

## Reason for the Chapter 6 Administrative Change

The 2012 Planning Rule (36 CFR §219) requires that all forest plans follow the monitoring requirements of the 2012 Rule, regardless of which rule they were developed under. The 2015 revision of the Prescott Forest Plan was developed under the 1982 Rule provisions and as a result, must be brought in-line with the 2012 Rule monitoring requirements. To achieve this, an administrative change is needed to Chapter 6. Monitoring and Evaluation of the Prescott NF Forest Plan.

The changes include a shift from Management Indicator Species to focal species, additions to and minor modifications of the plan monitoring questions to better address the effects of climate change and the social and economic sustainability of communities in the plan area, and the removal of questions that are no longer required for monitoring. In addition, the language used to describe the action, effect, or resource to be measured was clarified in some cases. The necessary changes, shown below, are being kept to a minimum as the original monitoring section in the revised plan incorporates many of the new planning rule concepts and has already gone through a period of public review and comment.

**Table 1. Monitoring Questions**

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
<b>Theme 1 – Legally Required Monitoring (from the 1982 Planning Rule, Section 219)</b>				
<del>Comparison between estimated and actual plan objectives (Section 219.12(k)(1))</del>	Are we achieving plan objectives within the estimated ranges?	Proportion of objectives accomplished	Annually	A
<u>Progress toward meeting the desired conditions and objectives in the plan. (Section 219.12(a)(5) (vii))</u>				
<del>Plan objectives, standards, and guidelines (Section 219.12(k)(2))</del>	Are the effects of forest management resulting in significant changes to the productivity of the land?	Changes in watershed condition class (6 <sup>th</sup> level hydrologic units)	Annually	A
<u>The effects of each management system to determine that they do not substantially and permanently impair the productivity of the land. (Section 219.12(a)(5) (viii))</u>				
<del>Comparison of actual and estimated costs of activities estimated in plan objectives (Section 219.12(k)(3))</del>	<del>How close are projected costs with actual costs?</del>	<del>Dollars</del>	<del>Every 10 years</del>	<del>A</del>

Commented [PNF1]: Language updated for clarity.

Commented [PNF2]: Language updated for clarity.

Commented [PNF3]: Language updated for clarity.

Commented [PNF4]: Removed. This question is not required for monitoring and is unnecessarily cumbersome to implement.

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
Lands not suited for timber production. (Section 219.12(k)5(ii)) (Section 219.11(a)(2))	Have areas classified as unsuited for timber production become suitable?	Amount of unsuited versus suitable acres	Every 10 years	A
Maximum size of openings from even-aged management (Section 219.12(k)5(iii))	What percentage of openings created from even-aged management are 40 acres or less?	Percentage of harvest units	Every 4 years	A
Destructive insects and disease <sup>1</sup> (Section 219.12(k)5(iv))	To what extent are undesirable outbreaks of insects and pathogens occurring within the plan area?	Acres of infestation and tree mortality	Annually	A
Population trends of the management indicator species <sup>2</sup> (MIS) in relation to habitat changes (Section 219.19(a)(6)) <u>Status of focal species<sup>1</sup> to assess ecological conditions due to management actions (Section 219.12(a)(5) (iii)).</u>	As a proxy for population, what are the trends in habitat for MIS within the plan area? <u>What is the habitat occupancy of focal species in response to management actions within the plan area?</u>	MIS habitat attributes; MIS occurrence and distribution <u>Focal species habitat attributes; focal species occurrence and distribution</u>	Annually <u>Every 1-5 years, depending on species</u>	A
<b>Theme 2 – Conserving Biological Diversity</b>				
Vegetation diversity (Obj-1, Obj-2, Obj-3, Obj-4, Obj-5, Obj-6, DC-Veg-1)	What are the current condition and trend of key characteristics for vegetation identified in the desired conditions for the plan area?	Vegetation size class, percent canopy cover, and composition; carbon stored in vegetation; acres of treatment by treatment type	Every 4 years	A
	How effective are management actions at maintaining or making progress toward desired conditions for the key characteristics of vegetation within the plan area?			

**Commented [PNF5]:** Reference updated.

**Commented [PNF6]:** Removed. This question is not required for monitoring under the 2012 Planning Rule. Superseded by 36 CFR §219.11(d)4

**Commented [PNF7]:** Moved to Theme 3 – Retaining Ecosystem Resilience

<sup>1</sup> The transition to the new monitoring requirements at 36 CFR 219.12(a)(5) resulted in some changes to this plan monitoring program. The Management Indicator Species (MIS) used to compare and evaluate the plan alternatives were replaced and supplemented with four focal species: northern goshawk, western scrub-jay, western meadowlark, and aquatic macroinvertebrates.

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
Species diversity (Obj-1, Obj-2, Obj-3, Obj-4, Obj-5, Obj-6, Obj-25, Obj-26, Obj-27, Obj-28, DC-Ecosystem Resilience-1, DC-Wildlife-1 to 2)	To what extent are management activities providing ecological conditions to maintain habitat for <b>viable</b> populations of <b>terrestrial</b> native and desired nonnative species?	Habitat acres treated; miles of fence modified; number of water developments improved; species surveys (e.g., fish, reptiles and amphibians, breeding birds, bats)	Every 2-4 years, depending on species	A
Aquatic species (Obj-24, DC-Aquatic-1, DC-Aquatic-3)	Are management actions maintaining or making progress toward desired habitat conditions for native fish, amphibian, and <b>aquatic</b> reptile species?	Aquatic habitat quality; stream miles improved	Every 2-4 years, depending on species	A
Species Conservation (DC-Ecosystem Resilience-1)	Have <b>conservation recovery</b> actions <b>or conservation strategies</b> for federally listed species <b>and/or conservation strategies</b> for regionally sensitive species <sup>2</sup> been implemented?	Number of plans or actions initiated	Every 2-4 years, depending on species	A
	What are the habitat trends for federally listed species on the Prescott NF?	Habitat attributes		
<b>Theme 3 – Retaining Ecosystem Resilience</b>				
Nonnative invasive plant species (Obj-6, DC-Ecosystem Resilience-1, DC-Veg-1)	What are the status and trend of areas infested by invasive plant species?	Acres of invasive species surveyed; acres of infestation treated	Annually	A
<b>Destructive insects and disease</b> (DC-Ecosystem Resilience-1)	To what extent are <b>undesirable outbreaks of insects and pathogens occurring within the plan area?</b>	<b>Acres of infestation and tree mortality</b>	<b>Annually</b>	<b>A</b>
Fire (Obj-1, Obj-2, Obj-3, Obj-4, Obj-5, DC-Airshed-1, DC-	Are management actions moving fire regimes toward desired conditions?	Acres treated by fire severity level and frequency	Annually	A

Commented [PNF8]: Moved from Theme 1 – Legally Required Monitoring

<sup>2</sup> Under current direction, the Prescott NF has chosen to consider regionally sensitive species to be species of conservation concern.

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
Ecosystem Resilience-1 <sub>d</sub> )	To what extent is wildland fire used to maintain desired fuel levels and vegetation characteristics? To what extent is unwanted wildfire on the landscape suppressed?	Acres of fire managed for multiple objectives; acres of unwanted fire suppressed; postfire fuel loadings		
	To what extent is prescribed fire used to maintain desired fuel levels, mirror natural processes, and/or restore desired vegetation characteristics?	Acres of prescribed fire by fuel type; postfire fuel loadings; vegetation species structure and density		
	Has the risk for active crown fire been sufficiently reduced in fire-adapted ecosystems where crown fires were not frequent occurrences historically?	Predicted fire behavior by fuel type/loading		
	To what extent are extreme weather patterns (e.g., precipitation and air temperature) affecting fire season length and severity?	Monthly/daily energy release component (ERC) estimates by fuel type		
Ecosystem resilience (DC-Ecosystem Resilience-1)	What management actions, measures, or decisions is the Forest Service taking to enhance ecosystem resilience or adaptation in response to changing environmental conditions?	Project level design features or mitigations	Every 2 years	A

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
	<p><u>What interacting stressors<sup>3</sup> are impacting the plan area?</u></p> <p><u>How are these stressors trending, and how are these trends affecting the plan area?</u></p>	<p><u>Project level identification of measurable changes resulting from climate change</u></p> <p><u>Monthly energy release component (ERC) estimates by fuel type</u></p> <p><u>Acres of unwanted wildfire</u></p> <p><u>Acres of infestation and tree mortality</u></p> <p><u>Acres of invasive species surveyed</u></p> <p><u>Visitor use trends</u></p>	<u>Annually</u>	<u>A</u>
<b>Theme 4 – Maintaining Watershed, Soil, and Air Quality</b>				
High priority watersheds (Obj-18)	Are management actions being implemented to improve watershed conditions?	Number of projects implemented	Annually	A
Watershed features (Obj-19, Obj-23)	Are management actions being implemented to improve conditions of at-risk riparian areas, seeps, and springs?	Number of projects implemented	Annually	A
Watershed Conditions (Obj-20, Obj-21, Obj-22, Obj-31)	Are management actions being implemented to reduce negative impacts to watershed conditions?	Miles of repaired or improved roads, routes, or trails	Annually	A
		Number of improved drainage crossings, stream channels, and floodplains.	Annually	A
Airshed conditions (DC-Airshed-1)	<p>Are management activities contributing or responding to air quality effects on human health or human enjoyment?</p> <p>Are air quality related values (e.g., visibility) of the Sycamore Canyon and Pine Mountain Wilderness areas being maintained?</p>	Particulate matter (PM <sub>2.5</sub> ) recorded at smoke sensitive sites	Annually	A
		Visibility using Interagency Monitoring of Protected Visual Environments (IMPROVE) program	Annually	A

<sup>3</sup> Interacting stressors may include fire, insects, invasive species, loss of spatial connectivity, disruption of natural disturbance regimes, geologic hazards, water withdrawals and diversions, and changes in social, economic, and cultural conditions, among others.

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
<b>Theme 5 – Sustaining Recreational and Social Benefits</b>				
Diverse recreation opportunities (Obj-8, Obj-10, Obj-13, Obj-14, Obj-16, DC-Rec-1, DC-Rec-Trails-2)	How many new recreation opportunities have been added to the system?  How many recreation sites or locations have been improved, relocated, or decommissioned in response to known resource damage?	Number of facilities or dispersed sites	Every 2 years	A
	Does the number of recreation opportunities limit overcrowding, reduce user conflicts, and minimize resource damage?  Does the range of recreation opportunities consider population demographic characteristics and desires of the local communities?	Visitor use trends, recreation impact assessments, user satisfaction surveys (e.g., National Visitor Use Monitoring)	Every 4-6 years	A
	To what extent are visitor information opportunities/ education activities being provided to the public?	Number and type of visitor information and education activities	Annually	B
Wild and scenic rivers (DC-Wild & Scenic-1)	Has there been adequate protection of outstandingly remarkable values (ORVs) of wild and scenic river segments that are eligible or designated?	Changes to ORVs	Every 4-6 years	B
Wilderness areas (DC-Wilderness-1)	Has there been adequate protection of wilderness characteristics of areas that are existing wilderness or recommended for wilderness designation?	Changes to wilderness character	Every 4-6 years	B

Action, Effect, or Resource to be Measured	Monitoring Question	Performance Measure	Monitoring Frequency	Data Reliability
Land adjustment (DC-Open Space-1, DC-Lands-1, Obj-29, Obj-31)	To what extent is the Prescott NF land adjustment program supporting or enhancing plan desired conditions (e.g., open space, scenery values, historic access)?	Area of land adjustment that meets community open space needs and provides for natural resource values	Every 4-6 years	B
<b>Theme 6 – Maintaining Infrastructure Capacity</b>				
Roads, trails, and facilities (Obj-9, Obj-11, Obj-12, Obj-15, Obj-17)	How many miles of the designated roads and trails are maintained to standard?	Miles of roads and trails	Annually	A
(DC-Rec-Trails-2, DC-Transportation & Facilities-1)	How many developed and designated recreation sites are being maintained?	Percentage of sites maintained	Annually	A
	What proportion of trailheads and wilderness boundaries are adequately signed or marked?	Percentage of total trailheads; miles of wilderness boundary	Annually	A

<sup>1</sup> This item also meets the monitoring intent of theme 3, “Retaining Ecosystem Resilience.”

<sup>2</sup> The list of 10 MIS found in the 1987 plan was reviewed and, based on recommendations from forest specialists, modified. The following three MIS were used to compare and evaluate the plan alternatives: pronghorn antelope, northern goshawk, and aquatic macroinvertebrates