

Appendix C – Monitoring Requirements

2016 Transition to New Planning Rule

The four Southern California National Forests propose the following administrative changes to the Land Management Plan (LMP) monitoring requirements in 2016. These changes are proposed in order to comply with the requirements of the 2012 Planning Rule (36 CFR 219.12), and are noted in this document in **Bold Text**. All other monitoring requirements, including changes made in the 2014 LMP Amendment, remain unchanged. The following revisions are proposed:

- Update Part 1 monitoring questions to:
 - Add a question for fire activity.
 - Adjust the question for tree mortality.
 - Add a question for non-native annual grasses.
 - Add a question for fire regime departure.
 - Add a question for coast live oak mortality for the Cleveland National Forest (CNF) and Los Padres National Forest (LPNF).
 - Add a question for special uses.
 - Add a question for streamflows.
 - Adjust the indicator for Goal 6.2.
 - Adjust the report period for all questions from 5 years to 2 years.

The planning rule contains seven specific requirements applicable to the Southern California National Forests. They are listed below as they appear in the planning rule, and the questions and indicators that satisfy each of these criteria are noted in Table 1.

- (i) The status of select watershed conditions.
- (ii) The status of select ecological conditions including key characteristics of terrestrial and aquatic ecosystems.
- (iii) The status of focal species to assess the ecological conditions required under §219.9.
- (iv) The status of a select set of the ecological conditions required under §219.9 to contribute to the recovery of federally listed threatened and endangered species, conserve proposed and candidate species, and maintain a viable population of each species of conservation concern.
- (v) The status of visitor use, visitor satisfaction, and progress toward meeting recreation objectives.

(vi) Measurable changes on the plan area related to climate change and other stressors that may be affecting the plan area.

(vii) Progress toward meeting the desired conditions and objectives in the plan, including for providing multiple use opportunities.

(viii) The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land (16 U.S.C. 1604(g)(3)(C)).

Criterion (viii) applies only to National Forests with timber production programs, which the four Southern California National Forests do not have. Therefore, no monitoring is needed for this criterion, and it has not been included in the new monitoring framework.

2016 Other Administrative Changes to Clerical Errors

Several other minor administrative changes have been included in this document to correct clerical errors from the 2014 LMP Amendment, and simplify Appendix C. Those changes include:

- Deletion of the Introduction section added in the 2014 Amendment – this was background used to explain the monitoring program in 2014. It did not contain any specific monitoring requirements and was considered unnecessary for the 2016 Administrative Change.
- The word “energy” was inserted back into the title of Goal 4.1b in Table 1. It had been inadvertently left out in the 2014 LMP Amendment and is critical to the context of Goal 4.1b. This is noted in bold text in Table 1.
- The description of Part 2 Monitoring was revised to indicate that only the San Bernardino National Forest has additional monitoring questions in Part 2 of the LMP. The 2014 LMP Amendment mistakenly referred to additional monitoring questions in Part 2 for all four Southern California National Forests. This is noted in bold in Part 2 Monitoring.

2014 LMP Amendment

In October 2014, the Southern California National Forests each completed a Record of Decision for the LMP Amendment Supplemental Environmental Impact Statement. This process modified the monitoring requirements based on a Settlement Agreement. The amended monitoring and evaluation requirements included the following revisions:

- Update Part 1 monitoring questions to:
 - Add a question for mortality risk.
 - Add a question for riparian condition.
 - Drop the question for general forest activities.
 - Add an indicator for unauthorized roads and trails.

- Clarify and update several indicators to reflect current inventory methodology.
- Add a section that describes the implementation of Part 1 monitoring in greater detail.
- Expand the description of Part 3 monitoring to provide more detail on how to select projects for monitoring.

Part 1 Monitoring

Monitoring and evaluation provide knowledge and information to keep the forest plan viable. Appropriate selection of indicators, and monitoring and evaluation of key results helps the Forest Service determine if the desired conditions identified in the forest plan are being met.

Monitoring and evaluation also help the Forest Service determine if there should be changes to goals and objectives, or monitoring methods.

Evaluation is more than reporting facts and figures. Forest plan evaluation tells how decisions have been implemented, how effective the implementation has proved to be in accomplishing desired conditions, what was learned along the way, and how valid management assumptions are that led to forest plan decisions. Monitoring and adaptive management should lead to improved implementation and resource conditions.

Adaptive management is the foundation for planning and management. The planning regulations require that forest plans be revised every 15 years after forest plan approval (36 CFR 219.7(a)). Forest plans need to be dynamic to account for changed resource conditions, such as: large-scale wildland fire or listing of additional species under the Endangered Species Act; new information and science such as taking a systems approach; new or modified regulations; and new or modified policies such as the Roads Analysis Policy.

Monitoring and evaluation are critical to adaptive management. Other component parts include inventory, assessment, planning, and implementation. No single component can be isolated from the whole of adaptive management.

Monitoring and evaluation processes begin by identifying key questions Forest Service managers need to answer about forest plan implementation. Understanding the questions helps to identify information needs, data collection designs, and tools needed to turn data into information and knowledge. Managers must also have a clear understanding of baseline conditions (current resource condition at the time of signing the Record of Decision) versus desired conditions and the evaluation strategies that will help determine if movement towards desired conditions is occurring. Appropriate selection of indicators helps assess resource status and trends and progress towards meeting the desired conditions identified in the forest plan.

The aggregated outcome of project level work reflects progress towards achieving the desired conditions of the forest plan and the contribution to agencies' priorities. This emphasizes the importance of using the National Strategic Plan desired conditions, goals and objectives that apply to the planning area in the forest plan and to use common criteria and indicators as appropriate in the forest plan. This approach will enable monitoring and evaluation efficiencies and provide critical information on the national forests' contribution to the agency's mission, goals, and objectives. Table 1 provides the Key Questions by resource area, the indicator for that question, what monitoring action(s) will occur and the appropriate data to use, the reliability of the data, and cost.

In accordance with the Planning Rule, reporting for Part 1 monitoring shall occur biennially (every two years), with the first report to be available no later than two years from the date that these changes are adopted.

Table 1. Part 1 Monitoring Summary

Goals	Monitoring Question	Indicators	2012 Rule Component Addressed ¹
1.1	Has the forest made progress in reducing the number of acres that are adjacent to development within Wildland Urban Interface (WUI) defense zones that are classified as high risk?	Acres of High Hazard and High Risk in WUI Defense Zone	
1.1 1.2 3.2 6.2	Are wildfires becoming larger, more frequent, or more severe, and is there a seasonal shift in fire activity?	Total and Mean Fire Size, Ignition Density, Fire Severity, and Monthly Area Burned	ii, iv, (vi)
1.2 6.2	Is tree mortality increasing across the landscape, and is it distributed evenly across elevations?	Mortality Risk Assessment and Forest Health Protection Mortality Surveys	ii, iv, (vi)
1.2 6.2	Are chaparral and coastal sage scrub vegetation communities type converting to non-native annual grasslands?	Extent of Non-native Annual Grasses	ii, (iii), iv, vi
1.2 3.2 6.2	Are fire frequencies becoming more departed from the natural range of variation?	Proportion of Landscape in Departed Fire Frequency	iv, (vi)
1.2.1	Is the forest making progress toward increasing the percentage of montane conifer forests in Condition Class 1?	Departure from desired fire regime, acres by Fire Regime I	ii, iv
1.2.1 6.2	Is coast live oak mortality increasing across the landscape? (CNF/LPNF only)	Forest Health Protection Mortality Surveys	ii, iv (iii)
1.2.2	Is the forest making progress toward maintaining or increasing the percentage of vegetation types that naturally occur in Fire Regime IV in Condition Class 1?	Departure from desired fire regime, acres by Fire Regime IV	ii, iv
1.2.3	Has the forest been successful at maintaining long fire-free intervals in habitats where fire is naturally uncommon?	Departure from desired fire regime, acres by Fire Regime V	ii, iv
2.1	Are the national forests' reported occurrences of invasive plants/animals showing a stable or decreasing trend?	Acres of treatments in reported occurrences	ii, iv
3.1	Are trends in indicators and visitor satisfaction surveys indicating that the forest has provided quality, sustainable recreation opportunities that result in increased visitor satisfaction?	Visitor Satisfaction (National Visitor Use Monitoring)	v
3.2	Are trends in indicators and visitor satisfaction surveys depicting the forest has provided solitude and challenge in an environment where human influences do not impede the free play of natural forces?	Wilderness Condition	v
4.1a	Has the forest been successful at protecting ecosystem health while providing mineral and energy resources for development?	Number of Mineral and Energy Development Projects Proposed and Approved	
		Minerals and Energy Success at protecting Ecosystem Health	

Goals	Monitoring Question	Indicators	2012 Rule Component Addressed ¹
4.1a 4.1b 7.1	How many of each type of special use authorization, mining permit, and forest product permit are active on the forest?	Number of special use authorizations and permits by type	(vii)
4.1b	Has the forest been successful at protecting ecosystem health while providing renewable energy resources for development?	Number of Renewable Resource Projects Proposed and Approved	
		Renewable Resources Success at protecting Ecosystem Health	
5.1	Is the forest making progress toward sustaining Class 1 watershed conditions while reducing the number of Condition Class 2 and 3 watersheds?	Number of Watersheds in each Condition Class	i, ii, iv
5.1 5.2 6.2	How do streamflows compare with historical records?	Monthly Streamflows, Timing and Magnitude of Peak Flows, Degree of Variation	i, ii, iv, (vi)
5.2	Is the forest increasing the proper functioning condition of riparian areas?	Change in Indicator Score for Aquatic Habitat, Aquatic Biota and Riparian Vegetation	i, ii, iv
6.1	Is forest rangeland management maintaining or improving progress towards sustainable rangelands and ecosystem health?	Percent of key areas in active allotments meeting or moving towards desired conditions	
6.2	Are trends in resource conditions indicating that habitat conditions for fish, wildlife, and rare plants are in a stable or upward trend?	Habitat Condition of At-Risk Species	ii, (iv)
7.1	Is the forest balancing the need for new infrastructure with restoration opportunities or land ownership adjustment to meet the desired conditions?	Land Ownership Complexity	
		Authorized and Administrative Infrastructure	
		Miles of Unauthorized Motorized Routes	

¹ The 2012 Planning Rule components in parentheses () indicate the monitoring questions and/or indicators that were created or modified to specifically address components. Those components not in parentheses indicate existing monitoring questions that address 2012 planning rule components, and new questions that address additional components.

Part 2 Monitoring

Monitoring identified in LMP Part 2 is focused on program implementation including inventory activities. The Angeles, Cleveland, Los Padres, and San Bernardino National Forests currently use performance indicators for tracking program accomplishments. The current system tracks performance measures linked to the National Strategic Plan and reports accomplishments through a national reporting system. Although the system will evolve over time as technology changes, Table 2 represents the type of measures that are reported on an annual basis.

The LMP further defines how inventory and reporting will be accomplished in Part 2 Appendix B - Program Strategies and Tactics:

- **AM 1 - Land Management Plan Monitoring and Evaluation**

Report the results of land and resource management plan monitoring and evaluation questions in the annual monitoring and evaluation report, including the actions taken to respond to new information learned through the adaptive management cycle.

- **AM 2 - Forest-wide Inventory**

Develop and maintain the capacity (processes and systems) to provide, store, and analyze the scientific and technical information needed to address agency priorities.

Table 2. Part 2 Monitoring Summary

Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
Acres of Terrestrial Habitat Enhanced	High	1	1
Miles of Aquatic Habitat Enhanced	High	1	1
Acres of Noxious Weeds Treated	High	1	1
Acres of Vegetation Improved (also see Hazardous Fuels Reduction)	High	1	1
Acres of Watershed Improved	High	1	1
Acres of Land Ownership Adjusted	High	1	1
Number of Heritage Resources Managed to Standard	Moderate	1	1
Products Provided to Standard (Interpretation and Education)	Moderate	1	1
Recreation Special Use Authorizations Administered to Standard	Moderate	1	1
PAOT Days Managed to Standard (Developed Sites)	Moderate	1	1
Recreation Days Managed to Standard (General Forest Areas)	Moderate	1	1
Land Use Authorizations Administered to Standard	Moderate	1	1
Number of Mineral Operations Administered	High	1	1
Number of Allotments Administered to Standard	High	1	1
Acres of Hazardous Fuel Reduction	High	1	1
Miles of Passenger Car Roads Maintained to Objective Maintenance Level	High	1	1
Miles of High Clearance & Back Country Roads Maintained to Objective Maintenance Level	High	1	1
Miles of Road Decommissioned	High	1	1
Miles of Trail Operated and Maintained to Standard	Mod	1	1

Additional monitoring questions specific to the **San Bernardino National Forest** are included in Part 2 of **the San Bernardino National Forest LMP**.

These data are reported in the annual monitoring and evaluation report as part of the National Forest's implementation monitoring efforts. Annual monitoring and evaluation reports will document when there is a need to change the Southern California Land Management Plans in response to declining trends in resource conditions.

Part 3 Monitoring

Implementation and effectiveness monitoring for Part 3 of the LMPs are conducted at the project level. Part 3 of the LMPs requires annual implementation monitoring of new projects and ongoing activities and sites. Project selection for monitoring will use the following protocol and will be reviewed and updated annually as needed.

As detailed in the LMPs, the Program Emphasis and Objectives describe the activities and programs on the Forests. Activities were organized into six functional areas, which include all areas of business for which the national forests are responsible. The functional areas collectively include 35 programs. National forest management uses the results to clearly communicate program capability both internally and externally.

The six functional areas are:

- **Management & Administration:** National forest leadership, management and administrative support activities, communications, external affairs, community outreach, planning, human resources, information technology, and financial management.
- **Resource Management:** Activities related to managing, preserving, and protecting the national forest's cultural and natural resources.
- **Public Use & Enjoyment:** Activities which provide visitors with safe, enjoyable and educational experiences while on the national forest and accommodate changing trends in visitor use and community participation and outreach.
- **Facility Operations & Maintenance:** Activities required to manage and operate the national forest's infrastructure (i.e., roads, facilities, trails, and structures).
- **Commodity & Commercial Uses:** Grazing management, forest special product development, and activities related to managing non-recreation special-uses such as national forest access, telecommunications sites, and utility corridors.
- **Fire & Aviation Management:** Wildland fire prevention through education, hazardous fuels reduction, and proactive preparation. This program also includes on-forest wildland fire suppression, and national or international wildland fire and emergency incident response.

The Program Emphasis and Objectives will be used to stratify the new projects and ongoing activities and sties by functional areas.

New Projects

All new projects implemented during the monitoring period, including projects that are implemented over multiple years, will be stratified into the appropriate functional areas. A new project should be randomly selected from each of the five functional areas that had new projects implemented during the monitoring period. The Management & Administration functional area is excluded since it does not generate new projects. If there are a large number of new projects

implemented within a functional area over the monitoring period, then a larger number of new projects should be selected from that functional area.

Ongoing Activities and Sites

All ongoing activities and sites will be stratified into the appropriate functional areas. Ongoing activities and/or sites should be selected from Public Use & Enjoyment, Facility Operations & Maintenance, and Commodity & Commercial Uses functional areas. As timing and funding permit, ongoing activities and/or sites should be randomly selected from each applicable sub-category in the three functional areas.

A review team will visit the selected projects and ongoing activities and sites to review the effectiveness of applying LMP design criteria. If problems in implementation are detected, or if the design criteria are determined to be ineffective, then the team will recommend corrective actions. Corrective actions may include amendments to the LMPs if necessary to improve the effectiveness of the design criteria. Results of this monitoring will be reported annually in the LMP monitoring and evaluation report (Table 3). In addition, design criteria, including new laws or regulations referenced in Appendix A of the LMPs will be updated. Appendix A is comprised of all current and relevant statutes, regulations, executive orders and memorandums, and other management direction. Together, they provide overarching management direction for the LMPs. While the list may be periodically updated to better reflect the current status, new additions or deletions are automatically in effect as overarching direction.

Table 3: Part 3 Monitoring Summary

Indicators	Data Reliability	Measuring Frequency (Years)	Report Period (Years)
Design Criteria	Moderate	1	1

Monitoring will be conducted through an interdisciplinary team examining documentation (NEPA or otherwise) for required mitigation measures including applicable Best Management Practices (BMPs), consultation requirements from US Fish & Wildlife Service and the State Historic Preservation Office (SHPO), and applicable guidance from the Southern California Land Management Plans. The team will validate whether the projects were implemented consistent with LMP direction, how well objectives were met and how closely standards and project mitigation measures improved environmental conditions. This monitoring will be completed in conjunction with other types of monitoring when efficient.

A comparison of expected results and actual results is needed to determine whether programs and projects are meeting LMP direction as part of the Adaptive Management Cycle.

It is anticipated that there will be a minimum of 8 new projects and ongoing activities and sites that will be validated each year.

If problems in implementation are detected, or if the design criteria are determined to be ineffective, then the team will recommend corrective actions. Corrective actions may include amendments to the LMPs if necessary to improve the effectiveness of the design criteria. Results of this monitoring will be reported annually in the LMP monitoring and evaluation report. As described above, design criteria, including new laws or regulations referenced in Appendix A of the LMP will be updated.