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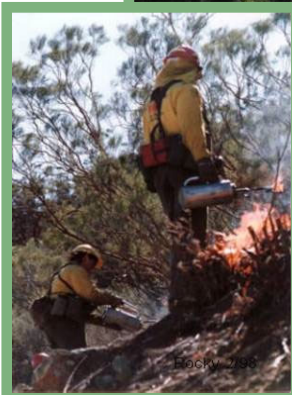
Forest Service

Pacific  
Southwest  
Region

# Land Management Plan Monitoring and Evaluation Report

September 2019

## Cleveland National Forest Fiscal Year 2018





Dear Cleveland National Forest Stakeholders:

September 2019

I am pleased to present the Cleveland National Forest's (CNF) annual monitoring and evaluation report for your review. The purposes of this report are – to determine if plans, projects, and activities are implemented as designed and in compliance with the CNF Land Management Plan (LMP); to evaluate the effectiveness of the LMP; and to help identify potential future adjustments to the LMP.

Monitoring is emphasized and identified as a key element in all programs to ensure achievement of the LMP's desired conditions over time. This year's report is the thirteenth monitoring and evaluation report produced since the LMP was revised in 2005, and includes annual indicators of progress and a comprehensive review of any trends.

Keeping CNF stakeholders informed of the results of our monitoring is important to me. This report will be posted on the CNF website at: <https://www.fs.usda.gov/land/cleveland/landmanagement> (under Forest Planning). If you are interested in becoming involved in projects or other planning, please also see our Schedule of Proposed Actions at <https://www.fs.fed.us/sopa/forest-level.php?110502>.

Sincerely,



Scott R. Tangenberg  
Forest Supervisor  
Cleveland National Forest

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# Cleveland National Forest

## LMP Monitoring and Evaluation Report

### Fiscal Year 2018

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## 1. Introduction

The CNF Land Management Plan (LMP) went into effect on October 1, 2006. The LMP includes a monitoring program that provides the means for confirming the sufficiency and adequacy of management direction in the LMP, and for tracking the status of and trends in changing resource conditions. It facilitates the process for adapting to change and documents the need to update, amend and eventually revise LMPs in order to achieve desired conditions while ensuring healthy National Forests exist for future generations. This report documents the evaluation of activities that were implemented on the CNF and the interpretation of monitoring data from Fiscal Year (FY) 2018, which began on October 1, 2017 and ended on September 30, 2018.

## 2. Methodology

Monitoring is described in all parts of the LMP, with monitoring requirements summarized in Part 3, Appendix C. Part 1 monitoring is required to be reported every two years and Parts 2 and 3 monitoring are to be reported annually. A summary of the requirements and recent changes to the reporting period for Part 1 are discussed below. For practical purposes and consistency, the CNF has decided to report on all requirements annually. The CNF Monitoring Guide further details the protocols that were used in this review. This guide is available on request from the CNF Forest Planner, whose contact information is listed on the final page of this report.

**Part 1** of the LMP identifies outcome questions that will help to evaluate movement toward the desired conditions of the LMP goals over the long term. The monitoring guide describes the baseline data that will be used to answer these questions and evaluate progress. This data is presented in this report. A comprehensive evaluation of this progress is prepared every two years and is included in this monitoring and evaluation. Previously, progress evaluation was completed every five years. The shorter reporting period, the addition of new monitoring questions, and the replacement of management indicator species with focal species were the 2016 administrative changes to the monitoring program per the new planning regulations.<sup>1</sup> **Part 2** monitoring is focused on program implementation including inventory. The current system tracks performance measures linked to the National Strategic Plan and reports accomplishments through a national reporting system called the Performance Accountability System. **Part 3** implementation and effectiveness monitoring was conducted at the project or activity level. A random sample of projects and ongoing activities was selected and visited to review the application and effectiveness of the design criteria. If problems with documentation or implementation were detected or if the design criteria were determined to be ineffective, then the monitoring team – an interdisciplinary team of specialists (Section 11) – recommended possible corrective actions to Forest officials. All results, conclusions, and recommendations are documented in this monitoring and evaluation report. All recommendations are deliberative in

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<sup>1</sup> Memorandum available at:

<https://www.fs.usda.gov/detail/cleveland/landmanagement/planning/?cid=stelprdb5270296>.



nature and do not constitute a management requirement nor a commitment of funds. The following questions were asked for each reviewed project or ongoing activity:

**1. By comparing expected results to actual results, did we accomplish what we set out to do?** Were relevant legal and other requirements applied to the project or site? Were LMP goals, desired conditions, and standards incorporated into operational plans, such as burn plans, allotment management plans, and facility master plans? Is LMP consistency documented, such as by a project-specific consistency review checklist? Were National Environmental Policy Act (NEPA) mitigation measures or LMP project design criteria implemented as designed? Were requirements from biological assessments, biological evaluations, heritage evaluations, and watershed assessments implemented? To evaluate effectiveness, the review team asked: Have the project design criteria applied effectively improved environmental conditions as expected?

**2. Why did it happen?** If the CNF did accomplish what it had set out to do, the review team attempted to identify the reasons for success; conversely, if not, reasons why not. The CNF emphasizes and seeks out underlying cause-and-effect relationships, not individual performance or behavior.

**3. What are we going to do next time?** What activities should be continued to sustain success? Are changes needed to correct any implementation- or effectiveness-related failures? If change is needed, is an amendment or administrative correction to the LMP required?

### 3. LMP Part 1 Monitoring

This chapter documents the monitoring of indicators of progress toward the desired conditions relative to the goals described in the CNF LMP (LMP, Part 1 monitoring). Monitoring questions and indicators with an asterisk (\*) represent additions from the 2016 administrative change to the monitoring program. Some monitoring questions are relevant to multiple goals. The discussion will be provided in the most relevant section with cross references to other sections. Tracking indicators annually helps identify trends over time and supports the comprehensive evaluation.

#### Forest Goal 1.1: Community protection (LMP, Part 1, pg. 19)

**Goal:** Improve the ability of southern California communities to limit loss of life and property and recover from the high intensity wildland fires that are part of California's ecosystem.

**Activity, Practice, or Effect to be Monitored:** (1) Vegetation Treatments in the Wildland/Urban Interface (WUI); and \*(2) Fire Activity on the Landscape.

**Monitoring questions:** (1) Has the CNF made progress in reducing the number of acres that are adjacent to development within WUI defense zones that are classified as high risk? \*(2) Are wildfires becoming larger, more frequent, or more severe, and is there a seasonal shift in fire activity?

**Indicator:** (1) Acres of High Hazard and High Risk in the WUI Defense Zone; and \*(2) Total and Mean Fire Size, Ignition Density, Fire Severity, and Monthly Area Burned.

**Monitoring Action:** Use baseline acres from the 2006 Southern California LMPs analysis;<sup>2</sup> subtracting the areas treated, and areas that are no longer WUI Defense Zone; and adding acres

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<sup>2</sup> CNF baseline acres as stated in the FY2006 report were re-calculated in the FY2017 report to account for land that has been added to the CNF since 2006, resulting in a small increase in baseline acreages. Throughout this LMP report, reference to the FY2006 acreage should be understood to mean the FY2006 acreage, as revised in FY2017.



from areas that have reverted to high hazard and risk due to maintenance backlog, and areas that have become WUI Defense Zone due to development.

In FY2018, hazardous fuel treatments occurred on 2,727 acres in the WUI, but 5,188 acres were reported as accomplished in the Forest Activity Tracking System database (FACTS). This is because some acreages received more than one type of treatment and the acres were counted more than once. This reporting contributes to the National Strategic Plan (Objectives 1.1 and 1.3). The LMP identifies a more specific indicator focused on measuring progress toward increasing the level of the CNF fuels program in the WUI defense zone described in the LMP.

### **Background on this indicator**

The WUI defense zone – that portion of the WUI that is directly adjacent to structures (LMP, Part 3, pg. 5, Standard S7; LMP, Appendix K) – has a variable width determined at the project level. The maximum width of the defense zone is defined for general vegetation types in Standard S7 (grass-100 feet, chaparral-300 feet, and forests-1,500 feet). For the LMP analysis, the maximum width was used. This information was used to represent the present, or “baseline,” extent of the WUI defense zone.

*High hazard fuels* are those that have the potential to burn with high intensity. Fire intensity affects suppression effectiveness in protecting structures in interface areas. A key strategy in the LMP is to reduce fire hazard adjacent to communities and structures to improve suppression effectiveness and provide defensible space in interface areas.

*Risk* is related to human values or risk of loss. The presence of structures is the indicator of risk in this analysis. Due to rapid development of private land in southern California, the inventory of areas with structures is constantly changing. Maps representing the WUI defense zone are typically a year or more old and therefore should only be considered an estimate of the actual area pending period updates. The actual presence of communities and substantial structures is determined at the project level. In other words, the defense zone coverage or map is not an LMP decision. The decision is to apply the direction in LMP standards S7 (including Appendix K) and S8 to areas that are actually adjacent to communities or substantial structures at the time of project planning. Areas where old structures have been removed are not part of the defense zone. No CNF-wide, site-specific inventory of fuel hazard within the defense zone exists. In addition, high hazard conditions can be dynamic, returning in as little as five years after a fire in some vegetation types. For this reason, the hazard indicator is assumed to be high in all areas until a project level assessment determines otherwise. Therefore, the monitoring task is to track the level of management effort directed at reducing fire hazard in the WUI defense zone including keeping the inventory of the actual defense zone up-to-date.

The method of calculating progress toward Goal 1.1 is summarized in Table 1. Indicators of progress toward Goal 1.1 will be calculated by using the WUI defense zone from the LMP analysis database. Acres of treatments in the WUI defense zone were calculated for each of the fire regimes and entered into column D in Table 1. These entries represent the annual indicator of progress toward the desired condition.

Every two years the number of high hazard acres within the defense zone should be calculated to use for documenting the trend as an indicator. As part of the two-year monitoring process, the number of high-hazard acres will be re-calculated every two years and represent the new baseline for high hazard acres. This is because the acres documented as being treated to-date, in the



corporate reporting system, can be assumed to no longer be considered a high hazard. The first monitoring and evaluation report after revision of the LMP, prepared for FY2006, showed that baseline acres from the previous year's analysis was 10,230 acres. FY2018 results (Table 1) show that this area has been reduced to 6,339 baseline acres and 755 additional acres of treatment in the WUI defense zone during FY2018 leaves 5,584 adjusted acres. There were no changes in FY2018 to the defense zone area resulting from new information on the presence of substantial structures.

<b>Table 1: Progress in treatment of WUI defense zone FY2018, adjustments to FY2016 baseline.</b>				
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>
<b>Baseline acres from FY2016 LMP analysis</b>	<b>Acres removed due to new info on presence of substantial structures</b>	<b>Acres added due to new info on presence of substantial structures</b>	<b>Acres treated in WUI defense zone, per corporate database</b>	<b>(A-B) + (C-D) (adjusted acres)</b>
Fire regime I: <b>4,549</b> acres	0	0	472	<b>4,077</b>
Fire regimes III, IV, and V: <b>1,790</b> acres	0	0	283	<b>1,507</b>
<b>Total: 6,339 acres</b>	<b>0</b>	<b>0</b>	<b>755</b>	<b>5,584</b>

Table 2 shows the status of fuels accomplishment as per the FACTS database. An annual query of this database measures the progress that the CNF has made to reduce the number of acres adjacent to development within WUI defense zones and that are classified as high risk. Use of spatially explicit information for adjusting the baseline is important so the cause of changes in the numbers can be evaluated. Knowing if the change is due to improved inventory information, actual treatments, or both is important. Simply adding the annual indicator – that is, the number of acres treated – and subtracting it from the baseline could over-count maintenance treatments and would not take into account acres added due to new development. Part of our evaluation should determine if new development is adding to the defense zone increase because we have an LMP strategy to prevent that from happening through involvement in local planning.

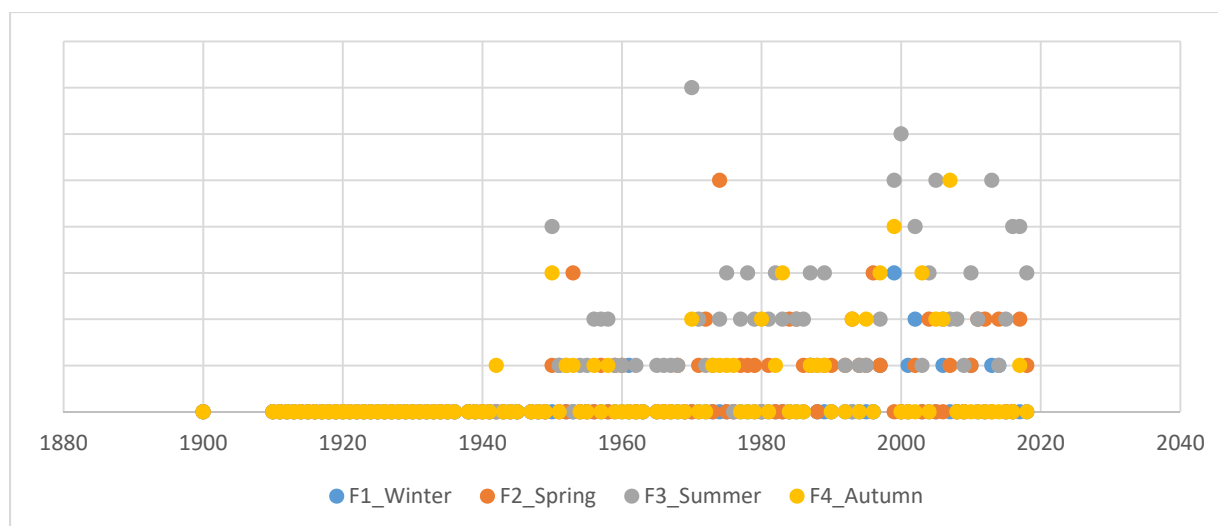
The CNF focused vegetation treatments in the WUI threat and defense zones (see Table 2). Approximately 5,188 acres were treated during FY2018, of which 68 percent of the acres treated were in the threat zone, while 32 percent of the acres treated were in the defense zone.

<b>Table 2: Treatments in FY2018</b>				
<b>Activity</b>	<b>WUI Class</b>			<b>Total</b>
	<b>Threat zone</b>	<b>Environment</b>	<b>Defense zone</b>	
Broadcast burning	402	0	130	532
Burning of piled material	531	0	162	693
Sanitation	9	0	321	330
Herbicide	97	0	52	148
Piling	618	0	289	907
Rearrangement of fuels	297	7	87	391
Thinning for hazardous fuel reduction	969	0	317	1287
Cover brush pile for burning	548	0	232	780



Table 2: Treatments in FY2018				
Activity	WUI Class			Total
	Threat zone	Environment	Defense zone	
Grazing and range management for hazardous fuels reduction	78	0	43	121
<b>Sum of all acres treated</b> (some activities occurred in the same areas)	3,549	7	1,632	5,188
<b>Percent of total</b>	<b>68</b>	<b>0.1</b>	<b>32</b>	<b>100</b>

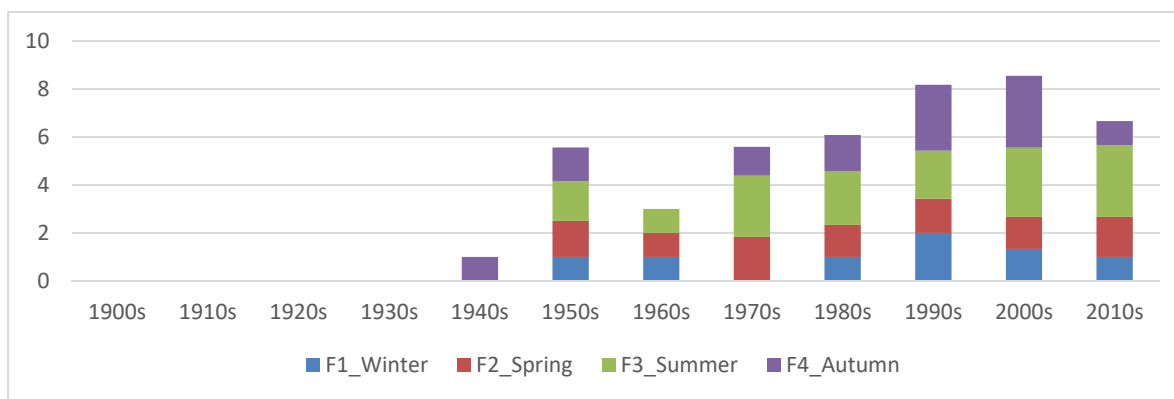
A protocol was developed to evaluate whether temporal trends are evident for wildfire size, frequency, severity, and seasonality across the Southern California National Forests. Fire information by season (where date is known) is provided in Figures 1 to 3. On the CNF, fires historically occurred in the fall with more variation and larger fires in recent times, although at the decade scale, the variation is not so apparent. Fire size in recent years can be attributed to multiple, compounding factors such as vegetation density, the effects of climate change (e.g., warmer temperature with no corresponding increase in precipitation), wind speed, and droughts.<sup>3</sup> These factors result in a positive feedback loop with negative consequences on the landscape, which may be seen in the catastrophic fires that appear to be the new normal in California. Continued fuel reduction efforts are important to protect resources and people at the local level.



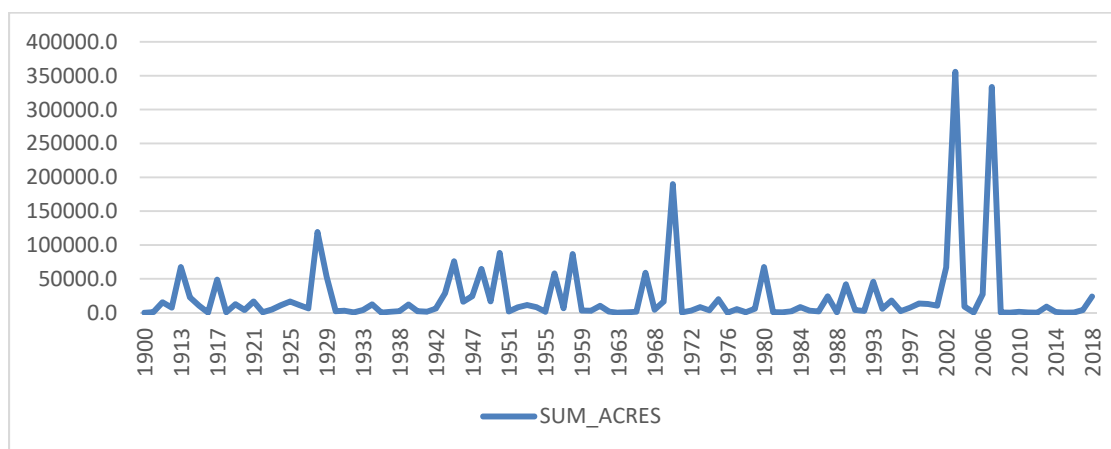
**Figure 1 – Fires Season by Year**

<sup>3</sup> See e.g., California Department of Water Resources (<https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/All-Programs/Climate-Change-Program/Files/Hydroclimate-Report-2017.pdf>); Asner et al., 2015. Progressive forest canopy water loss during the 2012 – 2015 California Drought (<http://www.pnas.org/content/113/2/E249.full.pdf>); Intergovernmental Panel on Climate Change, 2014 Synthesis Report ([http://ipcc.ch/publications\\_and\\_data/publications\\_and\\_data\\_reports.shtml](http://ipcc.ch/publications_and_data/publications_and_data_reports.shtml)).





**Figure 2 – Fire Season by Decade**



**Figure 3 – Fire Size (Acres Affected)**

**Trends in annual indicators for Goal 1.1:** The CNF has achieved progress in meeting this goal. Starting with a FY2006 baseline of 6,656 acres in the WUI defense zone in Fire Regime I, approximately 2,579 acres were treated by the end of FY2018. Starting with a FY2006 baseline of 3,574 acres in the WUI defense zone in fire regimes III, IV, and V, some 2,067 acres had been treated by the end of FY2018.

Overall, between FY 2006 and 2018, approximately 6,597 acres have been treated in the WUI defense zone. Many of these acres had multiple activities undertaken, such as an area that underwent cutting, piling, and then burning of piles to reduce fuel loads. Figures 4 to 6 show actual fuel treatments over the past 5 years (FY14 to FY2018) against the planned treatment areas. As discussed above, high hazard fuels can return in as little as five years in some vegetation types.



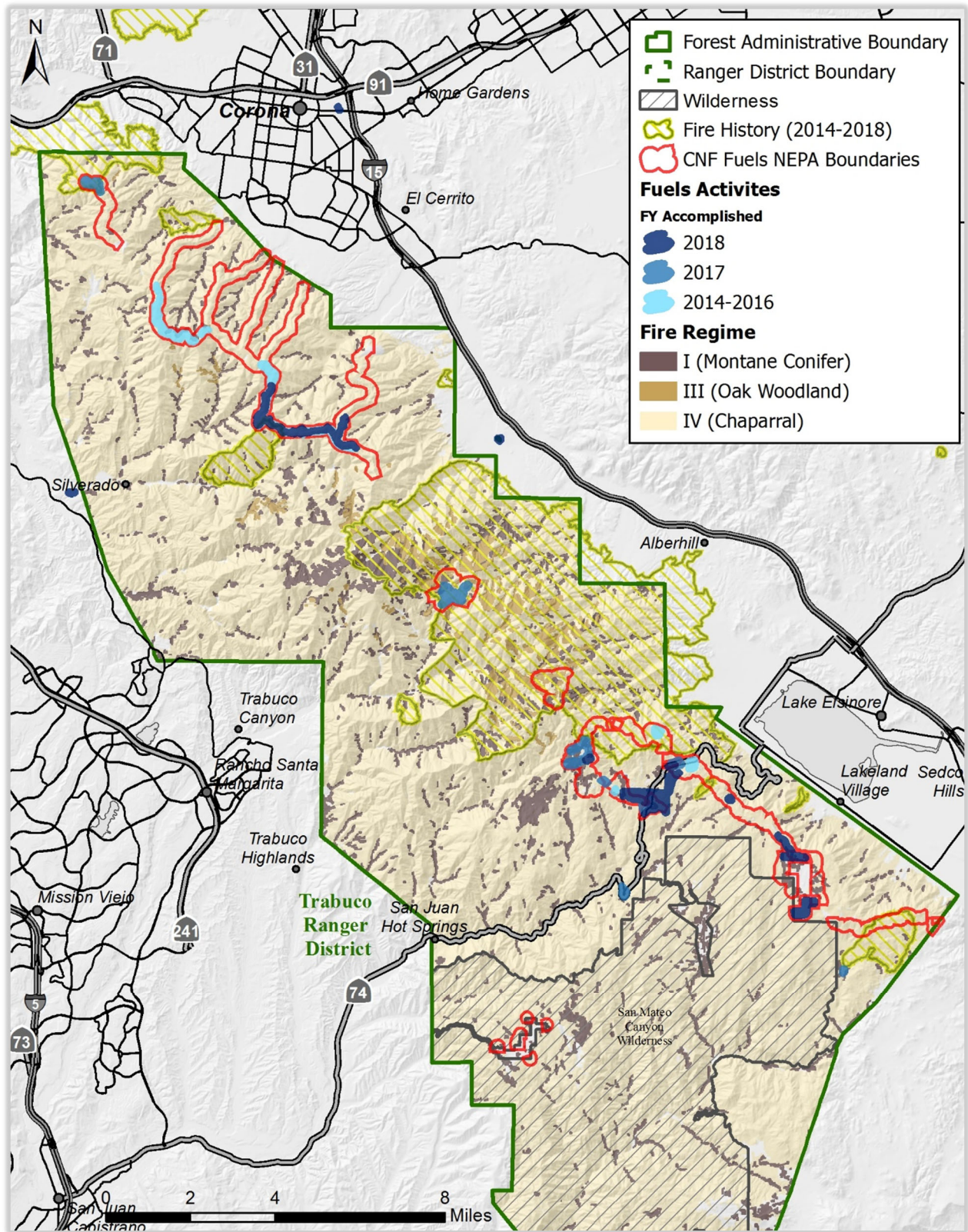
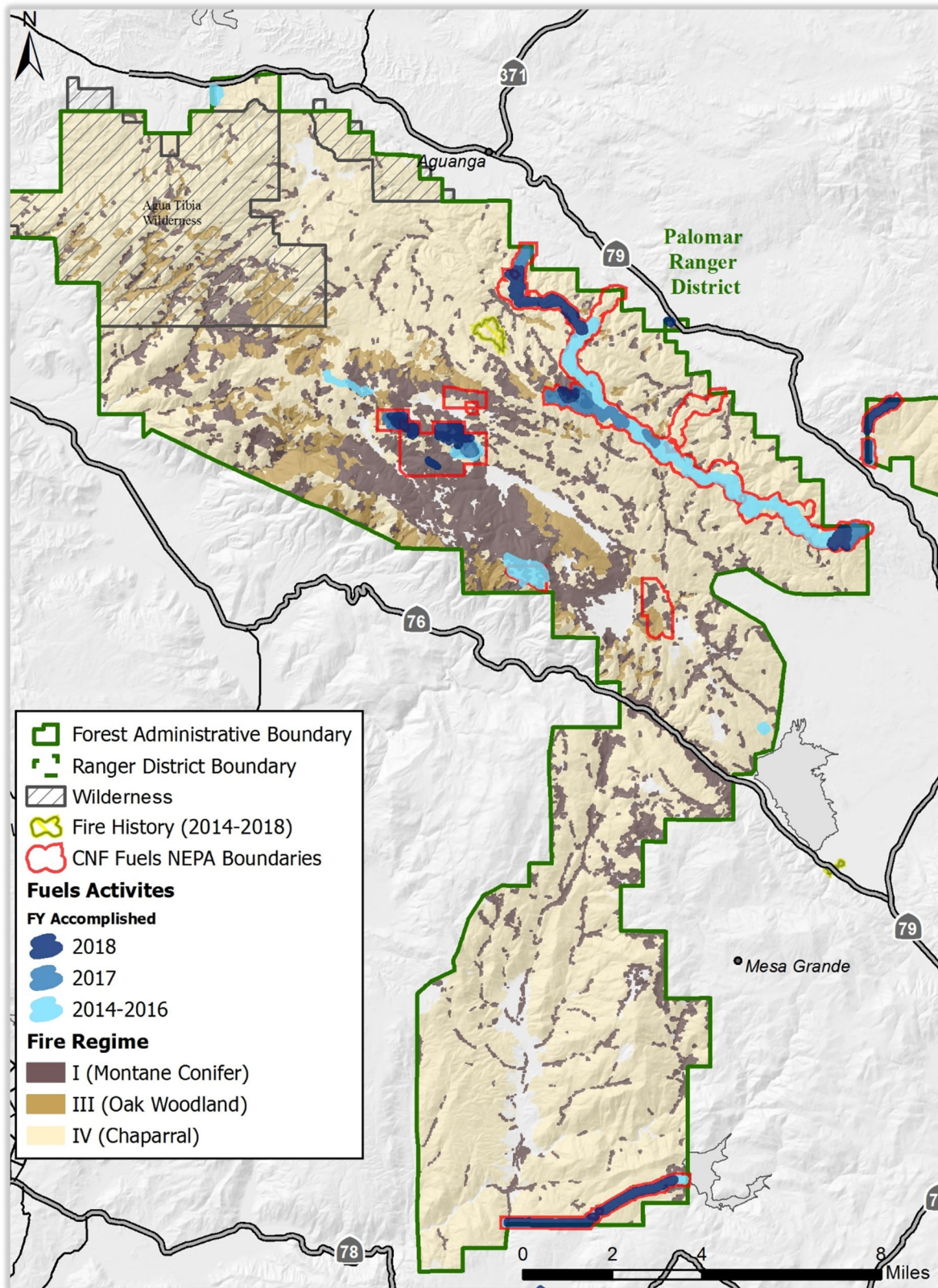


Figure 4 – Trabuco Ranger District Fuel Treatments





**Figure 5 – Palomar Ranger District Fuel Treatments**



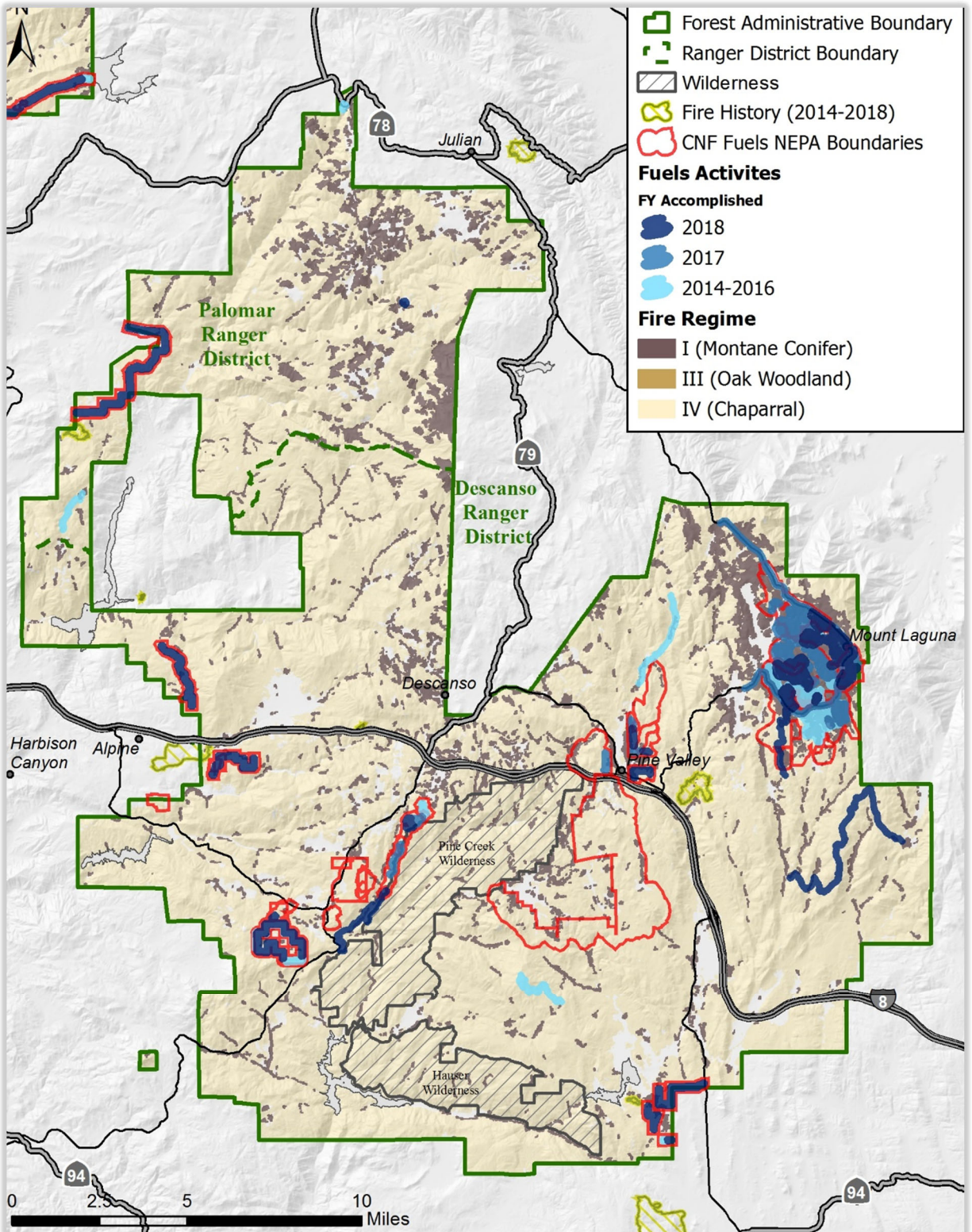


Figure 6 – Descanso Ranger District Fuel Treatments



## **Forest Goal 1.2: Restoration of forest health (LMP, Part 1, pg. 20)**

**Goal:** Restore forest health where alteration of natural fire regimes has put human and natural resource values at risk.

**Activity, Practice, or Effect to be Monitored:** Vegetation condition.

**Monitoring Question:** **\*(1)** Is tree mortality increasing across the landscape, and is it distributed evenly across elevations? **\*(2)** Are fire frequencies becoming more departed from the natural range of variation?

**Indicator:** **(1)** Mortality Risk Assessment and **\*Forest Health Protection Mortality Surveys.** **\*(2)** Proportion of Landscape in Departed Fire Frequency.

**Monitoring Action:** Compare the annual National Insect and Disease Risk Map (NIDRM) data and cross referencing mortality within the reporting period and compare every two years.

The overall long-term goal is to perpetuate plant communities by maintaining or re-introducing fire regimes appropriate to each type while at the same time protecting human communities from destructive wildland fires.

This indicator gauges departure from either the minimum or the maximum fire return interval. In 2006, the fire regime condition class monitoring indicator was updated using new mapping procedures. In the new GIS maps, information is provided on presumed fire return intervals from the period preceding Euroamerican settlement (“presettlement”) and for contemporary fire return intervals, and comparisons are made between the two.

Current differences between presettlement and contemporary fire return intervals are calculated based on mean, maximum, and minimum values. This map is a joint project of the California chapter of The Nature Conservancy and the U.S. Forest Service Region 5 Ecology Program (David Schmidt, fire ecologist, The Nature Conservancy; Hugh Safford, regional ecologist, U.S. Forest Service, Region 5).

The information was compiled from the fire history literature, expert opinion, data collection, and vegetation modeling. The California Department of Forestry and Fire Protection’s Fire and Resource Assessment Program fire history database was used to characterize current fire regimes. The vegetation type stratification was based on the 1996 CALVEG map (U.S. Forest Service Remote Sensing Lab) for the four national forests in southern California.

For data limitations in these datasets, see the CALVEG mapping and California fire history database metadata, respectively:

- <http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>
- [http://frap.fire.ca.gov/data/frapgismaps/frap\\_maps.html](http://frap.fire.ca.gov/data/frapgismaps/frap_maps.html)

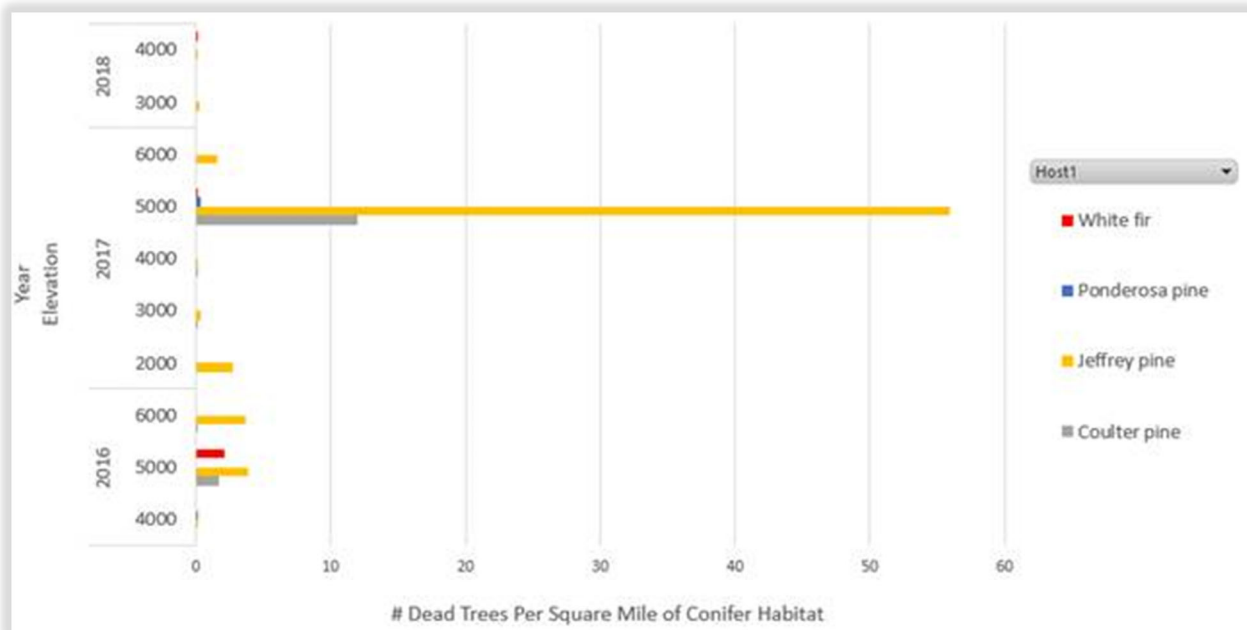
Table 3 displays the baseline status as of FY2006 for departures from the mean fire return intervals. Areas where the current interval is more frequent than expected are shown as negative numbers, while areas that have had longer than expected fire return intervals are shown as positive numbers. A condition class of either 1 or -1 indicates that fire return intervals are within the expected range of variability around the mean for a given fire regime. Condition classes 2 or -2 indicate a moderate departure from the expected mean, while condition classes 3 or -3 indicate a high departure from the expected mean. Both moderate and high departures may indicate that altered fire regimes pose a risk to the ecological condition of the site. Type conversion from high



fire frequencies (Condition Class -3) or deforestation from wide-spread high severity crown fires (Condition Class 3) are more likely as the absolute value of the condition class rating increases.

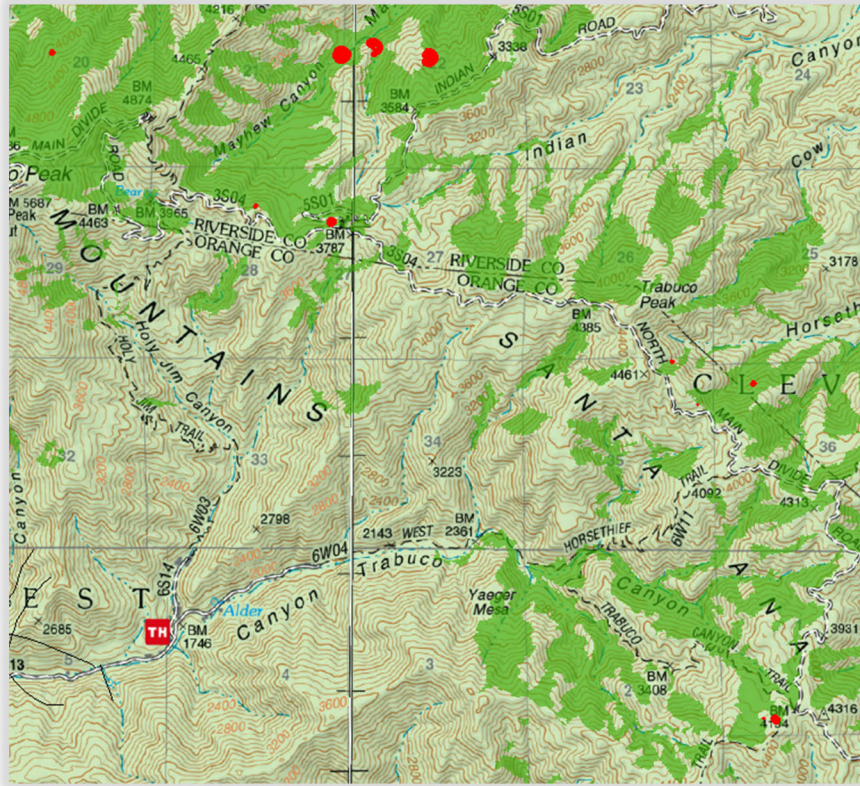
<b>Fire Return Interval Departure</b>	<b>Acres</b>	<b>Percent of total (FY2006)</b>	<b>Percent of total (FY2018)</b>
-3	18,996	6	4
-2	207,109	43	49
-1	9,733	33	2
1	135,270	7	32
2	35,618	2	8
3	12,853	5	3
Unclassified	7,219	2	2
<b>Total</b>	<b>426,799</b>	<b>100</b>	<b>100</b>

The protocol for tracking tree mortality and its altitudinal distribution across Southern California National Forests is still being refined as of September 2019. However, the Forest Service's Southern Province Ecologist for the Pacific Southwest Region has provided some initial data and a tentative assessment of tree mortality and its altitudinal distribution on the CNF. Figures 7 show that Jeffrey pines are dying at the 5,000 feet above sea level, with 2017 being a year with high tree mortality; approximately 1,218 acres affected. Figures 8 to 10 are provided for illustrative purposes; the green are confider vegetation types with red polygons representing the area of tree mortality. The reason for tree mortality are compounding and likely not due to any single cause (e.g., air quality, pests, drought, overstocking).

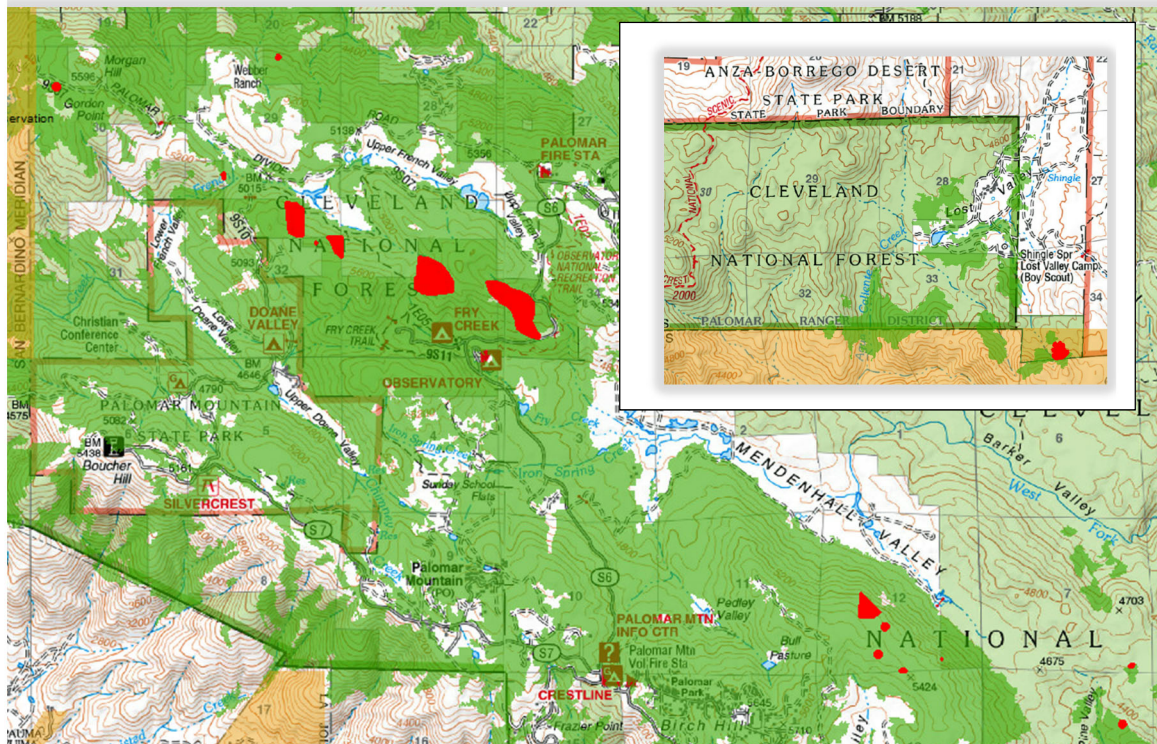


**Figure 7 – Conifer Mortality by Elevation (2016-2018)**



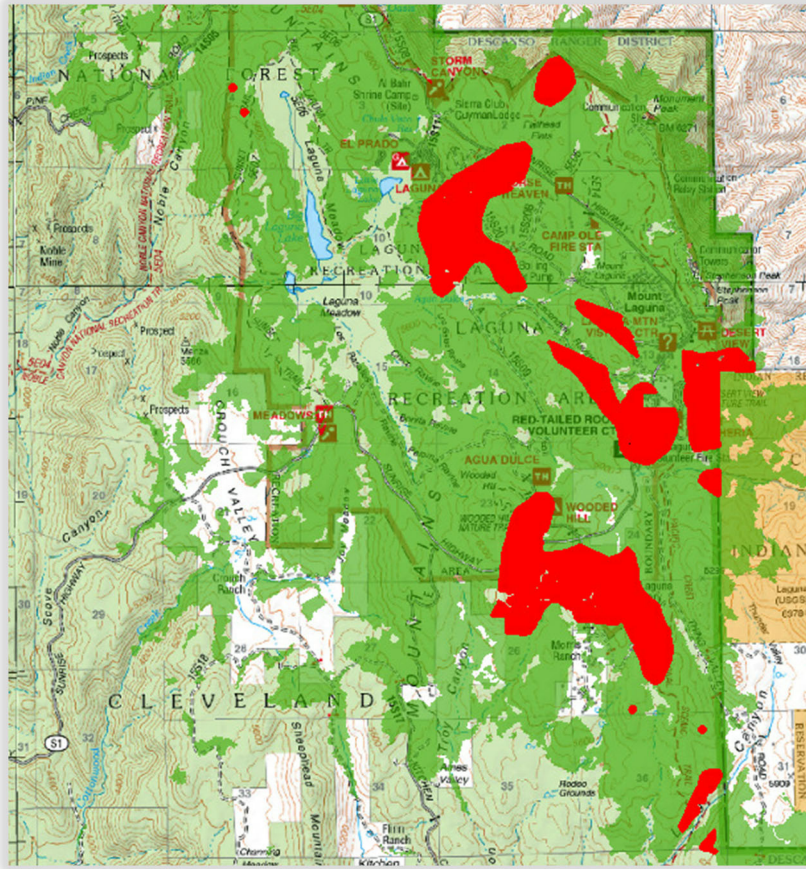


**Figure 8 - Trabuco Ranger District Conifer Mortality (2016-2018)**



**Figure 9 – Palomar Ranger District Conifer Mortality (2016-2018)**





**Figure 10 - Descanso Ranger District Conifer Mortality (2016-2018)**

**Trends in annual indicators for Goal 1.2:** First of all, it should be noted that recent land acquisitions affect the year-to-year data trends by up to one percentage point. From FY2006 to FY2018, the percent of the forest in condition class -2 (too frequent fire) increased from 43% to 49%. There was also an increase in areas in condition class 2 (too infrequent fire), due to wildfire and fuel treatments moving the condition class from class 3 to class 2 due to lack of wildfire. In general, the trend in this indicator is away from the LMP desired condition due to two unprecedented, large wildfire events in 2003 and 2007. On the other hand, 4% less of the forest in FY2018 existed in the worst condition classes of 3 and -3 relative to FY2006.

**Forest Goal 1.2.1: Fire Regime I, 0 to 35 years, low severity (LMP, Part 1, pg. 22)**

**Goal:** Reduce the potential for widespread losses of montane conifer forests caused by severe, extensive, stand-replacing fires.

**Activity, practice, or effect to be monitored:** Vegetation condition.

**Monitoring question:** Is the CNF making progress toward increasing the percentage of montane conifer forests in Condition Class 1?

**Indicator:** Departure from desired fire regime, acres by Fire Regime I.

**Monitoring Action:** Use baseline acres of Montane Conifer, Fire Regime I, from the 2006 Southern California LMPs analysis that were in Condition Class 1; subtracting the areas that have not had mechanical treatment, prescribed under burning, or wildfire within the previous 35



years; and adding the areas that have been mechanically treated, areas that have had prescribed under burning, and areas that have had wildfire over the two year monitoring period.

Table 4 shows that in FY2018 a total of 1,600 acres were treated in montane conifer, of which 90% were in Condition Class 3, which are most in need of treatment. Treating hazardous fuels in these areas that have missed expected fires is consistent with Goal 1.2.1 of the LMP, which directs the CNF to reduce the potential for widespread losses of montane conifer forests caused by severe, extensive, stand replacing fires (LMP, Part 1, pg. 22).

<b>Table 4: Acres treated in Fire Regime I by fire regime condition class (FY2018).</b>							
<b>Activity</b>	<b>Condition Class</b>						<b>Total</b>
	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>1</b>	<b>2</b>	<b>3</b>	
Broadcast Burning	0	0	0	0	12	189	<b>201</b>
Burning of piled material	0	0	4	3	30	290	<b>327</b>
Piling of fuels	0	0	4	23	10	67	<b>104</b>
Rearrangement of fuels	0	0	1	2	2	209	<b>214</b>
Sanitation Cut	0	0	0	0	0	320	<b>320</b>
Thinning or pruning for hazardous fuel reduction	0	0	4	21	10	369	<b>404</b>
Cover brush pile for burning	0	0	0	21	5	0	<b>26</b>
Grazing and Range Management for Hazardous Fuels Reduction	0	0	0	2	2	0	<b>4</b>
<b>Total</b>	<b>0</b>	<b>1</b>	<b>12</b>	<b>72</b>	<b>70</b>	<b>1,445</b>	<b>1,600</b>

\*Some units received more than one treatment in FY2018.

**Trends in annual indicators for Goal 1.2.1:** Based on reported fuel reduction activities that have occurred from FY2008 through FY2018, approximately 12,080 acres were treated in montane conifer. Some 10,889 acres of the total, or 90 percent, were treated in Condition Class 3, while 684 acres, or 6 percent, were treated in Condition Class 2. Over that same period, only 507 acres, or 4 percent of the total, were treated in all other condition classes.

Based on these data, the CNF has made good progress toward increasing the percentage of montane conifer forests in Condition Class 1.

### **Forest Goal 1.2.2: Maintain or increase percent chaparral and coastal sage scrub in condition class 1 (LMP, Part 1, pg. 25)**

**Goal:** Restore forest health where alteration of natural fire regimes has put human and natural resource values at risk. Reduce the number of acres at risk from excessively frequent fires while improving defensible space around communities.

**Activity, practice, or effect to be monitored:** Vegetation condition.



**Monitoring questions:** Is the CNF making progress toward maintaining or increasing the percentage of vegetation types that naturally occur in Fire Regime IV in Condition Class 1?

**Indicator:** Departure from desired fire regime, acres by Fire Regime IV.

**Monitoring Action:** Use baseline acres of Chaparral, Coastal Sage Scrub, Gabbro, Serpentine, Closed-cone conifer, and Lower montane vegetation types, Fire Regime IV, from the 2006 Southern California LMPs analysis that were in Condition Class 1; subtracting the areas that have a return interval of disturbance that is less than 35 years over the two year monitoring period through mechanical treatment, prescribed under burning, and wildfire; and adding the areas that have not had mechanical treatment, prescribed under burning, or wildfire within the previous 35 years.

As shown in Table 3, as of 2006, approximately 49 percent of the forest land area was at moderate to high risk of type conversion from excessively frequent fires (i.e., in condition classes -2 and -3). Unlike in Fire Regime I (conifer forest), vegetation treatments in condition class -2 or -3 move the area away from the desired condition by adding another burn or disturbance to a location that has already burned too frequently. These concerns primarily apply to Fire Regime IV, which includes mostly chaparral and coastal sage scrub vegetation types but also serotinous conifer and big sagebrush vegetation types. The CNF strategy in treatment of these vegetation types is to focus vegetation management into direct protection of communities or in pre-identified strategic locations where protection of communities can be improved, such as major ridge tops that are upslope from developed areas. Fire history patterns show that fires often stop in the same locations due to topography or, sometimes, man-made features such as reservoirs or highways.

Table 5 shows that 2,965 total acres were treated in Fire Regime IV in FY2018, 31% of which were in condition classes -1 or 1, meaning that they were within the natural range of variability expected for this vegetation type. Acres in negative condition classes where fire is overly frequent were treated primarily for community defense against wildfire in the WUI. As a result, location and fuel condition were the primary factors for their selection rather than condition class, unlike montane conifer ecosystems on the Forest.

<b>Table 5: Acres treated in Fire Regime IV by fire regime condition class (FY2018).</b>							
<b>Activity</b>	<b>Condition Class</b>						<b>Total</b>
	<b>-3</b>	<b>-2</b>	<b>-1</b>	<b>1</b>	<b>2</b>	<b>3</b>	
Broadcast Burning	0	131	11	115	49	0	<b>306</b>
Burning of Piled Material	0	108	2	62	70	0	<b>242</b>
Piling of Fuels, Hand or Machine	50	460	1	164	0	0	<b>676</b>
Re-vegetation treatments - herbicides	0	16	0	61	0	0	<b>77</b>
Rearrangement of Fuels	0	73	21	39	11	0	<b>144</b>
Sanitation Cut	0	0	0	1	2	0	<b>3</b>
Thinning or Pruning for	50	494	20	175	7	0	<b>746</b>



<b>Table 5: Acres treated in Fire Regime IV by fire regime condition class (FY2018).</b>							
Hazardous Fuels Reduction							
Cover brush pile for burning	50	447	1	158	0	0	<b>656</b>
Grazing and Range Management for Hazardous Fuels Reduction	0	29	0	83	4	0	<b>115</b>
<b>Total</b>	<b>151</b>	<b>1,758</b>	<b>56</b>	<b>857</b>	<b>143</b>	<b>0</b>	<b>2,965</b>

\*Some units received more than one treatment in FY2018.

Another measure of effective protection of chaparral and coastal sage scrub ecosystems from overly frequent fire consists of the CNF's fire suppression efforts. Over the course of FY2018, firefighters fought 53 fires that would have otherwise consumed CNF lands. Only 8 of these fires grew to more than an acre in size, and the largest burned 23,025 acres of the National Forest. For the long term protection of overly burned ecosystems, such effective fire suppression is essential.

**Trends in annual indicators for Goal 1.2.2:** Based on reported fuel reduction activities that have occurred from FY2008 through FY2018, approximately 19,087 acres were treated in Fire Regime IV. Some 1,699 acres of the total, or 9 percent, were treated in condition classes 2 and 3, while 8,200 acres, or 43 percent, were treated in condition classes -2 and -3. Over that same period, 8,834 acres, or 46 percent of the total, were treated in condition classes -1 and 1.

Although 8,200 acres were treated in condition classes -2 and -3, which represent areas that have experienced fire or disturbance more frequently than would be naturally expected, the areas that were treated are found mainly in areas that comprise WUI defense or threat zones. Fuel reduction activities in these areas are expected to reduce the potential for wildfires to threaten the safety of persons living near the perimeter of the national forest.

**Goal 1.2.3:** Goal 1.2.3, which relates to maintaining long fire-free intervals in habitats where fire is naturally uncommon, is not addressed in this report because this goal was developed at a scope that accounted for all four southern California national forests and is primarily important on the three other national forests, not the CNF.

### **Forest Vegetation and Health Monitoring**

The Forest Service Remote Sensing Lab provides inventories of vegetation resources in an ecological framework for determining changes, causes, and trends to vegetation structure, health, biomass, volume, growth, mortality, condition, and extent. For details of the vegetation monitoring section, see: <http://www.fs.fed.us/r5/rsl/projects/>.

Aerial detection surveys for tree mortality are conducted annually. An overview of these surveys, as well as maps for the CNF, may be found at:

[http://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3\\_046696](http://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3_046696)

Widespread oak tree mortality is occurring on federal, state, private, and Native American lands in San Diego and Riverside Counties, including the southern portion of the CNF. Researchers from the Forest Service and other agencies discovered that dead and dying oaks were infested with a beetle called the gold-spotted oak borer (*Agrilus coxalis*). The oak borer infests and kills California black oak, coast live oak, and canyon live oak. Due to current and potential impacts,



both regionally and throughout California, multiple agencies and organizations are working together in the research, education, and outreach efforts regarding this pest. Information on the gold-spotted oak borer may be found at: <http://www.gsob.org>.

### **Forest Goal 2.1: Invasive species (LMP, Part 1, pg. 31)**

**Goal:** Reverse the trend of increasing loss of natural resource values to invasive species.

**Activity, practice, or effect to be monitored:** Invasive species.

**Monitoring question:** Are the CNF's reported occurrences of invasive plants/animals showing a stable or decreasing trend?

**Indicator:** Acres of treatments in reported occurrences.

**Monitoring Action:** Establish a baseline for the acres of reported occurrences of invasive plant and animal species; subtracting the areas that have been effectively treated; and adding areas where new presence of invasive species has been reported.

During FY2018, according to the FACTS database, approximately 496 acres of invasive species were treated on the CNF. There were weed treatments on all three districts, with the majority of the acres treating tamarisk in Pine Creek Wilderness on the Descanso Ranger District and in upper Santa Ysabel Creek on the Palomar Ranger District. Aquatic invasive animal removal treatment was done on the Palomar District in Cedar Creek, a tributary to the San Diego River.

**Trends in annual indicators for Goal 2.1:** Survey data is entered into the NRIS corporate database and acres treated are recorded in the FACTS database. Based on reported activities that have occurred from FY2008 through FY2018, approximately 2,136 acres were treated or retreated for invasive species on the CNF. Invasive species that were removed include giant reed (*Arundo donax*), tree tobacco, tamarisk, yellow starthistle, Italian thistle, Spanish broom, mustard, and purple pampas grass. Eradication of new infestations and planning and treatment of riparian areas were emphasized. New treatment areas in the San Diego River Watershed for aquatic invasive fish have been identified, primarily targeting green sunfish, bass, and bullfrogs and will continue to be treating in upcoming years. Because the Forest does not receive a level of funding sufficient to conduct a comprehensive inventory, we are unable to identify a stable or decreasing trend based on change from total inventoried acres. However, based on internal knowledge of the areas of the CNF infested, it is likely that there is a decreasing trend for our priority weed species, but for all invasive plants it is stable or even increasing.

### **Forest Goals 3.1 and 3.2: Managed recreation in a natural setting (LMP, Part 1, pp. 33 to 36)**

**Goals:** Provide for public use and natural resource protection (3.1).  
Retain a natural-evolving character within wilderness (3.2).

**Activity, practice, or effect to be measured:** (1) Visitor use of the CNF (3.1). (2) Wilderness use (3.2).

**Monitoring questions:** (1) Are trends in indicators and visitor satisfaction surveys indicating that the CNF has provided quality, sustainable recreation opportunities that result in increased visitor satisfaction? (2) Are trends in indicators and visitor satisfaction surveys depicting the CNF has provided solitude and challenge in an environment where human influences do not impede the free play of natural forces?



**Indicators:** (1) Visitor satisfaction (National Visitor Use Monitoring). (2) Wilderness condition.

**Monitoring Actions:**<sup>4</sup> (1) Use baseline scores in Visitor Satisfaction from NVUM that occurred around the 2006 Southern California LMPs and comparing the five year NVUM Visitor Satisfaction scores. (2) Use baseline scores in Visitor Satisfaction for Wilderness from NVUM that occurred around the 2006 Southern California LMPs and compare the five year NVUM Visitor Satisfaction scores for Wilderness; national reporting systems for management actions in wilderness; and accomplishment data related to the National 10-year Wilderness Stewardship Challenge.

Annual indicators are recreation facilities managed to standard including natural resource protection as described in Goal 3.1. Meaningful Measures provides a framework for measuring this but the linkage to resource protection is not as clear. Implementation and effectiveness monitoring of resource protection actions required by standards S34 and S50 (including Appendix D) help to measure the resource protection element of this goal.

Long-term indicators are visitor use trends by activity and overall satisfaction from the National Visitor Use Monitoring (“NVUM”) survey. The baseline NVUM survey reported 97 percent visitor satisfaction; 93 percent of visitors were satisfied as of 2014. The current report summarized data which were collected in 2014 as shown below in Table 6. Data for FY2018 is not available.<sup>5</sup>

Table 6. Percent satisfied by site type.			
Satisfaction Element	Satisfied Survey Respondents (%)		
	Developed Sites	Undeveloped Areas (GFAs)	Designated Wilderness
Developed Facilities	82.2	80.3	78.8
Access	95.4	85.5	98.4
Services	86.8	78.6	77.5
Feeling of Safety	98.7	93.3	100

These 2014 values are generally higher across the board than those determined in 2009. The two exceptions are developed facilities in developed sites, and service in designated wilderness. This data differs slightly from what was reported in the FY2016 LMP Monitoring and Evaluation Report, and may be due to updates made in the NVUM database as recently as January 26, 2018. The results also indicate that CNF visitation has increased substantially since 2009, with approximately 641,000 visits in 2014 relative to 465,000 in 2009. The 2014 report is available online at: <http://www.fs.fed.us/recreation/programs/nvum/>.

FY2014 marked the end of the 10-Year Wilderness Stewardship Challenge, and implementation of a new performance measure called the Wilderness Stewardship Performance (WSP) the following year. WSP is a framework used to measure Forest Service efforts to meet its primary responsibility under the Wilderness Act: to preserve Wilderness character. The framework establishes a nationally consistent approach, and allows units to tailor their reporting to local Wilderness needs and priorities by selecting the elements of greatest local relevance. From 20 elements possible, each wilderness unit selected 10 core elements to be graded on, four of which

<sup>4</sup> Baseline data does not exist in FY2006. Data is only available for FY2009 and FY2014.

<sup>5</sup> A more current survey is not available, see: <https://apps.fs.usda.gov/nvum/results>.



were required. Preliminary reporting was initiated 2015 and 2016 was the first official reporting period.

There were no wilderness management actions on the CNF during FY2018 aside from the completion of the baseline report for Agua Tibia. Table 7 shows the WSP scores of all four CNF Wilderness areas for FY 2015 to 2018. These scores reflect the 10 core elements of wilderness condition. Each element has a 10 point score maximum with a combined maximum score of 100. Scores over 60 are considered managed to standard. In 2017 there was an 84 point improvement in the overall wilderness area score. Scores generally remained the same since FY2017 with a minor increase in Agua Tibia for completion of the baseline report.

<b>Table 7: Wilderness Stewardship Performance Scores</b>				
<b>Year</b>	<b>Wilderness Area</b>			
	<b>Agua Tibia</b>	<b>Hauser</b>	<b>Pine Creek</b>	<b>San Mateo Canyon</b>
2015	38	20	22	26
2016	38	24	22	26
2017	54	48	44	48
2018	56	48	44	48

**Trends in annual indicators for Goal 3.1 and 3.2:** While the baseline NVUM survey and the current report from data collected in 2014 cannot be compared directly due to differing methodology, the CNF maintains a high level of user satisfaction. The trend between 2009 and 2014 reports shows increases in visitor satisfaction on the CNF, and Wilderness condition is improving consistently as well.

### **Forest Program Goal – Her 1: Heritage Resource Protection**

According to the Heritage Program Managed to Standard (HPMtS) criteria established by the Regional Heritage Program office, the CNF Heritage Program was not managed to standard in FY2018. “A minimum cumulative score of 45 is necessary to meet the minimum stewardship level. A score of less than 45 does not trigger punitive action, but rather indicates where emphasis is needed to bring a program up to standard.” Due to a robust Forest Program of Work monopolizing the heritage staff time the CNF was unable to plan and coordinate the heritage program desired for FY2018.

It should be noted, however, that while the official score may be 22 according to NRM, the CNF Heritage staff accomplished a great deal of work on the ground, much of which was not captured by the reporting database. The CNF Heritage Program conducted a variety of Section 110 activities that earned an actual total of 33 points. Section 110 projects were completed, relationships with partners and volunteers were maintained and strengthened and points were earned in six of the seven indicator categories by the CNF, including:

- Indicator 1: Program Plans (3 points);
- Indicator 2: Section 110 Field Survey (1 points);
- Indicator 3: NRHP Evaluations and Nominations (0 points);
- Indicator 4: Priority Heritage Asset condition Assessment (9 points);
- Indicator 5: Priority Heritage Asset Stewardship (5 points);
- Indicator 6: Public Outreach (10 points);
- Indicator 7: Volunteer Contributions (5 points).



The desired condition is to preserve or enhance significant heritage resources. FY2018 CNF Heritage Program accomplishments under the *Programmatic Agreement among the U.S.D.A Forest Service, Pacific Southwest Region (Region 5), California State Historic Preservation Officer, Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding the Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forests of the Pacific Southwest Region (RPA)* or Section 106 of the National Historic Preservation Act (NHPA) included the analysis of the potential for effects to historic properties for a total of 46 proposed undertakings were analyzed for the potential for effects on historic properties by the CNF HPM in FY2018. All 46 proposed undertakings were determined to be compliant with Section 106 of the NHPA through the application of the stipulations of the RPA.

Of the 46 proposed undertakings in FY2018, 6 required assessment of the identified potential for effects associated with those projects. Cultural resource surveys conducted in support of this undertaking resulted in the survey of approximately 437 acres. A total of 5 new archaeological sites were identified as a result of survey although full recordation was not completed at the time.

Table 8 provides a summary of the 46 proposed undertakings that were analyzed for their potential for effects and determined to be compliant through the application of the stipulations of the RPA in FY2018. Of these 46 undertakings, the associated Area of Potential Effects (APE) of 6 of them required survey, 12 were determined to have been adequately surveyed in association with previous projects, and 28 met the requirements for being authorized as Screened Undertakings per Stipulation 7.2 and Appendix D of the RPA. The 28 Screened Undertakings were “Class B” exemptions under subparts: c - “Disturbed Context”; f - “Issuance, granting of permits”; g - “Applications of pesticides, biocontrol agents, or herbicides”; h - “within stream channels”; i - “Less than 1m of ground disturbance”; j - “Installations of barriers, fencing, or signs with “T”-posts or rebar”; l - “Routine trail maintenance...”; m - “Trail maintenance of existing tread on slopes exceeding 30%”; n - “Routine road maintenance”; o - “Felling of hazardous trees, rec areas”; and u - “alter structures less than 45 years of age.”

<b>Table 8: Project Summary</b>					
<b>Total Projects</b>	<b>36 CFR 800 Projects</b>	<b>RPA Projects</b>	<b>Survey Projects</b>	<b>Previously Surveyed</b>	<b>Screened Undertakings</b>
46*	0	46	6	12	28

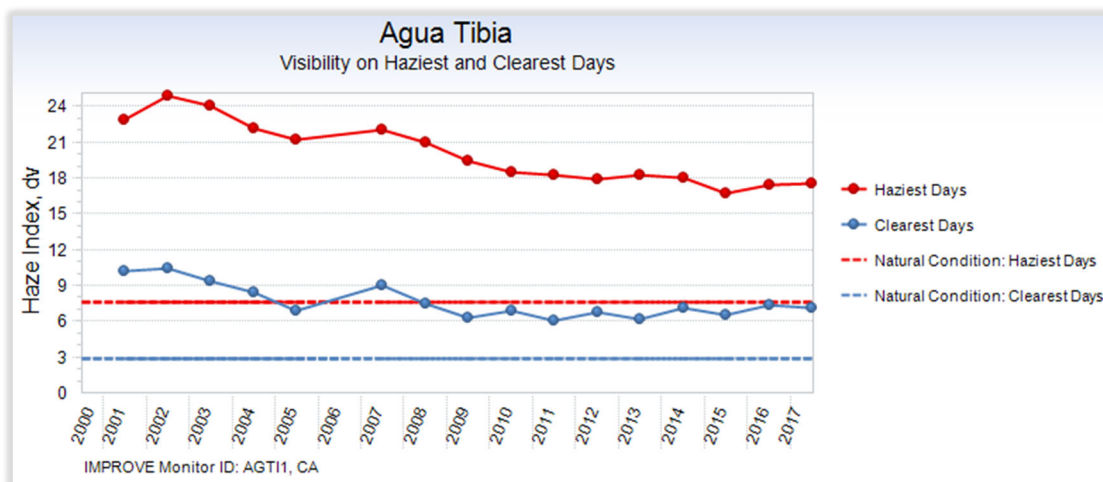
Table 9 summarizes the number of acres surveyed (437), the number of new cultural resources identified and recorded (5), the number of previously recorded resources for which site record updates were completed (32), the number of historic properties that were required to be protected from identified potential for effects through the implementation of Standard Protection Measures (SPM) (32), the number of sites that were required to be monitored for the avoidance of identified potential for effects (32), and the number of Inadvertent Effects (1) associated with projects determined to be compliant under the stipulations of the RPA in FY2018.

<b>Table 9: Historic Property and Survey Data</b>					
<b>Acres Surveyed</b>	<b>New Sites Recorded</b>	<b>Sites Updated</b>	<b>Sites Protected</b>	<b>Sites Monitored</b>	<b>Inadvertent Effects</b>
437	5	32	32	32	1



## Air Quality Monitoring

Under the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, a sampling station at the Dripping Springs Fire Station monitored the air quality near the Agua Tibia Wilderness Class 1 air shed. Monitoring results indicate that the largest sources of haze were ammonium sulfate and ammonium nitrates and that visibility has been improving for the Agua Tibia Wilderness since monitoring began (Figure 11 shows number hazy days decreasing). A deciview (dv) reading of “0” indicates a clear view with no reduction in visibility. Data after 2017 is not available for Agua Tibia due to Forest Service budget reallocation. In addition, the Forest Service conducts real-time visibility monitoring of select locations using a real-time web camera (<https://www.fsvisimages.com/>), although CNF locations are not included. The Forest Service’s Air Quality Specialist for the Pacific Southwest Region is looking into alternative monitoring strategies for the CNF. The Forest Service would continue to assess wilderness visibility under the Clean Air Act’s Prevention of Significant Deterioration (PSD) program for projects on the CNF, as applicable.



Source: [http://views.cira.colostate.edu/fed/SiteBrowser/Default.aspx?appkey=SBCF\\_VisSum](http://views.cira.colostate.edu/fed/SiteBrowser/Default.aspx?appkey=SBCF_VisSum)

**Figure 11. Agua Tibia Air Quality Monitoring Results.**

### **Forest Goals 4.1a and 4.1b: Energy and minerals production (LMP, Part 1, pp. 37 and 38)**

**Goals:** Administer minerals and energy resource development while protecting ecosystem health (Goal 4.1a).

Administer renewable energy resource developments while protecting ecosystem health (Goal 4.1b).

**Activity, practice, or effect to be measured:** (1) Mineral and energy development (Goal 4.1a).  
(2) Renewable energy resource development (Goal 4.1b).

**Monitoring questions:** Has the CNF been successful at protecting ecosystem health while providing renewable resources for development?

**Indicators:** (1) Number of Mineral and Energy Development Projects Proposed and Approved.  
(2) Renewable Resources Success at protecting Ecosystem Health.

**Monitoring Actions:** (1) Compare the number of mineral and energy development projects proposed with those approved to establish a baseline of impacts to resources. Compare the



number of acres of habitat conserved as part of mitigation for mineral and energy development projects. **(2)** Compare the number of renewable resource projects proposed with those approved to establish a baseline of impacts to resources. Compare the number of acres of habitat conserved as part of mitigation for renewable resource projects.

In FY2018, the Forest Service continued monitoring implementation of the ongoing San Diego Gas & Electric's (SDG&E) powerline replacement project. The project began in 2016 and construction is anticipated to be completed over the next two years. Aside from the mitigation funds provided by SDG&E, the fire hardening aspect of this project is a significant benefit to National Forest System lands, its resources, and communities located within and adjacent to the CNF by minimizing the potential for powerline caused wildfires in the future. In FY2018, two properties were acquired as mitigation for the Sunrise Powerlink – Jeff Valley (575 acres) and Cherofske on Mount Laguna (155 acres). Additional acquisitions are planned in the future.

In FY2018, the Forest Service continued conducting site inspections to determine the status of mining claims on the CNF. From 2012-2014, gaps in the mining record exist due to lack of permit administration staff. As of the date of this report, there are 15 claims on the Trabuco Ranger District, 13 Palomar Ranger District, and 18 Descanso Ranger District. In FY2018, 8 of these claims are considered active, 2 claims were closed on the Trabuco, and 2 claims were determined to be unauthorized on the Palomar.

In total, 20 special use authorizations (SUAs) were processed for powerlines and utility improvements (SCE, SDG&E, Motorola, and State of California) and 2 were issued for mineral exploration (Unavoc Inc. and U.S. Geological Survey) on the CNF in FY2018.

No new hard rock mine approvals on NFS lands occurred in FY2018.

**Trends in annual indicators for Goal 4.1a and Goal 4.1b:** Based on projects and activities that have been analyzed and authorized via the NEPA process, the CNF continues to meet the intent of both these goals. Projects that meet the criteria of these goals include SDG&E's project and administration of existing mining claims to ensure ecosystem health is protected.

### **Forest Goals 5.1 and 5.2: Watershed function (LMP, Part 1, pg. 39) and riparian condition (LMP, Part 1, pg. 41)**

**Goals:** Improve watershed conditions through cooperative management (Goal 5.1).

Improve riparian conditions (Goal 5.2).

**Activity, practice, or effect to be monitored:** **(1)** General forest activities and watershed improvement projects (Goal 5.1). **(2)** General forest activities (Goal 5.2). **(3)** Streamflows (Goals 5.1 and 5.2).

**Monitoring questions:** **(1)** Is the CNF making progress toward sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 and 3 watersheds? **\*(2)** How do streamflows compare with historical records? **(3)** Is the CNF increasing the proper functioning condition of riparian areas?

**Indicators:** **(1)** Number of Watersheds in each Condition Class. **\*(2)** Monthly Streamflows, Timing and Magnitude of Peak Flows, Degree of Variation. **(3)** Change in Indicator Score for Aquatic Habitat, Aquatic Biota and Riparian Vegetation.

**Monitoring Actions:** Compare baseline number of watersheds in each Condition Class from the 2006 Southern California LMPs analysis with the five year Watershed Condition Assessment (Goal 5.1). Compare the change in score from the Watershed Condition Assessment indicators (Goal 5.2; coordinate with Goal 5.1).



<b>Table 10: Watershed Condition Framework – 2011<sup>6</sup></b>					
<b>Outcome indicator</b>	<b>Desired condition</b>	<b>Baseline Watersheds</b>	<b>Year 5</b>	<b>Trend</b>	<b>Trigger</b>
Watersheds in Condition Class 1, Properly Functioning	Maintained condition ratings	31	N/A	N/A	Decrease in number of Class 1 watersheds
Watersheds in Condition Class 2, Functioning at Risk	Maintained or improved condition ratings	17	N/A	N/A	Decrease in number of Class 2 watersheds
Watersheds in Condition Class 3, Impaired Function	Improved condition ratings	0	N/A	N/A	Degrading conditions in Class 3 watersheds

Table 10 displays Watershed Condition Framework ratings finalized in 2011. Prior monitoring and evaluation reports published the draft ratings from 2010, which were different than the final version. The majority of watersheds on the CNF are functioning properly; none are impaired. Priority watersheds are: Cedar Creek (Palomar Ranger District), Kitchen Creek-Cottonwood Creek (Descanso Ranger District), and Arroyo Trabuco (Trabuco Ranger District).

In FY2018, the CNF continued to implement Watershed Restoration Action Plans (WRAPs) in Cedar Creek and Kitchen Creek-Cottonwood Creek watershed and started to implement the WRAP in Arroyo Trabuco. Both Cedar Creek and Kitchen-Cottonwood Creek WRAPs include invasive feral pig monitoring and eradication, which continued through FY2018. An initial entry for Invasive Fig removal was completed in Arroyo-Trabuco. Dam removal sites completed in earlier years were monitored for recovery. A new priority watershed (Boulder Creek) has been identified and the WRAP is in draft form. Several actions identified in the draft WRAP were planned in FY2018 for implementation in FY2019/2020 (invasive weed removal, aquatic invasive removal, trail stabilization and management, impacted site monitoring). Three Sisters Trail was constructed in FY2018 which improved both water quality and public safety. Through coming years we will continue to designate priority watersheds and track watershed condition. Additionally the Cleveland will be assessing watershed change yearly if large disturbance events occur as well as better refining the attributes that define the watershed condition class.

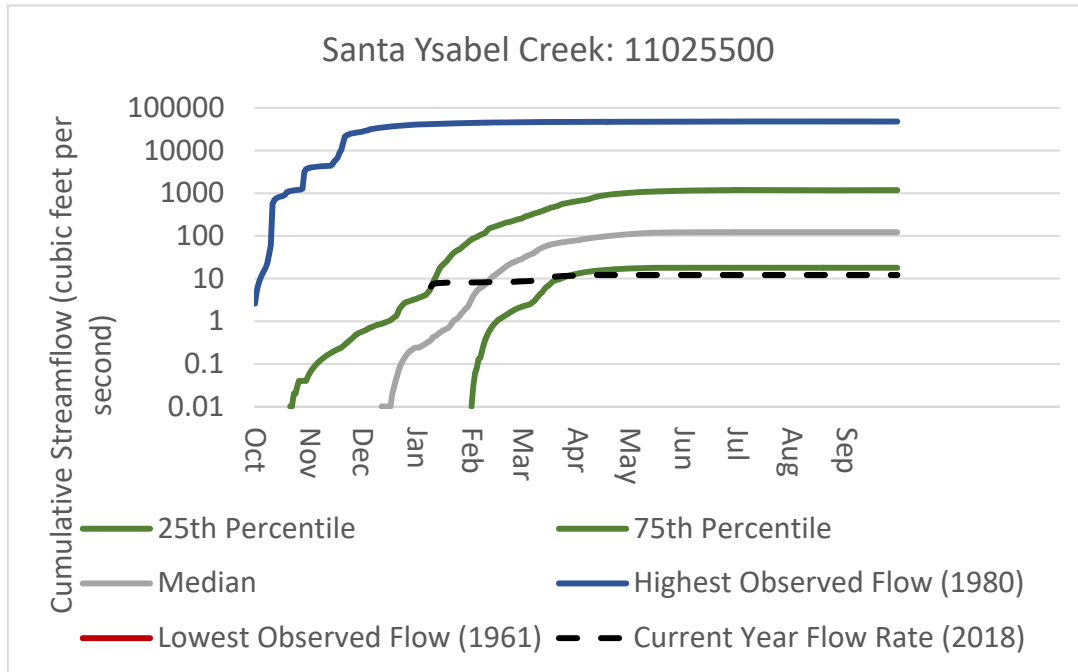
The CNF's biannual Best Management Practices Evaluation Program report for FY2017 and FY018 is currently being prepared and will be sent to the Regional Water Quality Control Boards. This report is delayed due to impacts from 2018-2019 government shutdown and BAER response actions for the 2018 Holy Fire. In addition, periodic road decommissioning projects contribute to improved watershed function as well as projects to remove Aquatic Organism Passage barriers. We continue to look for watershed restoration projects that will improve watershed condition classes.

This is the second year utilizing the new protocol developed for tracking streamflows. Figures 12 and 13 show percentiles and median streamflows from historical years 1955-1980 for two gaged streams on the CNF: Santa Ysabel Creek on the Palomar Ranger District and Sweetwater River on the Descanso Ranger District. Highest and lowest flows from 1955-2018 are also displayed. The lowest observed flow for Santa Ysabel Creek was in 1961 when the creek was effectively dry from a lack of surface flow, which is why the lowest observed flow line is not displayed in Figure 12. For Water Year 2018, Santa Ysabel Creek experienced below average flows relative to the historical period of 1955-1980. Winter and early Spring flows were within

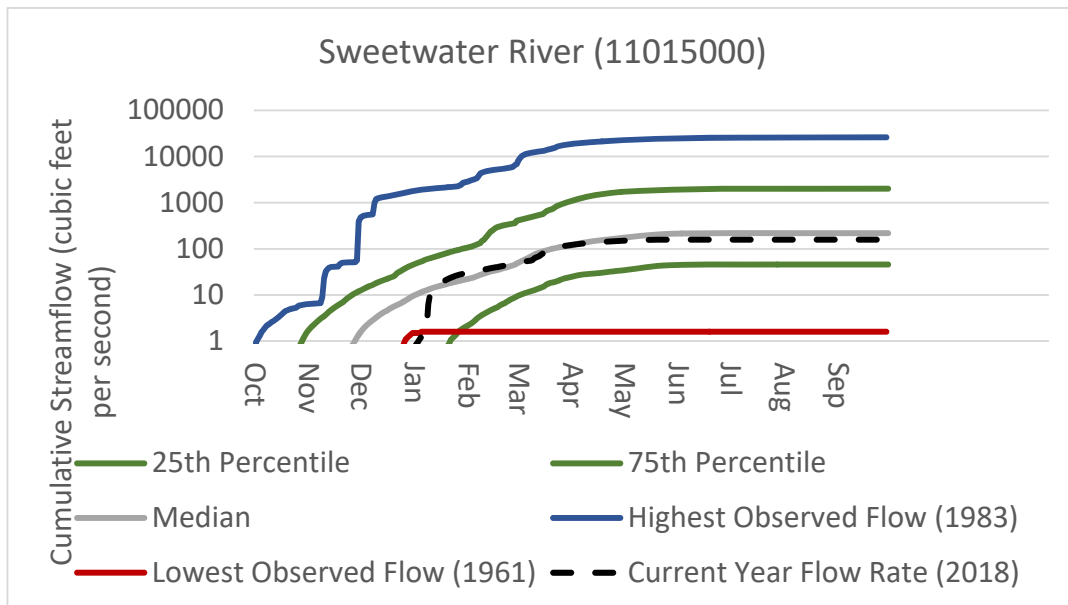
<sup>6</sup> [https://www.fs.fed.us/naturalresources/watershed/condition\\_framework.shtml](https://www.fs.fed.us/naturalresources/watershed/condition_framework.shtml)



the 50<sup>th</sup> percentile, but lack of mid to late spring precipitation resulted in cumulative flows ranking slightly lower than the 25<sup>th</sup> percentile from March through September. For Water Year 2018, Sweetwater River experienced average flows relative to the historical period of 1955-1980. Early winter flows are slightly below average, but quickly increase to practically mirror the median cumulative flows by February and through the rest of the year.



**Figure 12. Santa Ysabel Creek Streamflow.**  
**Historical Years: 1955-1980; Total Data Years: 1955-2018 (water year).**



**Figure 13. Sweetwater River Streamflow.**  
**Historical Years: 1957-1980; Total Data Years: 1957-2018 (water year).**



**Trends in annual indicators for Goals 5.1 and 5.2:** No changes in Watershed Condition Class or indicators have been documented since the initial ratings, and so no trend is evident thus far.

### **Forest Goal 6.1: Rangeland condition (LMP, Part 1, pg. 42)**

**Goal:** Move toward improved rangeland conditions as indicated by key range sites.

**Activity, practice, or effect to be measured:** Livestock grazing.

**Monitoring question:** Is forest rangeland management maintaining or improving progress toward sustainable rangelands and ecosystem health?

**Indicator:** Percent of key areas in active allotments meeting or moving towards desired conditions.

**Monitoring Action:** Compare baseline percent of Key Areas in active allotments meeting or moving towards desired conditions from the 2006 Southern California LMPs analysis with two year percent.

Table 11 displays the baseline and trend monitoring for the range and grazing for FY2018.

<b>Table 11: Baseline and trend monitoring for range allotments in fiscal year 2018. (No new plot data since fiscal year 2013)</b>					
<b>Outcome indicator</b>	<b>Desired condition</b>	<b>Previous monitoring</b>	<b>Current</b>	<b>Trend</b>	<b>Trigger</b>
Livestock grazing areas in <b>good/high</b> condition	Maintain condition rating	12	12	Stable	Decrease in number of key areas in good condition
Livestock grazing areas in <b>fair/moderate</b> condition	Maintain/improve condition rating	14	14	Stable	Decrease in number of areas in fair condition
Livestock grazing areas in <b>poor/low</b> condition	Improve condition rating	0	0	Stable	Degrading conditions in key areas poor condition

Table 12 displays the most recently available allotment conditions.

<b>Table 12: Allotment grazing conditions.</b>			
<b>Allotment, pasture</b>	<b>Condition</b>	<b>Assessment type</b>	<b>Year</b>
Black Mountain	Good—stable	Annual compliance monitoring, BMP monitoring	2018
Corte Madera, Lower Bear Valley	Fair – Signs of reduced OHV trespass damage, drought impacts highly visible, grazing season shortened	Annual compliance monitoring	2018
Guatay	Good – Stable	Region 5 long-term trend monitoring in 2010; annual compliance monitoring	2018
Indian Creek	Ungrazed, not monitored	--	n/a



<b>Table 12: Allotment grazing conditions.</b>			
<b>Allotment, pasture</b>	<b>Condition</b>	<b>Assessment type</b>	<b>Year</b>
Laguna, Kitchen Valley	Moderate	Annual compliance monitoring	2012
Laguna, Cameron, La Posta Creek	Moderate	Region 5 long-term trend monitoring in 2010; annual compliance monitoring	2018
Laguna, Joy Pasture	Low—2006 , Low – 2011 Visual assessment in 2013 showed improvement and reduction on OHV impact – Fair condition in 2017	Region 5 long-term trend monitoring in ?; annual compliance monitoring	2017
Laguna, Long Canyon Pasture	Low—2006; Moderate—2009	Region 5 long-term trend monitoring in 2009; annual compliance monitoring	2016
Laguna Meadow, mid-meadow plot	Good—light grazing pressure well within standards	Annual compliance monitoring	2018
Laguna Meadow, Las Rasalies plot	High 2000, moderate 2005, moderate 2009, trend stable	Region 5 long-term trend monitoring, annual compliance monitoring	2011
Love Valley	High—stable	Annual compliance monitoring	2018
Mendenhall, Lower	Good	Annual compliance monitoring	2018
Mendenhall, Upper	High	Region 5 long-term trend monitoring in 2011; annual compliance monitoring	2017
Mesa Grande, Kelley unit	Fair – difficult to monitor	Rapid	2008
Miller Mountain	Good	Annual monitoring compliance	2012
Samataguma	Good	Annual monitoring compliance	2018
Tenaja	Good - ungrazed	Region 5 long-term trend monitoring	2011
Verdugo	Good	Annual compliance monitoring	2017
Warner Ranch	Good	Annual compliance monitoring	2018

**Trends in annual indicators for Goal 6.1:** All areas showed improved productivity from the previous year due to good rainfall conditions for the winter season. However, drought conditions over a longer timeframe continue. Grazing permittees, in general, have responded to the drought by reducing numbers of the livestock in the herds or selling calves early. One Region 5 long-term monitoring plot was read in 2018. Based on periodic compliance monitoring, nearly half of allotments or pastures remain in good to high condition (Table 12). Several issues with range condition are tied to illegal OHV use and not grazing management. These include areas on the



Corte Madera allotment and on the Laguna Allotment. Work has occurred to block off sensitive meadow areas from vehicular trespass at Bear Valley and along Kitchen Creek Road. Monitoring has shown OHV use damage remaining relatively stable in Bear Valley in FY2018, and sharply reduced along Kitchen Creek Road.

### **Forest Goal 6.2: Biological resource condition (LMP, Part 1, pg. 44)**

**Goal:** Provide ecological conditions to sustain viable populations of native and desired non-native species.

**Activity, practice, or effect to be measured:** General forest activities and focal species.

**Monitoring questions:** **(1)** Are trends in resource conditions indicating that habitat conditions for fish, wildlife, and rare plants are in a stable or upward trend? **\*(2)** Are chaparral and coastal sage scrub vegetation community types converting to non-native annual grasslands? **\*(3)** Is coast live oak mortality increasing across the landscape?

**Indicator:** **(1)** Habitat Condition of At-Risk Species. **\*(2)** Extent of Non-native Annual Grasses. **\*(3)** Forest Health Protection Mortality Surveys.

**Monitoring Action:** Use baseline habitat condition from the 2006 Southern California LMPs analysis and compare with the existing habitat condition on the southern California National Forests.

**Threatened and Endangered Species monitoring:** In 2018, the CNF continued with monitoring specified in applicable biological opinions. The CNF annual report to the US Fish and Wildlife Service included the following species and monitoring activities, where applicable:

Arroyo Toad – Seven sites on the Cleveland require some level of arroyo toad monitoring effort including five roads, two campgrounds and one trail. Monitoring efforts primarily focus on three factors including the determination of toad presence/absence, toad mortality and habitat disturbance. In 2018, no road kill was detected. In general, protection measures were implemented and were working well. Other responsibilities include checking relevant signage, barriers, fences, gate closures, etc.

Habitat improvement work (noxious weed removal) was completed in Trabuco and San Juan Canyons. The Forest is also continuing work on a dam removal project that will result in the removal of 81 check-dams that are impairing stream function. Thus far, approximately 45 dams have been removed from Silverado, Trabuco and Holy Jim Creeks (FY 2015, FY 2017, FY 2018 work). The Forest has seven agreements in place with partners who are funding or contributing in-kind effort to this project. When completed, the project will have substantial benefits for arroyo toad populations in San Juan and lower Trabuco Creeks, as it will restore more natural flows of water and sediment in the stream.

Coastal California Gnatcatcher – Coastal sage restoration work is underway at San Diego River. This project is located within designated critical habitat for the gnatcatcher, and it is funded through the Witch Fire settlement. This will be a multi-year project. The Forest also continued implementation of a Forest-wide project closing and decommissioning unauthorized motor vehicle routes. This project benefits the California Gnatcatcher and other species.

Least Bell's Vireo - A least Bell's vireo survey was conducted in San Diego River to check the status of this small population. Two pairs of vireos were detected. The population at San Diego River appears to be increasing slightly.



Southwestern Willow Flycatcher – USGS continued the third year of 5-year monitoring and research program at the upper San Luis Rey River in 2018. About 10 pairs of Southwestern Willow Flycatcher were detected on the Forest in 2018. Nest monitoring will resume next year, and no incidental take has been detected.

Hermes Copper Butterfly (candidate) – The Forest has conducted additional surveys for this species and has implemented a number of management actions to protect its habitat including gates and barriers to prevent OHV traffic and restoration of nectar sources after fire. The Forest has also informally consulted with US Fish and Wildlife Service regarding this species, primarily with regard to fuel breaks. Several parcels of land the Forest has received (or will receive) as mitigation for the Sunrise Powerlink construction support this species; specifically the Nelson Canyon parcel, acquired in 2014, and the Bell Bluff parcel which will be acquired in the next few years.

Laguna Mountains Skipper – Skipper surveys were conducted at Palomar Mountain sites by Forest staff. Fence enclosures at Observatory Campground, Mendenhall Valley and Mount Laguna were maintained. Monitoring fire effects to the Skipper's host plant, Cleveland's horkelia (*Horkelia clevelandii*), continued in select fuels treatment blocks. Initial results demonstrated that prescribed fire was not detrimental to plant populations. Monitoring will continue into future years and efforts expanded into additional treatment blocks.

Munz's Onion – Improved habitat by controlling yellow star thistle population at Elsinore Peak, along South Main Divide Road.

San Bernardino Bluegrass – Pre-grazing checks were completed for populations at Laguna and Mendenhall Meadows.

San Diego Thornmint – Implementation continued for grass-specific herbicide treatment to control or eradicate non-native Purple False Brome in occupied habitat along Viejas Grade Road to improve habitat for San Diego Thornmint. This work will continue for several years and is being implemented by the San Diego Gas and Electric (SDG&E) as part of the mitigation for the Sunrise Powerlink Project. In partnership with the San Diego Management & Monitoring Program, several populations were monitored as part of a coordinated landscape-scale conservation effort.

Southern Steelhead – In 2018, additional planning was done for removal of 81 check dams. The Forest is currently working with several partners including Caltrans, Orange County Parks, US Marine Corps, and Orange County Transportation Authority; all of these partners are expected to contribute funding toward the completion of the dam removal project. In 2018, the Marine Corps completed removal of 22 dams at Holy Jim Creek, and 4 dams were removed with a spider excavator at San Juan Creek.

Incidental Take: No take was observed for any threatened or endangered species in 2017 from LMP on-going activities.

The environmental baseline identifies the extent of occupied and suitable habitat for each species and describes ongoing activities authorized by the Forest Service in relation to the occupied and suitable habitats. Implementation of LMP strategies over time is expected to cause changes, both positive and negative, in the baseline. Annual reporting of activities that may change the baseline conditions—including recovery actions proposed, new conservation strategies and new information from surveys or inventory—for threatened, endangered, proposed, and candidate species is recommended by the US Fish and Wildlife Service.



**Sensitive Species Monitoring:** Kirsten Winter, Forest Biologist, conducted monitoring to look at the effects of fuel breaks on sensitive plants. Heart-leaved Pitcher Sage (*Lepechinia cardiophylla*), Orcutt's Brodiaea (*Brodiaea orcutti*), vanishing wild buckwheat (*Eriogonum evanidum*), and other species were evaluated; all appeared tolerant of fuels treatments.

**Focal Species Monitoring:** A LMP administrative change was completed in May 2016 and added two focal species to the CNF monitoring program: non-native annual grasses and coast live oak. The coast live oak issue is being monitored in part via interpretation of aerial photos, which help to track oak mortality. This is the second annual monitoring report to address these questions.

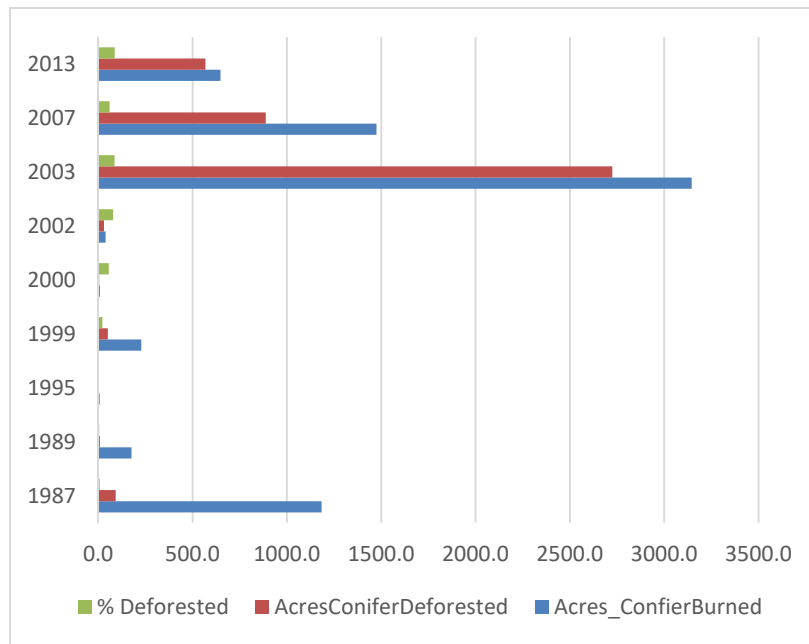
Non-native Annual Grasses – A protocol was being developed to evaluate the extent of type conversion from shrublands to annual grasslands across the Southern California National Forests. Last year's annual report utilized a 2011 model output and compared it to historic conditions.

As previously reported, the number of acres of habitat type conversion from shrubland to annual grassland from Historic conditions to 2011, was determined as follows. The Wieslander Vegetation Type Map (VTM) was used as the best historic baseline of shrubland vegetation extent. This vegetation map was created from data collected in the 1930s. The VTM was spatially compared to a 2011 model of herbaceous ground cover developed by Isaac Park (University of California Riverside) and the Angeles National Forest. The model capitalizes on phenological differences between evergreen (shrublands) and summer senescent (annual grasses and other herbaceous species) vegetation types. Any area within the VTM shrubland vegetation type that was greater than 50% herbaceous cover was considered type converted. Areas recovering from fire, having burned within the last 10 years, were excluded from the analysis.

Wieslander's VTM contains 225,303 baseline acres of shrubland within the land area owned by the CNF in 2017. Of this, 11,425 acres (5.1%) have type converted to annual grassland according to the 2011 model. Regional USFS staff were not able to reproduce the 2011 methods and could not generate a model for more recent years. Therefore, no updated FY2018 information is available.

Despite this lack of information, type conversion may occur as a result of wildfires. Figure 14 shows that of the fires that burned conifer vegetation types (where date is known), 63% of the burned conifer area was deforested by the fire. In 2018, 3 fires burned 23,812 acres of the CNF; Monte, West, and Holy. Conifer vegetation types were affected by the Holy Fire and replanting is likely needed to keep this vegetation type on the landscape.





**Figure 14 – Acres Conifer Deforested by Fires**

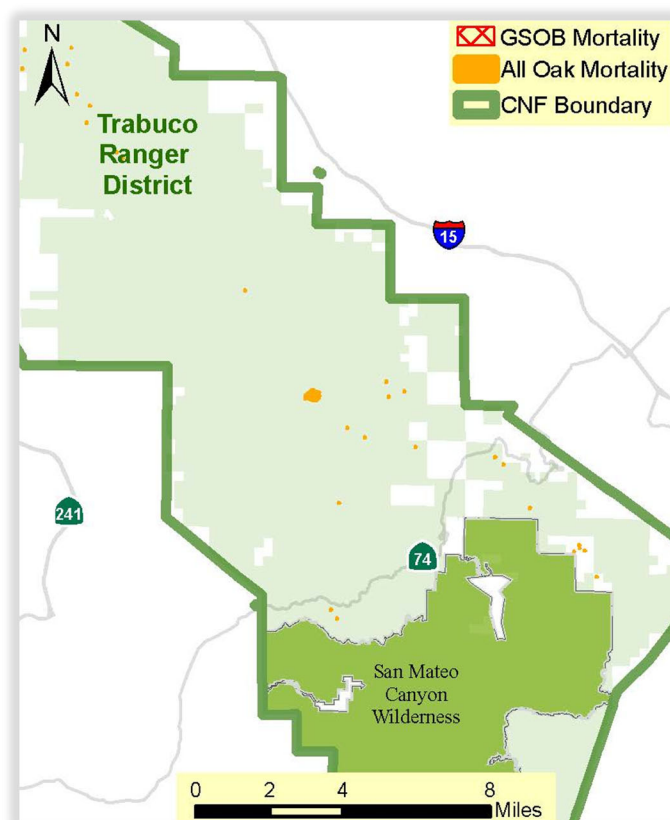
Coast Live Oak – The Forest Health Protection program of the Forest Service conducts Aerial Detection Survey overflights annually to monitor tree mortality across the National Forests of California. In 2018, coast live oak mortality attributed to goldspotted oak borer (GSOB) was observed in an estimated 1,800 coast live oaks over 438 affected acres (Table 13). Although the CNF acreage affected is less than 2017, it is not clear to what factor this decrease may be attributed. In FY2017, it was noted that the recent wet winters may have led to trees being stronger and better able to defend against GSOB.

In 2018, oak mortality was more observable on the Trabuco Ranger District as shown on Figure 15 (large cluster apparent). Only small clusters existed in FY2017. Figure 16 shows the movement and continued presence of GSOB on CNF and adjacent areas. GSOB is a regional issue that requires collaboration. Limitations on data interpretation for FY2018 are at least three-fold. First, the exact same flight path not flown each year. For instance, the eastern portion of the Descanso Ranger District was not part of the 2018 flight path and so a comparison against past years' results cannot be made. Second, GSOB movement may not necessarily represent an increase or decrease in GSOB populations. Third, the location of the dead trees does not necessarily indicate the location of the current GSOB infestation since aerial detection survey results are reporting trees in the “red-dead” phase.



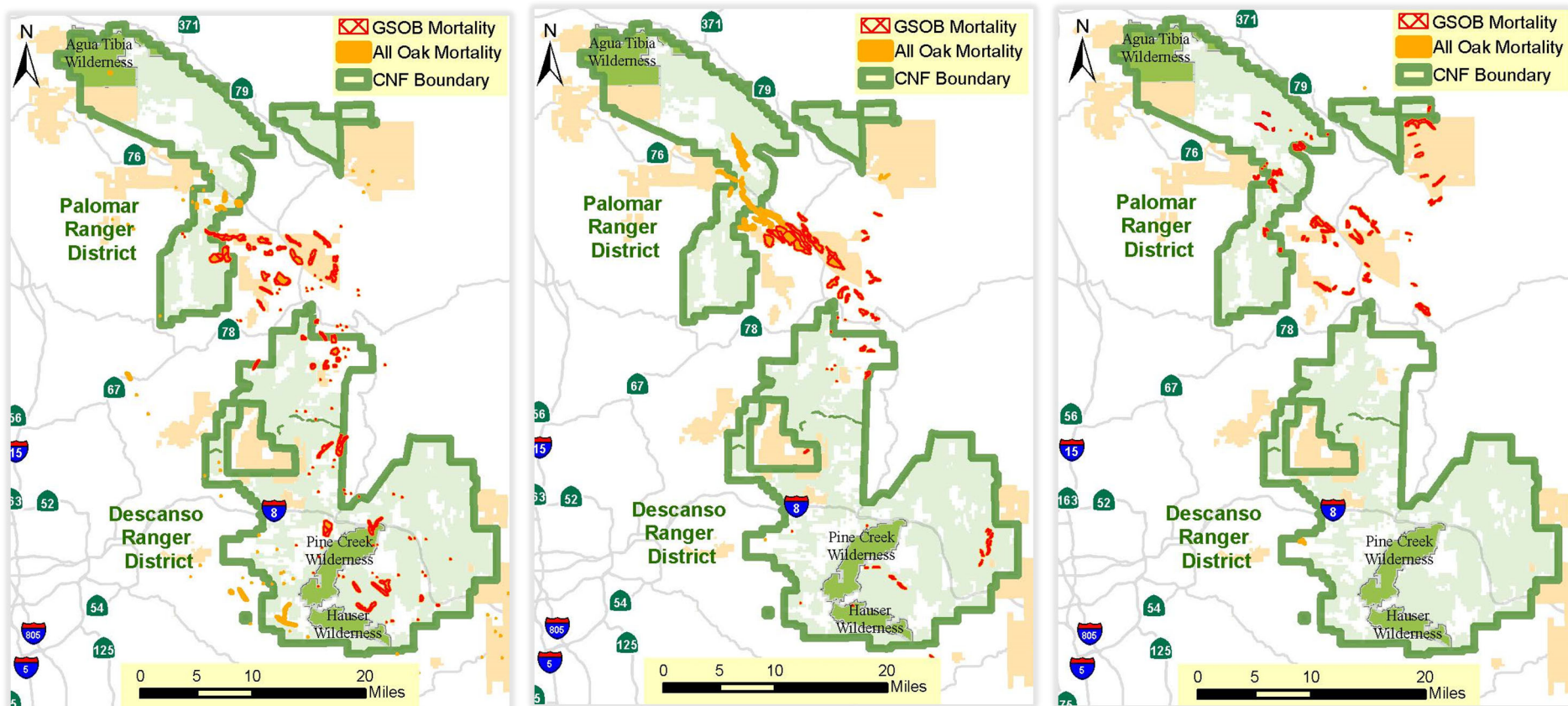
Table 13: Coast Live Oak mortality (in acres).	
Year	Mortality
2011	1,272
2012	1,002
2013	720
2014	939
2015	2,146
2016	2,177*
2017	1,050
2018	438

\*Previously reported acres for 2016 (4,096) were revised lower in the 2017 Aerial Detection Survey report  
Source: [https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fseprd628962.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd628962.pdf)



**Figure 15 - All Oak Mortality (2017 & 2018 Combined)**





Source: [https://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3\\_046696](https://www.fs.usda.gov/detail/r5/forest-grasslandhealth/?cid=fsbdev3_046696)

2016

2017

2018

**Figure 16 – All Oak Mortality & GSOB-Related Oak Mortality**



## Conclusions

The threatened and endangered species monitoring program is adequate. More funding and staff time is needed to support this program and meet legal requirements. A process is in place to update procedures based on updated information and monitoring results. Information is not available to determine shrubland type-conversion for FY2018. Coast live oak mortality affected less acreage in FY2018, but the reasons for this has not been determined.

## Recommendations

Continue required monitoring. Plant more oak trees to replace those that are dying. Suppress fires to prevent further type conversion, assumed to be occurring since 2011, within coastal sage scrub vegetation communities. As operational plans are developed for recreation sites, ensure institutional memory of problem resolution by documenting past protection measures (e.g., in INFRA database), whether on an annual, periodic, or one-time basis.

**Trends in annual indicators for Goal 6.2:** Monitoring has not identified any trends in resource conditions that indicate habitat conditions for fish, wildlife, and rare plants are not stable, with the exception of California Spotted Owl and California Gnatcatcher, both of which appear to be experiencing loss of habitat and declining populations due to drought or too-frequent fire.

## Forest Goal 7.1: Natural areas in an urban context (LMP, Part 1, pg. 46)

**Goal:** Retain natural areas as a core for a regional network while focusing the built environment into the minimal land area necessary to support growing public needs.

**Activity, practice, or effect to be measured:** Built landscape extent; land adjustment; special use authorizations.

**Monitoring questions:** **(1)** Is the CNF balancing the need for new infrastructure with restoration opportunities or land ownership adjustment to meet the desired conditions? **\*(2)** How many of each type of special use authorization, mining permit, and forest product permit are active on the forest?

**Indicators:** **(1)** Land Ownership Complexity, Authorized and Administrative Infrastructure, Miles of Unauthorized Motorized Routes. **\*(2)** Number of Special Use Authorizations and Permits by Type.

**Monitoring Actions:** Calculate the miles of exterior and interior boundary divided by the acres of NFS lands and compare from the 2006 Southern California LMPs analysis. Establish a baseline number of authorized and administrative infrastructure from the 2006 Southern California LMPs analysis and comparing the existing authorized and administrative infrastructure on the National Forests. Establish a baseline for the miles of unauthorized motorized roads and trails reported; subtracting the miles that have been decommissioned; and adding the miles of unauthorized motorized roads and trails that have been reported.

As of the end of FY2018, the CNF consists of approximately 426,804 acres of land with 1,036 miles of exterior and interior boundary, yielding a perimeter to area ratio of 0.00243 miles per acre. This acreage reflects the recent land acquisitions and also corrections to errors made that were discovered over the past year. In FY2018 the CNF acquired a 575-acre parcel in Jeff Valley and a 44-acre parcel on Mount Laguna (former Cherofske property). By subtracting 3,946 acres of land acquisitions between 2006 and FY2018, the 2006 CNF acreage is recalculated at 422,858 acres with 1,060 miles of boundary, yielding a perimeter to area ratio of 0.00251 miles per acre.



Goal 7.1 calls for minimization of the built environment. In 2006, there were 286 administrative buildings on the CNF. As of the end of FY2018, 271 administrative buildings existed following the decommissioning of 2 buildings and removal of erroneous database records (17 building removed from INFRA database). This represents a 7% reduction from the prior fiscal year.

Roads are another element of the built environment and are part of the outcome indicators for this goal. In addition, Goal 3.1 instructs the CNF to remove roads that are determined to be unnecessary through a roads analysis and the analysis required by NEPA.

Table 14 below shows that the CNF has successfully decommissioned 157.84 miles of unauthorized travel routes<sup>7</sup> between 2006 and FY2018. Many of these routes impact riparian conservation areas, archaeological sites, Wilderness areas, or habitat for endangered or threatened species. The Forest-wide Unauthorized Route Decommissioning decision of 2016 is still being implemented in FY2018 (a total of 26.08 miles left to be decommissioned). Additional unauthorized routes totaling 2.9 miles would be addressed in a separate, future NEPA effort. FY2018, a total of 30.87 miles of unauthorized travel routes and 1.63 miles of NFS road 16S03 (maintenance level 2) was decommissioned.

<b>Table 14: Miles of travel routes in Forest Service jurisdiction by type, 2006 baseline and FY2018.</b>						
<b>Maintenance level</b>		<b>NFS road</b>	<b>Permitted road</b>	<b>Unauthorized, undetermined</b>	<b>Unauthorized, unneeded, existing</b>	<b>Unauthorized, unneeded, decommissioned</b>
Not applicable	2006	--	--	154.0	--	4.0
	2018	--	--	2.9	26.08	157.84
1: Basic custodial care (closed)	2006	34.4	--	--	--	--
	2018	35.1	--	--	--	--
2: High clearance vehicles	2006	280.9	136.9	--	--	--
	2018	276.97	129.9	--	--	--
3: Suitable for passenger cars	2006	11.5	--	--	--	--
	2018	15.0	--	--	--	--
4: Moderate degree of user comfort	2006	54.2	--	--	--	--
	2018	54.1	--	--	--	--
5: High degree of user comfort	2006	18.1	--	--	--	--
	2018	19.0	--	--	--	--
Totals	2006	399.1	136.9	154.0	--	4.0
	2018	400.17	129.9	27.6	21.9	161.84

Table 15 below shows the number and variety of special use authorizations (SUA) administered in FY2018 – a total of 699 permits active on the CNF (99 administered in FY2018). This is a 19 percent reduction in SUAs processed overall since FY2017. There was a 31 percent reduction in special forest product permits (e.g., mistletoe, firewood, botanical) and a 5 percent reduction in recreation residence permits (19 were closed, temporary permits ended and reissued to same/new owner, and 12 were placed in non-use status due to the 2018 Holy Fire). Outfitting and guiding was a new use in FY2018.

<sup>7</sup> This includes roads and motorized trails (e.g., OHV trails).



Table 15. Number and type of special use authorizations and permits.					
Type	FY2018	Type	FY2018	Type	FY2018
Club	4	Construction Camp and Residence	2	Cellular	2
Shelter	1	Warehouse and Storage Yard	0	Resource Monitoring Site	*3
Recreation Residence	*342	Commercial Still Photography	*0	Commercial Mobile Radio Service	6
Resort	2	Motion Picture and TV Location	*2	Facility Manager	15
Concession Campground	1	Geological and Geophysical Exploration	2	Telephone and Telegraph Line	*15
Recreation Event	*12	Powerline	17	Fiber Optical Cable	3
Apiary	9	Other Utility Improvement	1	Other Communication Improvement, not REA	*2
Convenience Enclosure	0	Airport, Heliport	2	Navigation Equipment	1
Church	1	DOT Easement	5	Irrigation Water Transmission Pipeline $\geq 12''$ Diameter	1
Marker	4	Forest Road and Trail Act Easement	6	Irrigation Water Transmission Pipeline $< 12''$ Diameter	12
Monument	1	Federal Land Policy and Management Act Easement	6	Water Transmission Pipeline $\geq 12''$ Diameter	1
Service Building	8	Federal Land Policy and Management Act Permit	83	Water Transmission Pipeline $< 12''$ Diameter	7
Site Survey and Testing	0	Wilderness Act Authorization, Roads and Trails	1	Dam, Reservoir	5
Resource Survey	1	Amateur Radio	1	Water Diversion, Weir	3
Experimental Station	0	Microwave-Common Carrier	4	Well, Spring, or Windmill	6
Research Study	5	Microwave-Industrial	5	Wildlife Water Supply	2
Weather Station	5	Local Exchange Network	1	Water Storage Tank	17
Observatory	1	Private Mobile Radio Service	27	Water Treatment Plant	1



<b>Table 15. Number and type of special use authorizations and permits.</b>					
<b>Type</b>	<b>FY2018</b>	<b>Type</b>	<b>FY2018</b>	<b>Type</b>	<b>FY2018</b>
Military Training Area	3	Passive Reflector	0	Special Forest Product Permit	104
Nondisturbing Use (Archaeological Investigation)	4	Cable Television	1	Active Mineral Operations	10
Disturbing Use (Archaeological Investigation)	1	Outfitting and Guiding Service	3	<b>TOTAL</b>	<b>699</b>

**Trends in annual indicators for Goal 7.1:** As of FY2018 land ownership complexity has been reduced relative to 2006 despite an increase in land area. The number of buildings and footprint on the landscape has been reduced by 7 percent. From 2014 through FY2018, an overall total of 92.84 miles of unauthorized routes have been decommissioned. This includes implementation of the 2016 Forest-wide Unauthorized Route Decommissioning decision, which continued into FY2018. Of the 70.6 miles planned for decommissioning under the 2016 decision, 43.2 miles have been completed as of FY2018. The remaining known routes are expected to be decommissioned over the next several years. A wide variety of special uses are authorized across the CNF. For FY2018, the number of authorizations decreased by 19% compared to FY2017.

## 4. Part 2 Monitoring

This chapter documents program implementation (LMP, Part 2 monitoring), as tracked through performance measures linked to the National Strategic Plan and accomplishments reported through national databases. Note that more detailed information about certain accomplishments is provided by Goal in Part 1, while these summary data are consolidated for review.

<b>Table 16. Part 2 Monitoring Summary Indicators</b>	<b>FY2018 Accomplishment</b>	<b>Part 2 Monitoring Summary Indicators</b>	<b>FY2018 Accomplishment</b>
Acres of Terrestrial Habitat Enhanced	4,430	Recreation Days Managed to Standard (General Forest Areas)	Unassigned
Miles of Aquatic Habitat Enhanced	22	Land Use Authorizations Administered to Standard	83
Acres of Noxious Weeds Treated	496	Number of Mineral Operations Administered	10
Acres of Vegetation Improved (also see Hazardous Fuels Reduction)	5,188	Number of Allotments Administered to Standard	N/A - see Table 12
Acres of Watershed Improved	1,431	Acres of Hazardous Fuel Reduction	5,188
Acres of Land Ownership Adjusted	730	Miles of Passenger Car Roads Maintained to Objective Maintenance Level	0



<b>Table 16. Part 2 Monitoring Summary Indicators</b>	<b>FY2018 Accomplishment</b>	<b>Part 2 Monitoring Summary Indicators</b>	<b>FY2018 Accomplishment</b>
Heritage Program Management Points	33	Miles of High Clearance & Back Country Roads Maintained to Objective Maintenance Level	45.23
Products Provided to Standard (Interpretation and Education)	Obsolete	Miles of Road Decommissioned	1.63
Recreation Special Use Authorizations Administered to Standard	377	Miles of Trail Operated and Maintained to Standard	Unassigned
People-at-one-time Days Managed to Standard (Developed Sites)	119,955		

## 5. Part 3 Monitoring

This section addresses the monitoring and evaluation of projects and activities. Using the methodology described in the 2014 LMP Amendment, eight new and existing projects were randomly selected for review from five of the six functional areas listed in the LMP, as shown in Table 17. The LMP monitoring team conducted field visits for randomly selected projects on June 11, 17, and 21, 2019.

<b>Table 17. FY2018 projects randomly selected for Part 3 monitoring.</b>				
<b>Ranger District</b>	<b>Project Name</b>	<b>Functional Area</b>	<b>New or Existing</b>	<b>Section in monitoring report</b>
<b>Descanso</b>	Four Corners Trailhead – Vault Restroom and Accessible Parking Project	Facility Operations & Maintenance	New	<b>5.3</b>
	El Centro Tract Recreation Residence (DRD654709)	Public Use & Enjoyment	New	<b>5.2</b>
	County of San Diego FLPMA Permit (DRD100409)	Commodities & Commercial Uses	New	<b>5.4</b>
	Pine Valley – Laguna Place, Unit 12	Fire & Aviation Management	New	<b>5.5</b>
<b>Trabuco</b>	Holy Jim Dam #2 Removal	Resource Management	New	<b>5.1</b>
	San Mateo Canyon Wilderness – Verdugo Trail (6W12)	Facility Operations & Maintenance	Existing	<b>5.3</b>



Table 17. FY2018 projects randomly selected for Part 3 monitoring.				
Ranger District	Project Name	Functional Area	New or Existing	Section in monitoring report
	Recreation Event - Warrior's Society (TRD0518)	Public Use & Enjoyment	Existing	5.2
Palomar	Warner Ranch Allotment	Commodities & Commercial Uses	Existing	5.4

## 5.1 Resource Management Projects

### *Holy Jim Dam #2 Removal*

#### Monitoring

Monitoring for this event was a desk-audit of the project planning documents and the most recent 2018 project monitoring report. No field visit was conducted because recent monitoring results were already document in the monitoring report.

#### Results

Relevant and Notable Information:

- Holy Jim Dam #2 was a 4-foot high and 3-foot thick rock structure located in the Holy Jim Creek channel. In November 2018, it was removed using explosives and jackhammers with contractor support and assistance from the U.S. Marine Corps. Its removal is part of a larger-ongoing project to remove dam from Silverado, Holy Jim and San Juan Creeks on the Trabuco Ranger District. The project primarily seeks to enhance aquatic organism passage (remove dam barriers) and suitable habitat for potential re-establishment of extirpated species such as the Southern California steelhead by removing the dams and thus restore natural creek processes. To date, 57 of 78 dams have been removed.
- The project's Environmental Assessment (EA) evaluated effects to relevant resources and integrated information demonstrating LMP consistency. The project area is in San Mateo Place and Silverado Places, both area with high Scenic Integrity Objectives, and the project was developed to implement Goal 6.2 – provide ecological conditions to sustain viable populations of native and desired nonnative species. NHPA consultation efforts were ongoing at the time the EA was prepared. The project EA includes project design features focused on ESA-listed species and indicates that the agency coordinated with U.S. Fish and Wildlife during development of the EA. The project EA discusses water quality best management practices (BMP) required to ensure compliance with Clean Water Act.
- BMP implementation and effectiveness monitoring for Arroyo Trabuco was conducted in April 2018, before Holy Jim Dam #2 was removed. Arroyo Trabuco is the stream that Holy Jim feeds into and so the BMP results would capture any upstream BMP issues. No turbidity was observed at levels of concern, downstream of Holy Jim Creek during dam removal. Material from the dam was used as planned, to stabilize disturbed banks. There were no instances of noncompliance during project implementation.
- The proper functioning condition (PFC) of Holy Jim Creek was established and then monitored along 3 reaches to determine if the creek return to its PFC after dams were



removed. The most relevant and recent PFC monitoring report was prepared in December 2018 for stream reaches along Holy Jim Creek, upstream of Holy Jim Dam #2.

## Conclusions

In response to the questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- Based on a review of the project record and monitoring results, the project has been implemented consistent with the NEPA document and other applicable laws – e.g., LMP, CWA, ESA, and NHPA. No changes to the project are recommended for the future dam removals.
- Implementation and effectiveness monitoring was conducted for ESA and CWA. As to ESA, Biologists were on site at all times to confirm the presence/absence of aquatic threatened and/or endangered species within the project area, prior to project implementation, and make appropriate adjustments during project implementation in regards to dam removal methods, timing, order, and placement of debris.
- Implementation methods had to be changed after cooperators determined original methods chosen would not be suitable for the location. The NEPA document allowed for adaptive management by including various methods that could be used so thus no further NEPA analysis was required for method changes.
- Unplanned events (weather and the government shutdown) required changes to the timing of scheduled activities. Project implementation was still completed on time due to the flexibility of the project contractors and Forest Service personnel.
- Dam removal work was precise and there were no adverse impacts to the Holy Jim Creek. This is attributed to the skill of both the contractors and the U.S. Marine Corps in operating the equipment in a low-impact manner and focused use of explosives, respectively.
- PFC results indicate that the project overall is moving the condition of Holy Jim Creek toward its established PFC and the LMP's desired conditions.
  - PFC Monitoring Reach 1. Results indicate this reach is *Functional-At Risk* for both pre- and post-implementation monitoring due to the presence of non-native plants preventing a diverse composition and age classes of riparian-wetland vegetation as well as the system not being vertically stable and the stream. *Note: many of the characteristics that contribute to the Functional – At Risk rating are outside the scope of the project.* Scouring occurred below the dams resulting in large plunge pools and sediment accumulation behind the dams resulting in large gradient changes in the channel. As of fall 2018, the channel has begun returning to a more natural bedload and sediment transport regime. The channel is moving towards a more natural gradient as sediment that was artificially stored behind the dams has been mobilized and redeposited in scoured out plunge pools that had formed below the dams. There is an apparent upward trend in Holy Jim Creek at this point.
  - PFC Monitoring Reach 2. Results indicate this reach is *Functional-At Risk* for pre-implementation and post implementation year 1 monitoring due to the presence of



non-native plants preventing a diverse composition and age classes of riparian-wetland vegetation as well as the system not being vertically stable and the stream not being in balance with the water and sediment being supplied by the watershed. With minimal amounts of precipitation received after removal of the dams, the channel didn't have much of an opportunity to redistribute bedloads that had been held behind the dams. However, by year 2 monitoring this reach obtained a *Functional* rating. The channel is moving towards a more natural gradient as sediment that was artificially stored behind the dams has been mobilized and redeposited in scoured out plunge pools that had formed below the dams. The sinuosity of the channel has begun to become more in balance with the landscape setting and riparian vegetation has grown back to near pre-removal levels helping to protect banks and dissipate energy during high flows.

- PFC Monitoring Reach 3. Results indicate this reach is *Functional-At Risk* pre-implementation due to the system not being vertically stable and the sinuosity, width/depth ratio, and gradient not being in balance with the landscape setting. By year 1, post removal, this reach has obtained a *Functional* rating. The channel is moving towards a more natural gradient as sediment that was artificially stored behind the dams is beginning to mobilize and redeposit in scoured out plunge pools that had formed below the dams. The sinuosity of the channel has begun to become more in balance with the landscape setting and riparian vegetation has grown back to pre-removal levels helping to protect banks and dissipate energy during high flows.

## Recommendations

In response to the question:

### 3. What are we going to do next time?

- As time and resource permit, conduct additional post-implementation monitoring beyond the 3-year Water Board requirement, especially after large rain events, to enable Forest Service to look at scouring of the channel and downstream movement of materials. For instance, after the 2018-2019 rain events, previously undetectable dams were exposed.



Before Dam Removal (Feb. 2013)

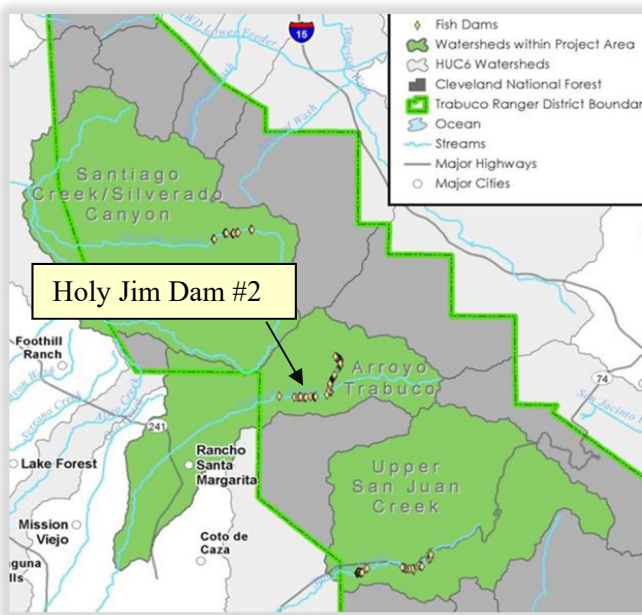


After Dam Removal (Nov. 2018)

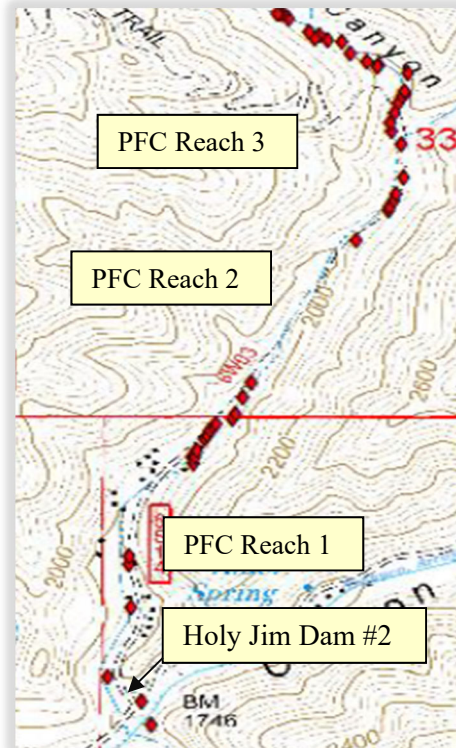




U.S. Marine Corps Assisting



Location of Holy Jim Dam #2



Location of PFC Reaches

## 5.2 Public Use and Enjoyment Projects

### *Recreation Event - Warrior's Society*

#### **Monitoring**

Monitoring for this event was a desk-audit of the special use authorization (SUA) application, the signed SUA (permit), available project planning documentation. No field visit was conducted because this event is not amenable to post-event monitoring.

#### **Results**

Relevant and notable information:



- The SUA authorized The Warrior Society to conduct 3 mountain bike races (The Vision Quest/The Counting Coup and The Trabuco Challenge) over 2 days, April 7 and May 12, respectively, using existing CNF roads and trails. The *roads* used include: Blackstar, North Main Divide, Maple Springs, and Trabuco Creek. The *trails* used include: Silverado Motorway, Holy Jim, West Horsethief, and Trabuco. Each race was limited to 175 participants. The authorization covers use of an 80 acres area and/or 0.12 miles. The Trabuco Challenge is stated to be 24 miles long.
- The SUA includes standard provisions, notably:
  - SUA Provision #27 explains that sites that need special measures for the protection of Endangered, Threatened and Sensitive Species may be identified on the ground or shown on a separate map.
  - SUA Provision #28 explains that the permittee shall notify the Forest Service of all archeological-paleontological discoveries and that protective mitigation measures may apply.
  - Exhibit B is the Operating Plan, which states in relevant part: (1) the events would occur within an 85-acre area; (2) with 550 participants planned; (3) with 100 spectators expected; (4) that facilities and aid stations would be located at the Maple Springs trailhead and the Holy Jim parking lot; (5) signage would be limited to ribbon and chalk; and (6) there would be no off-road travel.
- The issuance of the SUA was within the scope of NEPA categorical exclusion (CE) (d)(8) - approval, modification, or continuation of minor, short-term (one year or less) special uses of National Forest System lands. Use of CE (d)(8) was supported by a prior NEPA and IDT review. No extraordinary circumstances were found by biologist, land, trails, heritage and tribal specialists.

## Conclusions

In response to the questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- Although no LMP consistency review documentation was available to review, a review of the LMP and Forest Service geospatial data indicates that mountain bike events are not inconsistent with LMP in land use zones: Back Country, Back Country Motorized Use Restricted, Back Country Non-Motorized, and Developed Area Interface. Use of mountain bikes in these area on existing NFS roads and trails is consistent with the LMP unless restricted for another reason (e.g., another competing LMP provision or other legal requirement/limitation). A review of the LMP standards do not indicate any other restriction imposed by the LMP. For example, Standard #20 (California spotted owl limited operating period) does not apply to existing road and trail use. Other legal requirements would be informed by the IDT.
- The SUA authorized 3 events using the same route based on an existing NEPA and IDT review. Although prior reviews can be sufficient to support future events, new information or circumstances can change legal requirements and a new IDT review is the best way to ensure LMP consistency, NEPA, and other legal compliance. For example, the R5 PA implementing the NHPA has been amended since 2007. It is likely the SUA



was issued based on prior NEPA and IDT review due to lack of IDT availability to process a new review in a timely manner (e.g., in time for the event) due to other priority projects. The use of existing legal compliance documentation for a reoccurring event is a solution, if it satisfies applicable and current legal requirements.

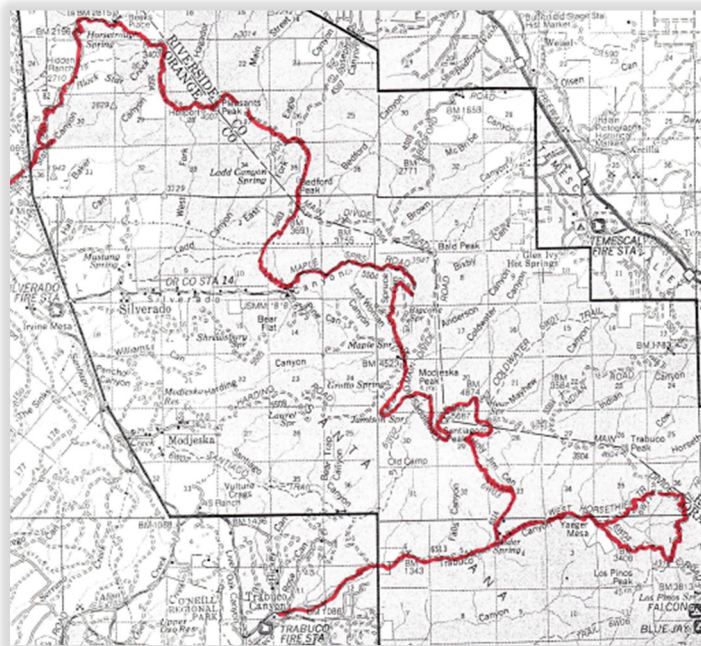
- SUA Provision #27 is included in the SUA despite no ESA concerns or requirements.
- SUA Provision #28 is included in the SUA despite no concerns or requirements. Also, permittee is likely not trained to identify such resources.
- Information in Exhibit B does not match what was authorized in the SUA (80 acres, 0.12 mile, and number of participants). The prohibition on off-road travel may not be specific enough to caution participants and the permittee against off-trail biking, which could result in resource damage. The use of trails, is technically “off-road” and authorized under the SUA.

## Recommendations

In response to the question:

### 3. *What are we going to do next time?*

- Tailor the SUA standard provision to eliminate confusion that occurs with use of standard provisions. Clarify the off-road prohibition.
- Conduct a LMP Consistency review and a new NEPA and IDT review for future events. Ensure future events are reviewed by current Heritage Program Manager under the current version of the R5 PA.
- In the future, the Forest Service may have to deny public access if legal compliance cannot be ensured due to inadequate agency staffing. The Forest Service is only able to be as efficient as Congress intended and this intent is communicated by the budget.



Mountain Bike Route



## ***El Centro Tract Recreation Residence***

### **Monitoring**

Monitoring for this event was a desk-audit of the SUA, permit file records, project planning documents, and a field visit to the recreation residence (*Cabin # not included for privacy*) on June 17, 2019.

### **Results**

Relevant and notable information:

- Per the SUA (printed in bold-face type), the cabin is eligible for listing in the National Register of Historic Places (NRHP) and will be managed as historic per the Region 5 Programmatic Agreement (PA) and Forest Service policy (R5 Recreation Residence Supplement 2709.11-2000-1). In addition, the SUA explains the process for proposing improvements under II. Improvements, A. Limitations on Use.
- From 1935 to 2017, the cabin has had 10 owners with no adverse effects to the cabin until 2018. The current owner purchased the cabin in 2017. The Forest Service observed the unauthorized improvement during an inspection in August 2018. The Forest Service issued a notice of noncompliance, requiring the permittee to correct the unauthorized improvements by December 2019. The SUA did not direct the permittee to specifically do or not do anything in regards to management of the historic cabin. However, Forest Service staff confirmed that the permittee was provided with documents that explained what is and is not allowed in regards to modification of historic cabins. In addition, the permittee was aware of the process for proposing improvements as stated in the SUA.

### **Conclusions**

In response to the monitoring questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- The cabin was not managed in accordance with the SUA and NHPA. Because of this, the SUA was not managed consistent with the LMP, which integrates legal compliance into relevant cultural and historic goals and standards. Because the SUA terms were not adhered and the process for proposing improvements was not followed, the Forest Service was not able to prevent adverse effects. The unauthorized improvement may have been a result of confusion regarding why a federal law applies to a privately-owned cabin. Although the Forest Service does not own the cabin, the issuance of a SUA and subsequent permit administration (e.g., O&M work or improvements to the cabin) is the federal “undertaking” that brings the privately owned structure within the scope of NHPA. NHPA applies to the permittee indirectly because the cabin sits on NFS lands.
- Permittee noncompliance with the SUA and NHPA places the Forest Service in jeopardy of losing its ability to operate under the R5 PA, which provides a more streamline process for complying with NHPA requirements. In effect, permittee noncompliance equates to Forest Service noncompliance. Permittee noncompliance would factor into whether SUAs would be reauthorized, revoked, or terminated. In addition, noncompliance affects the residence program on the CNF for other permittees if the program cannot be managed in accordance with the LMP and other applicable laws.



## Recommendations

In response to the monitoring question:

### 3. *What are we going to do next time?*

- The Forest Service is required to report R5 PA noncompliance to the State Historic Preservation Officer (SHPO).
- At a minimum, ensure that the Heritage and Tribal Program Manager reviews all SUA proposals, including permit administration (e.g., O&M, improvements), for NHPA-eligible cabins to ensure compliance with the NHPA.
- Send letters to permittees that occupy NRHP-eligible cabins to remind them that work on cabins is not allowed without Forest Service approval with an explanation of why federal law applies to the privately-owned cabins.
- Tailor future SUA provisions to expressly state that applicable prohibitions rather than referring generally to the applicable law. This may be prudent given that the current SUA provision did not prevent adverse effects and is difficult to restore historic properties once they are affected.

*Photos not included for privacy.*

## 5.3 Facility Operations and Maintenance Projects

### *San Mateo Canyon Wilderness' Verdugo Trail*

#### Monitoring

Monitoring for this event was a desk-audit of available wilderness management direction and documents, a 1994 Ortega Fire Burned-Area Report, and a June 11, 2019 field visit.

#### Results

Relevant and notable supporting information:

- Verdugo Trail is an existing hiking trail in the San Mateo Canyon Wilderness that can be hiked out-and-back or as a through-hike. The LMP monitoring team hiked the initial 4 miles starting from the Rancho Carrillo trailhead and ending at the Four Corners trail marker.
- The trailhead log indicates 9 visitors over a 3-month period (April to June). The trail is not accessible to the general public from the Rancho Carrillo gate, but access into the area is possible by other routes in Orange and Riverside counties. Public access from the Rancho Carrillo trailhead requires permission by the community, but the sign informing the public of this is located inside the community, not at the Ortega Highway gate where it can be seen. Rancho Carrillo signs may confuse the public on whether hunting is allowed in the wilderness. The general public does not need Rancho Carrillo community approval to hunt in the San Mateo Wilderness. Also, the signs may be located on NFS land.
- The trail is a former road that was in existence before the area was designated as wilderness in 1984 under the *federal* California Wilderness Act. The trail provides a very pleasant, scenic, and remote hiking experience. This was based on the relatively good condition of the trail (likely due to volunteers keeping vegetation trimmed), a variety of wildflowers in bloom, and good scenic vistas along the entire trail. The minimalist trail markers are consistent with the Wilderness Act's mandate that wilderness be protected and managed to preserve its natural conditions with the imprint of man's work substantially unnoticeable



(see photo below). Considering the heat exposure on the trail, the trail markers are necessary aids to the public given that the trail branches off in several direction at the Lucas Ranch and Four Corners intersections. The markers can help to avoid the public getting lost. Cow pies were noticeable along the beginning of the trail. The remnant fencing in disrepair near the Rancho Carrillo trailhead is likely related to past grazing. There is no need for these fences since the cattle are free range within the allotment. Grazing is allowed in the wilderness because the use was established prior to 1964. The culvert in the riparian area appeared functional and properly sized. Other signs of man's work are the water tank near the beginning of the Rancho Carrillo trailhead. A culvert is located in the riparian area under the trail, which is a former road. Hand work done by volunteers (vegetation trimming and water bars) is consistent with the prohibition on using machinery in the wilderness.

- Forest Service geospatial data shows potential incursions by Rancho Carrillo properties into the wilderness (e.g., backyards, private trails).
- Erosion is evident on a few stretches of the trail where there is a long and steep grade. There is an approximate ½-mile segment of the trail is moderately to severely gullied (length estimated from field visit and aerial imagery). The most severe gullying was observed on wide sections of trail that most resemble old roads, in granitic soils, and on continuously steep slopes. There was some evidence of recent handwork to improve drainage in the form of small rock water bars or earthen rolling dips, a few old wood check dams, but more systematic and extensive trail maintenance would be required to arrest this erosion and restore existing gullies. This may be contributing sediment to connected waterbodies, namely the ephemeral west fork tributary of Bluewater canyon, which can adversely impact downstream water quality. LANDSAT aerial imagery available on Google Earth Pro reveals that areas of disturbance have been experiencing similar erosion for approximately a decade or more, therefore gullying has not been exacerbated by any recent change in management.

## Conclusions

In response to the monitoring questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- Forest Service management of the San Mateo Wilderness was determined to be consistent with the LMP and the Wilderness Act. Applicable LMP management direction is LMP Goal 3.1 – *Provide for Public Use and Natural Resource Protection*, and Goal 3.2 – *Retain a Natural Evolving Character within Wilderness*.
- Overall, natural processes are largely at play in the wilderness with very little sign of man's work. However, in hiking the trail, staff become aware of natural erosional processes that may impair use of the trail and result in downstream sedimentation of water bodies. The erosion has occurred over many years and continues. This is attributed to lack of staff availability and other agency priorities shifting attention away from wilderness areas. Restoration work would be needed to address erosion.
- Public access into the area is possible, although generally not from Rancho Carrillo.

## Recommendations

In response to the monitoring question:



3. *What are we going to do next time?*

- A meeting with Rancho Carrillo may be needed to discuss potential issues.
- Further research may be needed on potential incursions into wilderness.
- Propose restoration work for erosion and potential private property incursions.



Source: Google Earth (August 15, 2019).

Trail Segment Hiked by Monitoring Team



Scenery from Rancho Carrillo Trailhead to the Four Corners trail maker.





Wildflowers along trail and Four Corners trail maker (view is toward Riverside County/Tenaja Trail).

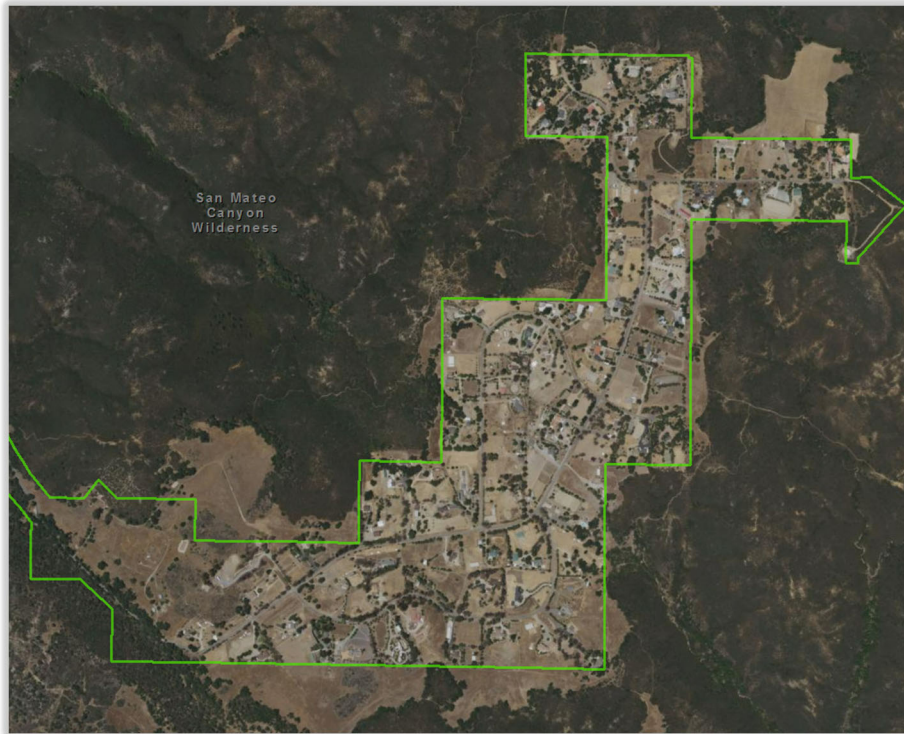


Evidence of gully along trail and example of erosion-induced subsidence along hillslope (unknown cause)



Near Rancho Carrillo trailhead entrance – water tower, Rancho Carrillo sign, and Rancho Carrillo trailhead marker.





Rancho Carrillo & San Mateo Wilderness Boundary

### ***Four Corners Trailhead – Vault Restroom and Accessible Parking Project***

#### **Monitoring**

Monitoring for this event was a desk-audit of project planning documents, contract documents, and a June 21, 2019 field visit.

#### **Results**

Relevant and notable information:

- The project involved installing a vault toilet and paving the parking area at the Four Corners trailhead leading into the Corral Canyon Off-Road Vehicle Area. The project was intended to resolve sanitation issues and provide Americans with Disabilities Act (ADA) access.
- The project was determined to be within the scope of NEPA categorical exclusion (CE) (d)(3) – repair and maintenance of administrative sites. No extraordinary circumstances were found upon IDT review by a biologist, hydrologist, and the land, trails, heritage specialists. NEPA documentation and IDT review is initially dated in 2008, but follow-up reviews were conducted in 2016 and 2017 for continued validity of the prior findings.
- The project required compliance with Forest Service National Core and Region 5-specific water quality BMPs, namely: Fac-2. Facility Construction and Stormwater Control; Fac-4. Sanitation Systems; 2.10 Parking and Staging Areas; 2.11 Equipment Refueling and Servicing; 2.13 Erosion Control Plans; and 4.4 Control of Sanitation Facilities.
- Contract documents generally refer to some of the BMP requirements.
- A contract modification occurred for installation of a shade structure.



## Conclusions

In response to the monitoring questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

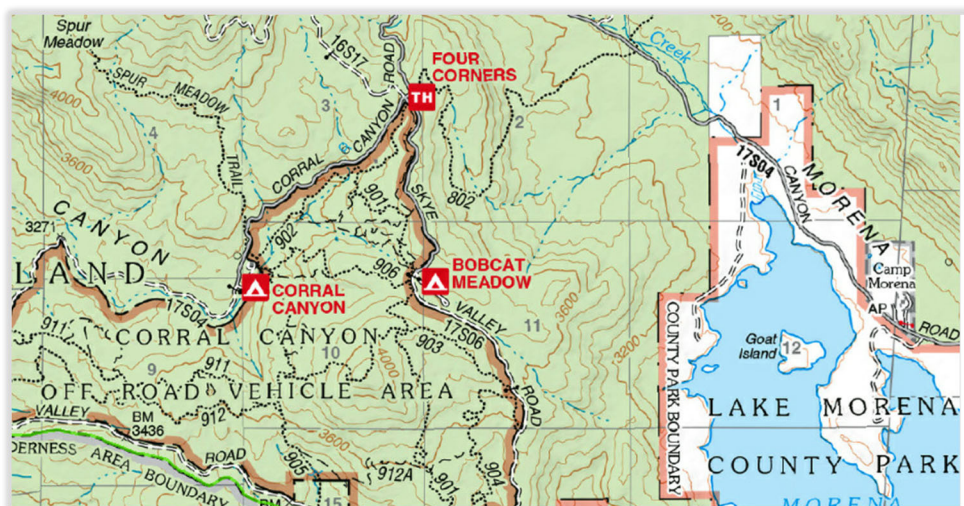
Main findings:

- Despite lack of LMP Consistency documentation, the project was developed to further LMP direction (e.g., Goal 3.1 – Provide for Public Use and Natural Resource Protection and REC 2 - Sustainable Use and Environmental Design). The project was implemented in a Backcountry land use zone. Management direction is to limit development to a slow increase of carefully designed facilities to help direct use into the most suitable areas. The project only developed and paved a small area of the existing dirt parking area to support a vault toilet, shade structure, and ADA-accessible parking spot. The project addressed a high-use area to promote a positive, safe, and sanitary user experience. In addition, the project ensured compliance with the ADA.
- Although no issues were noted with project implementation and the contract provisions were generalized to put the contractor on notice of BMP compliance requirements, the Forest Service specific BMPs were not expressly integrated into the contract document. It may be that this information was provided to the contractor as a separate submittal.

## Recommendations

In response to the monitoring question:

3. *What are we going to do next time?*
- Forest Service COs should integrate requirements developed during the planning process into the project contract documents or provide them to the contractor as attachments/exhibits to the contract.
  - Involve the relevant Forest Service IDT member in review of contract modifications.



Location of the Four Corners Trailhead





Post-Construction Photos of the Four Corners Trailhead

## 5.4 Commodity and Commercial Uses Projects

### *Warner Ranch Allotment*

#### **Monitoring**

Monitoring for this event was a desk-audit of project planning documents, a monitoring report, and a contract documents, and a June 21, 2019 field visit.

#### **Results**

Relevant and notable information:

- Grazing in the Warner Ranch Allotment (WRA) is authorized via a term grazing permit with on-off provisions with adjacent land owned by Vista Irrigation District (VID). The WRA permit exists to prevent the need for exclusion fencing, to prevent unauthorized grazing, although the WRA is not actively grazed. The main grazing area is actually located off-CNF. A water trough is located on NFS land.
- The term permit provisions were tailored to the WRA and integrated the Allotment Management Plan and relevant LMP requirements, which were also tailored to the WRA.
- NEPA analysis was completed in 2006 and reevaluated in 2018 (NEPA sufficiency review) to ensure continued validity and legal compliance. The statutory CE for grazing was used, as provided in the Consolidated Appropriations Act of 2004. IDT review included: wildlife biologist, hydrologist, and archeologist. WRA contains occupied Stephens's kangaroo rat habitat and management action is in accordance with the terms of the biological opinion issued pursuant to ESA. In specific, grazing benefits the species habitat by maintaining it as open grassland. WRA contains some floodplains and wetland areas associated with the West Fork of the San Luis Rey River. Water quality BMPs monitoring adopts range-specific methods.
- The project was randomly selected for BMP monitoring in 2013, as part of the CNF's BMP Evaluation Program (BMPEP) that is conducted annually. No outstanding issues related to range activities were found. Riparian and stream channel attributes (related to grazing activities) were rated as stable on both allotments. Both allotments are being managed in accordance with the LMP; BMPs were implemented and effective. WRA was also monitored in 2009 and 2012 with the same results.



## Conclusions

In response to the monitoring questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- Forest Service project planning and implementation was determined to be consistent with the LMP and NEPA, CWA, ESA, and NHPA. The existing NEPA analyses was updated by the IDT to ensure legal compliance by considering any new information or changed circumstances. The Allotment Management Plan was also updated.
- Archeological site records were updated as part of the project. This caused project delay despite the existence of a Grazing PA that is supposed to streamline NHPA compliance. The reality on the CNF is that a lot of the archeological site records have omissions or errors that require correction before a NHPA determination is made in reliance on these records. Practically speaking, the opportunity to revise site records is when there is a project in an area since that is the time staff are able to focus on any one project area. It is currently not possible for the Forest Service archeologists to conduct a comprehensive update of the CNF's site records in advance of projects. This will be an ongoing challenge.
- The term permit was a great example of a tailored terms and conditions. Avoiding boilerplate provisions provides for clarity and certainty for permittee and agency staff during permit administration. It also avoids the need to reference past planning document since those requirements were carried forward into the permit.

## Recommendations

In response to the monitoring question:

3. *What are we going to do next time?*
- Consider additional archeologist support to update CNF site records to reduce other project delay.



Ladder to allow amphibians to exit trough.



Evidence of off-road vehicle use in the WRA.



## ***County of San Diego FLPMA Permit***

### **Monitoring**

The project is the issuance of a SUA to San Diego County for the use and maintenance of a segment of Lyons Valley Road. The purpose of the June 6, 2019 field visit was to inspect the road segment permitted to the County to determine if use is as permitted and consistent with the LMP. The relevant project documents include the permit and field inspection notes from 2008.

### **Results**

Relevant and notable information:

- The SUA is not actually a new project, it is dated 1954 for a linear right-of-way with 4.1 miles of county road located on NFS land. The SUA includes provision that require the permittee to protect NFS land under permit from damage. It also includes additional stipulations and construction standard pertaining to many items including culverts and BMPs; these requirements are circa 1953.
- An IDT review was conducted in 2003, but findings are not available to review.
- A field inspection occurred in 2008 and did not note any issues.
- During the June 6, 2019 monitoring, the Forest Service transportation engineer found no recent, significant damage, but that improvement for long-term erosion control/sediment control is possible. Most of the road prism is in stable condition, the road has sufficient drainage features. One culvert was found to be non-functioning.

### **Conclusions**

In response to the monitoring questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- The permit file does not contain documentation that demonstrates LMP consistency or other legal compliance, including NEPA. This may be a result of the fact that this use has been in existence since the early 1950s and no new activities being proposed by the permittee. However, this is likely not the case since road maintenance has likely occurred since the 1950s.

### **Recommendations**

In response to the monitoring question:

3. *What are we going to do next time?*
  - Forest Service should: (1) inform the permittee of the needed corrective action determined by the Forest Service transportation engineer. To conduct storm patrol after unusual wet winters to address maintenance that may be needed outside of regularly scheduled maintenance. (2) Determine if there are additional requirements from the Forest Service hydrologist.
  - Forest Service should update the SUA to integrate current requirements so that use of NFS lands complies with current and applicable requirements.





Long-term erosion issues noted along shoulder of Lyons Valley Road (left). Embankment erosion (center). Blocked culvert (non-functioning) leading to issues nearby (right).

## 5.5 Fire and Aviation Management Projects

### *Fuel Reduction at Pine Valley – Laguna Place: Unit 12 (34 acres)*

#### Monitoring

Monitoring consisted of a desk-audit of project planning documents and a field visit on June 17, 2019.

#### Results

Relevant and notable information:

- Unit 12 is comprised of 34 acres on Mount Laguna. This project is part of an ongoing project analyzed in a 2014<sup>8</sup> NEPA document for *Mount Laguna and Pine Valley Community Protection and Healthy Forest Restoration Project*. The total area to be treated on Mount Laguna is 4,443 acres. Overall, the project seeks to minimize adverse effects to life, property and resource values from wildland fire.
- The pre-burn work (e.g., cutting and piling vegetation to be burned) occurred in 2016.
- This unit was treated in March 2018 by broadcast burning the area to discourage crown fire and pruning trees to raise canopy height. Fire and manual methods (axe) were used to treat the vegetation.
- The 2014 Burn Plan integrated resource protection measures (RPMs) and design features set forth in the 2014 NEPA document and authorized burning between 2014 and 2015.

#### Conclusions

In response to the monitoring questions:

1. *By comparing expected results to actual results, did we accomplish what we set out to do?*
2. *Why did it happen?*

Main findings:

- LMP consistency was integrated into the project NEPA document. The project was developed to implement the LMP.
- Burning of Unit 12 followed burn plan and NEPA document requirements, but the actual burning occurred outside of the Burn Plan's authorized window. Despite this, project burning occurred on the local air board's permissive burn days.

<sup>8</sup> The 2018 supplemental NEPA document allowed for commercial sale of wood products and did not vary the RPMs and design features of the 2014 NEPA document.



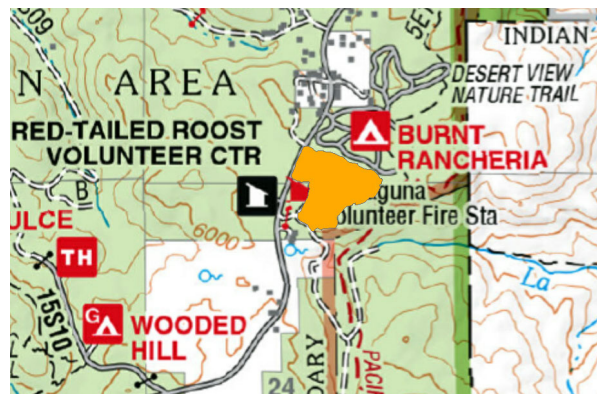
- The project area appears in good condition with little-to-no signs (e.g., potential adverse effects) that the area was recently burned.
- No issues noted from the implementation team, including adherence to limited operating procedures in place for the protection of the California spotted owl.

## Recommendations

In response to the monitoring question:

### 3. *What are we going to do next time?*

- Although no erosion-related issues were observed in the treated area, the CNF hydrologist recommended installing water bars or ditches along the fire lines in the future to avoid post-implementation erosion. This could be done at the same time that the implementation team restores fire lines when they are done treating the area.
- The project implementers recommended that the planning team consolidate project design feature and other mitigation measures, developed during the planning process, in a single NEPA document. This would ensure all measures are implemented and avoid the scenario where implementers are parsing through initial and supplemental NEPA documents to determine the sum total requirements.



Unit 12 (in orange) is located in the Mount Laguna Recreation Area.



CNF Monitoring Team walking through treated area and along the fire line used to implement project.





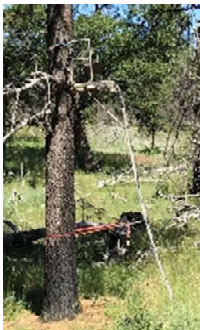
Un-treated chaparral vegetation in the background (behind the large trees).



Fire lines created and used to implement the project



Tree killed by fire (green and totally scorched) vs. tree killed by other cause (brown with low scotch line).



Deer stands, glass bottles, and damaged fence.

## 6. LMP Monitoring Protocol Recommendations

This year the team continued with the open-ended-question format used for the first time in the FY2008 monitoring and evaluation report. The monitoring approach combined the monitoring guide, as revised in the spring of 2009, with the 2014 Southern California LMP Amendment Monitoring Alternative B, and new protocols developed for monitoring questions adopted in 2016. They are available to the public upon request to the CNF Planner.



## 7. Monitoring Team Recommendations

The FY2018 monitoring team found that the LMP goals, strategies, and design features are taken seriously and incorporated into project planning, and they are generally manifested in the field by project results. However, in FY2018, the effects of an ever increasing workload and corresponding decrease in agency budget and staff availability are apparent in the project record.

Overall, more “left-side” planning (LMP consistency review) and improved project record management is recommended to ensure legal compliance and avoid project delay or project cancellation. Despite this, internal processes and communication continue to improve. Monthly IDT meetings continue to be held. Project records are being organized in a central location and maintained more consistently through project planning. Maps and photographs are being incorporated more into planning documents to avoid highly technical explanations that those outside the agency may not understand. NEPA documents are being improved to be more focused on the issues that matter, demonstrate NEPA and other legal compliance, and to serve as the informational tool they are intended to be under the law. The IDT continues to review Forest Service Enterprise Team and other contractor work products for technical and legal sufficiency.

The Forest Service staff on the CNF are committed to efficiently navigating legal requirements so that projects benefiting the land and public are implemented, rather than generating the “excellent paperwork” cautioned against by Congress in NEPA. CNF staff continue to look for ways to be more efficient and are currently working with the state to utilize California’s Senate Bill 901 (SB 901) on projects that would benefit both state and NFS lands. CNF staff will continue to scrutinize new tools that purport to provide the agency with efficiencies (e.g., new Healthy Forest Restoration Act categorical exclusions), as standard processes are sometimes the most efficient route given CNF-specific issues and needs.

More specific recommendations have been provided to the CNF’s Forest Leadership Team for consideration and are discussed in Section 9.

## 8. Potential LMP Amendments and Corrections

Monitoring did not surface a need for a significant amendment of the plan at this time; however, two future LMP amendments may be required. *First*, to determine management direction for lands that have been acquired by the Forest Service into the CNF. For instance, SDG&E has donated 11 parcels totaling approximately 2,147 acres to the CNF from 2012 to 2018. *Second*, is to establish management direction for CNF Inventories Roadless Areas (IRA) above the minimum prohibitions set at the national level. This potential need was identified during the course of reviewing Nevada Hydro’s proposed Lake Elsinore Advanced Pump Storage (LEAPS) project. The current CNF management direction may not take into account the unique characteristics for which IRAs were designated.

To date, the following individual project decisions have included insignificant amendments of the Cleveland LMP: 1) Motorized Travel Management (November 12, 2008); 2) West-Wide Energy Corridor (January 14, 2009); 3) Sunrise Powerlink (July 9, 2010); and 4) El Cariso Communication Site (March 8, 2011).



The CNF LMP Amendment with a Record of Decision signed on October 23, 2014 altered the Land Use Zones of some of the Forest's IRAs<sup>9</sup> and undeveloped areas as well as adjusted the strategy used for LMP Monitoring, as reflected in this report. An administrative change on May 9, 2016, brought the monitoring program into compliance with the 2012 planning rule requirements (36 CFR 219).

## **9. Action Plan, Forest Leadership Team**

The actions discussed below will be taken in response to this FY2018 LMP monitoring and evaluation report, including those actions from past monitoring that need to continue.

### **Program of Work (POW)**

- Ensure the amount of projects planned for each fiscal year is commensurate with staff availability to carry out project planning, with consideration given to post-planning (implementation) requirements those same staff are required to perform.
- Ensure a project leader is assigned to all proposed projects. This normally would be the project proponent. It could be the person who is proposing, developing, and/or designing a project to respond to a need.

### **Monthly Standing IDT Meeting**

- Continue the monthly standing IDT meetings.
- Encourage active project leader involvement in monthly standing IDT meetings to ensure that projects identified in the POW are being moved through the necessary planning, permitting, and consultation processes in advance of any contracting deadline.

### **Project Planning (LMP, NEPA, and Other Legal Compliance)**

- Involve project implementers into the planning process to ensure projects and mitigation measures, as designed, are feasible and projects are "shovel ready" once the NEPA process is completed. In many cases the implementers may be the project proponents.
- Resume use of LMP consistency checklists during project development (left-side planning on the triangle below) to inform Forest Service Line Officers before initiating the NEPA process (right-side planning on the triangle below). LMP consistency is a prerequisite to initiating the NEPA process and taking agency action.
- Involve tribes before initiating any NEPA public involvement processes. Improve documentation for: pre-scoping tribal notification and coordination. This obligation is rooted in the unique Government-to-Government relationship between tribes and the federal government. In addition, advance communication will facilitate compliance with other historic and cultural resources laws, regulations, and policies pertaining to tribes. The PA is the Forest Service R5 agreement with the SHPO and tribes on how the agency will comply with the NHPA on NFS lands.
- Involve the public for all projects as required by Forest Service regulations, until such requirement becomes discretionary. Forest Service NEPA regulations are being revised to make public involvement discretionary for use of CEs.

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<sup>9</sup> Note: the 2001 RACR prohibitions trump any inconsistencies in the CNF LMP, which appears to have adopted an IRA map that allows for road construction in some areas even though this deviation is not reflected in the rule. An LMP amendment is not required to correct this error because, as is the case with all law and policy changes, the LMP would be implemented in accordance with the 2001 RACR.



- Improve NEPA documentation (e.g., explaining rationale for conclusion) and demonstrating LMP consistency and other legal compliance (in addition to NEPA) so that the NEPA documents truly are informational documents for the public and the Line Officer. This will also allow the Line Officer to have all the important and relevant information to make an informed decision. It will also help project implementers know the next steps after the NEPA process. Finally, showing our work provides evidence that a “hard look” was taken under NEPA.
- Improve documentation for public scoping efforts for using CEs until the Forest Service regulations change to make this discretionary (regulations currently being revised).
- Improve the integration of adaptive management into NEPA documents and avoid unnecessary prohibitions on agency action so that implementers have the flexibility to do what is right by the resource. Minor modifications that do not trigger the threshold for supplemental NEPA review may be documented by a supplemental information report.
- Integrate EADM principles into project planning. For instance, consolidate all reoccurring recreation events into single NEPA review to make efficient use of IDT time for minor project with little-to-no potential for adverse effects. Also, consider a forest-wide fuels NEPA document.

### **Project Management**

- Keep all project planning documents in the working CNF project file for the current fiscal year or the permit file to support SUAs. This is recommended despite NEPA not requiring a project file for use of some CEs. Note that this NEPA discretion is specific to NEPA and exercising it may not always benefit the agency. *First*, the IDT are not able to use, update, or rely on past analyses if records are not saved in a central location. The IDT cannot gain efficiencies. *Second*, the agency’s decision to use a CE that does not require a project file can still be challenged under the Administrative Procedures Act (APA) arbitrary and capricious standard of review. The court will also look to see if the agency took the requisite “hard look” before making its decision. The hard look requirement applies to all levels of NEPA analysis, even CEs with no project file. *Third*, if the agency action is challenged under the APA, the court will review the “whole record.” If there is no record containing the supporting information that led to the agency action, it becomes difficult for the agency to demonstrate legal compliance occurred (NEPA and other laws) and that a “hard look” was taken under NEPA.

### **Project Implementation**

- Improve project implementation and effectiveness monitoring to facilitate future, similar projects. The agency at the Washington Office level is requesting National Forests make efforts to improve implementation and effectiveness monitoring, so that future project NEPA analyses can be supported by evidence. In addition, the Forest Service NEPA regulations are being revised to allow for use of CEs for similar projects. Monitoring data would support using the new CE (e.g., demonstrating that past planned project resulted in little to no adverse effects as anticipated). The project’s Contracting Officer Representative (COR) is often the only person involved in project implementation and thus the most logical person to aid the agency with conducting project implementation and effectiveness monitoring (bottom of the triangle below). COR field notes could integrate relevant information.



- Continue to improve internal communications so that project planning requirements are carried forward into contracts so that projects are implemented based on the design and mitigation measures identified in the planning process.
- Continue to ensure projects are implemented according to specific instructions provided by signed NEPA decisions in all cases. Cross-reference to make sure that specialist reports match analysis and decision documents, and that language and locations for contract specifications, permits, and project plans are derived from decision documents.
- Continue to involve the IDT through project implementation, especially when field realities necessitate changes in projects not fully anticipated during the NEPA process.
- Continue to arrange for the transfer of project leadership duties from departing staff members to new personnel to avoid communication issues and lack of project oversight.

### **Route Management**

- Continue to emphasize decommissioning of undetermined, unneeded roads and resolving the status of “temporary roads.” This work serves to improve watershed function and further LMP goals and objectives.
- For roads under special use permit (which the permittee is required to maintain), ensure that permittee is aware of current road management standards and monitor condition of roads. Issue notices of non-compliance for roads not meeting forest standards that are contributing to degraded watershed conditions. Develop special use permits for existing, needed roads without permits when considering nearby projects.
- Update the CNF road and trail layer to ensure correct information is located in one place. Currently the Forest Service GIS specialist for the CNF is managing two separate layers.

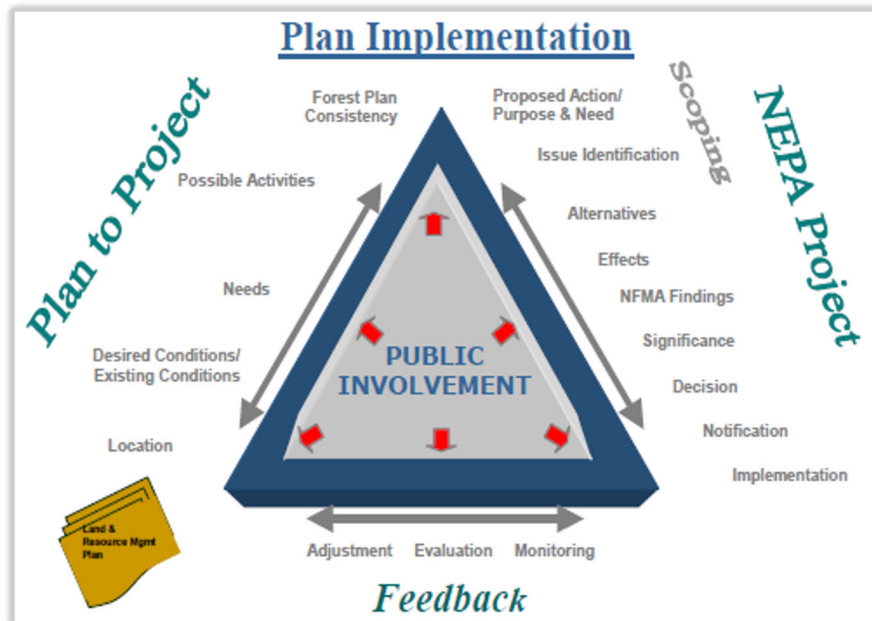
### **Watershed Management**

- Develop a prioritized plan for improving the condition of roads, trails, and facilities that do not meet Best Management Practice standards for protecting water quality, given currently insufficient funding for their maintenance.

### **LMP Annual Report**

- Complete monitoring and prepare this report earlier in the FY (i.e. March/April) to avoid conflicts with other pressing forest management activities (e.g. wildfire), and to contribute to the POW planning for the following FY that begins in the springtime.





## 10. Public Participation

Groups or individuals who have indicated an interest in LMP monitoring received an email notifying them of the availability of this report on the CNF web site and how to obtain a print version of this document.

## 11. Members of the Monitoring Team

Monitoring and evaluation of the LMP requires support and contributions from a wide range of program and project leaders on the CNF. Completion of this year's report was primarily challenged by limited staff availability due to emergency response efforts associated with the 2018 Holy Fire and the 2018-2019 government shutdown. Despite these and other challenges, meaningful contributions were made by USDA Forest Service staff in the furtherance of this process and the management of the CNF.

Members of the FY2018 project field monitoring team include:

Management:	Jeff Heys, CNF Resource Staff Officer
	Amy Reid, Palomar District Ranger
Resource Specialists:	Linda Serret, CNF Forest Planner
	Trien Le, CNF Transportation Engineer
	Stephen Fillmore, CNF Fuels Mgmt. Specialist
	Victoria Stempniewicz, CNF Hydrologist
	Kim Villa, CNF Resources Assistant
	Lance Criley, CNF Rangeland Management Specialist
	Lindsey Steinwachs, Descanso Recreation-Lands Officer
	Jake Rodriguez, Trabuco Recreation and Lands Officer
	Julie Donnell, CNF Fish Biologist
	Eraina Nossa, CNF Archeologist
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Program monitoring information was contributed by:

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GIS:	Steven Del Favero, CNF GIS Coordinator
Hydrology:	Victoria Stempniewicz, CNF Hydrologist Emily Fudge, CNF Supervisory Hydrologist
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