evaluation metric is something you are measuring or counting to monitor population change. It has a unit of measurement attached to it.

Point count surveys for birds (compare species diversity, evenness, and richness); spatial capture/recapture integrating photos and GPS collar data for predators; Calf/Cow ratios for elk, presence/absence survey data for T&E species; population sampling of fisheries; Predation rates/risk modeling for large mammals (deer, elk, black bear, mountain lion); sample counts of invertebrates by species for forest/meadow communities and stream communities; counts of invertebrate species and individuals in forest soils (treated and untreated).

Examples of population evaluation metrics: number of wildlife encounter events per unit area via point counts or remote cameras (for wildlife usage), number of pellet groups along transects used to calculate animal density per unit area (for mammal usage), presence/absence of a plant community-associated wildlife species in the project area, presence of aquatic species as indicated by eDNA

☐ Please check this box if you are not evaluating fish & wildlife populations.

Data and Methodology

13. Select the type(s) of monitoring you used to assess Project-scale (P) and Landscape-scale (L) progress towards fish & wildlife habitat desired conditions for this report. Select all that apply.

P	L	
☑	☑	**Baseline Data Collection** (i.e. was data collected prior to treatment to be used for later comparison?)
☑	☑	**Accomplishment Reporting** (i.e. was progress tracked using acres and miles reported?)
☑	☑	**Implementation Monitoring** (i.e. were the treatments implemented as prescribed?)
☐	☐	**Effectiveness Monitoring Pilot Study** (i.e. was a trial run conducted to assess considerations of crafting an effectiveness monitoring plan?)
☑	☑	**Effectiveness Monitoring** (i.e. were treatments effective at meeting the stated objectives?)
☐	☐	**Ecological Impacts Monitoring** (i.e. were there any unforeseen ecological consequences that could compromise treatment success?)
☐	☐	**Other.** Please describe:

14. Select the methodologies used to assess Project-scale (P) and Landscape-scale (L) progress towards fish & wildlife habitat desired conditions for this report. Select all that apply and provide a brief description for each:

P	L	
☑	☑	Common Stand Exams (USFS procedures): CSE sites sampled on SFNF and VALL for 2009 proposal; used in LANDFIRE models and thinning
☑	☐	Understory vegetation plots or transects: Line transects and quadrat plots assess herbaceous response to thinning/fire treatments.
☑	☑	Fish or Wildlife occupancy/use surveys: Surveys for endangered species in pre-treatment areas (Sec. 7 compliance). Field surveys/counts
☑	☑	Stream surveys: Includes permanent reaches for fishery monitoring, aquatic invertebrates, stream geomorphology, water quality and dis
☑	☐	Remote motion-capture cameras: Widespread monitoring of wildlife using dozens of camera traps.
☑	☐	Ground-based photo points or photo plots: Repeat photos of treatment areas: pre- and post-treatment and long-term changes.
☑	☑	Aerial surveys, aerial photography, or remote sensing: Aerial photos, LiDAR (pre- and post-treatment and long-term changes) for veg and
☑	☑	Treatments implemented (e.g. acres or miles accomplished): Data collected during contract inspections.
☐	☑	Modeling (include type and whether ground-truthed): LANDFIRE using CSE ground data.
☑	☑	GIS analysis: Mapping data included for all treatments.
☐	☐	Other:

15. Where is the the data that is being used for monitoring Project-scale (P) and Landscape-scale (L) progress toward fish & wildlife habitat desired conditions being stored? Select the database categories that apply and provide a description of the specific datasets being used. Include links if available:

P	L	
☑	☑	GIS database: Local SFNF and VALL databases/servers.
☐	☐	County database:
☑	☑	State database: The information submitted to NRIS also is submitted to the New Mexico Natural Heritage Database (State of NM).
☐	☐	Tribal database:
☐	☐	Citizen Science database:
☐	☑	FSVeg: CSE plot data
☑	☑	NRIS: Natural Resource Information System (occurrence records for many Forest Sensitive Species are submitted to NRIS each year).
☐	☐	Other USFS database of record: *please select performance measure from the table below*
☑	☐	Other: Various universities and NGOs; final data sets will be copied to SFNF and VALL databases when proje

Performance Measure Shorthand	Description	Database	P	L
BIO-NRG	Green tons from small diameter and low value trees removed from NFS lands and made available for bio-energy production	TIM	☐	☐
FOR-VEG-EST	Acres of forest vegetation established	FACTS	☐	☐
FOR-VEG-IMP	Acres of forestland vegetation improved	FACTS	☑	☐
FP-FUELS-NON-WUI	Acres of hazardous fuels treated outside the wildland/urban interface (WUI) to reduce the risk of catastrophic wildand fire	FACTS	☑	☐
FP-FUELS-WUI	Acres wildland/urban interface (WUI) high-priority hazardous fuels treated to reduce the risk of catastrophic wildland fire	FACTS	☑	☐
HBT-ENH-LAK	Acres of lake habitat restored or enhanced	WIT	☐	☐
HBT-ENH-STRM	Miles of stream habitat restored or enhanced	WIT	☑	☐
HBT-ENH-TERR	Acres of terrestrial habitat restored or enhanced	WIT	☑	☐
INVPLT-NXWD-FED-AC	Highest priority acres treated annually for noxious weeds and invasive plants on NFS lands	FACTS	☑	☐
INVSPE-TERR-FED-AC	Highest priority acres treated for invasive terrestrial & aquatic species on NFS lands	FACTS	☐	☐
RD-DECOM-NON-SYS	Miles of road decommissioned (non-system)	WIT	☑	☐
RD-DECOM-SYS	Miles of road decommissioned (system)	ROADS	☑	☐
RD-HC-IMP	Miles of high clearance system roads improved	ROADS	☐	☐

Performance Measure Shorthand	Description	Database	P	L
RD-HC-MAIN	Miles of high clearance system roads receiving maintenance	ROADS	☐	☐
RD-PC-IMP	Miles of road reconstruction and capital improvement	ROADS	☐	☐
RD-PC-MAIN	Miles of system roads receiving maintenance	ROADS	☐	☐
RG-VEG-IMP	Acres of rangeland vegetation improved	FACTS	☑	☑
S&W-RSRC-IMP	Acres of water or soil resources protected, maintained or improved to achieve desired watershed conditions	WIT	☑	☑
SP-NATIVE-FED-AC	Number of priority acres treated annually for native pests on Federal lands	FAD	☐	☐
STRM-CROS-MITG-STD	Number of stream crossings constructed or reconstructed to provide for aquatic organism passage	WIT	☐	☐
TL-IMP-STD	Miles of system trail improved	TRAILS	☐	☐
TL-MAINT-STD	Miles of system trail maintained	TRAILS	☐	☐
TMBR-SALES-TRT-AC	Acres of forestlands treated using timber sales	FACTS	☑	☐
TMBR-TRT	Acres of forestlands treated to achieve healthier conditions	FACTS	☐	☐
Other:			☐	☐
Other:			☐	☐

16. Please describe why the datasets or performance measures you selected in Question 15 above are <u>appropriate for assessing progress</u> towards your fish & wildlife habitat desired condition(s).

Forest vegetation improved, timber stands treated, and fuels treatments reduce the risk of stand replacing fires, maintaining wildlife habitat and water quality.
Range improvements reduce grazing damage to riparian and upland habitats

Project-scale scoring

From the beginning, CFLRP intended to shift towards desired conditions at the landscape-scale. As the disturbances and processes of interest occur at a landscape-scale, we need a landscape-scale assessment. It's a challenge to look at the impacts at that scale, given the scale itself as well as time delays (e.g. it takes more time to shift outcomes at landscape-scale than project-scale). While landscape-scale is the focus, project-scale assessments allow projects to bring in their monitoring data and look at treatment outcomes.

Each management action funded through CFLRP 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 project. Individual projects may not meet every desired condition of the CFLRP project. Project-scale scoring is conducted by the multi-party monitoring group following completed management activities.

An individual activity might not need to lead to a fully restored acre, but if it sets the landscape up for the next treatment it may still get a good rating. For example if a successful thinning doesn't restore a fire regime, but it sets up landscape for subsequent burns that might, it could still receive a "Green" rating. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across 75% or more of our CFLRP project areas.
- **Yellow** = Expected progress is being made towards desired conditions across 26% - 74% of our CFLRP project areas.
- **Red** = Expected progress is being made towards desired conditions across 25% or less of our CFLRP project areas.

Ecological Indicator	Green, Yellow, or Red score and % of the CFLRP project areas resulting in measurable progress as defined above	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Fish and Wildlife Habitat	Green - 100% of projects	Yes.

Please briefly describe how you calculated your score.

Terrestrial habitat treatments are specifically designed to change forest stand structure to reduce fuels and simultaneously improve wildlife habitat; thus, all treatments that are successfully implemented accomplish the habitat improvement goal. Similarly, stream and wetland treatments have similar goals and show near-immediate results (within 1 year) in terms of water quality and habitat improvement.

Scoring for National Reporting

Landscape-scale scoring

Few (if any) CFLRP-funded Landscapes propose to meet every proposed desired condition on every acre or achieve landscape-scale objectives through the mechanical treatment of every acre within their landscape boundary. Rather, multiple projects with multiple objectives (fire risk reduction, wildlife habitat improvement, stream restoration, etc.) should facilitate meeting these broader objectives. Scoring at the landscape-scale reflects the degree to which individual Landscapes are moving towards Desired Conditions at broader spatial extent. Landscape-scale scoring is conducted by the multi -party monitoring group at each Landscape.

"Expected progress" will be defined using 10-year benchmarks for FY 2010 projects and 8-year benchmarks for FY 2012 projects for each desired condition based on a percentage of the lifetime outcome specified for the landscape in each proposal. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across [65] % of our CFLRP landscape area.
- **Yellow** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.
- **Red** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.

Ecological Indicator	Green, Yellow, or Red score and % of the landscape across which progress is being made towards desired conditions	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Fish and Wildlife Habitat	Green - 95% progress on 65% of total project	Yes

Please briefly describe how you decided on the percentage thresholds used above for the scoring categories and how you calculated your score.

These thresholds are essentially identical to those of the fuels management (Fire Regime) assessments in Section 1 above. We anticipate that each treatment will be 95-100% effective at meeting desired conditions, and that by 2024, we will have treated the high priority areas (about 65% of the land area) within the CFLRP areas (again, not including grasslands and previously burned areas). This assessment was conducted by the Wildlife Biologist for the Valles Caldera National Preserve, which coordinates the SW Jemez Monitoring program.

2019 CFLRP Ecological Indicator Progress Report

Project Name: Southwest Jemez Mountains - CFLR006 State: New Mexico

INVASIVE SPECIES

Narrative - *Note: All boxes in this template will scroll, so you have as much space as you need*

☐ If invasive species is not part of your CFLRP proposal and landscape restoration strategy, please let us know by checking this box.

1. Did you make any changes to your desired condition(s) for invasive species as compared to the 2014 Ecological Indicator Report? Please briefly describe: **Yes** ☐ **No** ☑

2. Did you make any changes to your monitoring methodologies for invasive species as compared to the 2014 Ecological Indicator Report? Please briefly describe: **Yes** ☐ **No** ☑

3. Did you use any new or updated baseline data for evaluating your invasive species progress for the purposes of this report? Please briefly describe: **Yes** ☐ **No** ☑

4. Did your projects experience any unanticipated developments that positively or negatively affected expected progress towards your desired conditions for invasive species? (e.g. wildfire in the project area, litigation outcome, change in collaborative participation, etc.)

Wildfires and managed fires may have potentially contributed to increased population spread of noxious weeds through fire disturbance, but this has not been verified quantitatively.

5. What were the most difficult barriers or challenges you experienced in progressing towards your desired conditions for invasive species? If you adapted to address these challenges please provide a brief description of how.

Acquiring adequate resources (personnel, expertise, data collection/mapping devices, etc.) to conduct surveys, treatments, and post-treatment monitoring over such a vast area. This project work is very time consuming and requires a large amount of field work and arduous labor. Challenges on Forest Service lands have included the need for a supplemental EIS for the use of herbicides (completed early 2018), issues with executing agreements to conduct the work, and failure of Human resources in hiring field crews. We will be attempting to execute an agreement with the Pueblo of Jemez to get work crews to conduct much needed noxious weed treatments in the 2020 field season.

Desired Conditions

*In this report, the term "**desired conditions**" refers to landscape and resource conditions (as defined collaboratively by stakeholders and land managers) that you are seeking to achieve and maintain for your CFLRP landscape over the next 10+ years. Desired conditions are outcome-driven not output-driven, and should link to your project's CFLRP proposal while being measurable. (Note: The term "desired condition" is used somewhat differently in the Forest Service's Land Management Planning Process. In that context, it is not time bound, and often represents long-term social, economic and ecological goals, while the term "objective" is used to represent specific, measurable and time-bound benchmarks to be achieved while working toward desired conditions in a forest plan area.) In this report, the term "**landscape**" refers to the landscape identified in your CFRLP project proposal or in subsequently-approved proposal edits. See cover page for links to guidance.*

6. Project-scale Desired Conditions Target for Invasive Species

80	% change (relative to the desired condition) occurs across	95	% of the project areas by	12/31/2024
	% change (relative to the desired condition) occurs across		% of the project areas by	

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

1. Noxious weed populations treated have been reduced to <1% of their original size in the treated areas of the VALL.
2. No new state-listed noxious weed species infestations have been detected on VALL

Example: Cogongrass is reduced to less than 25% cover.
Example: Using the prevention protocols on all projects, no new invasive species infestations are established.

7. Landscape-scale Desired Conditions Target for Invasive Species:

75	% change (relative to the desired condition) occurs across	42	% of the landscape area by	12/31/2024
	% change (relative to the desired condition) occurs across		% of the landscape area by	

Please include 1-5 *quantifiable* desired condition statements upon which the above target is based:

1. Total acreage of invasive species treated since 2014 on VALL (42% of CFRLP Project Area) is approximately 47 acres.
2. Total new acreage surveyed on VALL since 2014 is 22,000 (VALL veg crew, Volunteers, and CR surveys).

Example: The increase in coverage of Leafy Spurge and Rush Skeletonweed is prevented on 500 acres of sensitive botanical habitat within our CFLRP landscape.
Example: All known populations of Yellow Star Thistle are contained along 100 miles of FS roads and trails within our CFLRP landscape.
Example: The presence of feral swine is surveyed and mapped on 500 acres within our CFLRP landscape.

8. Please select the categories of the broader goals related to invasive species that you are trying to achieve through your quantifiable desired condition(s):

- ☑ Inventory and Mapping
- ☑ Risk Assessment
- ☑ Prevention
- ☐ Maintenance at current levels
- ☐ Containment below thresholds
- ☑ Reduction
- ☐ Eradication
- ☑ Increased resilience. Recognizing *invasive species are not constrained to disturbed areas*, please describe your definition of resilience in an invasive species context: Resilience is the ability of ecosystems and habitats to naturally withstand the presence of noxious weeds.
- ☐ Other. Please describe:

9. For each invasive species you have addressed within your CFRLP landscape, please list the action(s)[1] you have taken to work towards your invasive species desired conditions, the acres and/or miles you have accomplished, and the efficacy of each action*:*
(All of the following data is reported in FACTS.)

Target Invasive Species	Action Taken	Land Ownership	Acres	Efficacy (%)
Canada thistle	inventory and mapping; chemical removal	VALL		99%
Bull thistle	Inventory & mapping; manual removal; chemical removal	VALL		99%
Musk thistle	Inventory & mapping; manual removal; chemical removal	VALL		99%
Oxeye daisy	Inventory & mapping; manual removal; chemical removal	VALL		99%
Cheatgrass	Inventory & mapping; manual removal; chemical removal	VALL		65%

[1] Actions taken to address an invasive species might include inventory & mapping, hand removal, mechanical removal, release of a biological control agent (an organism that kills the target species), ground-based herbicide application, aerial herbicide application, tarping, grazing, preventative weed wash stations, trapping invasive animals, etc.

10. Please briefly describe the specific negative impacts each of your target invasive species causes that you are trying to avoid.
These impacts can be environmental, economic, cultural, or human/animal health-related.

Environmental impacts include changes in plant community composition and therefore habitat quality for forage and other uses by wildlife, reduced erosion control for some species, changes in fire behavior based on fuel characteristics of some invasives (e.g., cheatgrass), displacement of native species and changes to water usage and soil chemistry.

Data and Methodology

11. Select the methodologies used to assess Project-scale (P) and Landscape-scale (L) progress towards invasive species desired conditions for this report. Select all that apply and provide a brief description of each:

P	L		
☐	☐	Aerial surveys/inventories/mapping:	
☑	☑	Ground surveys/inventories/mapping:	Data collection using GPS devices and data dictionaries are used to develop inventory and mappin
☐	☐	Environmental sampling (wood, soil, water, infected tissue, etc.):	
☑	☑	Observations of individuals:	Data collection on species and population characteristics.
☑	☑	Observations of damage:	Data collection on environmental and habitat conditions during survey and treatment efforts.
☐	☐	Observation of tracks, scat, nests, etc.:	
☐	☐	Trap samples:	
☐	☐	eDNA:	
☑	☐	Other:	Test plots in VALL forest thinned areas where noxious weeds are treated or not treated, to assess whether weed populations are

12. Where is the the data that is being used for monitoring Project-scale (P) and Landscape-scale (L) progress toward invasive species desired conditions being stored? Select the databases categories that apply and provide a description of the specific datasets being used. Include links if available:

P	L		
☑	☑	GIS database:	Santa Fe National Forest corporate database
☐	☐	County database:	
☐	☐	State database:	
☐	☐	Tribal database:	
☐	☐	Citizen Science database:	
☐	☐	Forest Inventory and Analysis (FIA) database:	
☐	☐	USFS database of record (FACTS - *select performance measures*):	
		☐ INVPLT-NXWD-FED-AC Highest priority acres treated for noxious weeds and invasive pests ☐ INVSPE-TERR-FED-AC Highest priority acres treated for invasive terrestrial & aquatic species	
☑	☑	Other:	Local NPS/VALL database.

Project-scale scoring

From the beginning, CFLRP intended to shift towards desired conditions at the landscape-scale. As the disturbances and processes of interest occur at a landscape-scale, we need a landscape-scale assessment. It's a challenge to look at the impacts at that scale, given the scale itself as well as time delays (e.g. it takes more time to shift outcomes at landscape-scale than project-scale). While landscape-scale is the focus, project-scale assessments allow projects to bring in their monitoring data and look at treatment outcomes.

Each management action funded through CFLRP 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 project. Individual projects may not meet every desired condition of the CFLRP project. Project-scale scoring is conducted by the multi-party monitoring group following completed management activities.

An individual activity might not need to lead to a fully restored acre, but if it sets the landscape up for the next treatment it may still get a good rating. For example if a successful thinning doesn't restore a fire regime, but it sets up landscape for subsequent burns that might, it could still receive a "Green" rating. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across 75% or more of our CFLRP project areas.
- **Yellow** = Expected progress is being made towards desired conditions across 26% - 74% of our CFLRP project areas.
- **Red** = Expected progress is being made towards desired conditions across 25% or less of our CFLRP project areas.

Ecological Indicator	Green, Yellow, or Red score and % of the CFLRP project areas resulting in measurable progress as defined above	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Invasive Species	Yellow; 50% of project areas are moving tow	Yes.

Please briefly describe how you calculated your score.

% efficacy is high for all project areas (75% or greater).

Scoring for National Reporting

Landscape-scale scoring

Few (if any) CFLRP-funded Landscapes propose to meet every proposed desired condition on every acre or achieve landscape-scale objectives through the mechanical treatment of every acre within their landscape boundary. Rather, multiple projects with multiple objectives (fire risk reduction, wildlife habitat improvement, stream restoration, etc.) should facilitate meeting these broader objectives. Scoring at the landscape-scale reflects the degree to which individual Landscapes are moving towards Desired Conditions at broader spatial extent. Landscape-scale scoring is conducted by the multi -party monitoring group at each Landscape.

"Expected progress" will be defined using 10-year benchmarks for FY 2010 projects and 8-year benchmarks for FY 2012 projects for each desired condition based on a percentage of the lifetime outcome specified for the landscape in each proposal. There may be many reasons for not scoring a "Green," including ecological and sociological considerations beyond the scope of the CFLRP project as well as recognition of unanticipated barriers or challenges. Note that scoring a "Yellow" or "Red" does not necessarily mean that work was not accomplished.

If you need to summarize scores across different desired condition targets, please refer to Guidance Document for additional instruction.

- **Green** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.
- **Yellow** = Expected progress is being made towards desired conditions across [45] % of our CFLRP landscape area.
- **Red** = Expected progress is being made towards desired conditions across [ ] % of our CFLRP landscape area.

Ecological Indicator	Green, Yellow, or Red score and % of the landscape across which progress is being made towards desired conditions	Are you achieving your CFLRP objectives? Yes or No? If "no", briefly describe why in the box below and use the narrative section as needed.
Invasive Species	Yellow; 45% of project area (mostly VALL)	

Please briefly describe how you decided on the percentage thresholds used above for the scoring categories and how you calculated your score.

The Valles Caldera makes up 42% of the CFLRP project area and progress towards desired conditions is being made on VALL. Forest Service lands have made negligible progress to date, but we hope to make progress in the next few years.

Monitoring References and Resources

1. Briefly describe any key lessons learned about integration across these 4 ecological sub-indicators.
For example, if you planned fuels reduction treatments (Fire Regime) strategically around a Priority Watershed (Watershed Condition).

VALL restoration has prioritized south- and west-facing slopes of mountains and ridges for thinning and burning (based on high-severity burn patterns observed in 2011 Las Conchas fire and 2013 Thompson Ridge fire) to protect watersheds and soils; also, areas next to WUI residences adjacent to VALL have been treated for public safety.

2. Briefly describe the roles of the parties involved in setting the desired conditions, and collecting, assessing, and sharing the data used in this report:

The CFLRP Collaborative (37 organizations) meets annually each spring in Santa Fe, NM, for a 2-day "All Hands" meeting, to go over implementation accomplishments, monitoring data updates, and plans for the next year's activities.

3. Please acknowledge the people who assisted with completing this 2019 CFLRP Ecological Indicator Report:

SFNF: Karl Buermeyer, CFLRP Coordinator; Heidi Klingel, Acting Watershed Program Manager; David Isackson, Fuels Specialist; Andre Silva, Zone Wildlife Biologist.

4. Please provide links to your past CFLRP monitoring reports developed by the USFS, partners, etc.:

https://usdagcc.sharepoint.com/sites/fs-fm-cflrp/Monitoring%20Documents/Forms/AllItems.aspx?id=%2Fsites%2Ffs%2Dfm%2Dcflrp%2FMonitoring%20Documents%2FSW%20Jemez%2FCFLRP%20Monitoring%20Report%202010%2D2014%2Epdf&parent=%2Fsites%2Ffs%2Dfm%

Examples: Uncompahgre CFLRP Monitoring of Forest Spatial Patterns; Four Forest Restoration Initiative Bird Survey Report 2015

5. Please provide links to your CFLRP monitoring plans and any approved revisions (or include as an attachment):

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5383560.pdf

Examples: Colorado Front Range Multi-Party Monitoring Plan; Dinkey Landscape Ecological Monitoring Plan

6. Please provide links to technical reports or other literature utilized in determining and assessing the desired conditions used in this report:

https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb5383563.pdf

Examples: Historical Forest Attributes of the Western Blue Mountains of Oregon; Restoring Ponderosa Pine Forests of the Colorado Front Range