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Biennial Monitoring Evaluation Report for the Ozark-St. Francis National Forests FY23-24



Forest Service

Ozark-St. Francis National Forests

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Cover Photo: Mirror Lake Dam taken by Robert Duggan

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Part I - About the Plan Monitoring Program

Purpose

The purpose of the monitoring program described in the 2005 Revised Land and Resource Management Plan (Forest Plan) is to help the responsible official determine whether change is needed in Forest Plan direction, such as plan components or other plan content that guide management of resources in the plan area. Simply stated, "Are we meeting the Plan?"

Providing timely, accurate monitoring information to the responsible official and the public is a key requirement of the monitoring program. Results of monitoring are reported in Biennial Monitoring Evaluation Reports. These reports are not decision documents, instead they detail the status of the approximately 200 monitoring elements and objectives in the plan's monitoring program.

How the Plan Monitoring Program Works

Monitoring and evaluation requirements were established in the National Forest Management Act (NFMA) at 36 CFR 219. Additional direction is provided by the Forest Service in Chapter 30 – Monitoring – of the Land Management Handbook (FSH 1909.12).

The Ozark-St. Francis National Forests (OSFNF) monitoring program was developed during the 2005 revision of the Land and Resource Management Plan. Over 200 monitoring elements and objectives were selected in the plan to inform management of resources on the plan area. Monitoring questions have been developed that are consistent with the 2012 planning regulations (36 CFR 219.12) in order to evaluate the status of these indicators.

Monitoring questions in this report are organized into nine topics as outlined in FSH 1909.12: Chapter 30.

1. The status of select watershed conditions
2. The status of select ecological conditions
3. The status of plan focal species
4. The status of federally listed species, and regional species of conservation concern
5. The status of visitor use, visitor satisfaction, and recreation objectives
6. Changes on the plan area related to environmental stressors
7. Progress toward meeting the desired conditions and objectives in the plan
8. The effects of management systems on the productivity of the land
9. Social, economic, and cultural sustainability

Monitoring Objectives

The objectives of the Plan Monitoring Program include:

- Assess the current condition and trend of selected resources.
- Document implementation of the Plan Monitoring Program.
- Evaluate relevant assumptions, changed conditions, management effectiveness, and progress toward achieving the selected desired conditions, objectives, and goals described in the Forest Plan.
- Assess the status of previous recommended options for change based on previous monitoring evaluation reports.
- Document scheduled monitoring actions that have been completed.
- Present any new information not outlined in the current Plan Monitoring Program that is relevant to the evaluation of the selected monitoring indicators.
- Incorporate broader scale monitoring information from the Regional Broader Scale Monitoring Strategy that is relevant to the understanding of the monitoring questions.
- Present recommended change opportunities to the responsible official.

Public Outreach

Information on the OSFNF monitoring program can be found on the Planning web page: <https://www.fs.usda.gov/r08/ozark-stfrancis/planning>. Links to this monitoring report as well as previous monitoring reports are available on this page. Additional information on the OSFNF planning program including links to the Forest Plan and amendments is also available.

General Information regarding the Ozark-St. Francis National Forests can be found on the OSFNF home page: <https://www.fs.usda.gov/r08/ozark-stfrancis>

Information regarding the publication of this monitoring report and other OSFNF news can also be found on the Newsroom web page: <https://www.fs.usda.gov/r08/ozark-stfrancis/newsroom>

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In addition, members of the public can contact Janine Book, Environmental Coordinator, by email at janine.book@usda.gov for more details regarding this report and other monitoring or planning information.

Part II - Summary of Results and Certification

Monitoring Results Summary

As mentioned in Part I, the Forest Plan lists 200 or so monitoring elements and objectives. Monitoring questions covering a broad range of those indicators were developed and organized into the nine topic areas. Not all elements and objectives are assessed every monitoring cycle, but enough data is reviewed to effectively answer the monitoring questions.

In this cycle, 24 monitoring questions were evaluated, and the results are presented in this report. Tables 1 through 4 summarize the results for the Forest Supervisor's review. Part III includes a more detailed discussion of the 9 topic areas and the associated 24 questions. A crosswalk relating the 24 questions with the elements and objectives considered in this monitoring cycle is available in Part IV.

For the 24 monitoring questions, results from this monitoring cycle revealed that there are five areas that would benefit from management action. Four of these five also represent areas where managers have not been able to meet the pace and scale of Forest Plan direction. Three additional areas of concern can be addressed in future forest plans. Of the other 16 questions, no action or change to either the Forest Plan or monitoring program is recommended.

Table 1. Quantitative Summary of Monitoring Results Addressed in Report (24 Questions)

Results	Yes, need for change	Uncertain	No
Results inconsistent with Forest Plan direction		4	20
Change to future Forest Plan may be warranted		2	22
Change to Plan Monitoring Program may be warranted		1	23
Change to management activities warranted	5		19

Table 2. Summary of Findings for each Monitoring Question

Monitoring Question	Last Year Updated	Consistency with Forest Plan Intent¹	Change or Update?	Type of Change or Update Recommended²
Is water quality being protected by application of appropriate best management practices (BMPs) during project implementation?	2023	Yes	No	N/A
Are watershed improvements conducted on at least 20 acres per year?	2023	Yes	No	N/A
Is the road system being managed to protect water quality where possible?	2023	Uncertain	Yes	Increase decommissioning activities
Are livestock impacts on water quality being reduced?	2023	Yes	No	N/A
Are management actions improving and/or maintaining aquatic communities and habitat?	2023	Yes	No	N/A
Are range allotments managed to standard and what is their progress toward desired condition?	2023	Yes	No	N/A
Are Forest Plan objectives being met to reduce or eliminate occurrences of non-native, invasive plant species (NNIS)?	2023	Yes	No	N/A
Do population trends for plan focal species suggest a need to change forest management or monitoring plans?	2023	Yes	No	N/A
Are management actions improving and/or maintaining habitat for focal species?	2023	Yes	No	N/A
Are forest management actions contributing to declines or recovery of populations of federally listed threatened and endangered species, proposed and candidate species, and/or regional species of conservation concern?	2025	Yes	No	N/A
Are developed and dispersed recreation opportunities being managed and maintained to national quality standards?	2023	Yes	No	N/A
Are trail systems being managed for both ecological sustainability and visitor use?	2025	Uncertain	Yes	Increase opportunities to partner with OHV community
Is scenery being considered at the project level for areas of high scenic integrity and for scenic byways?	2023	Yes	No	N/A

Table 2. Summary of Findings for each Monitoring Question Continued

Monitoring Question	Last Year Updated	Consistency with Forest Plan Intent ¹	Change or Update?	Type of Change or Update Recommended ²
Are Wild and Scenic Rivers being managed for free-flowing, outstandingly remarkable values, and water quality?	2023	Yes	No	N/A
Are wilderness character indicators (trends) improving or diminishing over time within designated wilderness areas?	2023	Yes	No	N/A
How are environmental stressors influencing ecological conditions on the OSFNF?	2025	N/A	Uncertain	Add Relevant Elements to Future Forest Plans
Are treatment activities such as regeneration cutting, thinning, and prescribed fire being utilized to increase forest diversity and community safety?	2023	Uncertain	Yes	Increase management activities
At a landscape-level, is composition of major forest communities within desirable ranges of variability?	2023	Uncertain	Yes	Increase management activities
Are rare communities being maintained at desired composition, structure, and function and managed to provide for the species associated with each community type?	2023	Yes	Yes	Develop better tracking system
Have management practices maintained or improved soil productivity?	2023	Yes	No	N/A
Is timber production meeting sustainable levels?	2023	Yes	Uncertain	Recalibrate Sustainable Levels in Future Forest Plans
What changes are occurring in the social, cultural, and economic conditions in the area?	2023	Yes	No	N/A
Is timber harvest enough to continue to support the social and economic needs of the surrounding communities?	2023	Yes	Uncertain	Recalibrate Sustainable Levels in Future Forest Plans
Are Forest Plan objectives being met for conservation education, heritage, facilities, safety, lands, minerals, and special uses?	2025	Yes	No	N/A

¹ Do results demonstrate progress toward achievement of the plan components associated with this monitoring item?

² Refer to Part III Topics discussions for more details regarding any specific recommendations for change.

Table 3. Past and Current Monitoring Recommendations Status

Monitoring Items	Year of Previous Recommendations	Previous Observation and Current Status
Watershed Conditions Livestock Fencing	2020 2023	A potential need for change in the monitoring of livestock fencing was identified in 2020 and 2023. However, as many of our range allotments shift to vacant. Fencing is being removed or repaired at an acceptable pace. In 2023 an Environmental Assessment (EA) for the allotments on the OSFNF was recommended which would have allowed for comprehensive management of fencing, range improvement, and allotment status. Since then, more categorical exclusions have been developed that allow for flexible NEPA¹ on these types of issues at a smaller scale and therefore a large EA undertaking is no longer warranted.
Watershed Conditions Road System	2025	This monitoring report identifies that efforts to meet Forest Plan objectives for road decommissioning have fallen behind due to funding needs.
Focal Species - Bobwhite Quail - Wild Turkey	2016 2020	Concerns for bobwhite quail and wild turkey were highlighted in the 2016 and the 2020 Monitoring Report. Treatments to increase the amount of open woodland and early seral habitat which would benefit both bobwhite quail and wild turkey continue to be completed. The acres required in the Forest Plan for the implementation of other vegetation restoration efforts is high enough to ensure the objectives for bobwhite quail and wild turkey are met so no additional concerns were identified for these species in this monitoring cycle.
Focal Species Small-Mouth Bass	2016 2020	Concerns for small-mouth bass were highlighted in the 2016 and the 2020 Monitoring Report. The need to monitor stream temperatures in order to protect small-mouth bass populations is still uncertain as no effects on populations have yet been identified. So, rather than tracking temperatures in relation to small-mouth bass specifically, this may be better as one of the potential monitoring elements tracked under environmental stressors which this report recommends.
Recreation Objectives Trail Systems	2025	This monitoring report identifies a need to increase OHV trail maintenance by training staff and engaging partners.
Environmental Stressors	2020 2023 2025	There are no monitoring objectives in the current Forest Plan to monitor the effects of environmental stressors on the plan area. However, the 2020, 2023, and 2025 Monitoring Reports considered environmental stressors in compliance with NFMA². The monitoring questions chosen here are not set and may still be adjusted up to the point that future forest plans are able to set this topic as a permanent part of the monitoring program.

Table 3. Past and Current Monitoring Recommendations Status Continued

Monitoring Items	Year of Recommendation	Previous Observation and Current Status
Desired Conditions • Distribution • Treatment Objectives	2016 2020 2023 2025	2016, 2020, and 2023 Monitoring Reports found the distribution of age classes across the major forest communities is skewed heavily to older age classes. This continues to be true in this monitoring cycle. In 2020 and 2023 it was further identified that treatment objectives identified in the monitoring program were not being met. That trend has also continued in this report. The need to increase regeneration cutting, thinning, and burning treatments to Forest Plan objective levels remains.
Desired Conditions • Rare Communities	2025	A recommendation was made in this monitoring report to develop a database tracking rare communities across the OSFNF to increase management effectiveness.
Productivity • Timber Sustainability • Timber	2020 2023 2025	In 2020 and 2023 the fact that sales and treatments remained below the Forest Plan objectives brought up the question of whether the objectives set by the Forest Plan are still accurate, achievable, or ecologically and economically sustainable. This question is still relevant due to the results of this monitoring cycle. Likely a recalibration of these numbers won't be completed until the next iteration of the Forest Plan.

¹National Environmental Policy Act²National Forest Management Act**Table 4. Recommended Questions for Addition to Monitoring Program**

Monitoring Item	Recommended Change	Status
Environmental Stressors	There are no monitoring objectives in the current Forest Plan to monitor the effects of environmental stressors on the plan area. Future forest plans should include this topic in the monitoring program.	The status of this need was already covered in Table 3.

Forest Supervisor's Certification

This report documents the results of monitoring activities that occurred through Fiscal Year 2024 on the Ozark-St. Francis National Forests. Monitoring on some topics is long-term, and evaluation of those data will occur later in time.

I have evaluated the monitoring evaluation results presented in this report. I have examined any recommended changes to the 2005 Revised Land and Resource Management Plan, as amended at this time. Based on these results and my evaluation, I consider the 2005 Revised Land and Resource Management Plan sufficient to continue to guide land and resource management of the Ozark-St. Francis National Forests.



Dan Olsen
Forest Supervisor

Part III – Topics

Status of Select Watershed Conditions

Summary

Streams and rivers on the Ozark-St. Francis National Forests (OSFNF) provide for aquatic habitat, riparian dependent species, and for recreation, municipal, commercial, and agricultural uses. Many streams and river systems within north and central Arkansas originate within National Forest boundaries. These streams supply water to the five major rivers – White, Buffalo, Little Red, Illinois, and Arkansas. Potential sources of negative effects on water quality come from recreation, road construction, timber harvesting, agriculture, urban development, and natural disturbances.

The goal of monitoring is to determine if watersheds are being maintained (and where necessary restored) to provide resilient and stable conditions to support the quality and quantity of water necessary to protect ecological functions and support intended beneficial uses. These results will help determine what effect (if any) management actions are having on watershed conditions.

Monitoring Questions

Is water quality being protected by application of appropriate best management practices (BMPs) during project implementation?

Are watershed improvements conducted on at least 20 acres per year?

Is the road system being managed to protect water quality where possible?

Are livestock impacts on water quality being reduced?

Key Results

- Monitoring has verified adherence to the application of BMPs for evaluated forestry activities. Occasional small sediment releases occur despite adherence to these practices which is represented by the rare Fair or Poor rating for a review. Though some amount of sediment in the stream course is unavoidable, the OSFNF is making progress in reaching the goal of 100% excellent ratings.

Table 5. Percent Rating for BMP Compliance

Year	# Excellent	# Good	# Fair	# Poor
2023	75%	12.5%	0	12.5%
2024	78%	11%	11%	0

- There were 8 BMP reviews conducted in 2023 and 9 in 2024. The single Poor rating was in Use of Prescribed Fire, and the single Fair rating was in Road Operation and Maintenance. Discussions have been had with dozer operators to try to take a lighter touch and keep sediment out of streams. It should be noted that when evaluating Use of Prescribed Fire, hundreds of feet of fire line are observed. However, if only one location shows signs of sediment reaching a water body, the entire review may be rated as Poor.
- The number of acres of watershed improvements completed varies yearly depending on proposed projects and funding available to accomplish them, but at least 20 acres continue to be accomplished annually.

Table 6. Acres of Watershed Improvements

Year	Acres Accomplished
2023	61
2024	74

- Unmaintained roads remain one of the highest manmade contributors of sediment to streams on National Forest. Options are to either increase maintenance on roads that need attention or to decommission them, especially roads that are underutilized or redundant. The OSFNF had identified roads to be decommissioned through a forest-wide transportation system analysis, however, with increasing maintenance costs, very little funding is available for road decommissioning, and none was completed this reporting period.
- Likewise, road maintenance is very budget driven. Reduced road maintenance budgets over recent years have made it difficult to increase miles maintained. The miles maintained in 2024 are somewhat lower than that recorded in 2022, but priority is given to those roads that have high usage where treatment can make the most difference to sediment reduction.

Table 7. Miles of Road Maintenance and Improvements

Open Road Miles Receiving Maintenance		Open Road Miles Receiving Improvements	
FY 2022	FY 2024	FY 2022	FY 2024
571	486	8.6	6.4

- Due to funding received through the Federal Highway Administration's Emergency Relief for Federally Owned Roads (ERFO) program, OSFNF has been able to repair multiple storm damaged roads, therefore maintaining these assets and protecting water quality.
- More fencing of cattle from streams and water source improvements are still needed in the future as funding and NEPA allows. Allotment management is covered in the next topic.

Recommended Changes

1. Other opportunities for funding road decommissioning need to be established. Within the first ten years of the 2005 Forest Plan, about 3.5% of those roads identified have been decommissioned, the OSFNF should strive to decommission at a minimum the remaining 11.5% to achieve the goal of decommissioning 15% of the identified roads by the end of the second decade.

Status of Select Ecological Conditions

Summary

This section includes ecological indicators or monitoring elements that haven't been covered elsewhere in this monitoring report including key characteristics of terrestrial and aquatic ecosystems. This includes the results of stream condition surveys and allotment inspections. Stream condition surveys are taken periodically to measure aquatic habitat conditions. Forest Plan objectives include increasing pool habitat by placing large woody debris in-stream and improving aquatic organism passage. Monitoring is also done to evaluate both lake and stream fish communities. In addition, the Forest Plan also has set objectives for range management and treatment of non-native invasive plant species (NNIS) which will be discussed here.

Monitoring Questions

Are management actions improving and/or maintaining aquatic communities and habitat?

Are range allotments managed to standard and what is their progress toward desired condition?

Are Forest Plan objectives being met to reduce or eliminate occurrences of non-native, invasive plant species (NNIS)?

Key Results

- Fish and aquatic habitat surveys were conducted at 10 sites in 2024 by the Forest Service Center for Aquatic Technology Transfer (CATT) aquatic monitoring crew. Information was collected for fish abundance, diversity, biological integrity and stream stability.

Table 8. Stream Survey Results.

Stream	# of Fish	Simpson Diversity	Riffle Stability Index	Index of Biological Integrity
Baron Cr	336	0.72	60	72
Buckhorn Cr	19	0.74	59	43
Fall Cr	176	0.8	86	48
Fanes Cr	430	0.88	56	71
Frog Bayou	234	0.83	83	75
Hurricane Cr	646	0.74	65	67
Mill Cr (White R)	405	0.59	97	70
Mountain Fork Cr	1155	0.79	65	53
Salt Fork Cr	311	0.6	82	60
Washita Cr	389	0.71	94	64

- Fish community diversity and the index of biological integrity (IBI) are methods used to determine the condition of the fish community. For the IBI, a modified version of the Ouachita IBI established by Dewalter and Jackson (2004)¹ was used. For interpretation, a score of 60 or over is considered 'good,' while below 60 is fair. Buckhorn Creek, Fall Creek, and Mill Creek each showed some level of impairment between these two metrics, and those three watersheds contain OHV trail systems. Although a causal relationship hasn't been confirmed, the impacts of those trail systems may warrant additional investigation.
- Riffle Stability Index (RSI) has been found to be a valuable indicator of management-related impacts in a watershed compared to natural or reference-conditions (Kappessar 2002)². Generally, watersheds in the 40-70 RSI range are considered optimal, 70-85 are sub-optimal, and greater than 85 are impaired. Of the 10 streams measured, five were optimal range, two were sub-optimal, and three were impaired. A reach with an RSI value above 70 has a higher percentage of mobile particles indicating increased sediment.
- The Forest Plan calls for improvement of six stream crossings per year. Several fish passage projects have been identified, however, due to the high complexity and cost of these improvements, the OSFNF continues at a pace closer to one crossing per year. Staff have actively participated with the Arkansas Stream Heritage Partnership, which is the Arkansas aquatic connectivity team, in coordination with the Southeastern Aquatic Resource Partnership (SARP). That team has addressed numerous fish passage problems across the state and conducted inventories on all streams in the aquatic Conservation Opportunity Areas identified in the Arkansas Wildlife Action Plan. Funding for fish passage improvements has been very limited compared to past monitoring cycles, but the OSFNF was able to contribute Joint Chiefs funding to a fish passage project conducted by the Beaver Watershed Alliance in the Upper White River on private land that improved aquatic connectivity to streams on the OSFNF.
- The OSFNF supports academic partners in the research and monitoring of aquatic habitat and species. Risa McCollough, graduate student at Arkansas Tech University, will defend her thesis on fish movement and morphology on intermittent, headwater streams that have natural road-related fish passage barriers. The Adams Fish Lab in University of Central Arkansas has studied and reported on the impacts of a large summer flood on Sylamore Creek in July 2024. UGA students found a reduced percentage of small fish, indicating possible loss of young-of-the-year fish and a downstream shift in diversity of fish assemblages, indicating potential displacement of fish by high flows.
- The OSFNF has continued to improve lake habitat. In 2023, fish structures were added to Cove and Spring Lakes as well as Shores Lake. Yellow floating heart, a non-native invasive continued to be treated on Lake Wedington, and Floating Primrose-Willow was treated on Cedar Piney Lake to improve fishing access. Bear Creek and Storm Creek Lakes on the St. Francis National Forest have suffered a significant infestation of alligator weed and started the environmental analysis to treat that and other potential aquatic invasives in the future.

¹ Dauwalter, D. C., & Jackson, J. R. (2004). A provisional fish index of biotic integrity for assessing Ouachita Mountains streams in Arkansas, USA. *Environmental Monitoring and Assessment*, 91(1), 27-57.

² Kappesser, G. B. (2002). A Riffle Stability Index to Evaluate Sediment Loading to Streams. *Journal of the American Water Resources Association*, 38(4), 1069-1081.

- All active allotments have been fully managed to standard in 2023 and 2024. All allotments, with few exceptions, have either stable to improving ecological conditions and are either at, or moving toward, desired conditions. Any ecological problems that arise are usually temporary and relatively minor and can usually be solved by adjustments in number of livestock, changes in class of livestock, modifications to the season of use, or adjustments to distribution patterns.
- The last monitoring report identified a need to refresh the NEPA documents covering OSFNF's active allotments. Upcoming changes in NEPA regulations should allow for this update to be less extensive than originally anticipated and can be done on a case by case basis. This will allow more needs based actions to take place when unforeseen issues arise with the allotment conditions.
- There continues to be an increased need for the control of non-native invasive plant species. In order to make the best use of funding and employee resources, a decision matrix serves to prioritize treatment areas with high rates of spread and also target species with high colonization rates. Treatment areas within rare communities are also prioritized in order to protect the presence of rare species.
- Well over 200 acres per year have been consistently treated for reduction or elimination of non-native, invasive plant species. far exceeding the 200-acre Forest Plan objective.

Table 9. Acres of NNIS Treatment

Year	Acres Accomplished
2023	2,538
2024	1,976

Recommended Changes

None identified.

Status of Plan Focal Species

Summary

The results of this section will identify any notable changes in status or trends in either the habitat or population of the focal species listed below. These species represent various habitat types or focus areas managed by the OSFNF. Changes in population trends serve as early warning signs that management may need to make extra effort to support these populations or their associated niches. In addition, the status of game species is evaluated.

Monitoring Questions

Do population trends for plan focal species suggest a need to change forest management or monitoring plans?

Are management actions improving and/or maintaining habitat for focal species?

Key Results

Table 10. Focal Species Trend Data Based on R8 Bird Counts

Species	Long-term Trend	Short-term Trend	Ecosystem
Prairie Warbler	Declining	Increasing	Early Successional Forests
Northern Bobwhite	Declining	Increasing	Savannah and Grasslands
Yellow-Breasted Chat	Increasing	Stable	Regenerating Forests
Brown-headed Nuthatch	Stable	Declining	Pine Forests and Woodlands
Redheaded Woodpecker	Increasing	Stable	Oak Woodland
Ovenbird	Declining	Stable	Dry-Mesic Oak Forests
Scarlet Tanager	Stable	Declining	Dry-Mesic Oak Forests
Northern Parula	Increasing	Increasing	Riparian/Mature Forests
Acadian Flycatcher	Increasing	Stable	Mature Mesic Forest
Cerulean Warbler	Stable	Stable	Mature Hardwood Forests
Pileated Woodpecker	Stable	Stable	Snags

- Because of their mobility and habitat specialization, bird focal species are a good indicator of abundance and quality of different habitat types on the OSFNF. However, since they are migratory species, impacts from outside the OSFNF can also impact their population trends. Forest Service and partners have been monitoring an average of 235 fixed bird points over the last 28 years. Based on these trends, both short and long-term, inferences can be made on the conditions of the various ecological goals of the Forest Plan.
- Prairie warbler and northern bobwhite quail, both already rare, have continued to decline over the entire 28 years, but show some recent improvement. Although glade and grassland restoration has been an important aspect of the wildlife and ecology programs, these remain relatively rare on the OSFNF. Yellow-breasted chat has increased indicating a positive trend for young, regenerating forest stands.
- Long-term stable and increasing trends in Brown-headed nuthatch and red-headed woodpecker indicate efforts to restore open woodland habitats have been positive. The ovenbird and scarlet tanager both remain abundant as well, though there is some trade-off reducing the forest structure they prefer in favor of the open woodland the nuthatch and woodpecker prefer. The goal is to balance the presence of various bird species with a mosaic of habitat types.
- Northern parula and Acadian flycatcher are both relatively common and have increased over the sample period. Forest management has little impact on the wetter areas they prefer. There is concern that Cerulean warbler populations are decreasing on the OSFNF, but that has not shown up in the bird counts yet. Pileated woodpecker populations are stable with increased snag protections on the OSFNF that also benefit bat species.
- Turkey harvest in Arkansas did not statistically change in 2023 or 2024 from prior years. Ozark National Forest wildlife management areas (WMAs) provided the top three public hunting areas regarding number of turkeys harvested. Harvest and recruitment numbers are on a favorable upward trend. Woodland restoration, forest thinning and regeneration, prescribed fire, and wildlife opening management and maintenance is contributing to the successful management of a productive and huntable population of wild turkey.
- A University of Georgia study of Chronic Wasting Disease (CWD) conducted on the Buffalo National River found deer populations declining by as much as 15% per year³. This has serious implications for National Forest and state-wide populations. Continued cooperation with Arkansas Game & Fish Commission (AGFC) on efforts to manage the deer population and the spread of CWD are necessary to mitigate the impacts.
- 2023 was the highest black bear harvest on record. Data collected by AGFC has indicated a continued increasing trend in black bear populations. Black bears are sensitive to the availability of remote habitat away from roads. No substantial changes in road infrastructure have occurred during this monitoring period, so there is no significant change to the amount of remote habitat available.

Recommended Changes

None identified.

³ Jorge M.J., Gaya H.E., Jorge L.A., Jarosinski D., Ruder M.G., D'Angelo G.J., Chandler R.B., and Chamberlain M.J. 2025. Arkansas Chronic Wasting Disease Deer Study: Final Report to the Arkansas Game and Fish Commission. Warnell School of Forestry and Natural Resources, University of Georgia, Athens, GA.

Status of Listed Species

Summary

Conditions required to contribute to species recovery are monitored to measure management specific effects to federally listed threatened and endangered species, and of selected sensitive and locally rare species. It is important to identify species with notable changes in status or trends for both habitat and population. The desired condition is populations of threatened, endangered, or sensitive species above the levels necessary for long-term viability and available habitat to maintain and support the recovery of these species.

Monitoring Question

Are forest management actions contributing to declines or recovery of populations of federally listed threatened and endangered species, proposed and candidate species, and/or regional species of conservation concern?

Key Results

- Population health of bat species on the OSFNF continues to be a strong indicator of the status of listed species. There are four Endangered Species Act (ESA) listed bats on the OSFNF, including gray bats, Indiana bats, Ozark big-eared bats, and Northern long-eared bats. In addition, Tricolored bats have been proposed for listing as endangered.
- When the Northern long-eared bat was uplisted to endangered, OSFNF reinitiated consultation with US Fish and Wildlife Service. That consultation resulted in the Programmatic Biological Opinion and Conference Opinion for Imperiled Bats on the Ozark-St. Francis National Forest (issued April 19, 2023). This Programmatic Biological Opinion covers the four listed bat species and tri-colored bat if uplisted. While white-nose syndrome (WNS) continues to be the main driver of decline in bat species, active management on OSFNF follows this Programmatic Biological Opinion in order to reduce additional impacts to these species where possible.
- Bat surveys track National Forest and statewide populations and habitat use. Winter hibernacula surveys indicated that Ozark big-eared bat and Indiana bat populations are increasing in the state, and the OSFNF provides substantial habitat for those endangered species. Gray bat populations remain stable.
- On the OSFNF, the species that were most highly impacted by WNS, including northern long-eared, little brown, and tricolored bats, continue to have substantially reduced populations. Tricolored bat declines appear to be stabilizing somewhat, but the overall population is reduced by approximately 90% from pre-WNS numbers.

- Summer netting and acoustics have indicated some continued presence of Northern long-eared bats on the OSFNF and have demonstrated continued Indiana bat maternity use at the Big Piney location.
- A graduate student at Arkansas Tech University has employed genetics evidence to show additional Ozark big-eared bat summer use sites and is working to improve our knowledge of the bat's prey species.
- The Forest Service continues to respond to the threat of WNS by installing cave gates to reduce the risk of human-caused spread of the fungus. In addition, improving foraging and roosting habitat through active management is expected to benefit current and future bat populations.
- No other category of federally listed threatened and endangered species, selected sensitive, or locally rare species exhibited remarkable change in distribution or abundance this monitoring cycle.

Recommended Changes

None identified.

Visitor Use, Satisfaction, and Progress on Recreation Objectives

Summary

Abundant opportunities exist for the public to use and enjoy the Ozark-St. Francis National Forests (OSFNF). Areas or facilities include developed recreation sites, wilderness areas, trails (motorized and non-motorized), and wild and scenic rivers. This section will discuss visitor use and satisfaction as well as track success on recreation objectives.

Monitoring Questions

Are developed and dispersed recreation opportunities being managed and maintained to national quality standards?

Are trail systems being managed for both ecological sustainability and visitor use?

Is scenery being considered at the project level for areas of high scenic integrity and for Scenic Byways?

Are Wild and Scenic Rivers being managed for free-flowing, outstandingly remarkable values, and water quality?

Are wilderness character indicators (trends) improving or diminishing over time within designated Wilderness areas?

Key Results

- All districts continue to complete annual inspections of developed sites, trails, and bridges. Developed and dispersed recreation areas are being managed to national and regional quality standards. The National Visitor Use Monitoring Program is completed every 5 years and was not completed during this Biennial Monitoring Cycle.
- Thanks to the partnership of the Ozark Highland Trail Association, a little over 300 miles of trail maintenance was accomplished in 2023 and again in 2024 on pedestrian/hiking trails along the Ozark Highland Trail and many associated connector trails.
- In 2024, improvements to OSFNF geospatial trails data were made on over 650 miles of trail, correcting centerline locations. This work increases user experience quality by providing more accurate trail maps to the public.
- The OSFNF provides over 930 miles of road open to OHV use which is approximately 42% of the OSFNF designated transportation system. There are also an additional 150 miles of motorized trail available for offroad OHV use across the OSFNF. OHV use continued to increase on these resources during this monitoring cycle.

- When accomplishing management activities along scenic byways and in areas of high scenic quality, projects incorporate scenery considerations through design criteria included in the NEPA analysis process. Recent Scenic Byway improvements include slide repairs on Highway 21 and Highway 215 and the installation of new National Forest portal signs on Mt. Magazine, Pig Trail, Arkansas Hwy 7, and Ozark Highlands Scenic Byways.
- Wild and Scenic Rivers (WSR) are managed for free-flowing, outstandingly remarkable values and water quality. Projects completed that positively affect WSR conditions include a slide repair on Highway 215 and repair of a damaged pipeline crossing under the Mulberry River. In addition, the use of the existing WSR Management Plan for Sylamore Creek informed the E-Bike project where the OSFNF decided to not authorize E-Bike use within the WSR corridor.
- Wilderness Character Monitoring results were used to compare wilderness conditions to the baseline established in 2021. The qualities measured were Untrammelled, Natural, Undeveloped, Solitude or Primitive and Unconfined Recreation, and Other Features of Value. The scores in the table below represent the status of the five OSFNF wilderness areas monitored. Sixty points is considered a passing score. Results improved in all areas, though trail conditions and availability in Leatherwood and Richland Creek is still affecting overall scores for those wilderness areas.

Table 11. Wilderness Character Scores

Wilderness Area	2021 (baseline)	2023	2024
East Fork	60	62	62
Hurricane Creek	62	64	64
Leatherwood	54	56	56
Richland Creek	54	56	56
Upper Buffalo	62	64	64

Recommended Changes

1. In spite of the continued increase in OHV use on the OSFNF, less than 10 miles of OHV trails received maintenance in 2023 and 2024 due to a lack of staff qualified in that field. Identifying future partners from the OHV riding community would greatly increase our ability to maintain the current trail system and reduce illegal use and user conflict with other OSFNF visitors.

Environmental Stressors

Summary

National Forest lands are experiencing increased threats from fire, insect and non-native plant invasions, disease, extreme weather, and drought. Scientists project increases in temperature and changes in rainfall patterns that can make these threats occur more often, with more intensity, and/or for longer durations. Some of the areas that may require extra attention in monitoring include temperature, precipitation, forest health, non-native invasive species, fire management, and carbon sequestration.

The latest broad scale report for the Southern Region including the Ozark-St. Francis National Forests (OSFNF) was released in 2020. The next expected regional report will be in 2025. Therefore, this monitoring cycle has minimal new information on local environmental stressors.

Monitoring Questions

How are environmental stressors influencing ecological conditions on the OSFNF?

Key Results

- Overwhelming trends across the OSFNF are characterized by overstocked and stressed, closed canopy forest with an unbalanced age-class distribution heavily skewed towards trees 70 years and older. These overstocked stands are at an elevated risk to pest and disease outbreaks. Combining an aging forest, with high tree density, on low site index grounds, often results in poor forest health. Forest health concerns are present at a landscape level. More droughts and increased intensity of natural disturbances escalate those forest health concerns.
- Over the last several decades, the OSFNF has been impacted by many natural disturbances including oak decline, drought, and storm damage. At the time of publication, oak decline was listed in the Forest Plan as the most threatening native disease for the plan area. In addition to these events, damage to the forest caused by less common diseases and pests such as gall wasps and walking sticks, who have become opportunistic to a stressed forest is becoming more evident. Recently red oak borer outbreaks impacted millions of acres across multiple states in the region.
- Amphibians and bats are particularly affected by drought, wildfire, and other natural disturbances. Increases in temperatures or longer dry periods can allow invasive pests and plants to increase their spread. Invasive and aggressive plant and insect species may increasingly outcompete or negatively affect native species in the future.

- Certain invasive plant and insect species may increase dramatically as they are able to tolerate a wider range of harsh conditions, allowing them to rapidly move into new areas. Extended periods of extreme high temperature and drought may lead to drier forest fuels which will burn more easily and contribute to larger and more frequent wildfires.

Recommended Changes

1. The current Forest Plan does not include monitoring elements for change in background natural disturbances. The monitoring question included here was developed to meet the National Forest Management Act (NFMA) requirement in the 2012 Planning Rule. Future Forest Plan revisions should include monitoring questions that meet the 2012 Planning Rule requirement to track the effects of environmental stressors on forest health.

Progress Toward Meeting Desired Conditions and Objectives

Summary

A key indicator of desired condition in the Forest Plan is the abundance and distribution of the various forest types. Several management objectives are tied to percentage of each type, age class distribution within type, and treatment acres for each. Monitoring allows managers to identify forest types that are under-represented across the landscape and areas where the pace and scale of treatment does not meet the desired goals. Consideration of traditional silvicultural treatments including prescribed fire will be included here. Application of prescribed fire in the Wildland Urban Interface (WUI) will also be discussed here as it is not covered elsewhere in the report.

Monitoring Questions

Are treatment activities such as regeneration cutting, thinning, and prescribed fire being utilized to increase forest diversity and community safety?

At a landscape-level, is composition of major forest communities within desirable ranges of variability?

Are rare communities being maintained at desired composition, structure, and function and managed to provide for the species associated with each community type?

Key Results

- Forest Plan objectives commit to restoring and maintaining at least 22,000 acres per decade in oak woodland and 20,000 acres per decade in pine woodland along with a pace of 150,000 acres thinned or regenerated per decade across all forest types.
- The majority of acres monitored and treated are in Management Areas 3.A-3.E. According to Table 12 on the following page, OSFNF is on track to exceed the combined goal of 42,000 acres for woodland treatments assuming that some portion of the treatments in Management Areas 3.C-3.E can be considered woodland habitat. However, it is likely that more pine is being treated than oak, so there may still be need for an increased pace of treatment in oak woodland habitat.

Table 12. Acres Treated[^] in Select Management Areas

Management Area	2022*	2024**	5yr Total	Pace per Decade
3.A Pine Woodland	3,241	3,594	6,835	13,670
3.B Oak Woodland	783	875	1,658	3,316
3.C Mixed Forest	5,283	4,838	10,121	20,242
3.D Oak Decline Areas	603	227	830	1,660
3.E High Quality Forest	4,341	4,215	8,556	17,112
Total =	14,251	13,749	28,000	56,000
Forest Plan Objective				42,000

*Three-year cumulative acres 2020-2022 / **Two-year cumulative acres 2023-2024

[^]Acres are a combination of thinning and regeneration cuts.

- That treatment pace, however, falls well short of the goal for 150,000 acres per decade total. Data continues to show an imbalance in age-class distribution with trends skewed heavily towards the older age classes. This distribution is summarized in the following table. There is still need to increase treatments focusing on the creation of early seral habitat and young stands to meet Forest Plan desired conditions and objectives. A more balanced mosaic of habitat types and age classes will benefit more wildlife species.

Table 13. Distribution of Age Classes in Select Management Areas[^]

Management Area	Age Class					Total Acres
	1-10	11-40	41-70	71-100	>100	
3.A Pine Woodland	294	18,273	19,650	23,213	36,199	97,629
3.B Oak Woodland	599	7,146	15,509	48,039	83,411	154,704
3.C Mixed Forest	1,782	30,349	48,898	98,868	180,504	360,401
3.D Oak Decline Areas	6	4,012	6,042	17,787	39,844	67,691
3.E High Quality Forest	570	20,330	25,771	56,270	111,417	214,358
3.G & 3.H (St. Francis)	0	3,793	5,209	4,467	9,111	22,580
2.E Wedington Unit	0	356	1,087	1,335	7,690	10,468
Total =	3,251 (0.4%)	84,259 (9.1%)	122,166 (13.2%)	249,979 (26.9%)	468,176 (50.5%)	927,831
Forest Plan Objectives	3.8-6.8%	20-30%	20-30%	20-30%	20-30%	

[^]Number of acres in each age class (age range in years) as of 2024 for management areas that received treatments in 2023-2024.

- With the impacts of COVID on staffing and process mostly behind them, the prescribed burning program succeeded in increasing their accomplishments. They are closer to achieving Forest Plan goals of 120,000 acres per year, burning as much in just two years as in the three years prior. While it remains difficult to predict how outside factors such as weather will affect the program, staff prepare burn plans for as many acres as possible so that they are ready to respond when burn windows open.

Table 14. Acres Burned in Select Management Areas

Management Area	2020-2022	2023-2024
3.A Pine Woodland	24,240	27,123
3.B Oak Woodland	37,285	28,268
3.C Mixed Forest	48,351	56,800

Management Area	2020-2022	2023-2024
3.D Oak Decline Areas	6,856	4,543
3.E High Quality Forest	17,393	23,042
Total for All MAs	186,952	182,416
Forest Plan Objectives	360,000	240,000

- Rare communities are an important part of the OSFNF, including caves, canebrakes, and glades. Caves significant to endangered bat populations are protected with public signage and bat-friendly gates. New signs were installed in 2024 on all caves requiring temporary closure during bat hibernation periods. Canebrake restoration was completed on 265 acres, and additional restoration is being planned in partnership with the United Keetoowah Band of Cherokee Indians.
- In addition, the Sylamore RD accomplished over 3,000 acres of glade restoration using manual and mechanical treatments, and approximately 3,500 acres of glade habitat were restored using prescribed fire. The focus has begun to shift toward maintenance of existing glades rather than restoring new acres. The Sylamore RD is also collaborating with The Nature Conservancy (TNC) on a glade assessment. Permanent glade vegetation monitoring plots have been established by TNC and continue to be monitored regularly as funding allows.

Recommended Changes

1. The OSFNF continues to provide quality habitat for a diverse set of ecological communities. However, it remains a challenge to maintain a diversity of age classes. Stands aged 71-100 years continue to cross over into the >100 range with little progress recruiting into the 0-10 year age class which is necessary to repopulate the 11-40 and 41-70 ranges. As the forest continues to age, it becomes increasingly vulnerable to a natural event creating large scale die-off. Prioritizing treatments to alleviate this concern while increasing pace and scale will need to be the focus of future projects.
2. Developing an electronic database and geospatial layer to track rare community locations and restoration efforts would greatly improve analysis and management. As funding allows, this database could track the number and acreage of each community type, the percentage at desired conditions, and treatments completed.

Effects of Management Systems on Productivity

Summary

If not completed responsibly, management activities can have a negative effect on the productivity of forests. The National Forest Management Act requires forest managers to, “Conserve soil and water resources and not allow significant or permanent impairment of the productivity of the land.” It is important to monitor for any signs of degradation for habitat and watershed conditions. Silviculture practices should be mindful of maintaining site productivity and timber production should be based on sustainable levels. Watershed conditions were covered in an earlier section of this monitoring report, so the focus in this section will be on soil and timber productivity.

Monitoring Questions

Have management practices maintained or improved soil productivity?

Is timber production meeting sustainable levels?

Key Results

- Soil productivity is maintained by adherence to Best Management Practices that focus on reducing erosion during forestry activities.
- During this monitoring period, volume sold has dropped somewhat due to staffing and capacity issues during project development. Also, heritage consultation periods were extended as a result of additional heritage survey completion requirements.

Table 15. Timber Production

Year	Average Volume Sold	Percent of Regional Office Target	Percent of Forest Plan Target*
2023	38.8 MMBF	62%	53%
2024	30.6 MMBF	71%	42%

* 73.1 MMBF

- Sawtimber being produced is meeting diameter expectations with larger diameter trees being offered ranging from 12 to 28 inches with an average being 16 inches for both pine and hardwood. This shows sustainable growth levels within stands being treated.

- The OSFNF continues to have success restoring landscapes to appropriate native species. This includes an active reforestation program where the OSFNF established approximately 2,400 acres of shortleaf pine, white oak, and red oak through artificial and natural regeneration during this reporting period.

Recommended Changes

1. The amount of volume sold continues to be less than what was analyzed in the Forest Plan as sustainable levels and the need to accomplish the restoration goals discussed in the previous section. Managers should continue to look for opportunities to increase the pace and scale of our current program of work to improve these outcomes.

Social, Economic, and Cultural Sustainability

Summary

Contributions to social and economic sustainability of communities, multiple use management in the plan area, and progress toward meeting the desired conditions and objectives related to social and economic sustainability are covered in this section. This includes local contributions by the OSFNF to social, economic, and cultural factors as well as conservation education, heritage, facilities, lands, minerals, special uses, and safety.

Regional socio-economic conditions for the Ozark-St. Francis National Forests and the Southern Region can be found in the Broad-Scale Socioeconomic Monitoring Evaluation Report for the Southern Region. The last edition of that report in 2020 was included in the 2020-2022 monitoring report. The next edition of the Broad-Scale report will be discussed in the 2025-2026 monitoring report.

Monitoring Questions

What changes are occurring in the social, cultural, and economic conditions in the area?

Is timber harvest enough to continue to support the social and economic needs of the surrounding communities?

Are Forest Plan objectives being met for conservation education, heritage, facilities, safety, lands, minerals, and special uses?

Key Results

- During this reporting period, the OSFNF continued to return to somewhat normal operations post-COVID. The region continued to slowly recover economically. Budget and staff constraints did still have an effect on operations through 2024.
- Restoration work continued at a steady pace, but as mentioned in the previous section timber sales are still not being maximized. However strong partnerships with organizations such as The Nature Conservancy, the National Forest Foundation, Arkansas Game and Fish Commission, Rocky Mountain Elk Foundation and Quail Forever have assisted with furthering needed work across the OSFNF. These are just some of the many partners that support the community and work with OSFNF on forest management and other programs.
- Smokey Bear continues to be the primary mascot furthering conservation education programs across the community. His many trips to local schools, job fairs, community events, and holiday parties served to spread the message of conservation ethics to multiple generations.

- The heritage program remains committed to bringing the community and interested tribes into collaboration on training opportunities and partnerships. They hosted a para-professional training for the United Keetoowah Band of Cherokee Indians. They continued work in the field with the United Keetoowah Band and other Native American timber teams. They maintained partnership with the Arkansas Archeological Survey and the Arkansas Archeological Society. They also re-started an historic partnership with Arkansas Tech University to develop a field school for university students, surveying over 200 acres. In addition, they worked with The Osage Nation, Quapaw Nation, and Stone County Historical Society to develop a traditional cultural property. Work on a forest-wide government-to-government programmatic agreement continues.
- For facilities maintenance, reduced funding has created a deferred maintenance backlog. From 2023 to 2024, the allocated funding available for administrative facility maintenance was reduced in half again. This trend had a drastic effect on the maintenance of buildings and will result in an increase in the deferred maintenance backlog. The limited funds are focused first on the health and safety needs of employee occupied buildings.
- That said, HVAC replacements are ongoing. At three Districts and the Supervisor's Office, a total of ten HVAC units/systems were replaced with modern energy efficient units, improving the environment and working conditions of employees. In 2023 and 2024, a total of ten roof replacements were completed. Other maintenance activities included painting a District Office, removing hazardous trees to protect buildings, installation of security fencing at a District Office, replacing multiple heaters and repairing an automatic gate mechanism at a District Office.
- Physical Security Inspections were completed at two District Office compounds and two Work Center sites. Findings were entered into a Risk Mitigation Plan and addressed by the districts. As a result, new exterior lighting was installed, vegetation was cut back, new restricted area signs were posted, and trash containers were relocated away from facility entry locations.
- A current Architectural/Engineer design contract is underway for the complete renovations of the Office/Garage building at the Deer Work Center. The new building will have energy-efficient upgrades including an HVAC system with lower energy consumption and underground electric for future electric vehicle charging stations. The entrance and all building areas will be accessible. The new layout will include employees' workspace, a conference room, safe room and a fitness area.
- In 2023, Dam Safety inspections were conducted on all four of the Forests High Hazard Dams, meeting the 5 year inspection criteria. Environmental Assessments are underway to consider effects of any recommended upgrades.
- The lands, minerals, and special uses programs are being managed to Forest Plan standards. Mineral permit administration continues to increase, and 105 special use authorizations were processed. Through our partnership with State Parks, improvements continue at Mt. Magazine State Park with the approval of a new chlorination building and the Cameron Bluff Campground extension.

Table 16. Lands Program Accomplishments

Activity	Total FY 2023-2024
Corner Monument Maintenance	160
Corner Monument Restoration	35
New Boundary Line Establishment	7 Miles
Boundary Line Maintenance	49.5 Miles
Acres Acquired	173.4
Acres Disposed/Exchanged	3.7

Recommended Changes

None identified.

Part IV - Crosswalk of Plan Monitoring Indicators to Monitoring Questions

Monitoring Questions with Associated Elements and Objectives

As mentioned in Parts I and II, the Forest Plan Monitoring Program includes about 200 unique indicators to be monitored. These are included in the plan as both monitoring elements and objectives. Select elements and objectives were highlighted in this report in response to the monitoring questions addressed. A summary of these is included below with the associated questions from each topic.

For a table with the complete list of monitoring program elements and objectives, including those not covered in this monitoring cycle, refer to Appendix I of the Forest Plan which can be found at <https://www.fs.usda.gov/r08/ozark-stfrancis/planning>.

A monitoring question relating to environmental stressors is included in this report as a NFMA requirement, but monitoring elements for that topic were not included in the current Forest Plan and there are no elements or objectives for that topic to include in this crosswalk. Therefore, that topic will not be included in this Part.

Status of Select Watershed Conditions

Is water quality being protected by application of appropriate best management practices (BMPs) during project implementation?

- The level of BMP compliance as a percent of the number of projects investigated

Are watershed improvements conducted on at least 20 acres per year?

- OBJ19. Conduct watershed improvements on 20 acres per year

Is the road system being managed to protect water quality where possible?

- OBJ49. Decommission unnecessary roads
- OBJ53. Reduce miles of road under Forest Service maintenance

Are livestock impacts on water quality being reduced?

- OBJ20. Fence out livestock from riparian areas

Status of Select Ecological Conditions

Are management actions improving and/or maintaining aquatic communities and habitat?

- Conduct stream condition surveys
- Monitor composition of stream fish communities based on an index of biotic integrity (IBI)
- OBJ54. Improve aquatic organism passage on an average of six stream crossings per year
- OBJ16. Increase the amount of fish structures in large lakes

Are range allotments managed to standard and what is their progress toward desired condition?

- Number of acres in allotments managed to standard

Are Forest Plan objectives being met to reduce or eliminate occurrences of non-native, invasive plant species (NNIS)?

- OBJ09. Treat at least 200 acres per year for reduction or elimination of NNIS

Status of Focal Species

Do population trends for focal species suggest a need to change forest management or monitoring plans?

- Habitat and population trends for focal species

Are management actions improving and/or maintaining habitat for focal species?

- OBJ10. Improve and maintain habitat for bobwhite quail
- OBJ11. Improve and maintain habitat for whitetail deer
- OBJ12. Improve and maintain habitat for eastern wild turkey
- OBJ13. Improve and maintain habitat for black bear

Status of Listed Species

Are forest management actions contributing to declines or recovery of populations of listed species?

- Habitat and (trends in) status of federally listed threatened and endangered species, and of selected sensitive and locally rare species

Visitor Use, Satisfaction, and Progress on Recreation Objectives

Are developed and dispersed recreation opportunities being managed and maintained to national quality standards?

- MAOBJ5 Reduce the recreation facilities maintenance backlog
- MAOBJ7 Maintain all recreation facilities to standard

Are trail systems being managed for both ecological sustainability and visitor use?

- Report the total miles of roads and trails available for use by off-highway vehicles
- OBJ30. Conduct maintenance on at least 100 miles of non-motorized trails
- In MA 2.A Ozark Highlands Trail, monitor trail maintenance completed

Is scenery being considered at the project level for areas of high scenic integrity and for scenic byways?

- Monitor and evaluate trends in meeting scenic integrity objectives along scenic byways
- Determine if projects adequately consider scenic integrity objectives

Are Wild and Scenic Rivers being managed for free-flowing, outstandingly remarkable values, and water quality?

- Monitor and evaluate trends in outstandingly remarkable values

Are wilderness character indicators (trends) improving or diminishing over time within designated wilderness areas?

- Monitor and evaluate trends in visitor use and resource damage

Progress Toward Meeting Desired Conditions and Objectives

At a landscape-level, is composition of major forest communities within desirable ranges of variability?

- OBJ03. Across all community types, maintain more than 50% of forest and woodland in a mature condition and develop old growth conditions on approximately 20%
- OBJ06. Across all community types, maintain 3.8 – 6.8% of forest and woodland in regenerating forest conditions (0- 10 years old)
- Monitor and evaluate trends in 3.A Pine Woodland MA
- Abundance of pine woodland for all ages and each age class
- Monitor and evaluate trends in 3.B Oak Woodland MA
- Abundance of oak woodland for all ages and each age class
- Abundance of 3.G And 3.H Forest (St. Francis) for all ages and each age class

Are treatment activities such as regeneration cutting, thinning, and prescribed fire being utilized to increase forest diversity and community safety?

- OBJ02. Report annually total treatment acres by management area
- OBJ04. Restore and maintain 22,000 acres/decade (oak woodland)
- OBJ05. Restore 20,000 acres/decade (pine woodland)
- OBJ08. Reduce the risk of mortality by thinning and regenerating 150,000 acres/decade (all forest)
- Number of acres harvested within 3.C Mixed Forest Area
- Number of acres restored within 3.D Oak Decline Restoration Areas MA
- Number of acres harvested within 3.E High Quality Forest Products MA
- OBJ61. Burn under prescribed conditions 120,000 acres/year (all forest)
- Proportion of burning in 3.A Pine Woodland MA
- Proportion of burning in 3.B Oak Woodland MA

Are rare communities being maintained at desired composition, structure, and function and managed to provide for the species associated with each community type?

- Acreage of each rare community type at desired conditions

Effects of Management Systems on Productivity

Have management practices maintained or improved soil productivity?

- NFMA Requirement for soils - documentation of the measured prescriptions and effects, including significant changes in productivity of the land

Is timber production meeting sustainable levels?

- OBJ63 and MAOBJ.11. In MA 3.E provide 18-20" sawtimber
- OBJ64 and MAOBJ.10. In MA 3.C provide 14-16" sawtimber
- NFMA Requirement for timber - lands are adequately restocked

Social, Economic, and Cultural Sustainability

What changes are occurring in the social, cultural, and economic conditions in the area?

- No specific monitoring element exists in the Forest Plan for this question as it is an overarching theme and required monitoring report topic

Is timber harvest enough to continue to support the social and economic needs of the surrounding communities?

- OBJ62. Provide 73.1 MMBF of timber volume sold annually (economic sustainability)

Are Forest Plan objectives being met for conservation education, heritage, facilities, safety, lands, minerals, and special uses?

- Number and type of educational programs developed
- Number of heritage resources protected and managed to standard
- OBJ35. Evaluate historic sites for appropriate management
- OBJ36. Provide public involvement programs
- OBJ37. Develop partnerships in heritage resource stewardship
- OBJ38. Increase the heritage resource database by surveying non-project acreage
- OBJ39. Develop programmatic agreements with local recognized tribes and organized groups of interested Native Americans
- Evaluate trends in the maintenance backlog to determine progress toward the desired condition
- OBJ45. Upgrade all identified publicly accessible facilities to Architectural Barriers Act standards
- OBJ46. Complete energy efficiency upgrades on administrative buildings
- OBJ47. Inspect all buildings compliance with health and safety standards
- Annually report acres of land adjustment
- OBJ24. Maintain existing known corner monuments.
- OBJ25. Survey and restore lost/obliterated or found corner monuments
- OBJ26. Establish new boundary line
- OBJ27. Maintain existing boundary line