United States
Department of
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Forest
Service

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Dixie National Forest Plan Modification

Monitoring Plan

In Compliance With 36 CFR 219.12

Dixie National Forest
1789 North Wedgewood Lane
Cedar City, Utah

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Introduction

The Dixie National Forest is modifying its Land and Resource Management Plan (1986, Forest Plan) Monitoring and Evaluation Program (Forest Plan, pp. V-2 through V-12) to bring it into compliance with 2012 Planning Rule. Under the regulation, the Forest Supervisor (Angelita Bulletts) is the official responsible for the modification. At this time, the Forest Supervisor has delegated the responsibility for the modification to the Ecosystem Staff Officer. This document is intended to provide an explanation of the Forest Plan monitoring modification process to managers and employees of the Dixie National Forest, and to solicit help and feedback from all those who have an interest in Forest Plan monitoring.

Current Dixie National Forest Plan Monitoring Program

Table V-1 Monitoring Requirements (Current LRMP)

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
Recreation	Condition of Facilities (whether the condition of developed facilities is declining from the current situation)	Annual Recreation Information Management (RIM) System reports; Total $ needed to bring facilities to Condition Class I	High/ Moderate	Bi-Annual	5 Year	Five year average exceeds 1985 by 5%
	Soil and vegetative loss at developed sites	Transects, photo points at selected key sites	High/ Moderate	5 Year	5 Year	Campsite condition below Class III using the Limits of Acceptable Impact
	Facility Capacity (whether construction and reconstruction of facilities is keeping pace with demand)	PAOT, PAOT-Days	High/ High	Annual	5 Year	PAOT and PAOT-Days greater than or equal to 90% of projected demand
	Developed Site Service (whether Forest is able to	PAOT-Days FSM (to standard), Mgnt.	High/ High	Annual	5 Year	PAOT-Days FMS (standard) five year average exceeds or declines from the Forest Plan objective by 10%.

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
	provide service scheduled in the plan)	Attainment Report Item #26				
	Developed Site Use – Amount & Distribution (does demand exceed supply?)	Double sample indicator sites, random sample all fee sites	Moderate/ Moderate	Annual	Annual	Use of an individual site exceeds 60% of theoretical capacity for the summer season or daily use exceeds capacity on more than 5% of the days in the summer season. The five-year average developed site use for the Forest varies from projected demand by more than 20%
	Downhill Ski Area Use (Is it increasing as projected?)	Ski area attendance reports	High/ High	Annual	5 Year	Five year average varies from projected demand by more than 20%
	Organization Site Use (are existing sites being fully utilized?)	Permittee occupancy plan, pre-season occupancy reports, post-season regular visits to check occupancy	High/High	1st, 5th, 10th year	5 Year	Unreported private sector vacancies on Forest Land exceeding 10% or the summer season or reported and inventoried vacant periods for which no reservations are received
	Dispersed Visitor Use (summer and winter)	Road counters, parking lot counts, tail counters, annual RIM reports	Moderate/ Low	Annual	5 Year	Visitor use varies from projected demand by greater than 20%
	Site Condition (Limits of change)	Photo points, transects key sites adjacent to water	High/ Moderate	5 Year	5 Year	Campsite condition below Class III using the Limits of Change Table 1
	Trail Condition	Trail condition surveys	High/ Moderate	25% Annually	4 Years	Trail mileage classed as inadequate (substandard)exceeds the current inadequate mileage shown in the AMS
	Shifts between ROS Classes	ROS mapping	Moderate/ Low	10 Year	10 Year	If the change between classes is 5% greater than predicted.
	Off-Road vehicle travel	Acres needing rehabilitation	Low/High	5 Year	5 Year	Acres increased by 10% over last inventory

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
		Acres should be closed to resolve conflict	High/ Moderate	5 Year	5 Year	Acres increased by 10% over last inventory
Cultural Resources	Completion of cultural resource investigation for all site disturbing projects where no inventory has been completed in the past	Management Review	High/ High	Annual	Annual	Failure to accomplish is a performance problem and does not indicate a need to change management direction.
Visual Resource	Compliance with Visual Quality Objectives	Landscape Architect evaluate one retention corridor selected at random, landscape Architect evaluate a minimum of two or 10% (whichever is more) of previous year's projects, selection at random from list of previous year's completed projects	High/ Moderate	Annual	Annual	Corridor contains more than 2% of view area which does not conform to the visual quality objective, more than one sampled project does not meet VQO in a given year, or one or more projects in two successive years do not meet VQO
Wilderness	Condition of Campsites and Surrounding Area (are conditions declining from the current situation?)	Limits of Change at key sites	High/ Moderate	5 Years	5 Years	Limit of Change analysis shows that the condition class has declined one class on 25% of inventoried sites
	Amount and Distribution of Human Use	Trail registration, trail counters, and trailhead counts	Moderate/ Moderate	Annual	Annual	Human use exceeds area capacity identified in this plan

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
		with periodic intensive sample				
Wildlife and Fish	Management Indicators a. Big game (mule deer and elk)	UDWR harvest and classification data, winter range rides, aerial recon., pellet transects	Moderate/ Moderate	Annual	Annual	Prior to reaching optimum Forest populations, a downward population trend of 10% over 3 years. Once optimum populations are reached, a 20% total population or hard composition change over a 5 year period.
	b. Wild turkey	UDWR harvest data, sighting records *or reliable* persons. Habitat evaluation during pre- and post-timber sale reviews and range analysis	Moderate/ Moderate	Annual	Annual	10% total decline in population size over a 3 year period and/or *loss* of important habitat components; i.e., roost trees in 2 or more areas of essential habitat as designated by UDWR and FS
	c. Goshawk, common flicker, yellow-breasted chat	Nest survey for goshawk	Moderate/ Moderate	Annual if population near minimum level, *or* every 2-5 years in project areas	Annual	10% total declining goshawk population size over a 3 year period
		Variable strip transect for goshawk, common flicker, yellow-breasted chat; sighting records of reliable persons	Low/ Moderate	Annual if population near minimum level, *or* every 2-5 years in project areas	Annual	20% decline in chat population size; 25% decline in flicker population size over a 5 year period

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
	d.Trout: brook, brown rainbow, outthroat	Gill netting, electro-shocking, creel census	Moderate/ High	Annual	Annual	20% total decline in population size over a 5-year period or a major change in size or quality of catch
	e. Bonneville cutthroat	Electro-shocking, R-4 GAWS habitat survey	Moderate/ High	Annual	Annual	10% decline in population size in any one stream in any one year
	Conformance with Standards and Guidelines a. Habitat Diversity	Vegetative composition and age Class surveys, calculation of Patton Edge Shape Index from apa & air photos	Moderate/ High	Annual in vegetative manipulation project areas	Annual	Significant variation from Standards and Guidelines specifications; below 7% old growth, less than 7% grass, less than 10% in other age classes.
	b. Snag management	Pre-sale, post-sale, post-tire wood count and condition survey	High/ High	Each sale	Annual	10% below specifications of Standards and Guidelines
	c.Fish/Riparian habitat	R-GAWS analysis, vegetative composition and age class surveys	High/ High	Annual to develop baseline, every 5 years as needed thereafter	As data collected	20% variation from specifications of standards and Guidelines
	d.Habitat effectiveness for big game species	Road density: map, air photo,	High/ Moderate	Annual	Annual	10% below specifications of Standards and Guidelines
		Hiding, thermal cover: ground survey	High/ High	Each timber sale	Annual	10%-15% variation from specifications of Standards and Guidelines
Range	Range Vegetation Condition and Trend	Measurement of plant composition and vigor, ground	High/ Moderate	As per approved allotment	As per approved allotment	Downward vegetation and/or soil trend

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
		cover and soil stability		management plans	management plans	
	Forage Utilization	Grazing impact studies by standard Forest Service methods	Moderate/ Moderate	As per approved allotment management plans	As per approved allotment management plans	Exceed prescribed utilization by 20% one time or 10% consistently.
	Wild Horse Numbers and Habitat Trends	Aerial counts, grazing impact studies	Moderate/ Moderate	Annual horse count, habitat assessment as per allotment management plans	Annual	Horse numbers deviate by 10% or range trend. is down
Timber	Timber Harvest Area	Review timber program to ensure that harvest area will not exceed 10 year estimate by more than 10%.	High/ Moderate	Semi-Annual	Semi-Annual	Planned harvest area exceeded by more than 10% in any given year.
	Timber Research Needs existing	Document recurring or unusual problems	Moderate/ Moderate	Annual	Annual	Inability to solve problems through technology or practices.
	Verify Classification of Suitable and Unsuitable Lands	Examine lands during silvicultural exams, timber inventeries, and ID team reviews to ground truth capabilities	High/ High	Project basis	Annual	10% of land area found to be incorrectly identified
		Complete soil/geologic survey	Moderate/ High	On project basis as available, but prior to Forest	5 Years	10 % of land area found to be incorrectly identified

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
		of lands identified as unsuitable because of potential irreversible resource damage py 1990		plan update		
	Harvest Practices in Retention, Partial Retention and Riparian Areas	Review of silvicultural prescriptions for timber sales and post-sale stand exams	Moderate/ High	Project basis	Annual	Violation of visual quality objectives or riparian area damage
	Adequate Restocking of Stands W thin a Reasonable Time Period, Generally 5 Years of Final Harvest	Silvicultural exam (Type 3)	High/ High	5 Years after final harvest	Annual	Less than 5th year stocking standards in FSH 2409.26b--5.31-4
	Maximum Size of Openings Created by Clearcuttings	Review timber sale silvicultural prescriptions and post-sale silvioutural exams	High/ High	Project basis	Annual	Clearcut sizes either astrict timber harvest practices or adversely arrect visuals or other resource values
	Reforestation and Timber Stand Improvement Accomplishment	Review TSI and reforestation nee and accomplishment reports, KV plans	High/ High	Annual	Annual	Failure to meet targets or accomplish KV needs in timber sale plans
	Fuelwood Consumption and Supply	Determine supply by fuels inventories and acres available; determine demand by monitoring	High/ High	Project basis	Annual	Supply is not meeting or projected to not meet demand within 5 years

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
		permits issued and sampling actual removal				
	Growth Response of Regenerated Stands, Precommercially Thinned Stands and Cutover Sawtimber (including effects or insects & diseases)	Stage II stand examination, permanent growth plots	High/ High	5th Year	Annual	± 10% variance in actual growth measured against assumptions made in growth simulations (PROGNOSIS)
	Timber Supply Projections	Stage II stand examination to complete exam on remainder of commercial Forest land	High/ High	Annual in an accelerated basis until completed. Work toward goal or 45,000 acres per year on a continuing basis	Annual	± 10% variation in projections measured against Forest Plan projections
		Stage I timber inventory	High/ High	1989 or sooner	5 Years or before Forest Plan update	± 10% variation in projections measured against Forest Plan projections
Soils	Long Term Soil Productivity	Fabric dams, erosion pins, visual estimates, photo points, and/or other accepted methods	High/ Moderate	2 locations per year	Annual	Exceeding established soil loss tolerance levels
	Compaction	Measurement of bulk density and/or pore space	High/ High	2 timber sales per year	Annual	15% increase in bulk density or 50% decrease in pore space

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
	Upland Areas Adjacent to Riparian Management Areas	Fabric dams, erosion pins, visual estimates, photo points, and/or other accepted methods	High/ Moderate	2 locations per year	1st and 5th year following management practice	Exceed Forest Standards and Guidelines
	Soil & Water Resource Protection – Project EA Mitigating Requirements	Visual estimates	High/ Moderate	1 project per year per Ranger District	Annual	Mitigating requirements not implemented or not working
	Soil Survey Activities	Progress reviews, management attainment reports	High/ High	Annually during years of progracuced survey work	Annual	± 15% of plan direction
	Soil & Water Resource Improvement Needs Inventory	Update	High/ High	Annual	Annual	Detection of improvement needs requiring early treatment or of higher priority than on current list.
Water	Compliance with State Water Quality Standards	Baseline monitoring as described in Dixie Water Quality Monitoring Plan, coordination with State 208 Agency	Moderate/ Moderate	Monthly	Annual	Violation of Utah Water Quality Standards
	Effectiveness of Best Management Practices in Meeting Water Quality Objectives and Goals	Project monitoring as described in Dixie Water Quality Monitoring Plan or project plans, to include chemical, physical, bacterio-	High/ High	Variable	Variable	Non-achievement of water quality goals, violation of Utah Water Quality Standards,

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
		logical, invertebrate, sed-imentation or other parameters needed to meet monitoring objectives				
		Inspection of drainage and erosion control measures on ground disturbing activities	Moderate/ Moderate	Annual	Annual	Exceed Forest standards and guidelines
	Compliance with Utah Public Drinking Water Regulations	Required chemical analyses	High/ High	Every 3 years	Every 3 years	Violation of primary maximum contaminant levels
	Water Yield Increases in East Fork of Sevier Watershed	WRNESS water yield methodology	Low/ Moderate	Annual	Annual	Exceed minimum management requirements in timber harvest model
	Stability of Streambanks in East Fork of Sevier River Drainages	Sequential photopoints, measure stability rating in representative reaches	Moderate/ Moderate	Annual	Annual	Exceed Forest standards and guidelines
	Effectiveness and Maintenance Needs of Watershed Improvements	Visual Inspection	Low/ High	1st year after installation, every 5 years thereafter	Annual	Maintenance required or project not accomplishing stated objectives
		Volumetric measurements or retained sediments	Moderate/ Moderate	Variable	Variable	Project not accomplishing stated objectives

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
	Accomplishment of Riparian Area Management Goals	Sequential photopointa, forage utilization level measurements (total and browse), stream channel stability ratings, stream channel morphology measurements, streambed materials measurements	Moderate/ High	Annual	Annual	Exceed Forest standards and guidelines
Air Quality	Compliance with Utah State Air Quality Guidelines and Standards	Compliance with weather forecast, burning index	Moderate/ Moderate	Ongoing	As any violation occurs	Adverse public reaction, settling of smoke into inhabited areas
Minerals	Exploration Preposals: Adequacy or Permitting Process	Evaluation of case history	Moderate/ Moderate	Evaluate one on each B.D.	Annual	Non-compliance with the Regional standards and direction
	Lease/Permit Applications Forms and NEPA Process (Compliance with Regional Standards and Direction)	Inventory pending cases, evaluate adequacy of lease/permit and operating plan requirements, review EAs converting leasing and permits	Moderate/ Moderate	Evaluate one on each B.D.	Annual	Deviation from 1984 FS/BLM Agreement, lease and operating plan requirements are found inadequate to meet multiple resource needs, EAs inadequate
	Site Specific Development Proposals and	Field examination	High/ High	Ongoing during operations,	Annual	Any unacceptable or unexpected results that deviate from the environmental assessment and approved operating plan; inadequacy or

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
	Administration of Operations, Compliance with Terms of Operating Plans and Existing Agreements			outlines in Regional Standards		unreasonableness of lease/permit terms and operating plan requirements
	Reclamation Results: Effectiveness or Work Done	Field examination	High/ High	Annual inspection of 25% of operational areas that have been closed 2-3 years	Annual	Any unacceptable or unexpected results that deviate from the Environmental Assessment and approved operating plan
	Exercise of Reserved and Outstanding Rights by Owner of Minerals	Monitor mineral-related activity on NFS surface	Moderate/ Moderate	Ongoing	As any activity affecting NFS management occurs	Any impacts to NFS management of surface resources
Lands	Special Use Permits, Applications, Amendments and Transfers	Land use reports	High/ Moderate	Quarterly	As scheduled in FY Action Plan	Deviation from R-4 standards
	Special Uses (non recreation) Permit Administration and Inspection	Land use reports	Moderate/ High	Annually permits scheduled for inspection	As scheduled in FY Action Plan	Deviation from R-4 standards.
	Land Survey	Management attainment report	High/ High	Annually	As scheduled in FY	± 10% of planning period target

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
					Action Plan	
	Land Exchange	Land adjustment plan, management attainment report	High/ High	Annually on all acres planned for exchange	As scheduled in FY Action Plan	± 50% of planning period target
	Rights-of-Way	Right-of-way acquisition plan	High/ High	Annually on assigned targets	As scheduled in FY Action Plan	± 50% of planning period target
	Construction of Through Utilities	Construction within approved corridors/windows	High/ High	5 Year	Every 5th Year	Environmental analysis determines that a proposed corridor/window is better suited than those approved in the Forest Plan
Facilities	Road and Bridge Construction and Reconstruction	Telecommunication Plan Maintenance Cost Records Use Charges	High/ High	Periodic	Annual	5% deviation from projected quantities
	Road Management	Road logs, condition surveys, and signs	High/ High	Annual	5 Year	5% downward trend in the condition of existing roads
	Buildings	Inspection reports	High/ High	Continuous	5 Year	Excessive deterioration of existing buildings
	Dam Administration	Inspections	High/ High	Annual	5 Year	Administrative failure to followup on unsafe dams
Protection – Fire	Adequacy of Fire Prevention Programs	Measure or number and size of person-caused fires	High/ High	Annual	5 Years	20% increase in cumulative 5 years average
	Number of Wildfires and Acres Burned	Frequency by size distribution, intensity level and acres burned	High/ High	Annual	5 Years	20% increase in cumulative 5 years average for any of the factors

Program	Activities, Effects and Resources to be Measured	Monitoring Method	Precision/ Reliability	Measurement Frequency	Reporting Period	Variation which would cause further Evaluation and/or Change in Management Direction
	Fire management Effectiveness Index (FMEI)	Evaluate cost plus net value change during fire	Moderate/ Moderate	Annual	5 Years	20% increase in FMEI (FFP+FFF+NVC)
	Compliance with Fuel Loading Standards	Field measurements after activity or fuel treatment	Moderate/ Moderate	Sample 30% of projects	5 Years	Exceeding fuel level guidelines or 10% failure to make targets
Protection – Insect Disease	Population Levels of Insects and Diseases	Aerial surveys by R-4 F.P.M.	Moderate/ Moderate	Annual	Annual	Building of past populations
	Effectiveness of Dwarf Mistletoe Suppression Projects to Protect Regeneration	Field reviews	High/ High	Follow-up on projects	5 Years	Infestation in regeneration of Pre-commercial thinned areas
Economics	Effects on Local Economies of Forest --- Outputs	District staff reviews of affected sectors		Annually	Annually	Significant changes in sectors within economic impact areas

Table 3a: Northern Goshawk Forest Plan Amendment, Monitoring Requirements

ID	Goals & Obj.	Standards & Guidelines	Question	Item to Measure	Acceptable Range	Measurement Frequency	Report Frequency
m-1	G-10	all under the alternative goal	Are known goshawk territories on national forests remaining occupied?	Goshawk territory occupancy at the forest level.	Less than 20% decline in territory occupancy over a 3 year period.	Annually	Every 3 years
m-2	G-10	s-9 G-21	Are mitigation measures (standards and guidelines) employed during vegetative management project	Goshawk territory occupancy following vegetative management treatments.	No territory abandonment on projects where mitigation measures are used.	The first full breeding period following activity in all projects where pre-project surveys	Annually

ID	Goals & Obj.	Standards & Guidelines	Question	Item to Measure	Acceptable Range	Measurement Frequency	Report Frequency
			implementation sufficient to prevent territory abandonment?			determined territory occupancy.	
m-3	G-10	g-7	Is habitat connectivity, as represented by structural and species diversity and dispersion thereof, within and among 5th to 6th order watersheds (or equivalent ecological scale) being maintained?	Spatial dispersion and patch size of mature and old forest groups within a 5th to 6th order watershed. Tree species composition mix within mature and old groups within a landscape.	Approximately 40% of the coniferous and/or 30% of the aspen forested acres within a landscape are in VSS 5 and 6 classes. Seral species characteristic of the cover type are well represented in VSS 5 and 6 classes.	Completion of each landscape assessment	Every 5 years
m-4	G-10	g-9	Is snag habitat (i.e., number and size of sangs) being maintained in desired spatial arrangement?	Snag densities and sizes within a 100 acre block treated by mechanical or wildland fire use.	75% or more of the blocks measured meet guideline requirements.	10% or more of the acres treated within a project area, within 2 years following completion of the vegetative treatment.	Every 5 years
m-5	G-10	g-11	Are down woody material and logs being maintained in sufficient amounts, sizes and spatial locations?	Down log and woody debris amounts and sizes within a 10 acre block treated by mechanical or wildland fire use.	75% or more of the blocks measured meet guideline requirements.	5% or more of the acres treated within a project area, within 2 years following completion of the vegetative treatment.	Every 5 years
m-7	G-10	g-28 g-29	Are appropriate adjustments made to grazing practices in identified "at risk" locations where grazing is contributing to the "at risk" condition?	Ungulate grazing practices (i.e. utlization [sic], season of use, grazing system) in identified "at risk" locations.	Grass, forb, and shrub production objectives are within the range identifed [sic] in landscape assessments.	Grazing practices reviewed annually on at least 2 allotments where "at risk" conditions have been identified.	Every 5 years

Dixie National Forest Plan Monitoring Program

Monitoring Questions and Indicators

Program	Activity	Monitoring Question	Monitoring Indicator
Recreation	Developed Sites; Actual Use	Are developed recreation sites meeting Forest Plan standards for use, and are visitors satisfied?	Developed site use and visitor satisfaction.
	Developed Sites; Condition	Are developed recreation sites meeting Forest Plan standards for condition?	Developed site condition.
	Dispersed Sites; Actual Use	Are dispersed recreation sites meeting Forest Plan standards for use, and are visitors satisfied?	Dispersed site use and visitor satisfaction.
	Dispersed Sites; Condition	Are dispersed recreation sites meeting Forest Plan standards for condition, and are visitors satisfied?	Dispersed site condition.
	Trail Condition	Are trails meeting Forest Plan standards for use and condition, and are visitors satisfied?	Trail use, and visitor satisfaction; miles of motorized trail managed to standard; miles of non-motorized trail managed to standard.
Wilderness	Wilderness Character	Is wilderness character being preserved on wilderness areas across the Forest?	Incursions of developed facilities, access, services and perception of safety. Wilderness campsite condition.

			Motorized/mechanized incursions. Managed wildland/prescribed fire usage.
Cultural Resources	Identify, protect, interpret and manage the significant cultural resources on Forest lands.	Are heritage resources being protected and are mitigation measures sufficient to prevent damage to heritage resources from federal actions, looting, environmental disturbance, and other actions?	Number of historic properties recorded and evaluated for the National Register. Number of eligible historic properties being impacted by federal actions, looting, environmental disturbance, and other actions.
Fish and Wildlife	Wildlife Habitat Diversity	Is the diversity of wildlife habitat being maintained by managing Vegetative Structural Stage (VSS) distribution across the planning area?	Diversity and stability of forest and rangeland vegetation.
	Modification of Ecosystem	Are forest management activities and/or natural events affecting the structure and function of upland and riparian ecosystems?	Structure (VSS) and function of forest and riparian ecosystems. Upland and riparian vegetation diversity, condition, trend, structure and ground cover.
	Big Game Habitat Condition	Is big game habitat maintained to meet Forest Plan desired conditions?	Big game habitat condition and/or VSS Distribution across the landscape and within projects.

	Fish Quantity and Quality of Aquatic Habitats	Are forest management activities and natural events affecting the ecological conditions indicated by the status of focal species[1]? Are management activities maintaining and improving the ability of lakes and streams on the Forest to maintain self-sustaining cold water fisheries? Are forest management activities and/or natural events maintaining aquatic habitat to meet Forest Plan desired conditions and objectives or improving habitat to move toward those conditions and objectives?	Occupied habitat and population structure of focal species. Riparian vegetation diversity, condition, trend, structure and ground cover. Stream channel condition, morphology, bank stability and substrate composition. Compliance with State water quality sediment, turbidity and temperature standards and maintenance of beneficial uses. Function and condition of lentic riparian areas.
	Threatened, Endangered and Sensitive Plant Species	Are TES plant habitats being protected from forest plan implementation activities and maintaining sufficient numbers and distribution to maintain viable populations across the Forest?	TES species have suitable habitat to sustain population numbers to maintain viability.

[1] Bonneville Cutthroat trout (BCT), Colorado River Cutthroat Trout (CRCT), Southern Leatherside, Chub, Virgin spinedace and Nonnative trout species.

	Indicator and Special Status Species	Are forest management activities and natural events affecting the ecological conditions indicated by the status of focal species[2]?	Habitat conditions retained across the planning area in sufficient numbers and distribution to maintain species viability.
	Threatened, Endangered and Sensitive Animal Species	Are TES animal habitats being protected from forest plan implementation activities and maintaining sufficient numbers and distribution to maintain viable populations across the Forest?	TES species have suitable habitat to sustain population numbers to maintain viability.
	Snag Management	Is the spatial arrangement of snags in condition to meet needs of cavity nesters?	Snag species, density, size, height and condition.
Goshawk	Goshawk territory occupancy at the forest level	Are known goshawk territories on NFS lands remaining occupied?	Goshawk territory occupancy.
	Goshawk territory occupancy following vegetative management treatments	Are goshawk territories remaining occupied following vegetation management?	Goshawk territory occupancy.
	Dispersion & patch size of mature/old forest groups	Is mature and old forest habitat connectivity being adequately maintained?	Percent and distribution of mature and old forest cover.
	Down log & woody debris amounts/sizes within a 10 acre treatment block	Is downed wood being maintained in sufficient amount, size, and location?	Quantity of downed logs and woody debris.

[2] Mule deer, rocky mountain elk, wild turkey, Northern goshawk, Northern flicker, and sage-grouse, pygmy rabbit, spotted bat, Townsends Wester big-eared bat, bald eagle, sage-grouse, peregrine falcon, Flammulated owl, and three-toed woodpecker.

	Ungulate grazing practices in identified at-risk locations	Are appropriate adjustments to grazing practices being made where grazing is contributing to at-risk conditions?	Ungulate grazing practices in at-risk locations.
Range	Permitted Animal Unit Months (AUMs)	Are goods and services being provided in accordance with Forest Plan goals and objectives?	Level of permitted livestock grazing.
	Range Condition and Trend	Are desired conditions for rangeland plant communities being met in regards to species composition, trend and ground cover?	Range condition, trend and ground cover.
	Invasive Species	What is the extent of the change of ecological conditions due to invasive species?	Estimated acres infested with invasive plants and noxious weeds.
Timber	Assure that vegetation manipulation will not favor an increase in forest pests (insects, diseases, etc.)	Are vegetation conditions stable or moving toward Forest Plan desired conditions?	Extent of insect and disease infestations.
Water	Water Quality	Are beneficial uses, identified by the state of Utah, being maintained for all water bodies?	Impairment or degradation of water quality. Number of impaired or degraded water bodies.
	Changes in Stream Channels and Riparian Areas Due to Management	Are forest management activities affecting stream channels and riparian ecosystems?	Riparian ecosystem vegetation diversity, condition, trend, structure and ground cover. Riparian species occupied habitat and population structure. Stream channel condition, morphology, bank stability and substrate composition.

			Riparian species occupied habitat and population structure.
	Best Management Practices (BMP) effectiveness and compliance on land disturbing projects	Are appropriate BMPs being followed with forest management activities and are they meeting their intended effectiveness with respect to impacts to riparian ecosystems?	BMP compliance and effectiveness
Soils	Accelerated Soil Loss	Are forest management activities impairing soil productivity of the land?	Changes in soil properties (physical, chemical, and/or biological) and ground cover that result in the loss of the inherent ecological capacity or hydrologic function of the soil resource.
Facilities	Transportation System Management	Is adequate road access and maintenance being provided?	Miles of classified road open for public use. Number and condition of deficient bridges.
	Road Maintenance	Are open roads maintained to standard?	Miles of road maintained to standard.
	Water Systems	Do potable and non-potable water systems meet Federal, State, and Local requirements?	Water quality monitoring results and condition surveys.
	Dams and Water Impoundments	Do dams on Forest Service lands meet State and Local safety requirements?	Critical safety items identified during dam inspections.
Protection	Fuel Treatment	Are fuel treatment projects reducing risk to property, human health and safety, and reducing the potential for	Percent of projects where post-treatment total fuel load is reduced from pre-treatment levels.

		unwanted fire effects through reduction of total fuel loading to manageable levels?	
	Fire Management	Are forest vegetation conditions trending towards safe and efficient fire response and restoring fire as a disturbance agent consistent with management area emphasis and historic fire return intervals?	Percent of fires suppressed during initial attack where that is the chosen strategy. Percent of natural ignition acres with resource benefit.
	Insect & Disease	Are forest vegetation conditions stable or moving toward Forest Plan desired conditions?	Extent of insect and disease infestations.
Education	Public Outreach	Education and information: Are we delivering key education/enforcement messages to forest employees and users? (Key focus areas are: OHV use, recreation user ethics, fire's role/hazardous fuels, noxious weeds, watershed health.)	Number of key messages.