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: Cornerstone State: CA

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** ☐

The 2014 indicator report only had desired conditions as related to 2014, not for the life of the project. We therefore extended the DC to capture what is included in the business plan, using the updated 2017 business plan which goes through 2019.

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** ☐

The 2014 report only looked at target treatment relative to treatment goals. The monitoring strategy was finalized in November of 2016, which has led to project and landscape specific monitoring associated with Cornerstone goals and objectives. Ten monitoring activities have been implemented that monitor forest structure and fire and fuels. Of these 5 are occurring at a single project - specifically the Power Fire area, while the other five are happening at multiple projects/landscape scale.

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** ☐

For the purpose of the project level monitoring we provide information associated with outputs, rather than outcomes. The ACCG monitoring group focuses on ecological effectiveness monitoring rather than implementation monitoring. The majority of the ecological effectiveness monitoring was developed to answer key questions that the group had related to management. Monitoring was designed, when applicable, to provide results and recommendations across the larger landscape. With that said, we are still in the infancy of monitoring and many of the projects being monitored have only had pre-implementation monitoring completed. Where results exists we summarize those here as well as

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.)

Yes unpredicted and unprecedented climatic, environmental, and socio-economic conditions have reshaped the local landscape. These unplanned events included multiple large wildfires combined as well as increased tree mortality due to the drought and flood damage to roads. In addition departure of key Forest Service personnel, staffing vacancies, and challenges to reach timely NEPA decisions have all impacted project completion. Additionally, the original Cornerstone proposal had an ambitious goal of prescribed for 33,000 acres on the two Districts when their total combined burn capacity is only 1,250 acres per year or 12,500 acres for the 10-year term of the Cornerstone project.

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.

Some of the unpredictable events that occurred included: The catastrophic Butte Fire in September 2015 required emergency erosion control and the conversion of selected dozer contingency lines into formal fuel breaks using resources originally programmed for Cornerstone; The tree mortality epidemic from 2014 to present caused by drought and beetle infestations continues to consume USFS resources for hazard tree removal on the WUI, along roads, and around recreational facilities; Timber salvage operations from three catastrophic wildland fires (Rim, King and Butte fires) and epidemic tree mortality in our region overwhelmed the logging industry and filled the lumber mills to capacity leaving no room for green logs. Thus, timber sales under Cornerstone fuels reduction projects have been delayed two to three years; Closure of the biomass facility in Amador County made it impossible to convert the proposed 66,400 tons of forest slash into power and other products; and A multi-year drought hampered prescribed fire operations by limiting the burn window and extending the fire season.

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.

Yes, as part of cumulative effects analysis during planning. In addition, a subcommittee within the planning group of the ACCG was developed to assist in strategic landscape assessment. so that areas adjacent to the active treatment areas can be more effectively assessed in the future. The Strategic Landscape Assessment Sub Working Group (SLAWG) has decided that it will pursue two goals currently. First, the short-term goal of collecting project location data from ACCG partners and creating a Project Mapping Tool to be used to identify gaps in treatment and help prioritize new project locations. Secondly, the longer-term goal will be to provide a landscape assessment for the ACCG to use to identify priorities and vulnerabilities in the ACCG area.

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:

100	% change (relative to the desired condition) occurs across	7.4	% of the project areas by	09/30/2019
	% 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:

-Establish 1607.5 acres of forest vegetation
-Improve 7645.5 acres of forest vegetation
-Treat 4910 acres outside of the WUI to reduce the risk of catastrophic wild fire

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:

100	% change (relative to the desired condition) occurs across	7.4	% of the landscape area by	09/30/2019
	% 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:

Forest structure and condition allow fires to burn in a mosaic of low and mixed severity and result in forested condition resilient to climate change, large-scale disturbances such as insect outbreaks and reduction of threats to human life and property loss.

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:

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:

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.

vegetation cover, ground cover, regeneration of seedlings and saplings, vegetation species information, woody fuels, forest health, stand growth, planting densities, burn severity (when fire occurs), presence/absence and species richness of avian focal species associated with

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:

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:	were used to measure forest structure and health and fuels at multiple projects
☒	☒	Remote sensing:	Landsat is being used to evaluate change detection for mortality; LiDar being used to improve project planning and evalu
		☒LiDAR ☐Aerial photography ☐ NAIP ☒ Landsat ☐Other:	
☒	☒	Treatments implemented (e.g. acres or miles accomplished):	tracking treatment acres
☐	☐	Modeling (include type and indicators used):	
☐	☐	Measuring a reduction in the fire risk index:	
☒	☒	Observation/expert opinion:	
☒	☐	Fuels treatment effectiveness:	when there is a large wild fire fuels treatment effectiveness plots are installed
☐	☐	GIS analysis:	
☐	☐	Other:	

14. Where is the 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):	Plots that fall within the Cornerstone project as part of FIA project are monitored and we can access i
☒	☐	Fuels Treatment Effectiveness Report Database:	
☐	☐	GNN:	
☐	☐	VMap:	
☐	☐	Feat-Firemon Integrated Database:	
☒	☒	FACTS (please select performance measure):	projects are entered into FACTS when accomplished
		☐ FP-FUELS-NON-WUI ☐ FP-FUELS-WUI ☐ FOR-VEG-EST ☐ FOR-VEG-IMP ☐OTHER:	
☒	☒	Local database:	Partner databases
☐	☐	Inspection reports/contract record:	
☐	☐	Other:	

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	Green	Yes we are achieving 167% of our goals

15. Please briefly describe how you calculated your score.

For the project scale scoring we focused on outputs rather than outcomes, because the ACCG is not focusing their monitoring efforts on implementation monitor

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 [7.4] % 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	Yes

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

We have achieved the desired outputs of the six actions associated with fire regime that Cornerstone had in the business plan. In addition, we have made progress towards monitoring the outcomes. While data is primarily preliminary, monitoring has shown that 1) Current conditions on the landscape have greatly increased the risk of high severity fire supporting the need for treatment; 2) When fires occur - low to moderate severity fire maximizes plant species diversity, again further supporting the need for treatments; 3) Fuels and fire treatments reduce drought induced beetle mortality and increase future resilience of treated stands compared to untreated stands; and 4) Plantations are important tools for restoring post fire environments by increasing the rate of forest growth,

2019 CFLRP Ecological Indicator Progress Report

Project Name: Cornerstone State: CA

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** ☐

The 2014 indicator report only had desired conditions as related to 2014, not for the life of the project. We therefore extended the DC to capture what is included in the business plan, using the updated 2017 business plan which goes through 2019.

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** ☐

The 2014 report only looked at target treatment relative to treatment goals. The monitoring strategy was finalized in November of 2016, which has led to project and landscape specific monitoring associated with Cornerstone goals and objectives. Ten projects have been implemented that are monitoring watershed condition. Of these ten projects, all but one is monitoring at the watershed/landscape level.

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** ☐

For the purpose of the project level monitoring we provide information associated with outputs, rather than outcomes. The ACCG monitoring group focuses on ecological effectiveness monitoring rather than implementation monitoring. The majority of the ecological effectiveness monitoring was developed to answer key questions that the group had related to management. Monitoring was designed, when applicable, to provide results and recommendations across the larger landscape. With that said, we are still in the infancy of monitoring and many of the projects being monitored have only had pre-implementation monitoring completed. Where results exist we summarize those here as well as

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.)

Outside funding sources accelerated program goals. For example, in 2012 a local partner received a substantial grant from the Coca-Cola Corporation, resulting in fast-track implementation of the Indian Valley meadow restoration project. The forest also received funding from a fire settlement, and has partnered with the State of California Department of Fish and Wildlife to increase our Lake Restoration target. The ACCG has been fully supportive of these type of projects resulting in support for external funding and timely NEPA completion.

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.

Monitoring tools often used for watershed assessment (e.g., WCATT) are typically not sensitive to changes across the watershed particularly when our treatments affected a small percentage of the watershed of interest (less than 5% in all cases). It is assumed that the treatments that were designed although affected only a small portion of the watersheds are beneficial to the overall watershed condition.

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 <1 % 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:

120	% change (relative to the desired condition) occurs across	7	% of the project areas by	09/30/2019
	% 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:

-Protect, maintain, or improve 1879 acres of water or soil resources
-Improve 226 acres of rangeland vegetation
-Decommission 1 mile of road

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:

120	% change (relative to the desired condition) occurs across	7	% of the landscape area by	09/30/2019
	% 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:

Water quality, quantity, and sequestration (timing and duration of runoff) are maintained or improved for human and wildlife use. Stressors to watershed conditions are minimized and watersheds outputs meet state water quality objectives.

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:

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.

vegetation cover, ground cover, regeneration of seedlings and saplings, species composition, woody fuels, forest health, groundwater, stream flow, surface water, soil type, rooting depth, meadow avian focal species richness

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): primarily for implementation questions
☐	☐	Streambed coring:
☐	☐	Float method (water flow):
☐	☐	Current meter (water flow):
☐	☐	Fish occupancy/use surveys:
☒	☒	Ground-based photo points or photo plots: plots are associated with photos
☒	☒	Aerial surveys, aerial photography, or remote sensing:
☐	☐	GIS analysis:
☒	☐	Treatments implemented (e.g. acres or miles accomplished) used as proxy for monitoring outcomes: snow study on single project
☐	☐	Modelling used as proxy for monitoring outcomes:
☑	☐	Other: individual methods based on individual projects and objectives

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:
☐	☐	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: individual methods based on individual projects and objectives

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.

Acres and miles accomplished help identify what is being accomplished which gets at the % change relative to the landscape. The other monitoring w

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	Yes we are achieving 120% of our goals

Please briefly describe how you calculated your score.

For the project scale scoring we focused on outputs rather than outcomes, because the ACCG is not focusing their monitoring efforts on implementation monitor

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 [7] % 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	Yes

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

We have achieved the desired outputs of the nine actions associated with watershed condition that Cornerstone had in the business plan. In addition, we have made progress towards monitoring the outcomes. While data is primarily preliminary, monitoring has shown that: 1) Current conditions on the landscape have greatly decreased the risk of high severity fire which could have significant effects on water quality, thus supporting the need for treatment; 2) Research is currently occurring to help identify the quantitative benefits of watershed management in source water areas; 3) Most hydrological impacts associated with post burn landscape (Power Fire) occurred within the first several years; 4) Strategic management of road infrastructure minimizes gull erosion and sediment

2019 CFLRP Ecological Indicator Progress Report

Project Name: Cornerstone State: CA

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** ☐

The 2014 indicator report only had desired conditions as related to 2014, not for the life of the project. We therefore extended the DC to capture what is included in the business plan, using the updated 2017 business plan which goes through 2019.

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** ☐

The 2014 report only looked at target treatment relative to treatment goals. The monitoring strategy was finalized in November of 2016, which has led to project and landscape specific monitoring associated with Cornerstone goals and objectives. Eight monitoring activities have been implemented that are monitoring fish and wildlife habitat, three monitoring activities have been implemented that monitor both species and habitat, and one monitoring activities is specifically focused on species. Of these 12 monitoring activities, 7 are occuring at multiple projects while five are occurring at a single project. In addition, 6364 acres of spotted Owl PACS were monitored in the Hemlock project to evaluated

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** ☑

For the purpose of the project level monitoring we provide information associated with outputs, rather than outcomes. The ACCG monitoring group focuses on ecological effectiveness monitoring rather than implementation monitoring. The majority of the ecological effectiveness monitoring was developed to answer key questions that the group had related to management. Monitoring was designed, when applicable, to provide results and recommendations across the larger landscape. With that said, we are still in the infancy of monitoring and many of the projects being monitored have only had pre-implementation monitoring completed. Where results exists we summarize those here as well as

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.)

Cornerstone has done well moving towards desired conditions for fish and wildlife habitat.

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.

Spotted Owl guidelines were being developed and continued to evolve during project implementation. Fish and wildlife consultations continued to delay the project implementation. Initially AOP barriers were identified for replacement, however after evaluating closer it was determined that removing the AOP barriers could increase the number of non-native trout which would feed on amphibians.

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.

Yes during project planning cumulative effects were considered for adjacent landowners. Panther fuels project was adjusted based on cumulative effects across private lands, BLM, PGE, and CalFW. While this was specific to project changes and not monitoring changes, some monitoring is adjusted when other landowners are completing the monitoring (for example for spotted owls).

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:

100	% change (relative to the desired condition) occurs across	0.8	% of the project areas by	09/30/2019	
	% 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:

-8 stream crossings a re constructed or reconstructed to provide for aquatic organism passage
-52 acres of lake habitat is restored or enhanced
-13.5 miles of stream habitat is restored or enhanced

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:

100	% change (relative to the desired condition) occurs across	0.8	% of the landscape area by	09/30/2019	
	% 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:

Forest structure, function, and ecological processes promote aquatic and terrestrial health, biological diversity, and habitat for a variety of native species, especially Forest Service sensitive species.

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:

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.

vegetation cover, ground cover, regeneration seedlings and saplings, species occupancy, abundance and richness (plant and avian), woody fuels, forest health, forest structure

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 opennesss), 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: spotted owl, SN yellow-legged frog, Yosemite Toad, other species of conservation concern (e.g., Black-backed W
- ☐ Increase abundance/density:
- ☐ Decrease abundance/density:
- ☒ Maintain native species diversity: general avian, bees, spotted owl, Yosemite toad, Sierra Nevada yellow legged frog
- ☐ Increase native species diversity:
- ☐ Translocation/reintroduction:
- ☐ Optimal sustained yield of game species:
- ☐ Ecosystem function/food webs:
- ☐ Spatial extent of population:
- ☐ 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.

Species occupancy, abundance, richness and diversity associated with a plant or seral-stage community; number of bird individuals and species per hectare via point counts, occupancy and species richness of bat community per unit area

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): were used to measure forest structure and health at multiple projects
☒	☒	Understory vegetation plots or transects: were used to measure project effectiveness at multiple projects
☒	☐	Fish or Wildlife occupancy/use surveys: surveys were completed at multiple projects for multiple species: avian, bats, bees
☐	☐	Stream surveys:
☐	☐	Remote motion-capture cameras:
☒	☒	Ground-based photo points or photo plots: all CSE and understory veg plots/transects have associated photo points
☐	☐	Aerial surveys, aerial photography, or remote sensing:
☒	☒	Treatments implemented (e.g. acres or miles accomplished): being tracked for annual reports
☐	☐	Modeling (include type and whether ground-truthed):
☐	☐	GIS analysis:
☒	☒	Other: avian point counts, bee area searches, bat automated recording units, amphibian visual encounter surveys

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:
☐	☐	County database:
☐	☐	State database:
☐	☐	Tribal database:
☐	☐	Citizen Science database:
☐	☐	FSVeg:
☒	☐	NRIS: spotted owls in Hemlock
☐	☐	Other USFS database of record: *please select performance measure from the table below*
☒	☒	Other: Partner databases - http://data.prbo.org/apps/snamin/

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).

Acres/miles/structures accomplished help identify what is being accomplished which gets at the %change relative to the landscape. The other monit

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	Yes, we are achieving 97% of our goals.

Please briefly describe how you calculated your score.

For the project scale scoring we focused on outputs rather than outcomes, because the ACCG is not focusing their monitoring efforts on implementation monitor

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 [0.8] % 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	Yes, we are achieving 95.96% of our goals.

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

We have achieved the desired outputs of the four actions associated with fire regime that Cornerstone had in the business plan. In addition, we have made progress towards monitoring the outcomes. While data is primarily preliminary, monitoring has shown that: 1) Current conditions on the landscape have greatly increased the risk of high severity fire and reduced wildlife habitat in areas with a high density of small and medium trees, thus supporting the need for treatment; 2) Management of post fire landscapes that retain patches of herbaceous cover interspersed with bearclover provide temporally and spatially varied forage resources for pollinators. In addition, managers should postpone mechanical treatment or herbicide applications until after peak bearclover season and

2019 CFLRP Ecological Indicator Progress Report

Project Name: Cornerstone State: CA

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** ☐

The 2014 indicator report only had desired conditions as related to 2014, not for the life of the project. We therefore extended the DC to capture what is included in the business plan, using the updated 2017 business plan which goes through 2019. In addition, due to lower than originally projected growth in both number of infestations and size of existing infestations, the projected treatment areas were reduced to reflect actual situation on the landscape.

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** ☐

The 2014 report only looked at target treatment relative to treatment goals. The monitoring strategy was finalized in November of 2016, which has led to project and landscape specific monitoring associated with Cornerstone goals and objectives.

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** ☐

For the purpose of the project level monitoring we provide information associated with outputs, rather than outcomes. The ACCG monitoring group focuses on ecological effectiveness monitoring rather than implementation monitoring. The majority of the ecological effectiveness monitoring was developed to answer key questions that the group had related to management. Monitoring was designed, when applicable, to provide results and recommendations across the larger landscape. With that said, we are still in the infancy of monitoring and many of the projects being monitored have only had pre-implementation monitoring completed. Where results exists we summarize those here as well as

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.)

The original Cornerstone proposal assumed that invasive plants treatments over the life of the project would total ~2,900 acres on the Amador Ranger District. This initial assumption was based on the expected implementation of the Power fire reforestation project which would have created large areas vulnerable to invasive plant establishment and spread. Since the Power fire reforestation project was delayed, the realized spread and establishment was far less than anticipated and therefore the need for treatment across the planning area was reduced. Despite focused annual monitoring for new invasive plant infestations, only 977 acres of priority invasive plant infestations were identified and treated. on the Amador Ranger District of the CFLR planning area. (Matt's version 110519)

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.

Effective invasive plant management is largely dependent on treating infestations during the appropriate window when the target vegetation is most vulnerable to treatments. During the course of the project a reoccurring challenge/barrier for progressing towards desired conditions for invasive species was outside factors that inhibited/limited treatments efficacy and scale. Examples of these challenges include inclement weather (rain/wind) limiting ground based herbicide applications, resource concerns limiting treatment options for particular infestations, or simply running out of time to treat all of the known infestations in the project area during a narrow treatment window (i.e. spraying yellow starthistle when herbicides are most effective).

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

75	% change (relative to the desired condition) occurs across	90	% of the project areas by	09/30/2019
	% 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:

The cover and frequency of noxious/invasive plants remain stable or are reduced to levels that are not influencing native biodiversity.
-977 acres of priority invasive plant infestations restored (controlled, managed, or eradicated) within the Amador distict-wide invasive plant project area.

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	75	% of the landscape area by	09/30/2019
	% 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:

The cover and frequency of noxious/invasive plants remain stable or are reduced to levels that are not influencing native biodiversity.

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:
- ☐ 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 (%)
Yellow Star Thistle	Inventory and mapping, hand removal, ground-based herbicide	Amador RD	518.6	75
French Broom	Inventory and mapping, hand removal, ground-based herbicide	Amador RD	64.3	75
Medusahead grass	Inventory and mapping, hand removal, ground-based herbicide	Amador RD	143.4	75
Barbed goat grass	Inventory and mapping, hand removal, ground-based herbicide	Amador RD	110.1	75
Scotch broom	Inventory and mapping, hand removal	Amador RD	62.3	75
Spotted knapweed	Inventory and mapping, hand removal	Amador RD	0.9	75
other species invasive plant spe	Inventory and mapping, hand removal, ground-based herbicide	Amador RD	77.4	100

[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.

Yellow Starthistle: reduced wildlife habitat quality, impacts to native vegetation, toxic to horses, reduced forage for range.
Scotch Broom: loss of wildlife habitat, increase in dense woody fuel, impacts to native vegetation.
Barbed goatgrass: reduced forage for range, loss of wildlife habitat, increase in flashy fuels, impacts to native vegetation.
Medusa head grass: reduced forage for range, loss of wildlife habitat, increase in flashy fuels, impacts to native vegetation.

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:	Conducted annual invasive plant surveys of high risk areas (roads/trails, landings, plantations, area
☐	☐	Environmental sampling (wood, soil, water, infected tissue, etc.):	
☒	☒	Observations of individuals:	District ongoing invasive plant treatment and invasive plant surveys
☐	☐	Observations of damage:	
☐	☐	Observation of tracks, scat, nests, etc.:	
☐	☐	Trap samples:	
☐	☐	eDNA:	
☐	☐	Other:	

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:	All invasive plant records are stored in TESP-INV business area of NRM. Treatment data is stored in FACTS (see below)
☐	☐	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:	

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	Green	Yes, we are achieving 101% of our goals.

Please briefly describe how you calculated your score.

All priority infestations within the Amador District-wide invasive plant management project are currently under active management as demonstrated by the achi

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 [0.75] % 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.
Invasive Species	Green	Yes

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

Since 2012 the Amador District completed annual monitoring and inventories for invasive plant species in the Cornerstone area which has generally found that the cover and frequency of invasive species remaining stable across the landscape with some infestations approaching eradication due to annual management activities. To date, approximately 106 acres of new invasive plant infestations have been detected across the entire planning area. A majority of these new infestations are small/isolated and were quickly treated by the Forest before the infestation was able to establish and spread. Given the relatively small amount of new invasive plants that have been detected throughout the landscape, it can be assumed that much of the project area is relatively free of invasive plant

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).

Many of our desired conditions have overlap across multiple indicators. In order to complete this report we identified an individual indicator for e

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 desired conditions we used were developed by ACCG as part of the Cornerstone proposal and business plan update (project level DC) and as

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

Shana Gross, Becky Estes, Chuck Loffland, Robin Wall, Matt Brown, Helen Loffland, Gwen Starrett, Alissa Fogg

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

In 2017, we hosted a monitoring symposium. As part of that symposium every ACCG monitoring project had a project brief identifying relevant findings and project status. As part of the ACCG monitoring group we have been working with Sierra to California All-Lands Enhancement

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):

Our monitoring plan can be accessed here:
http://acconsensus.org/wp-content/uploads/2015/08/01_Cornerstone_Monitoring_Strategy_Final.pdf In addition we have developed a

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:

For this report we primarily used treatments completed as our target because of 1) the format of the report and 2) most of our project specific monitoring began in 2016 and beyond after the completion of the monitoring strategy. To date, none of the indicator specific monitoring (see

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