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Lassen Land and Resource Management Plan FY 2006 Monitoring Report

Lassen National Forest



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Lassen Land and Resource Management Plan FY 2006 Monitoring Report

Monitoring Summary

The Regional Forester signed the Record of Decision (ROD) and approved the Lassen National Forest (NF) Land and Resource Management Plan (LRMP) and Environmental Impact Statement (EIS) on January 11, 1993. In that decision, a commitment was made to conduct a monitoring and evaluation program. To date the following Monitoring & Evaluation Reports have been published by the Lassen National Forest:

- August 1997, comprising fiscal years 1993 through 1996
- July 1998, for fiscal year 1997
- July 1999, for fiscal year 1998
- September 2000 for fiscal year 1999

In addition, a Monitoring Report (accomplishment only) for FY 2005 was completed in September 2006.

The LRMP for the Lassen NF has been amended by three programmatic forest plan level decisions since its approval in 1993:

- The 1994 Northwest Forest Plan (NWFP) and RODs (2001, 2004, 2007)
- The Herger-Feinstein Quincy Library Group Forest Recovery Act (HFQLG) RODs (1999, 2003)
- The Sierra Nevada Forest Plan Amendment (SNFPA) RODs (2001, 2004)

Some LRMP monitoring has also been adjusted to reflect these strategies and changes in forest management. For example the wildlife monitoring plan objectives from the 1992 LRMP, Chapter 5, were amended to reflect changes from the 2004 SNFPA (refer to Chapter 1, Land and Resource Management Direction of the Lassen National Forest Management Indicator Species (MIS) Report (2006).

The Lassen NF is scheduled to begin Forest Plan Revision in Fiscal Year 2009. At this time the Forest will evaluate whether or not the assumptions used to develop its plan were correct. All the monitoring and evaluation information collected since the Plan's approval will be used for this plan revision effort.

Selected Monitoring Activities for FY 2006 Reporting

The Lassen Land and Resource Management Plan (as amended) has 22 disciplines, ranging from air quality to wildlife, for monitoring with one to several individual monitoring items for each discipline. The emphasis of this report is on implementation and effectiveness monitoring of the LRMP during FY 2006. The monitoring activities documented here are not all inclusive of the monitoring which occurs on a yearly basis, but rather a representative set of LRMP monitoring. Disciplines selected to report on for FY 2006 are: *Air Quality, Cultural, Fire & Fuels, Fish, Forest Health, Range, Sensitive Plants, Soils, Timber, Water & Riparian Areas, and Wildlife.*

LRMP Monitoring Components

Objectives

Table 1, *Monitoring Objectives, Accomplishments and Results*, documents whether the objectives, as identified in the Lassen LRMP (as amended), were accomplished, to what extent, and what results were realized from the monitoring effort. The questions to be answered here are: Did we do what we said we would? What were the results? Were the results within the allowable standards set up in the LRMP?

Monitoring

For the representative disciplines of this report, the specialists were asked to assess whether the monitoring as specified in the LRMP, as amended, was (1) accomplished in full, (2) accomplished in part (% accomplished if applicable), or (3) not accomplished.

Results

Results for the 2006 LRMP monitoring activities are summarized using the following criteria to compare post-monitoring conditions to monitoring limits of variability established in Chapter 5 of the LRMP (see Table 1). (1) conditions within standards, (2) conditions within allowable variation for standards, (3) conditions below allowable standards and variations, (4) conditions indeterminable, and (5) conditions not reported (see Table 1).

Conclusions

Table 2, *Monitoring Conclusions and Recommendations*, documents the specialist's conclusions for LRMP monitoring for their respective disciplines. An attempt was made to answer the questions: Is the monitoring outlined in the Lassen NF LRMP, as amended, effective, and are we using the right monitoring tools to properly assess potential effects to the Forest's management practices? These conclusions rely on the expertise of the specialists performing the monitoring and for the most part fall into three categories: (1) monitoring is effective, (2) monitoring is ineffective, and (3) monitoring is inconclusive. Conclusions for the LRMP monitoring of FY 2006 selected disciplines (omitting range and wildlife, analysis not available) were summarized for this report.

Recommendations

Table 2, *Monitoring Conclusions and Recommendations*, documents the specialist's general recommendations for LRMP (as amended) monitoring for their disciplines (omitting range, analysis not available). The specialists analyzed the monitoring results and made recommendations as to how effective the LRMP monitoring plans are, and what changes to the monitoring plan might be needed if standards were not met. These recommendations rely heavily on the expertise of the specialists who performed the LRMP monitoring and for the most part fall into six categories: (1) continue current monitoring, (2) improve monitoring applications, (3) improve documentation, (4) amend prescriptions, (5) amend standards & guidelines, and (6) revise Forest Plan.

Air Quality:

For air quality in FY 2006, the Monitoring objective was accomplished, and post-monitoring conditions were within standards. Monitoring objectives as designed in the Lassen NF LRMP were effective, and the recommendation is to continue current LRMP monitoring for compliance with local air quality regulations.

Cultural:

The monitoring objective for management of cultural resources was accomplished in part. Post-monitoring conditions for 55 sites (out of 61 monitored) were found to be within standards for management of cultural resources. However, conditions (inadvertent effects) at six sites (out of the 61) were below standard and are being investigated for illegal activity. FY 2006 monitoring objectives for management of cultural resources, as designed in the Lassen NF LRMP, were effective. It was determined that these monitoring applications are sufficient, but could be improved by increasing the number of monitoring events.

The monitoring objective was also accomplished in part for inventory and evaluation of cultural resources. Inventory (survey) efforts exceeded standards (32 sites added to inventory through survey efforts), but evaluations of cultural resources are being conducted below our LRMP standard. Monitoring objectives for inventory and evaluation of cultural resources were also determined to be effective. The recommendation is to continue current monitoring, but because inventory efforts are exceeding standards and guides, it is also recommended that the Standards and Guides and the Forest Plan be amended to meet current efforts for evaluations.

Fire and Fuels:

Monitoring objectives for wildland fire suppression, fuels treatments, and prescribed burns were accomplished, and post-monitoring conditions for all three were found to be within standards. FY 2006 monitoring objectives as designed in the Lassen NF LRMP were effective, and the recommendation is to continue current LRMP monitoring for wildland fire suppression, fuels treatments, and prescribed burns.

Monitoring data for fire intensity class (FIC) acres was collected using total acres burned rather than fire intensity class. Therefore, the objective for FIC acres was only accomplished in part (3 percent accomplished), and the post-monitoring conditions were indeterminable for FY 2006, making the monitoring objectives for burned acres by FIC inconclusive. It is recommended that improvements be made to the monitoring applications for FIC by monitoring for total acres burned rather than by Management Area (MA) and FIC.

Fish:

The monitoring objectives for anadromous fish were accomplished for FY 2006. Monitoring of habitat followed SNFPA PACFISH protocol developed by the Lassen NF for anadromous habitat on the forest. The results for the habitat component were indeterminable (analysis on monitoring not completed for FY 2006, but presumed to be within standards based on monitoring results of 10 prior years). Nearly 14 years of consecutive monitoring is now available to track trend in population of spring-run Chinook salmon, a Federally Listed species. The results for the population component showed conditions were within allowable variation for standards. For anadromous fish, FY 2006 monitoring was effective for both habitat and population, and it is recommended that current monitoring applications continue for both habitat and population.

The monitoring objectives for resident fish were accomplished in part for FY 2006. The results for the habitat component were indeterminable (analysis on monitoring not completed for FY 2006, but presumed to be within standards based on monitoring results of ~12 prior years). The results for the population component showed conditions were within standards at the sites sampled. The resident fish monitoring protocol was effective for habitat (the R-5 Stream Condition Inventory protocol is available and can be effectively used to track trend in condition of habitat). Population monitoring through the use of snorkeling techniques to determine presence or absence of species was also effective for resident fish. For resident fish habitat

monitoring, the recommendation is to continue current LRMP monitoring. When the Regional LRMP amendment for MIS is implemented, habitat monitoring requirements for rainbow trout should be re-evaluated at that time. For resident fish population monitoring it is recommended that current monitoring applications continue concurrent with habitat monitoring until amended by MIS implementation, and then re-evaluated at that time.

Forest Health:

The monitoring objective for forest pest conditions was accomplished in FY 2006. Post-monitoring conditions were also within allowable variation for standards, but these monitoring results are most likely reflective of favorable precipitation conditions rather than past management practices. FY 2006 monitoring objectives as designed in the Lassen NF LRMP were effective, and it is recommended that the current LRMP monitoring for forest pest conditions continue. It is also recommended there be a reduction in stand density and stocking levels to reduce impacts of insects and diseases on forest stands in the future.

Range:

For range, the objectives for FY 2006 LRMP monitoring were accomplished, and the post-monitoring conditions were within standards.

Sensitive Plants:

The monitoring objective for FY 2006 was accomplished for sensitive plants, and the post-monitoring conditions were within standards. The monitoring objectives as designed in the Lassen NF LRMP were effective and it is recommended that current LRMP monitoring for sensitive plant populations continue.

Soils:

The monitoring objective for soil productivity for FY 2006 was accomplished, and post-monitoring conditions were within standards. However, FY 2006 monitoring for soil productivity was inconclusive. More data is needed from the Long Term Soil Productivity Study. The recommendation is to improve monitoring applications for soil productivity. Decisions will need to be made on how to improve monitoring procedures for soil productivity following the Long Term Soil Productivity Study.

The monitoring objective for soil compaction for FY2006 was accomplished. Pre-and Post-monitoring conditions for soil compaction on several sites were found to be below allowable standards and variations. However, monitoring for soil compaction was also inconclusive. More data is needed to determine the true effect of soil compaction levels on sites which were found to be above acceptable levels. Legacy compaction is still apparent in current monitoring, but this level of compaction at these sites may not necessarily lead to a decrease in soil productivity. More data will need to be collected to determine if there are any effects from the measured compaction levels. It is recommended that improvements be made to the monitoring procedures for soil compaction and attempts at improving precision in the monitoring protocol are currently being made.

Timber:

Monitoring objectives for timber sale volume (47% of MMBF/60% of MMCF) and regeneration acres (11%) were only accomplished in part for FY 2006. Post-monitoring conditions for timber sale volume (ASQ) and regeneration acres were below allowable standards and variations. FY 2006 monitoring objectives as designed in the Lassen NF LRMP for ASQ were inconclusive. It

was determined that the monitoring system is adequate, with poor results being attributed to minimal volume. Monitoring for regeneration acres was also inconclusive. It was determined that the monitoring system is adequate, with poor results being attributed to minimal acreage. For ASQ and regeneration acreages, it is recommended to keep current LRMP monitoring system in place, but amend standards and guidelines to increase timber sale volume and regeneration acreage.

Plantation stocking level monitoring objectives were exceeded by 197%, and post-monitoring conditions for plantation stocking levels exceeded minimal standards for FY 2006. Monitoring objectives as designed in the Lassen NF LRMP for plantation stocking levels were effective and the minimal standards were exceeded. It is recommended to continue current monitoring applications for plantation stocking levels.

Water and Riparian Areas:

Water quality, watershed condition, cumulative watershed effects, riparian habitat monitoring, and Eagle Lake water quality monitoring objectives were all accomplished for FY 2006. Post-monitoring conditions were within standards set for water quality, watershed condition, cumulative watershed effects, Eagle Lake water quality, and riparian habitat. FY 2006 monitoring objectives for all five of these resources were effective, and it is recommended that current LRMP monitoring for water quality, watershed condition, cumulative watershed effects, and riparian habitat monitoring continue.

Eagle Lake water quality monitoring was suspended in FY 2007 and the California Dept. of Water Resources will be conducting sampling on a 5 year rotation from this point forward. Sampling data from the past 20 years indicated minimal change in water quality. Given this, monitoring has been scaled back for Eagle Lake water quality monitoring.

Wildlife:

Overall monitoring objectives for the 12 species listed in Chapter 5 of the Lassen NF LRMP were accomplished in part (10 out of 12 species listed in Lassen NF LRMP), and post-monitoring conditions met standards for all wildlife species monitored. However, it is recommended that the LRMP monitoring be re-evaluated to improve monitoring applications and documentation. Establishing a geodatabase for each special status species (MIS) would help improve the accuracy in documentation and effectiveness of monitoring applications.

Status of FY07/FY08 Monitoring & Evaluation on the Lassen NF

In preparation of the annual monitoring and evaluation report, depending on funding and personnel available, an IDT will need to be convened to analyze and evaluate the previous year's monitoring efforts. Recommendations could then be made to the Forest Supervisor if further monitoring or adjustment is needed, and a schedule to implement these recommendations proposed.

List of Preparers (Lassen National Forest)

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Appendix

References

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Tables

Table 1: *Monitoring Objectives, Accomplishments and Results*
 Lassen National Forest Fiscal Year 2006
 (see legend below)

Resource	Key	Objective	Accomplishment	Results
Air Quality:				
Compliance w/Local Air Quality Regulations	1-B	Assure that FS activities that could create air pollution (...and prescribed burning) comply w/all Regs & permit requirements of local air quality regulatory agencies	Accomplished in full	Conditions within standards
Cultural:				
Management of Cultural Resources	3-A	Ensure that cultural resources are protected during Forest management activities, and that Forest actions do not restrict traditional native American religious practices	Accomplished in part (61 sites were protected using SPMs; monitoring, however, showed six sites with inadvertent effects possibly as a result of illegal activity)	Conditions within standards for most sites Conditions below allowable standards & variations for six sites (inadvertent effects to six sites being investigated to determine and correct cause)
Inventory & Evaluation of Cultural Resources	3-B	Assess the adequacy of the Forest cultural resource inventory and determine if cultural resource inventories and evaluations will be completed by the first decade. Assess if 20% of all cultural properties will be evaluated for eligibility to the NRHP by first decade.	Accomplished in part: Survey efforts exceeding standards Evaluation efforts below LRMP standards, but just meeting RPA standards in agreed-upon 110 Plan)	Conditions within standards (32 sites added to inventory through survey efforts; inventory exceeding standards) Conditions below allowable standards & variations (evaluations being conducted below LRMP standard)
Fire & Fuels:				
Wildland fire suppression tactics & strategies	5-A	Assure that fire suppression actions are consistent w/Forest Plan Standards and Guides (S&Gs)	Accomplished in full	Conditions within standards
Burned Acreages by Fire intensity Class (FIC)	5-B	Compare the actual and predicted extent of wildfire acres.	Not accomplished (Total NFMAS – 5360 ac Total actual – 186 ac = 3% of predicted)	Conditions indeterminable (the monitoring data was collected using total acres burned, rather than fire intensity class)
Fuel Treatment and Prescribed Fire	5-C	Review prescribed burns and fuel treatments to determine if project objectives and Forest Plan Standards and Guidelines were met.	Accomplished in full	Conditions within standards
Fish:				
Anadromous Fish (Spring-run Chinook salmon)	7-A	Habitat - Determine habitat status and trend in relation to management activities.	Accomplished in full (5 miles of anadromous habitat monitored)	Conditions not yet analyzed for FY 2006 monitoring, but presumed within standards based on results from prior 10 year monitoring timeframe. Trend for 10 yrs of monitoring shows habitat conditions to be relatively stable.

Resource	Key	Objective	Accomplishment	Results
		Population - Determine relative distribution and abundance	Accomplished in full (37 miles of adult spring-run chinook salmon holding habitat surveyed and 37 miles of spawning habitat surveyed)	Conditions within allowable variation for standards (annual abundance estimates display a high level of fluctuation, but escapement trends have been positive since 1991)
Resident fish (rainbow trout)	7-A	Habitat - Determine habitat status and trend in relation to management activities.	Accomplished in part (number of sample units to be monitored annually is not defined, but 8 miles of stream condition were monitored)	Conditions not yet reported for FY 2006 monitoring, but presumed within standards based on results from prior ~12 years monitoring. Trend for 12 years of monitoring shows moderate habitat capability & an upward trend for key attributes.
		Population - Determine population distribution in medium to highly suitable streams	Accomplished in part (number of sample units to be monitored annually is not defined, but monitoring accomplished in conjunction with habitat monitoring noted above)	Conditions within standards at sites sampled
Forest Health				
Forest Pest Conditions	8-A	Detect and evaluate pest-related problems and damage through the Forest pest detection reporting process	Accomplished in full through Douglas-fir Tussock Moth (DFTM) surveys and aerial tree mortality surveys	Conditions within allowable variation for standards (results mostly reflect favorable precipitation conditions rather than past management practices)
Range:				
Range Utilization Studies	11-A	Review Ranger District programs to determine appropriate livestock grazing levels to maintain proper vegetative conditions.	A total of ten (10) allotment management plans (AMPs) were reviewed.	Exceeded minimum standard of six AMPs by four.
Rangeland Condition and Trend (C&T)	11-B	Determine if all rangelands are maintaining productivity, are in satisfactory or better condition, and have a static or improving trend in range condition.	A total of 18 C&T transects were read on nine allotments. Ten allotment NEPA assessments were reviewed.	Conditions within standards
Sensitive Plants:				
Sensitive Plant Populations	13 -A	Ensure habitat maintenance or improvement for Sensitive plants to avoid Federal listing as Threatened or Endangered species.	Accomplished in full	Conditions within standards
Soils				
Soil Productivity	14.A	Prevent irreversible loss of soil productivity by using erosion hazard information and by assessing the effects of management prescriptions and Forest projects on soil properties	Accomplished in full	Conditions within standards

Resource	Key	Objective	Accomplishment	Results
Soil Compaction	14.B	Determine soil compaction from timber harvesting, rangeland use, recreational activity, and other soil disturbing activities...	Accomplished in full	Conditions below allowable standards & variations (monitoring indicates compaction levels on several sites were above std. before operation and remained above std. after operations. This level of compaction may not lead to a decrease in productivity (per recent scientific findings). More data is needed to determine the true effect of this deviation)
Timber				
Timber Sale Volume	16-A	Evaluate timber sale volume for the Plan period in relation to the allowable sale quantity (ASQ)	Accomplished in part (output of 45 MMBF 47% of objective) Accomplished in part (output of 9 MMCF 60% of objective)	Conditions below allowable standards & variations Conditions below allowable standards & variations
Regeneration Acreages	16-B	Determine acreage of Forest's regeneration timber harvest in relation to HFQLG objectives	Accomplished in part (out put of 410 acres 11% of objective)	Conditions below allowable standards & variations
Plantation Stocking Level	16-C	Determine if tree stocking implantations meets minimum Regional standards and will assure regeneration of the forest within five years.	Accomplished in full (output of 9,255 acres 197% of objective)	Conditions within standards (exceeded minimal standards) 1 st yr: RF 102% survival JP 139% survival PP 157% survival 3 rd yr: PP 135% survival
Water and Riparian Areas				
Water Quality Management	19.A	Assess compliance with an effectiveness of BMP's for all management activities in a given watershed.	Accomplished in full	Conditions within standards
Significant Changes in Watershed Condition	19.B	Identify damaged watersheds or subbasins and needed improvements	Accomplished in full	Conditions within standards
Eagle Lake Water Quality	19.C	Detect any decreases in water quality compared to long-term average quality, particularly any adverse effects from National Forest lands.	Not accomplished	Conditions within standards (monitoring of Eagle Lake water quality was suspended this year and the California Dept. of Water Resources will be conducting sampling on a 5 year rotation from this point forward. Sampling data from the past 20 years indicated minimal change in water quality. Given this, monitoring has been scaled back)
Cumulative Watershed Effects	19.D	Identify cumulative impacts of proposed land disturbing activities in specific watersheds and impacted subbasins	Accomplished in full	Conditions within standards
Riparian Habitat	19.E	Assess riparian values, condition, and trend.	Accomplished in full	Conditions within standards

Resource	Key	Objective	Accomplishment	Results
Wildlife:				
Bald Eagle	22-A	Evaluate trends in habitat capability for both nesting and wintering birds. Determine trends in the breeding population.	A summary of established territories 1994 thru 2005 was made in 2006. A census was conducted and completed in 2006.	We are currently managing for 38 territories. The LRMP goal was for 21 territories. The census count in 2005 was 71 individuals. Census count on ELRD was 42 individuals.
Northern spotted owl	22-B	Evaluate trends in habitat capability. Monitor habitat conservation area for habitat integrity. Determine if Standards & Guides are being followed; verify if they are achieving the desired results and determine if underlying results are sound.	PNW-GTR-646 Habitat status and trend report was released in 11/2005. Standards and Guides were followed.	No change in habitat capability acres. 2006 MIS Species Account report indicates that 3 known nesting sites have been inactive since 2001.
Peregrine falcon	22-C	Population monitoring using Distribution data. Determine distribution trends of breeding pairs at historical and potential nest sites.	Surveys conducted on ALRD. Survey data not summarized.	2006 MIS Species Account report indicates that known nesting sites have increased from 1 to 8 sites over the last 10 years.
CA Spotted owl	22-D	Ensure compliance of Forest projects with Regional spotted owl direction. Determine population and habitat condition trends in network Protected Activity Centers (PACs) and Spotted Owl Habitat Areas (SOHAs). LNF will determine CSO distribution at the Forest scale and provide support to regional efforts at demographic population monitoring and cause and effect research.	Review was made of all district vegetation management projects in 2006. Population and trend analysis was conducted by USFWS per 12 month finding.	2006 MIS Species Account report indicates that the forest has exceeded the LRMP goal of 40 territories with current 127 territories. USFWS determined that LNF population is in a possible downward trend.
Northern goshawk	22-E	Determine habitat trends within designated goshawk habitat. Determine population trends within designated goshawk habitat.	A summary of established territories for 1993 thru 2005 was made in 2006. Surveys conducted on ALRD and ELRD.	2006 MIS Species Account report indicates that the forest has exceeded the LRMP goal of 113 territories with current 170 territories. Summary of nest success for same period indicates an upward trend in population.

Resource	Key	Objective	Accomplishment	Results
marten & fisher	22-F	<p>Field verify the suitability of potential marten & fisher habitat, and identify which areas are not currently suitable and plan for reaching suitability in the shortest possible time.</p> <p>The combination of population and habitat monitoring will help determine whether the conservation strategy is effective in increasing the marten population and in increasing the amount, quality and distribution of marten habitat.</p>	<p>Marten habitat suitability and predictive model development was started with support from PSW.</p> <p>Not accomplished (no surveys conducted by the Lassen NF in FY 2006. Pacific Southwest Research Station (PSW) conducts these surveys in conjunction with current year projects. None were done on the Lassen in FY 2006)</p>	<p>Secured funding for further development of habitat predictive model and re-initiation of carnivore surveys within PSW study area.</p> <p>Conditions not reported</p>
Black bear	22-G	<p>Assess changes in habitat capability as a result of management activities.</p> <p>Population monitoring using distribution data.</p>	<p>MIS report included Vegetation Change detection analysis & snag/down woody material analysis.</p> <p>Survey data was summarized for HCRD from 1993 thru 2004. Fall surveys were initiated on ELRD & ALRD.</p>	<p>Vegetation summary indicates slight increase in small diameter conifer types, net increase in shrubs and decrease in hardwoods.</p> <p>Population surveys indicate wide-spread distribution of black bears across forest and beyond normal range.</p>
Deer & Pronghorn	22-H	<p>Ensure that desired levels of habitat capability are provided.</p> <p>Monitor trend in population distribution within emphasized management areas.</p>	<p>MIS report included Vegetation Change detection analysis & snag/down woody material analysis.</p> <p>Annual spring and fall deer surveys were conducted for California Department of Fish & Game (CDFG) on each District.</p>	<p>Vegetation summary indicates, net decrease in hardwoods.</p> <p>Results are summarized by CDFG and currently unavailable for purposes of this report.</p>
Western gray squirrel	22-I	<p>Determine trends of selected habitat components, especially hardwoods.</p> <p>Population monitoring using distribution data</p>	<p>MIS report included vegetation change detection analysis & snag/down woody material analysis.</p> <p>Survey routes were established on the HCRD.</p>	<p>Monitoring data had not yet been analyzed at the time of this report.</p>
Hairy & Pileated woodpecker	22-J	<p>Determine nesting habitat trends.</p> <p>Monitor change in species distribution.</p>	<p>MIS report included Vegetation Change detection analysis & snag/down woody material analysis.</p> <p>Breeding bird surveys & land bird surveys conducted on all three districts in 2006.</p> <p>Survey data was summarized for forest using Breeding Bird Surveys from 1966 to 2003.</p>	<p>Habitat is moderately abundant and increasing for both.</p> <p>Systematic surveys for species distribution are scheduled for 2007.</p> <p>FY 2006 Monitoring for these woodpecker species was accomplished in part.</p>

Resource	Key	Objective	Accomplishment	Results
Osprey	22-K	<p>Ensure that adequate nesting habitat exists for osprey around Eagle Lake, Lake Almanor, Lake Britton, and other major water bodies.</p> <p>Population monitoring using Distribution data. Determine distribution trends of nesting pairs.</p>	Not accomplished	N/A
Waterfowl	22-L	<p>Determine trends in amount of nesting habitat present in emphasized management areas.</p> <p>Population monitoring using distribution data. Determine trend in distribution of nesting and brooding populations.</p>	Not accomplished	N/A

Legend

Key: from Lassen *Land and Resource Management Plan (LRMP)*, as amended by HFQLG and SNFPA, Chapter 5 – Monitoring and Evaluation, Monitoring Plan by Resource

- HFQLG - Herger-Feinstein Quincy Library Group
- SNFPA - Sierra Forest Plan Amendment
- RF=red fir/JP=Jeffrey pine/PP=ponderosa pine
- SPM - Standard Protection Measures
- NRHP - National Register of Historic Places
- RPA – Regional Programmatic Agreement

Table 2: *Monitoring and Evaluation* Conclusions and Recommendations
Lassen National Forest Fiscal Year 2006
(see legend below)

Resource	Key	Conclusions	Recommendations
Air Quality:			
Compliance w/Local Air Quality Regs	1-B	Monitoring effective	Continue current monitoring
Cultural:			
Management of Cultural Resources	3-A	Monitoring effective (monitoring identified inadvertent effects were occurring)	Monitoring applications are sufficient, but could be improved by increasing the number of monitoring events.
Inventory & Evaluation of Cultural Resources	3-B	Monitoring effective	Continue current monitoring However, inventory efforts are exceeding standards and guides. Recommend amending Standards and Guides and Forest Plan to meet current efforts for evaluations.
Fire & Fuels:			
Wildland fire suppression tactics & strategies	5-A	Monitoring effective	Continue current monitoring
Burned Acreages by Fire Intensity Class (FIC)	5-B	Monitoring inconclusive (monitoring data has been collected using total acres burned, rather than by FIC)	Improve monitoring applications (recommend monitoring for total acres burned, rather than by each Management Area (MA) and FIC.
Fuel Treatment and Prescribed Fire	5-C	Monitoring effective	Continue current monitoring
Fish:			
Anadromous Fish (Spring-run Chinook salmon)	7-A	Habitat – Monitoring effective Monitoring of habitat follows PACFISH protocol developed by LNF for anadromous habitat on the forest. Population - Monitoring effective Nearly 14 consecutive years of data available to track trend in population of spring-run Chinook salmon, a federally listed species.	Continue current monitoring Continue current monitoring
Resident fish (rainbow trout)	7-A	Habitat - Monitoring effective Monitoring Protocol Effective. R-5 Protocol (Stream Condition Inventory) is available and can be effectively used to track trend in condition of habitat. Population - Monitoring effective Snorkeling techniques used to determine presence/absence of species is effective.	Continue current monitoring (LRMP is currently proposed for regional amendment for management indicator species (MIS). Monitoring requirement for rainbow trout habitat may change for this MIS. Re-evaluate at that time) The value of the monitoring objective is questionable but data is inexpensive to obtain and can be conducted concurrent with habitat monitoring. Continue until amended by MIS decision and re-evaluate at that time
Forest Health			
Forest Pest Conditions	8-A	Monitoring effective	Continue current monitoring (reducing stand density and stocking levels is highly recommended to reduce impacts of insects and diseases on forest stands in the future)

Resource	Key	Conclusions	Recommendations
Sensitive Plants:			
Sensitive Plant Populations	13 -A	Monitoring effective	Continue current monitoring
Soils			
Soil Productivity	14.A	Monitoring inconclusive	Improve monitoring applications (As more data from the Long Term Soil Productivity Study becomes available, decisions can be made on how to improve monitoring procedures.)
Soil Compaction	14.B	Monitoring inconclusive	Improve monitoring applications (Attempts to improve the precision of monitoring data are being made. Legacy compaction is still apparent in current monitoring. Like the Soil Productivity section above, more data is needed to know if there are any effects of the measured compaction levels.)
Timber			
Timber Sale Volume	16-A	Monitoring inconclusive (monitoring system adequate, poor results due to minimal volume)	Continue current monitoring system, BUT amend standards & guides to increase timber sale volume.
Regeneration Acreages	16-B	Monitoring inconclusive (monitoring system adequate, poor results due to minimal acreage)	Continue current monitoring system, BUT amend standards & guides to increase regeneration acreage.
Plantation Stocking Level	16-C	Monitoring effective	Continue current monitoring
Water and Riparian Areas			
Water Quality Management	19.A	Monitoring effective	Continue current monitoring
Significant Changes in Watershed Condition	19.B	Monitoring effective	Continue current monitoring
Eagle Lake Water Quality	19.C	Monitoring effective	Forest Plan should be revised to change the frequency and intensity of monitoring given the observed lack of change in water quality parameters.
Cumulative Watershed Effects	19.D	Monitoring effective	Continue current monitoring
Riparian Habitat	19.E	Monitoring effective	Continue current monitoring

Legend

Resource: from *Table 1: Monitoring Objectives, Accomplishments and Results*
Lassen National Forest Fiscal Year 2006

Key: from *Table 1: Monitoring Objectives, Accomplishments and Results*
Lassen National Forest Fiscal Year 2006

HFQLG - Herger-Feinstein Quincy Library Group

SNFPA - Sierra Forest Plan Amendment

RF=red fir/JP=Jeffrey pine/PP=ponderosa pine

SPM - Standard Protection Measures

NRHP - National Register of Historic Places

RPA – Regional Programmatic Agreement