



Forest Service

Pacific
Southwest
Region

Land Management Plan Monitoring and Evaluation Report

September 2018

Cleveland National Forest Fiscal Year 2017



Dear Cleveland National Forest Stakeholders:

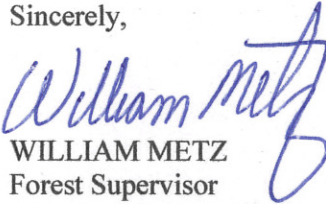
September 2018

I am pleased to present the Cleveland National Forest's (Cleveland NF) 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 Cleveland NF 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 twelfth 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 Cleveland NF stakeholders informed of the results of our monitoring is important to me. This report will be posted on the Cleveland NF website at <http://fs.usda.gov/cleveland/>. If you are interested in becoming involved in projects or other planning, please also see our Schedule of Proposed Actions at <http://www.fs.fed.us/sopa/forest-level.php?110502>.

Sincerely,


WILLIAM METZ
Forest Supervisor
Cleveland National Forest

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov. USDA is an equal opportunity provider, employer and lender.

TABLE OF CONTENTS

1. Introduction.....	4
2. Methodology	4
3. LMP Part 1 Monitoring.....	5
Forest Goal 1.1: Community protection (LMP, Part 1, pg. 19)	5
Forest Goal 1.2: Restoration of forest health (LMP, Part 1, pg. 20).....	8
Forest Goal 1.2.1: Fire Regime I, 0 to 35 years, low severity (LMP, Part 1, pg. 22)	10
Forest Goal 1.2.2: Maintain or increase percent chaparral and coastal sage scrub in condition class 1 (LMP, Part 1, pg. 25)	11
Forest Goal 2.1: Invasive species (LMP, Part 1, pg. 31)	14
Forest Goals 3.1 and 3.2: Managed recreation in a natural setting (LMP, Part 1, pp. 33 to 36).....	14
Forest Program Goal – Her 1: Heritage Resource Protection	16
Air Quality Monitoring	18
Forest Goals 4.1a and 4.1b: Energy and minerals production (LMP, Part 1, pp. 37 and 38)	19
Forest Goals 5.1 and 5.2: Watershed function (LMP, Part 1, pg. 39) and riparian condition (LMP, Part 1, pg. 41)	20
Forest Goal 6.1: Rangeland condition (LMP, Part 1, pg. 42)	22
Forest Goal 6.2: Biological resource condition (LMP, Part 1, pg. 44)	24
Forest Goal 7.1: Natural areas in an urban context (LMP, Part 1, pg. 46).....	29
4. Part 2 Monitoring.....	32
5. Part 3 Monitoring.....	33
5.1 Resource Management Projects	34
5.2 Public Use and Enjoyment Projects	35
5.3 Facility Operations and Maintenance Projects.....	37
5.4 Commodity and Commercial Uses Projects	40
5.5 Fire and Aviation Management Projects.....	41
6. LMP Monitoring Protocol Recommendations	43
7. Monitoring Team Recommendations.....	43
8. Potential LMP Amendments and Corrections	43
9. Action Plan, Forest Leadership Team.....	43
10. Public Participation	45
11. Members of the Monitoring Team	45

Cleveland National Forest

Land Management Plan Monitoring and Evaluation Report

Fiscal Year 2017

1. Introduction

The Cleveland National Forest Land Management Plan—referred to as the “Land Management Plan” or “LMP” throughout this document—went into effect on October 1, 2006. The LMP includes a monitoring program that provides the means for confirming the sufficiency and adequacy of guidance 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 land management plans 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 Cleveland National Forest (Cleveland NF) and the interpretation of monitoring data from fiscal year 2017, which began on October 1, 2016 and ended on September 30, 2017.

2. Methodology

Monitoring is described in all parts of the Land Management Plan, with monitoring requirements summarized in Part 3, Appendix C. The Cleveland NF monitoring guide further details the protocols that were used in this review. This guide is available on request from the Cleveland NF Planner, whose contact information is listed on the final page of this report.

Part 1 of the Land Management Plan identifies outcome questions that will help to evaluate movement toward the desired conditions over the long term. The monitoring guide describes the baseline data that will be used to answer these questions and evaluate progress. A comprehensive evaluation of this progress is prepared every two years and is included in this monitoring and evaluation report. Previously, progress evaluation was completed every five years in accordance with Part 3, Appendix C, in the LMP. An administrative change to the monitoring program in 2016 adjusted the reporting period to two years as mandated by new planning regulations. 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.

Implementation and effectiveness monitoring for Part 3 of the Land Management Plan 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 listed on p. 45 – recommended possible corrective actions to Forest officials. All recommendations are deliberative in 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 Land Management Plan 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 Land Management Plan 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 Cleveland NF 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 Cleveland NF 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?

All results, conclusions, and recommendations are documented in this monitoring and evaluation report.

3. LMP Part 1 Monitoring

This chapter documents the monitoring of indicators of progress toward the desired conditions described in the Cleveland NF Land Management Plan (LMP, Part 1 monitoring). Tracking annual indicators in this chapter will help identify trends over time, as well as support comprehensive evaluations that will be prepared every two years after LMP implementation.

The following goals are listed in Part 1 of the LMP:

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: Vegetation treatments in the wildland/urban interface; fire activity on the landscape.

Monitoring questions: Has the Cleveland NF made progress in reducing the number of acres that are adjacent to development within wildland/urban interface defense zones that are classified as high risk? Are wildfires becoming larger, more frequent, or more severe, and is there a seasonal shift in fire activity?

Indicator: Acres of High Hazard and High Risk in WUI Defense Zone; Total and Mean Fire Size, Ignition Density, Fire Severity, and Monthly Area Burned.

Monitoring Action: Use baseline acres from the 2006 Southern California Land Management Plans analysis; subtracting the areas treated, and areas that are no longer WUI Defense Zone; and adding acres 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 fiscal year 2017, hazardous fuel treatments occurred on 2,927 acres in the wildland/urban interface. 4,526 acres were reported accomplished in the Forest Activity Tracking System database (FACTS) because some acreages received more than one type of treatment. This 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 Cleveland NF fuels program in the wildland/urban interface defense zone described in the LMP.

Background on this indicator

The wildland/urban interface defense zone—that portion of the wildland/urban interface 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. For the LMP analysis, the maximum width was used. This information was used to represent the present, or “baseline,” extent of the wildland/urban interface 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 wildland/urban interface 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 Cleveland NF-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 wildland/urban interface 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 wildland/urban defense zone from the Land Management Plan analysis database. Acres of treatments in the wildland/urban 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 as the new baseline. Acres documented as being treated 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 fiscal year 2006, showed that baseline acres from the previous year's analysis was 10,230 acres. This year's results (Table 1) show that this area has been reduced to 6,339 baseline acres, and 1,072 additional acres of treatment in the wildland/urban interface defense zone during fiscal year 2017 leaves 5,267 adjusted acres. There were no changes in 2017 in defense zone area resulting from new information on the presence of substantial structures.

Table 1: Progress in treatment of wildland/urban interface (WUI) defense zone, adjustments to baseline.				
A	B	C	D	E
Baseline acres from fiscal year 2016 LMP analysis	Acres removed due to new info on presence of substantial structures	Acres added due to new info on presence of substantial structures	Acres treated in WUI defense zone, per corporate database	(A-B) + (C-D) (adjusted acres)
Fire regime I: 4,549 acres	0	0	982	3,567
Fire regimes III, IV, and V: 1,790 acres	0	0	90	1,700
Total: 6,339 acres	0	0	1,072	5,267

Table 2 shows the status of fuels accomplishment as per the FACTS database. An annual query of this database measures the progress that the Cleveland NF has made to reduce the number of acres adjacent to development within wildland/urban interface 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 Cleveland NF focused vegetation treatments in the wildland/urban interface threat and defense zones (see Table 2). Approximately 4,526 acres were treated during fiscal year 2017, of which 59 percent of the acres treated were in the threat zone, while 38 percent of the acres treated were in the defense zone.

Table 2: Treatments in 2017				
Activity	Wildland/Urban Interface Class			Total
	Threat zone	Environment	Defense zone	
Broadcast burning	466	26	169	661
Burning of piled material	191	0	165	356
Sanitation	51	0	1	52
Herbicide	73	0	31	104
Piling	390	43	38	471
Rearrangement of fuels	768	20	797	1,585
Thinning for hazardous fuel reduction	726	63	508	1,297
Sum of all acres treated (some areas had more than one activity type)	2,665	152	1,709	4,526
Percent of total	59	3	38	100

A protocol was developed to evaluate whether temporal trends are evident for wildfire size, frequency, severity, and seasonality across the Southern California National Forests. As of 2017, the second report to address this monitoring question, no trends were identified for any of these variables across the Cleveland National Forest. Wildfire sizes in particular peak as a result of Santa Ana wind events, including 2003 and 2007, but no trend through time is apparent, since there have not been similarly large fires since then and no trend is obvious for non-Santa Ana fires. The protocol and data are available for public review upon request.

Trends in annual indicators for Goal 1.1: The Cleveland NF has achieved progress in meeting this goal. Starting with a baseline of 6,656 acres in the wildland/urban interface defense zone in Fire Regime I in fiscal year 2006, some 3,091 acres had been treated by the end of fiscal year 2017. Starting with a baseline of 3,574 acres in the wildland/urban interface defense zone in fire regimes III, IV, and V in fiscal year 2006, some 1,874 acres had been treated by the end of fiscal year 2017.

Overall, between fiscal years 2006 and 2017, approximately 4,965 acres have been treated in the wildland/urban interface 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.

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: Has the forest been successful at reducing mortality risk? Is tree mortality increasing across the landscape, and is it distributed evenly across elevations? Are fire frequencies becoming more departed from the natural range of variation?

Indicator: Mortality Risk Assessment; Forest Health Protection Mortality Surveys; 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 metadata:

<http://www.fs.usda.gov/detail/r5/landmanagement/resourcemanagement/?cid=stelprdb5347192>

and the California fire history database metadata:

http://frap.fire.ca.gov/data/frapgismaps/frap_maps.html

Table 3 displays the baseline status as of 2006 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.

Table 3: 2017 status of departures from mean fire return interval.			
Fire Return Interval Departure	Acres	Percent of total (2006)	Percent of total (2017)
-3	18,996	6	4
-2	207,109	43	49
-1	9,733	33	2
1	135,239	7	32
2	35,388	2	8
3	12,445	5	3
Unclassified	7,152	2	2
Total	426,062	100	100

The protocol for tracking tree mortality and its altitudinal distribution across Southern California National Forests is still being refined as of September 2018, and so results may not be available until publication of the fiscal year 2018 monitoring report. While the altitudinal distribution of tree mortality has been assessed, the values need to be calibrated according to the altitudinal distribution of the species. For example, coast live oak mortality in 2016 was heavily concentrated between 3,000 and 4,000 feet in elevation, but that is due at least in part to coast live oaks being concentrated at that elevation level. Once calibration has occurred, the effect of elevation on tree mortality will be evaluated.

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 2006 to 2017, the percent of the forest in condition class -2 (too frequent fire) increased from 43% to 49%, which resulted from the 2007 wildfires reburning several areas burned in the 2003 wildfires. 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 2017 existed in the worst condition classes of 3 and -3 relative to 2006.

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 Cleveland NF 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 Land Management Plans 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 fiscal year 2017 a total of 3,041 acres were treated in montane conifer, of which 93% 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 Cleveland NF to reduce the potential for widespread losses of montane conifer forests caused by severe, extensive, stand replacing fires (LMP, Part 1, pg. 22).

Table 4: Acres treated in montane conifer by fire regime condition class.						
Activity	Fire Regime Condition Class					Total
	-2	-1	1	2	3	
Broadcast Burning	0	0	7	11	399	418
Burning of piled material	0	4	19	7	209	239
Piling of fuels	0	0	1	5	272	278
Herbicide	0	0	1	0	0	1
Rearrangement of fuels	0	13	5	56	1,076	1,151
Sanitation Cut	0	0	4	33	0	37
Thinning or pruning for hazardous fuel reduction	0	0	5	39	872	917
Total	0	18	43	151	2,829	3,041

*Some units received more than one treatment in fiscal year 2017.

Trends in annual indicators for Goal 1.2.1: Based on reported fuel reduction activities that have occurred from fiscal year 2008 through fiscal year 2017, approximately 10,480 acres were treated in montane conifer. Some 9,444 acres of the total, or 90 percent, were treated in Condition Class 3, while 614 acres, or 6 percent, were treated in Condition Class 2. Over that same period, only 422 acres, or 4 percent of the total, were treated in all other condition classes.

Based on these data, the Cleveland NF 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 Cleveland NF 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 Land Management Plans 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 Cleveland NF 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 1,123 total acres were treated in Fire Regime IV in fiscal year 2017, 28% 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 wildland/urban interface. 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.

Table 5: Acres treated in Fire Regime IV by fire regime condition class.						
Activity	Fire Regime Condition Class					Total
	-3	-2	-1	1	2	
Broadcast burning	0	135	0	8	0	143
Burning of piled material	0	18	0	17	52	88
Piling of fuels	0	96	0	61	7	164
Herbicide	0	87	0	0	0	87
Rearrangement of fuels	0	230	5	89	12	336
Sanitation cut	0	6	0	8	0	14
Thinning of fuels	0	151	5	122	13	291
Total	0	724	10	305	84	1,123

Another measure of effective protection of chaparral and coastal sage scrub ecosystems from overly frequent fire consists of the Cleveland NF's fire suppression efforts. Over the course of fiscal year 2017, firefighters fought 113 fires that would have otherwise consumed Cleveland NF lands. Only 14 of these fires grew to more than an acre in size, and the largest burned 680 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 fiscal year 2008 through fiscal year 2017, approximately 16,122 acres were treated in Fire Regime IV. Some 1,556 acres of the total, or 10 percent, were treated in condition classes 2 and 3, while 6,291 acres, or 39 percent, were treated in condition classes -2 and -3. Over that same period, 7,921 acres, or 49 percent of the total, were treated in condition classes -1 and 1.

Although 6,291 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 wildland/urban interface 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 Cleveland NF.

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 Cleveland NF, may be found at:

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 Cleveland NF.

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 Cleveland NF'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 fiscal year 2017, according to the FACTS database, approximately 788 acres of invasive species were treated on the Cleveland NF. 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. Twenty seven miles of streams were treated for aquatic invasive species in fiscal year 2017: nine miles of the San Diego River; eight miles in San Mateo Creek; four and a half miles in the San Luis Rey River; and five and a half miles in Arroyo Seco Creek.

Trends in annual indicators for Goal 2.1: 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, 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 fiscal year 2008 through fiscal year 2017, approximately 2,136 acres were treated or retreated for invasive species on the Cleveland NF. 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. In addition to those acres being treated, each year 3 or more miles of San Mateo Creek were enhanced by removal of invasive fish and bullfrog species, except for fiscal year 2014. Other Trabuco and Palomar Ranger District streams have also been treated although less often.

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

Goals: (3.1) Provide for public use and natural resource protection.

(3.2) Retain a natural-evolving character within wilderness.

Activity, practice, or effect to be measured: (3.1) Visitor use of the Cleveland NF. (3.2) Wilderness use.

Monitoring questions: (3.1) Are trends in indicators and visitor satisfaction surveys indicating that the Cleveland NF has provided quality, sustainable recreation opportunities that result in increased visitor satisfaction? (3.2) Are trends in indicators and visitor satisfaction surveys depicting the Cleveland NF has provided solitude and challenge in an environment where human influences do not impede the free play of natural forces?

Indicators: (3.1) Visitor satisfaction (National Visitor Use Monitoring) (3.2) Wilderness condition.

Monitoring Actions: (3.1) Use baseline scores in Visitor Satisfaction from NVUM that occurred around the 2006 Southern California Land Management Plans and comparing the five year NVUM Visitor Satisfaction scores. (3.2) Use baseline scores in Visitor Satisfaction for Wilderness from NVUM that occurred around the 2006 Southern California Land Management Plans 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:

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 Cleveland NF 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/>.

Fiscal year 2014 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 were required. Preliminary reporting was initiated 2015 and 2016 was the first official reporting period.

Wilderness management actions on the CNF during fiscal year 2017 included recreation site inventory, resource protection efforts, volunteer contributions, condition monitoring, and trail improvement. Table 7 shows the WSP scores of all four Cleveland NF Wilderness areas for 2015 to 2017. 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 for the Hauser and Pine Creek Wilderness areas doubled, and San Mateo Canyon and Agua Tibia also saw significant increases. The increase is attributed in part to more familiarity with the new WSP measure.

Table 7: Wilderness Stewardship Performance Scores				
Year	Wilderness Area			
	Agua Tibia	Hauser	Pine Creek	San Mateo Canyon
2015	38	20	22	26
2016	38	24	22	26
2017	54	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 Cleveland NF maintains a high level of user satisfaction. The trend between 2009 and 2014 reports shows increases in visitor satisfaction on the Cleveland NF, 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 FY2017. “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 new staff settling in and a robust Forest Program of Work monopolizing the heritage staff time the CNF was unable to plan and coordinate the heritage program they desired for FY2017.

It should be noted, however, that while the official score may be 32, according to NRM, the CNF Heritage staff accomplished a great deal of work on the ground. The CNF Heritage Program conducted a variety of Section 110 activities that earned 32 points. Section 110 projects were completed, relationships with partners and volunteers were maintained and strengthened and points were earned in four of the seven indicator categories by the CNF, including:

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

The desired condition is to preserve or enhance significant heritage resources. Fiscal year 2017 Cleveland NF 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 37 proposed undertakings were analyzed for the potential for effects on historic properties by the CNF HPM in FY2017. All 37 proposed undertakings were determined to be compliant with Section 106 of the National Historic Preservation Act (NHPA) through the application of the stipulations of the RPA.

Of the 37 proposed undertakings in FY2017, ten required assessment of the identified potential for effects associated with those projects, and two required additional surveys be conducted for the identification of historic properties. Cultural resource surveys conducted in support of this undertaking resulted in the survey of approximately 139 acres. A total of 3 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 37 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 FY2017. Of these 37 undertakings, the associated Area of Potential Effects (APE) of 10 of them required survey, 8 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”; D-“No ground disturbance”; F- “Issuance, granting of permits”; H-“within stream channels”; I-“Less than 1m of ground disturbance”; N- “Routine road maintenance”; O- “Felling of hazardous trees, rec areas” ; and P- “Felling of hazardous trees, roads”; and U- “alter structures less than 45 years of age.”

Table 8: Project Summary					
Total Projects	36 CFR 800 Projects	RPA Projects	Survey Projects	Previously Surveyed	Screened Undertakings
37	0	37	10	8	28

Table 9 summarizes the number of acres surveyed (139), the number of new cultural resources identified and recorded (3), the number of previously recorded resources for which site record updates were completed (1), the number of historic properties that were required to be protected from identified potential for effects through the implementation of Standard Protection Measures (SPM) (68), the number of sites that were required to be monitored for the avoidance of identified potential for effects (1), and the number of Inadvertent Effects (2) associated with projects determined to be compliant under the stipulations of the RPA in FY2017.

Table 9: Historic Property and Survey Data					
Acres Surveyed	New Sites Recorded	Sites Updated	Sites Protected	Sites Monitored	Inadvertent Effects
139	3	1	68	1	2

Air Quality Monitoring

Under the Interagency Monitoring of Protected Visual Environments (IMPROVE) program, a sampling station at the Dripping Springs Fire Station monitors the air quality near the Agua Tibia Wilderness Class 1 air shed. The largest sources of haze are ammonium sulfate and ammonium nitrates. Monitoring results from this site indicates visibility has been improving for the Agua Tibia Wilderness since monitoring began, as shown in Figure 1. In addition, visibility is monitored using a real-time web camera accessible at the following

URL: <http://www.fsvisimages.com/>. The Cleveland NF will continue to assess wilderness visibility under the Prevention of Significant Deterioration program of the Clean Air Act.

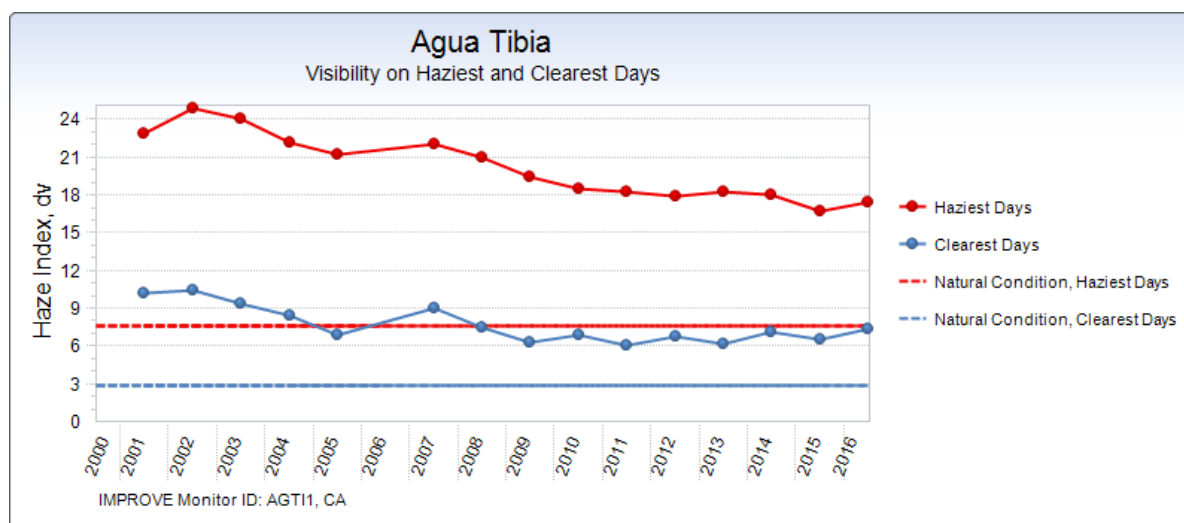


Figure 1. Air Quality Monitoring results from the Agua Tibia site. A deciview (dv) reading of “0” indicates a clear view with no reduction in visibility.

More information may be found at the Federal Land Manager Environmental Database web site at the following URL: <http://views.cira.colostate.edu/fed/>

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

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

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

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

Monitoring questions: (4.1a) Has the Cleveland NF been successful at protecting ecosystem health while providing mineral and energy resources for development? (4.1b) Has the Cleveland NF been successful at protecting ecosystem health while providing renewable resources for development?

Indicators: (4.1a) Number of Mineral and Energy Development Projects Proposed and Approved; Minerals and Energy Success at protecting Ecosystem Health (4.1b) Number of Renewable Resource Projects Proposed and Approved; Renewable Resources Success at protecting Ecosystem Health.

Monitoring Actions: (4.1a) 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. (4.1b) 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 fiscal year 2017, the Forest monitored the operation of the Sunrise Powerlink, a 500kV powerline across Forest Service land for which construction was completed in the summer of 2012, along with associated habitat restoration, which has been largely successful. The project also contained significant mitigation elements to protect ecosystem health and preserve habitats that would otherwise be impacted by construction and operation. In fiscal year 2017 the 41 acre Noble Canyon parcel was acquired as mitigation for the Sunrise Powerlink. Additional acquisitions are also in progress to mitigate development.

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 National Environmental Policy Act process, the Cleveland NF continues to meet the intent of both these goals. Projects that meet the criteria of these goals include the Sunrise Powerlink and approval of various plans of operation for hard rock mines on National Forest System (NFS) lands.

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

Goals: (5.1) Improve watershed conditions through cooperative management. (5.2) Improve riparian conditions.

Activity, practice, or effect to be monitored: (5.1) General forest activities and watershed improvement projects; (5.2) General forest activities; (5.1 and 5.2) Streamflows.

Monitoring questions: (5.1) Is the Cleveland NF making progress toward sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 and 3 watersheds? (5.2) Is the Cleveland NF increasing the proper functioning condition of riparian areas? (5.1 and 5.2) How do streamflows compare with historical records?

Indicators: (5.1) Number of Watersheds in each Condition Class (5.2) Change in Indicator Score for Aquatic Habitat, Aquatic Biota and Riparian Vegetation (5.1 and 5.2) Monthly Streamflows, Timing and Magnitude of Peak Flows, Degree of Variation

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

Table 10: Watershed Condition Framework – 2011					
Outcome indicator	Desired condition	Baseline Watersheds	Year 5	Trend	Trigger
Watersheds in Condition Class 1, Properly Functioning	Maintained condition ratings	31			Decrease in number of Class 1 watersheds
Watersheds in Condition Class 2, Functioning at Risk	Maintained or improved condition ratings	17			Decrease in number of Class 2 watersheds
Watersheds in Condition Class 3, Impaired Function	Improved condition ratings	0			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 Cleveland NF are functioning properly and none of the watersheds are impaired.

In fiscal year 2017, the Cleveland NF continued to implement Watershed Restoration Action Plans in two priority watersheds: Cedar Creek on the Palomar Ranger District and Kitchen Creek-Cottonwood Creek watershed on the Descanso Ranger District. For both watersheds, site-specific planning and implementation occurred for unauthorized route decommissioning. 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 Cleveland NF's biannual Best Management Practices Evaluation Program report for FY2017 and 2018 is currently being prepared and will be sent to the Regional Water Quality Control Boards. 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 first year utilizing the new protocol developed for tracking streamflows across Southern California National Forests. Figures 2 and 3 below show percentiles and median streamflows from historical years 1955-1980 for two gaged streams on the Cleveland NF: Santa Ysabel Creek on the Palomar Ranger District and Sweetwater River on the Descanso Ranger District. Highest and lowest flows from 1955-2017 are also displayed. Both streams experienced above normal flows in 2017 relative to historical years and were above the 75th percentile a majority of the year. Early in the rain season (November and December), streamflow in the Sweetwater River was below normal, but increased significantly in January. 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 2.

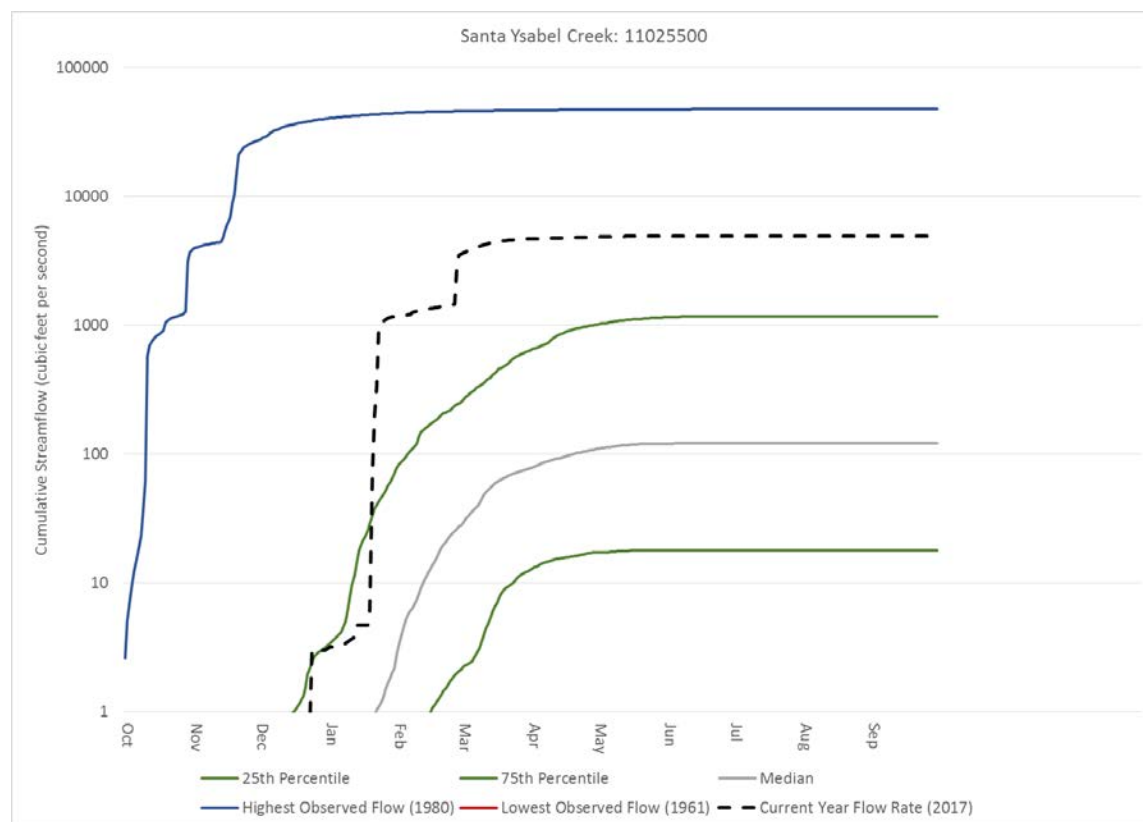


Figure 2. Santa Ysabel Creek Streamflow. Historical Years: 1955-1980; Total Data Years: 1955-2017.

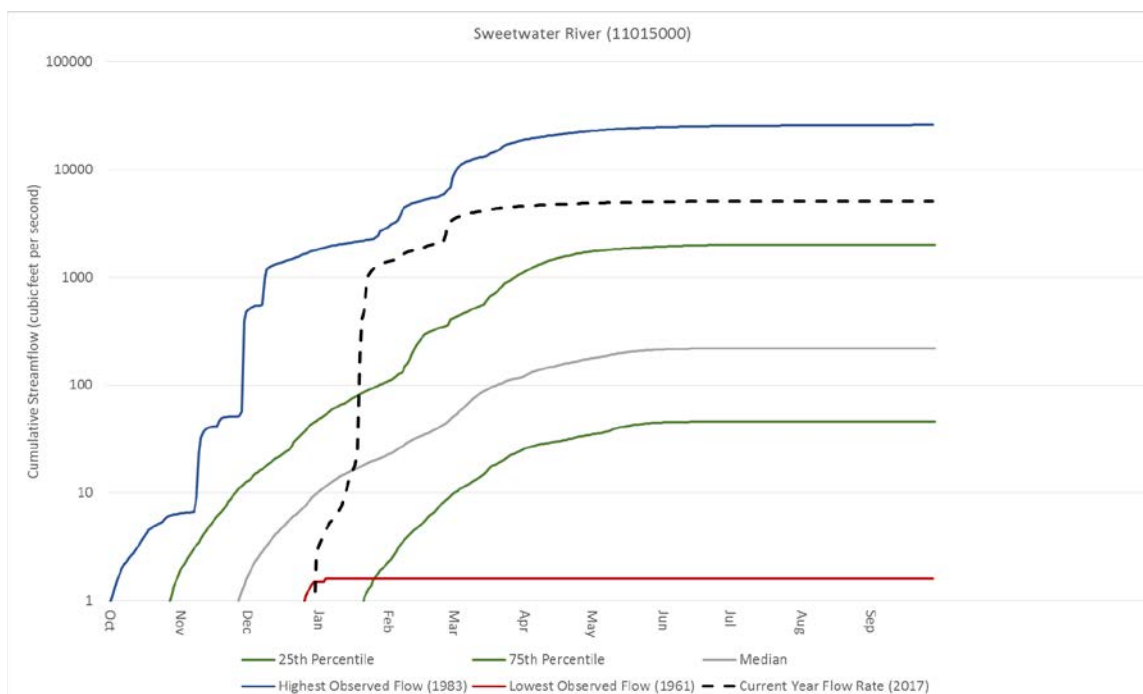


Figure 3. Sweetwater River Streamflow. Historical Years: 1957-1980; Total Data Years: 1957-2017.

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 Land Management Plans analysis with two year percent.

Table 11 displays the baseline and trend monitoring for the range and grazing for fiscal year 2017.

Table 11: Baseline and trend monitoring for range allotments in fiscal year 2017. (No new plot data since fiscal year 2013)

Outcome indicator	Desired condition	Previous monitoring	Current	Trend	Trigger
Livestock grazing areas in good/high condition	Maintain condition rating	13	12	Stable	Decrease in number of key areas in good condition
Livestock grazing areas in fair/moderate condition	Maintain/improve condition rating	12	14	Stable	Decrease in number of areas in fair condition
Livestock grazing areas in poor/low condition	Improve condition rating	1	0	Stable	Degrading conditions in key areas poor condition

Table 12 displays the most recently available allotment conditions.

Table 12: Allotment grazing conditions.

Allotment, pasture	Condition	Assessment type	Year
Black Mountain	Good—stable	Annual compliance monitoring, BMP monitoring	2015
Corte Madera, Lower Bear Valley	Fair – Signs of reduced OHV trespass damage, drought impacts highly visible, grazing season shortened	Annual compliance monitoring	2017
Guatay	Good – Stable	Annual compliance monitoring	2017
Indian Creek	Ungrazed, not monitored	--	n/a
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	2017
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	2017
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	2017
Mendenhall, Lower	Good	Annual compliance monitoring	2017
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

Table 12: Allotment grazing conditions.			
Allotment, pasture	Condition	Assessment type	Year
Miller Mountain	Good	Annual monitoring compliance	2012
Samataguma	Good	Annual monitoring compliance	2016
Tenaja	Good - ungrazed	Region 5 long-term trend monitoring	2011
Verdugo	Good	Annual compliance monitoring	2017
Warner Ranch	Good	Annual compliance monitoring	2017

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. No Region 5 long term monitoring plots were read in 2017. Based on periodic compliance monitoring, nearly half of allotments or pastures remain in good to high condition (Table 12). One livestock area was found to be in poor condition during long term monitoring plot visits (Table 11) due to the fact that unauthorized vehicle activity damaged the area. However, visual monitoring in 2017 showed this area has improved significantly. The long term plot has not been reread yet. 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 fiscal year 2017, 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; focal species

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

Indicator: Habitat Condition of At-Risk Species; Extent of Non-native Annual Grasses; Forest Health Protection Mortality Surveys.

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

Threatened and Endangered Species monitoring: In 2017, the Cleveland NF continued with monitoring specified in applicable biological opinions. The Cleveland NF 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 2017, one arroyo toad road-kill was detected at Corral Creek road on the county – maintained part of the road. In general, protection measures were implemented and were working well. Other responsibilities include checking relevant signage, barriers, fences, gate closures, etc.

The 2017 season was a normal or above-average rain year. The Forest took advantage of this by surveying the majority of the Arroyo Toad habitat, and we documented successful reproduction in the form of tadpoles and metamorphs at most locations.

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, 18 dams have been removed from Silverado, Trabuco and Holy Jim Creeks (FY 2015 and FY 2017 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 second year of 5-year monitoring and research program at the upper San Luis Rey River in 2017. About 10 pairs of Southwestern Willow Flycatcher were detected on the Forest in 2017. 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. The Forest continued implementing a route decommissioning and

restoration project in 2017. Removal of these routes will benefit this species and habitat by preventing or limiting unauthorized motor vehicle use. 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 Dave Faulkner. Fence exclosures 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 2017, 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 2017, the Marine Corps completed removal of 4 dams at Silverado Creek, and 5 dams at Holy Jim 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 Cleveland NF 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 developed to evaluate the extent of type conversion from shrublands to annual grasslands across the Southern California National Forests. However, there have been challenges reproducing outputs for the past couple of monitoring years. As a result, last year's annual report utilized a 2011 model output, and a similar approach was used for this year's report.

The number of acres of habitat type conversion from shrubland to annual grassland 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.

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. Their results for the Cleveland NF are displayed in Table 13 and show a decrease in Coast Live Oak mortality in fiscal year 2017. The decrease may be attributable in part to the increased precipitation received during the winter and spring season. The flight area was also reduced by approximately 15%.

As shown in Figure 4, oak mortality from goldspotted oak borer (GSOB) has decreased from 2016 to 2017. Oak mortality has increased west and northwest of Lake Henshaw encompassing both private and NFS lands.

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

*Previously reported acres for 2016 (4,096) were revised lower in the 2017 Aerial Detection Survey report https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fseprd582422.pdf

In 2017, changes were made to the program that make it harder to compare historical results with current and future data. Survey equipment no longer supported by the manufacturer was changed, and reporting standards were altered to meet national reporting needs. The new national standard is intended to provide a percent class of forested area affected as follows: Very Light (1-3%), Light (4-10%), Moderate (11-30%), Severe (31-50%), and Very Severe (>50%); this replaces the former standard of identifying trees (with damage/mortality) per acre. The Forest Health Protection program still intends to convert survey and percent class data to estimate mortality acres to provide a comparison with historical data.

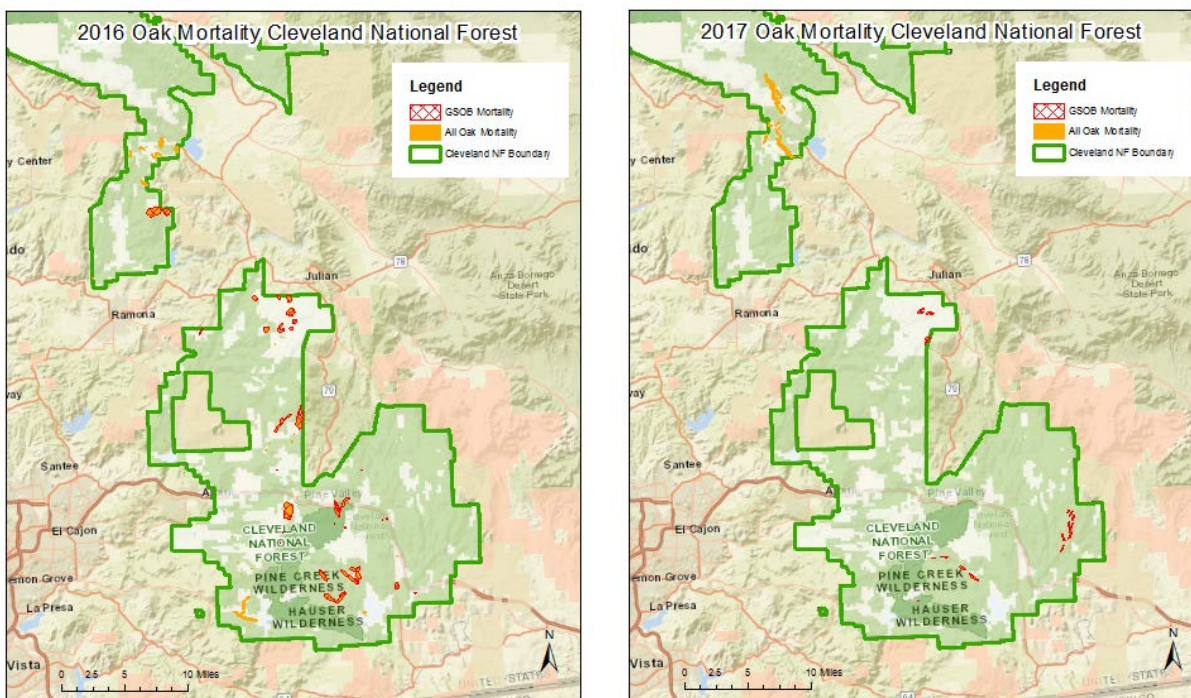


Figure 4. Oak mortality and goldspotted oak borer mortality on the southern Cleveland National Forest.

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. Type conversion has occurred across roughly 5% of Cleveland National Forest shrublands, and coast live oak mortality has dropped from the prior year.

Recommendations

Continue required monitoring. Plant more oak trees to replace those that are dying. Suppress fires to prevent further type conversion.

As operational plans are developed for recreation sites, ensure institutional memory of problem resolution by documenting past protection measures, whether on an annual, periodic, or one-time basis. These may be documented in the INFRA database for each site.

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: Is the Cleveland NF balancing the need for new infrastructure with restoration opportunities or land ownership adjustment to meet the desired conditions? How many of each type of special use authorization, mining permit, and forest product permit are active on the forest?

Indicators: Land Ownership Complexity; Authorized and Administrative Infrastructure; Miles of Unauthorized Motorized Routes; 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 Land Management Plans analysis. Establish a baseline number of authorized and administrative infrastructure from the 2006 Southern California Land Management Plans 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 fiscal year 2017, the Cleveland NF consists of 426,063 acres of land with 1,032 miles of exterior and interior boundary, yielding a perimeter to area ratio of 0.00242 miles per acre. Several different acreage values were provided in the LMP Revision EIS, and Forest Service land ownership data have recently been substantially updated and improved. By subtracting 3,327 acres of land acquisitions between 2006 and 2017, the 2006 Cleveland NF acreage has been recalculated at 422,736 acres with 1,060 miles of boundary, yielding a perimeter to area ratio of 0.00251 miles per acre. In fiscal year 2017 the Cleveland NF acquired a 41 acre parcel in Noble Canyon.

Goal 7.1 calls for minimization of the built environment. In 2006, there were 286 administrative buildings on the Cleveland NF. As of the end of fiscal year 2017, 290 administrative buildings existed following the decommissioning of three buildings and database updates. While the number of buildings has increased slightly compared to 2006, large abandoned buildings at the Laguna Air Force Base have been decommissioned whereas generally smaller buildings have been constructed, resulting in an overall reduction of the built environment footprint.

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 Cleveland NF 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 Cleveland NF has successfully decommissioned 128.6 miles of unauthorized routes between 2006 and 2017. A Forest-wide Unauthorized Route Decommissioning decision in 2016 approved decommissioning of an additional 70.6 miles, bringing the total to 85.5 miles ready for decommissioning. Many of these routes impact riparian conservation areas, archaeological sites, Wilderness areas, or habitat for endangered or threatened species. From 2014 through 2017, 63.6 miles of routes were decommissioned.

Table 14: Miles of road in Forest Service jurisdiction by type, 2006 baseline and 2017.						
Maintenance level		NFS road	Permitted road	Unauthorized, undetermined	Unauthorized, unneeded, existing	Unauthorized, unneeded, decommissioned
Not applicable	2006	--	--	154.0	--	4.0
	2017	--	--	27.6	21.9	128.6
1: Basic custodial care (closed)	2006	34.4	--	--	--	--
	2017	35.1	--	--	--	--
2: High clearance vehicles	2006	280.9	136.9	--	--	--
	2017	278.6	129.9	--	--	--
3: Suitable for passenger cars	2006	11.5	--	--	--	--
	2017	15.0	--	--	--	--
4: Moderate degree of user comfort	2006	54.2	--	--	--	--
	2017	54.1	--	--	--	--
5: High degree of user comfort	2006	18.1	--	--	--	--
	2017	19.0	--	--	--	--
Totals	2006	399.1	136.9	154.0	--	4.0
	2017	401.8	129.9	27.6	21.9	128.6

Table 15 below shows the number and variety of special use authorizations and permits active during fiscal year 2017. The number of permits for powerlines was reduced by 72 between 2016 and 2017 by combining permits for SDG&E into a master special use permit. The number of permits for private mobile radio service increased following inspection of communication sites resulting in the identification and processing of these uses.

Table 15. Number and type of special use authorizations and permits.					
Type	2017	Type	2017	Type	2017
Club	4	Construction Camp and Residence	2	Cellular	2
Shelter	1	Warehouse and Storage Yard	0	Resource Monitoring Site	2
Recreation Residence	361	Commercial Still Photography	1	Commercial Mobile Radio Service	6
Resort	2	Motion Picture and TV Location	5	Facility Manager	15
Concession Campground	1	Geological and Geophysical Exploration	2	Telephone and Telegraph Line	12
Recreation Event	13	Powerline	17	Fiber Optical Cable	3
Apiary	9	Other Utility Improvement	1	Other Communication Improvement, not REA	3
Convenience Enclosure	2	Airport, Heliport	1	Navigation Equipment	1
Church	1	DOT Easement	5	Irrigation Water Transmission Pipeline ≥ 12" Diameter	1
Marker	4	Forest Road and Trail Act Easement	5	Irrigation Water Transmission Pipeline < 12" Diameter	11
Monument	1	Federal Land Policy and Management Act Easement	8	Water Transmission Pipeline ≥ 12" Diameter	1
Service Building	7	Federal Land Policy and Management Act Permit	82	Water Transmission Pipeline < 12" Diameter	6

Table 15. Number and type of special use authorizations and permits.					
Type	2017	Type	2017	Type	2017
Site Survey and Testing	1	Wilderness Act Authorization, Roads and Trails	1	Dam, Reservoir	5
Resource Survey	2	Amateur Radio	2	Water Diversion, Weir	3
Experimental Station	2	Microwave-Common Carrier	4	Well, Spring, or Windmill	6
Research Study	8	Microwave-Industrial	4	Wildlife Water Supply	2
Weather Station	4	Local Exchange Network	1	Water Storage Tank	17
Observatory	1	Private Mobile Radio Service	29	Water Treatment Plant	1
Military Training Area	3	Passive Reflector	1	Special Forest Product Permit	151
Nondisturbing Use (Archaeological Investigation)	6	Cable Television	1	Active Mineral Operations	10
Disturbing Use (Archaeological Investigation)	1			TOTAL	864

Trends in annual indicators for Goal 7.1: As of fiscal year 2017, land ownership complexity has been reduced relative to 2006 despite an increase in land area. The number of buildings has increased, but their footprint on the landscape has been reduced. Between fiscal years 2006 and 2017, the Cleveland NF conducted NEPA analyses to determine if unauthorized routes were necessary for potential inclusion as part of its transportation system, if such routes should be actively decommissioned, or if such routes have already been naturally decommissioned by non-use and vegetation growth. Planning was completed to decommission an additional 85.5 miles of unauthorized routes. Of this, 63.6 miles were decommissioned from 2014 through 2017. The remaining known routes are expected to be decommissioned over the next several years. A wide variety of special uses are authorized across the Cleveland NF. For 2017, the number of authorizations decreased by 12.8% compared to 2016 in large part due to the consolidation of powerline permits.

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.

Table 16. Part 2 Monitoring Summary Indicators	Fiscal Year 2017 Accomplishment	Part 2 Monitoring Summary Indicators	Fiscal Year 2017 Accomplishment
Acres of Terrestrial Habitat Enhanced	5,600	Recreation Days Managed to Standard (General Forest Areas)	Unassigned
Miles of Aquatic Habitat Enhanced	41.5	Land Use Authorizations Administered to Standard	46
Acres of Noxious Weeds Treated	787.7	Number of Mineral Operations Administered	10
Acres of Vegetation Improved (also see Hazardous Fuels Reduction)	5,646	Number of Allotments Administered to Standard	10 pastures
Acres of Watershed Improved	1,846	Acres of Hazardous Fuel Reduction	5,646
Acres of Land Ownership Adjusted	41	Miles of Passenger Car Roads Maintained to Objective Maintenance Level	3.1
Heritage Program Management Points	32	Miles of High Clearance & Back Country Roads Maintained to Objective Maintenance Level	68.28
Products Provided to Standard (Interpretation and Education)	Obsolete	Miles of Road Decommissioned	0
Recreation Special Use Authorizations Administered to Standard	261	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 Land Management Plan Amendment, 8 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.

Table 17. Fiscal year 2017 projects randomly selected for Part 3 monitoring.				
Ranger District	Project Name	Functional Area	New or Existing	Section in monitoring report
Descanso	La Posta Road – 15S05	Facility Operations & Maintenance	Existing	5.3
	Laguna Water System Improvement	Facility Operations & Maintenance	New	5.3
	Horse Heaven Campground	Public Use & Enjoyment	Existing	5.2
	Noble Canyon 50k permit (DRD017917)	Public Use & Enjoyment	New	5.2
	Chipping on Mount Laguna	Fire and Aviation Management	New	5.5
Trabuco	Jameson/David Road permit (TRD559001)	Commodity & Commercial Uses	Existing	5.4
	EZ-UP permit (TRD1117)	Commodity & Commercial Uses	New	5.4
	Aquatic Invasive Treatment along San Mateo Creek	Resource Management	New	5.1

5.1 Resource Management Projects

Aquatic Invasive Treatment along San Mateo Creek

Monitoring

This activity occurred in the San Mateo Place on the Trabuco Ranger District along San Mateo Creek. The purpose of the project is to enhance habitat conditions for native aquatic species by removing non-native fauna from streams.

Results

A Decision Memo for the Forest-wide Aquatic Invasive Species Removal project was approved in May 2017 and authorized this work. Approximately 7-8 miles of San Mateo Creek were treated by the California Department of Fish and Wildlife and Cleveland NF staff. Invasive species such as bull frogs, sunfish, largemouth bass, and mosquitofish were treated utilizing seine nets, traps, and hand removal (dip net) methods. All conservation measures identified in the Decision Memo were implemented with the exclusion of measures #7, #8, and #9 because no electrofishing was completed. This work constitutes ecological restoration of habitat for the federally-listed endangered Southern California Coast Steelhead.

Conclusions

The project is consistent with Goal 2.1 of the LMP, which directs the Cleveland NF to reverse the trend of increasing loss of natural resource values due to invasive species (LMP, Part 1, pg. 31), Goal 3.2 of the LMP, which directs the Cleveland NF to retain a natural evolving character within wilderness (LMP, Part 1, pg. 36), Goal 5.2 of the LMP, which directs the Cleveland NF to improve riparian conditions (LMP, Part 1, pg. 41), and Goal 6.2 of the LMP, which directs the

Cleveland NF to provide ecological conditions to sustain viable populations of native and desired nonnative species (LMP, Part 1, pg. 44), as well as other LMP objectives, standards, and place emphases.

Recommendations

Continue to monitor San Mateo Creek for invasive species and retreat as necessary.

5.2 Public Use and Enjoyment Projects

Horse Heaven Campground

Monitoring

Horse Heaven Campground is located in the Laguna Place in the Laguna Mountain Recreation Area on the Descanso Ranger District.



Figure 5. The monitoring team visited Horse Heaven Campground on Mount Laguna.

Results

The campground is managed by the district and provides three group sites available for reservation at www.recreation.gov. Each site can accommodate 40-100 people, 10-16 vehicles and includes amenities such as potable water, sanitary facilities, tables, and fire rings. There is no host on site and conservation education interface with campers is limited by available funding and staff. Despite these systemic limitations, the campground was found to be clean and in good overall condition. A few bollards were replaced recently to separate vehicle areas from the campsites. Monitoring revealed another damaged bollard in need of replacement. A meadow adjacent to the campground did not show signs of over use or damage, and there are no other sensitive resources that warrant concern.

Neither an operation and maintenance plan nor any NEPA decisions were located for this campground.

Conclusions

Horse Heaven Campground is consistent with Goal 3.1 in the LMP, which directs the Cleveland NF to provide for public use and natural resource protection (LMP, Part 1, pg. 33), as well as other LMP objectives, standards, and place emphases.

Recommendations

Continue to monitor the condition of Horse Heaven Campground, and complete repairs and maintenance as needed.

Noble Canyon 50k permit (DRD017917)

Monitoring

The Noble Canyon 50k is a recreation event that occurred primarily within the Laguna Place of the Descanso Ranger District. The start and finish for the event began outside of the Cleveland NF and traversed a small segment of the Sweetwater Place near Pine Valley.

Results

A Decision Memo was completed in May 2017 and a permit issued on September 2017 for a one day running event on forest trails and roads. The event occurred on September 23, 2017.

There were some inconsistencies between the NEPA decision and the permit. For instance, the NEPA decision identified 75 planned participants with a maximum of 100. The event date was also listed as May 12, 2017. However, the permit approved 250 participants and 30 spectators for September 23, 2017. Additionally, the NEPA decision included provisions for the management of garbage, which were not incorporated into the permit.

The event was monitored by district staff, and it was reported that the permit holder and race occurred in compliance with the permit.

Conclusions

The Noble Canyon 50k event is consistent with Goal 3.1 in the LMP, which directs the Cleveland NF to provide for public use and natural resource protection (LMP, Part 1, pg. 33), as well as other LMP objectives, standards, and place emphases.

Recommendations

Ensure the permit authorizing the activity is consistent with the activity analyzed in accordance with the NEPA.

5.3 Facility Operations and Maintenance Projects

La Posta Road – 15S05

Monitoring

This road is in the Morena Place of the Descanso Ranger District. It is an official NFS road and is open to the public year around as shown on the Motor Vehicle Use Map.

Results

North of Interstate 8, the first 0.7 miles of La Posta Road is paved and under the jurisdiction of San Diego County. The remaining 5.6 miles is under Forest Service jurisdiction to its junction with Thing Valley Road, and it is this segment that was monitored as an existing facility for public and administrative use. The road provides access to SDG&E improvements and is currently being maintained by them. No maintenance agreement with SDG&E is on file.



Figure 6. The monitoring team visits a dual culvert site on La Posta Road.

Classified as a Maintenance Level 2, La Posta Road is open for use by high-clearance vehicles. The monitoring team found the road conditions exceeded these expectations to a standard suitable for passenger vehicles. Excess aggregate was observed along the sides of the road, in some instances creating wind rows that blocked drainage features. Grading the road to redistribute the material over the roadway would fix this issue. At one location, inslope erosion was observed leading around the base of an oak tree and toward the intake to a dual culvert. Installation of rip rap within and adjacent to the incision would help to stabilize it and direct water away from the tree.

Conclusions

La Posta Road is consistent with Goal 3.1 in the LMP, which directs the Cleveland NF to provide for public use and natural resource protection (LMP, Part 1, pg. 33), as well as other LMP objectives, standards, and place emphases.

Recommendations

Complete a road maintenance agreement with SDG&E to formalize the maintenance responsibility and ensure work is completed to acceptable standards. Fix the inslope road side drainage incision observed at the site in Figure 6 and pull excess road aggregate back onto the main roadway.

Laguna Water System Improvement

Monitoring

The Laguna Water System is located within the Laguna Place of the Descanso Ranger District. The purpose of the project was to update an existing water system servicing recreation sites, fire stations, and other facilities to maintain water delivery and reliability.



Figure 7. The monitoring team evaluates locations where the water line was buried and ongoing restoration and recovery of disturbed areas.

Results

The project was authorized by the Laguna Water System Improvement EA, and Decision Notice signed in March 2015. A contract for implementation was awarded on September 9, 2015, and implementation began on May 2, 2016. During that time it was discovered that not all available archaeological information was incorporated into the environmental analysis and contract. To

mitigate, an archaeologist flagged areas for avoidance in advance of construction near sensitive locations. However, there were challenges with the contractor adhering to these guidelines resulting in impacts to an archaeological site. The contract also lacked general stipulations for archaeological protection and mitigation making enforcement of protections and fines for violations difficult. Given this issue and others, it is unlikely the contractor will be utilized for future Cleveland NF projects.



Figure 8. The site above was found to be recovering well post disturbance, and did not exhibit use by recreationists.

Installation of the new water pipeline, water tank, and other associated facilities was completed on June 29, 2017. The majority of the pipeline was buried within the roadway of an administrative only access road. In several sections the pipeline diverts from the roadway and travels underneath a creek and upslope to a new water tank. The monitoring team inspected the recovery of the disturbance to these locations. Wood debris and water control features were installed to reduce the potential for erosion and discourage use by recreators. These design features were found to be functioning as intended, and vegetative regrowth and species diversity were at acceptable levels.

Conclusions

This project is consistent with Goal 3.1 in the LMP, which directs the Cleveland NF to provide for public use and natural resource protection (LMP, Part 1, pg. 33), and Goal 7.1 in the LMP, which directs the Cleveland NF to maintain high quality facilities (LMP, Part 1, pg. 47) as well as other LMP objectives, standards, and place emphases. Despite several challenges during project implementation, the water system is fulfilling its purpose.

Recommendations

Ensure resource evaluations are complete, and include an adaptive resource protection clause in contracts to aid adjustments if new information is discovered. Continue to maintain and monitor the condition of the water system.

5.4 Commodity and Commercial Uses Projects

Jameson/David Road Permit (TRD559001)

Monitoring

This use occurs within the Elsinore Place of the Trabuco Ranger District and consists of a road right-of-way approximately 66 feet wide and 1.0 mile across NFS lands.

Results

The original permit was issued in 1947 to provide access from private land, across NFS lands, to a private inholding. The permit was re-issued in 1965 with an updated format, clauses, and permit holder information, and included no expiration date. Both permits pre-dated the NEPA and other environmental laws, and therefore no associated environmental compliance documentation is on file. In 2008, the Cleveland NF purchased the private inholding (Eagle property), and recorded an easement off NFS lands providing access to the road through private property.

Currently, the road is highly overgrown and receives no motorized use. It provides access to a remote automated weather station (RAWS), and may receive periodic use by hikers or mountain bikers. A monitoring team site visit was scheduled to assess the road condition, but it had to be cancelled multiple times due to the 2018 Holy Fire emergency response.

Conclusions

The results of monitoring indicate consistency with Goal 7.1 of the LMP, which directs the Cleveland NF to focus the built environment in to the minimum land area needed to support growing public needs (LMP, Part 1, pg. 46), as well as other LMP objectives, standards, and place emphases.

Recommendations

Upon acquisition of the Eagle property, access and use as provided by the permit is no longer necessary. Therefore it is recommended the permit be closed and permit administration and transportation databases updated accordingly. Onsite evaluation is also recommended to identify any hydrological concerns resultant from a lack of maintenance, and further discussion to determine whether the route is needed for future access (e.g. RAWS).

EZ-UP permit (TRD1117)

Monitoring

This permit authorized EZ-UP to film a commercial for their cube tent at several sites within Blue Jay Campground. This activity occurred in the Elsinore Place of the Trabuco Ranger District.

Results

Environmental review of a proposal from EZ-UP was completed upon request. This type of activity is consistent with a category of actions that are considered minor, short-term special uses that do not require a project file and documentation in a decision memo, environmental assessment, or environmental impact statement to implement the NEPA. A Special Use Permit was issued on September 8, 2017 for one day of filming mid-September at up to three sites within Blue Jay Campground. The permit included an Operating Plan with stipulations to protect resources, the condition of the developed recreation site, and recreation experience for other forest visitors. Implementation of permitted activities were monitored and no issues were reported.

Conclusions

Permitted film activities are a valid use of NFS lands, and this project is consistent with Goal 7.1 of the LMP, which directs the Cleveland NF to focus the built environment in to the minimum land area needed to support growing public needs (LMP, Part 1, pg. 46), as well as other LMP objectives, standards, and place emphases.

Recommendations

None.

5.5 Fire and Aviation Management Projects

Chipping on Mount Laguna

Monitoring

The treatment area is located in the Laguna Place of the Descanso Ranger District, encompassing Burnt Rancheria Campground, Wooded Hill Campground, and Los Huecos, Boiling Springs, and Escondido recreation residence tracts. The project was designed to improve forest health and reduce the risks of wildfire to the community and forests of Mount Laguna.

Results

The project was authorized by the Mount Laguna and Pine Valley Community Protection and Healthy Forest Restoration Project EA, and Decision Notice signed in January 2014. Approximately 329 acres were thinned around residences and within developed recreation areas. The cut material was removed and chipped off site at a clearing formerly utilized as an Air Force Base.

Forest health and wildfire risk reduction objectives appear to have been met within developed recreation sites and within 300 feet of recreation residences. However, several items were identified for improvement. Rather than installing berms to prevent vehicle trespass, felled trees

could be retained onsite in limited quantities and at strategic locations to limit access, while still meeting fuel management objectives. Similarly, woody debris could also be retained onsite to mitigate the potential for erosion, and more oversight provided during control feature installation to ensure placement and design is adequate.

The amount of material chipped offsite has resulted in an excessive amount of wood chips as shown in Figure 9. Recognizing this issue, the district is supplementing the project EA to allow for the commercial sale of forest products (e.g. wood chips) generated from the project. When approved, the supplemental EA will increase the options available for disposing excess material. A Decision Notice is expected late September or early October 2018.



Figure 9. The monitoring teams discusses options for removing wood chips stored at the site of a decommissioned Air Force Base. A supplemental Environmental Assessment is currently being completed to evaluate proposed changes to the project to address this problem.

Conclusions

The project directly addressed Goal 1.1 of the LMP, which directs the Cleveland NF to improve the ability of southern California communities to limit loss of life and property and recover from the high intensity wildland fires that are a natural part of this state's ecosystem (LMP, Part 1, pg. 20) and Goal 1.2, which directs the Cleveland NF to restore forest health where alteration of natural fire regimes have put human and natural resource values at risk (LMP, Part 1, pg. 21), as well as other LMP objectives, standards, and place emphases. Project documents are on file at the Descanso Ranger District office.

Recommendations

Continue with treatments in accordance with approved NEPA decisions to achieve project objectives. Explore ways to provide more contract oversight during implementation, and continue pursuing the supplemental EA to broaden the tools available for disposing cut material from thinning treatments.

6. LMP Monitoring Protocol Recommendations

This year the team continued with the open-ended-question format used for the first time in the fiscal year 2008 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 Cleveland NF Planner.

7. Monitoring Team Recommendations

Altogether, the fiscal year 2017 monitoring team found that the Land Management Plan goals, strategies, and design features are taken seriously and incorporated into project planning, and they are generally manifested in the field by project results.

Project interdisciplinary communication has substantially improved over prior years, maps are being regularly incorporated into project documentation, and specialist review of Enterprise and consultant reports has become standard practice. Each of these improvements has been recommended by this report in prior years.

8. Potential LMP Amendments and Corrections

Monitoring did not surface a need for a significant amendment of the plan. 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 Cleveland NF LMP Amendment with a Record of Decision signed on October 23, 2014, alters the Land Use Zones of some of the Forest's Inventoried Roadless Areas and undeveloped areas as well as adjusts the strategy used for LMP Monitoring, as reflected in this report. In addition, 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 following are the actions that will be taken in response to LMP monitoring, including those actions from past monitoring that need to continue:

NEPA

Continue the monthly Standing Interdisciplinary Team approach for all Cleveland NF projects that has been developed over the past six years to improve communication and NEPA efficiency and ensure LMP consistency.

Emphasize requirement to screen all projects for consistency with the current LMP, especially when implementing projects with “refreshed” NEPA that was started before the adoption of the LMP. Continue work to build NEPA ready fuels management projects for outyears that are consistent with the current LMP.

Ensure local Forest specialists review all NEPA work conducted for the Forest by Enterprise Teams or private contractors to ensure all design criteria and mitigations are appropriate and implementable by the local unit.

Plan to Implementation

Ensure that 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.

Specialists must continue to be engaged through project implementation, especially when field realities necessitate changes in projects that may have not been fully anticipated during the NEPA process.

Arrange for the transfer of project leadership duties from departing staff members to new personnel to avoid communication issues and lack of project oversight.

Program Development

Follow through on this year’s recommendations throughout the coming fiscal year by incorporating them into program and project management and revising internal processes as necessary.

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

Continue to fine tune an interdisciplinary process for developing the program of work, striving to create an integrated program of work that is responsive to common priorities under the LMP.

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), work to 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.

Recreation Management

Continue to prepare operations and maintenance plans for Forest Service recreation sites over time.

Recreation events for the entire Forest should be analyzed in a single NEPA letter to the file and annually refreshed.

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.

10. Public Participation

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

11. Members of the Monitoring Team

Monitoring and evaluation of the Land Management Plan requires support and contributions from a wide range of program and project leaders on the Cleveland NF. Completion of this year's report was challenged and limited by emergency response to wildfires in the western United States, especially the 2018 Holy wildfire on the Trabuco Ranger District (RD). Despite these challenges, meaningful contributions were made by USDA Forest Service staff in the furtherance of this process and the management of the Cleveland NF.

Members of the fiscal year 2017 project field monitoring team include:

Planning/Monitoring Lead:	Kyle Kinports, Cleveland NF Land Management Planner
Land/Resource Mgmt.:	Jeff Heys, Cleveland NF Resource Staff Officer
	Bob Heiar, Descanso District Ranger
Engineering:	Noelle Graham, Cleveland NF Supervisory Engineer
	Trien Le, Cleveland NF Transportation Engineer
	Foster Kuramata, Cleveland NF Roads Engineer
Forestry:	Andrew Weinhart, Cleveland NF Forester
Botany:	Jenny Moore, Cleveland NF Botanist
GIS:	Steven Del Favero, Cleveland NF GIS Coordinator

Program monitoring information was contributed by:

Archaeology:	Karin Klemic, Cleveland NF Heritage Resource Program Manager
Engineering:	Noelle Graham, Cleveland NF Supervisory Engineer Trien Le, Cleveland NF Transportation Engineer Foster Kuramata, Cleveland NF Roads Engineer
Ecology	Nicole Molinari, Southern Province Ecologist
Forestry:	Andrew Weinhart, Cleveland NF Forester Stacy Hishinuma, Forest Health Protection, Forest Entomologist Jacqueline Pope, Region 5 State and Private Forestry
Fuels	Stephen Fillmore, Cleveland NF Fuels Mgmt. Specialist Tim McGrath, Cleveland NF Fire Mgmt. Planner
GIS:	Steven Del Favero, Cleveland NF GIS Coordinator
Hydrology:	Victoria Stempniewicz, Cleveland NF Hydrologist Emily Fudge, Cleveland NF Supervisory Hydrologist
Lands/Special Uses:	Brad Aughinbaugh, Cleveland NF Utilities Coordinator Becky Brand, Region 5 Realty Specialist Kim Villa, Cleveland NF Resources Assistant
Resource Mgmt.:	Jeff Heys, Cleveland NF Resource Staff Officer
Principal Author:	Kyle Kinports, Cleveland NF Land Management Planner
Range/Weeds:	Lance Criley, Cleveland NF Rangeland Management Specialist
Recreation:	Joe Raffaele, Cleveland NF Recreation Program Manager Don English, WO, Visitor Use Monitoring Program Manager Lindsey Steinwachs, Descanso RD Recreation and Lands Officer Jake Rodriguez, Trabuco RD Recreation and Lands Officer Debbie Gaynor, Region 5 Recreation Special Use Program Lead
Wildlife:	Kirsten Winter, Cleveland NF Biologist Julie Donnell, Cleveland NF Fish Biologist

For more information about this report, contact:

Linda Serret, Forest Planner
Cleveland National Forest
10845 Rancho Bernardo Road, Suite 200
San Diego, California 92127
(858) 674-2959
lindaserret@fs.fed.us