

CHAPTER 3: IMPLEMENTATION

IMPLEMENTATION SCHEDULE

Land use plan decisions are generally implemented or become effective upon approval of the plan and signing of the Record of Decision. These decisions include the effective date of land health standards and desired future or resource condition decisions, land use allocation decisions, and all special designations.

Management actions in this Approved Plan that require additional site-specific project planning, as funding becomes available, will require further environmental analysis, completion of 106 compliance for cultural resources, and Section 7 consultation. Implementation-level decisions, with the exception of routes designated open for off-highway vehicle use, are also contingent upon further environmental analysis, Section 106 compliance, and Section 7 consultation. Decisions to implement site-specific projects will be subject to administrative review at the time such decisions are made.

The Bureau of Land Management (BLM) will continue to involve and collaborate with the public during implementation of this Approved Plan. Opportunities to become involved in plan implementation will include development of partnerships and community-based citizen working groups. The BLM invites citizens and user groups interested in the management of Vermilion Cliffs National Monument (the Monument) to become actively involved in the implementation of plan decisions. The BLM and citizens can collaboratively develop site-specific goals and objectives that mutually benefit public land resources, local communities, and the people who live, work, or recreate on public lands.

MONITORING

Monitoring of actions related to implementing land use plans is an important part of adaptive management. Tracking the progress of actions and measuring changes resulting from these activities is important in either determining success or the need for a different management approach.

Many activities and events are monitored on the Monument. For example, grazing utilization and vegetation trends are measured to support decisions on allotment Standards and Guideline evaluations. A more detailed preliminary monitoring strategy is included in Table 3.1.

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
Soil, Water, and Air					
Monument-wide	Study the effects of continuing erosion that endanger floodplain soils and threaten meadow soils. Map out these areas	<ul style="list-style-type: none"> Gully, rill, and sheet erosion Vegetative cover Compaction 	<ul style="list-style-type: none"> Monitor erosion Monitor Vegetative cover Monitor impacts and gully progressions Collect and analyze sedimentation and erosion data 	<ul style="list-style-type: none"> On-going 	<ul style="list-style-type: none"> N/A
Wildfire burns and other select disturbed areas	Assess the effects of disturbance and reclamation	<ul style="list-style-type: none"> Erosion or stabilization Vegetative cover 	<ul style="list-style-type: none"> Visual inspection 	<ul style="list-style-type: none"> As needed 	<ul style="list-style-type: none"> Large wildfire Erosion and flooding
Forest & Woodlands					
Monument-wide	Management of Forest and Woodlands Restoration Projects (including other projects that attempt to or will change the character of overstory vegetation)	Number of acres monitored	<ul style="list-style-type: none"> Monitor stipulations Monitor contract/project adherence Monitor project effectiveness 	<ul style="list-style-type: none"> Ongoing Annually for selected sites and areas 	<ul style="list-style-type: none"> Terminate designated areas, designate new areas or boundaries, modify stipulations and or project implementation, limit permitted amounts, terminate contracts
Monument-wide	Management of Forest and Woodland Health	Number of acres monitored	<ul style="list-style-type: none"> Monitor overall forest and woodland health issues (insect, disease and stand density issues) 	<ul style="list-style-type: none"> Ongoing Annually for selected sites and areas As needed 	<ul style="list-style-type: none"> Determine appropriate management of problem issues.
Cultural Resources					
Designated road system	<ul style="list-style-type: none"> Off-road impacts Route proliferation Vandalism 	Visual site inspections for: <ul style="list-style-type: none"> Site integrity 	<ul style="list-style-type: none"> Monitor and report (Law Enforcement, Site Stewards, Staff, local rancher) 	<ul style="list-style-type: none"> Ongoing Annually for selected sites and 	<ul style="list-style-type: none"> Impacts/excavate, reroute, inventory Route closures

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
	<ul style="list-style-type: none"> • Surface collection 	<ul style="list-style-type: none"> • Surface integrity 	<ul style="list-style-type: none"> • Educate Public • Class III surveys 	<ul style="list-style-type: none"> • areas • As needed 	
Standing structures and prehistoric intact features	Natural deterioration Vandalism	Visual site inspections for: <ul style="list-style-type: none"> • Site integrity • Structural integrity 	<ul style="list-style-type: none"> • Monitor (Staff and Site Stewards) 	<ul style="list-style-type: none"> • Annually for selected sites and areas • Ongoing 	<ul style="list-style-type: none"> • Destruction of standing features/ stabilization, restoration, allow deterioration • Record sites, assign to category
Monument-wide	Livestock grazing impacts to rock art, standing structures and features, rock shelters, caves, concentrations of cattle (trampling)	Visual site inspections for: <ul style="list-style-type: none"> • Site integrity • Surface integrity 	<ul style="list-style-type: none"> • Section 106 for new facilities • Monitor – Site Stewards and staff 	<ul style="list-style-type: none"> • As needed • Ongoing • Annually for selected sites and areas 	<ul style="list-style-type: none"> • Impacts/mitigation, record, inventory area
Caves and Karst Resources					
Monuments-wide	Monitor Visitor Use Impacts; Monitor for Natural Resource Degradation	<ul style="list-style-type: none"> • Graffiti • Trash • Trails • Damage to Speleotherms • Hazardous Materials • Digging in cave • Vandalism in cave 	<ul style="list-style-type: none"> • Monitor unacceptable impacts • Visual inspection • Set permanent photo documentation points • Photo document impacted areas • Create Visual Impact Evaluation System for caves, as deemed necessary 	<ul style="list-style-type: none"> • As needed • Ongoing • Annually for selected sites and areas 	<ul style="list-style-type: none"> • Restrict access • Clean, as necessary
Recreation					
SRMAs	Produce targeted recreation opportunities specific to each RMZ	Realization of targeted benefits for each RMZ.	<ul style="list-style-type: none"> • Visitor surveys • Focus groups 	<ul style="list-style-type: none"> • Every 5 years 	<ul style="list-style-type: none"> • Targeted recreation benefits not realized
SRMAs	Produce targeted recreation opportunities specific to each RMZ	Physical setting conditions, such as remoteness, naturalness, facilities	<ul style="list-style-type: none"> • Monitor “development creep” with regard to authorizing expansion of designated road systems and 	<ul style="list-style-type: none"> • For every project proposed in SRMAs 	<ul style="list-style-type: none"> • Targeted recreation benefits not realized

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
			recreation facilities into settings targeted as more primitive; monitor lack of development in RMZs where development was targeted <ul style="list-style-type: none"> • Monitor landscape change via VRM 		
SRMAs	Produce targeted recreation opportunities specific to each RMZ	Social setting conditions, such as group size, encounters with other users, and evidence of use	<ul style="list-style-type: none"> • Existing NAU protocols for evidence of use (rapid site inventory, human impact site monitoring) • Actual counts for group size and encounters 	<ul style="list-style-type: none"> • Every 3-5 years for rapid site inventory • Every year - 2 years for human impact site monitoring, encounters and group size 	<ul style="list-style-type: none"> • Targeted recreation benefits not realized
SRMAs	Produce targeted recreation opportunities specific to each RMZ	Administrative setting conditions, such as visitor services, management controls, mechanized use	<ul style="list-style-type: none"> • Monitor level of effort to provide visitor information and assistance appropriate to targeted settings • Monitor level of regulation, signing, and permitting applied as appropriate to targeted settings 	<ul style="list-style-type: none"> • Project-by-project 	<ul style="list-style-type: none"> • Targeted recreation benefits not realized
SRMAs, ERMA	National RMiS requirements	Number of visits, visitor days, etc.	<ul style="list-style-type: none"> • Traffic counters, visitor registers, Coyote Buttes/Paria Canyon database, Information Center counter, SRP post-use reports, direct counts 	<ul style="list-style-type: none"> • Monthly for traffic and Information Center counters • Bi-monthly for visitor registers • Monthly for Coyote Buttes/Paria Canyon • Annually for SRPs 	<ul style="list-style-type: none"> • Ongoing
Monument-wide	Authorizing recreation uses	Number of permits	<ul style="list-style-type: none"> • Counting commercial and competitive SRPs • Counting individual SRPs 	<ul style="list-style-type: none"> • Monthly for RUPs • Post-use for commercial and competitive SRPs 	<ul style="list-style-type: none"> • N/A

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
				<ul style="list-style-type: none"> Monthly for individual SRPs 	
Monument-wide	Authorizing recreation uses	Number of permit violations	<ul style="list-style-type: none"> Monitor authorized activities for compliance with permit stipulations 	<ul style="list-style-type: none"> As needed 	<ul style="list-style-type: none"> N/A
Wilderness					
Statutory wildernesses	Preservation of wilderness character	Number of acres monitored	<ul style="list-style-type: none"> Patrol (foot or aerial) and staff report findings and recommendations NEPA process Existing NAU protocols for naturalness (rapid site inventory, human impact site monitoring) Actual counts for solitude 	<ul style="list-style-type: none"> Monthly patrol Project-by-project Every 3-5 years for rapid site inventory Every year to 2 years for human impact site monitoring and solitude 	<ul style="list-style-type: none"> N/A
Statutory wildernesses	Preservation of wilderness character	Number of wilderness boundary vehicle violations	<ul style="list-style-type: none"> Actual counts 	<ul style="list-style-type: none"> Ongoing 	<ul style="list-style-type: none"> N/A
Travel Management					
Designated road/trail system	Management of designated system	Number of roads/trails meeting targeted maintenance intensities	<ul style="list-style-type: none"> Road/trail condition assessments 	<ul style="list-style-type: none"> Annually on rotating basis 	<ul style="list-style-type: none"> N/A
Designated road/trail system	Management of designated system	Placement and retention of all signing	<ul style="list-style-type: none"> Road/trail condition assessments 	<ul style="list-style-type: none"> Annually on rotating basis 	<ul style="list-style-type: none"> N/A
Designated road/trail system	Management of designated system	Average daily traffic	<ul style="list-style-type: none"> Traffic counters on key roads/trails 	<ul style="list-style-type: none"> Monthly 	<ul style="list-style-type: none"> N/A
Designated road/trail system	Management of designated system	Number of illegal, off-system vehicle incursions	<ul style="list-style-type: none"> Visual inspections NAU protocols 	<ul style="list-style-type: none"> Ongoing Annually for selected rotating areas 	<ul style="list-style-type: none"> N/A

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
National Scenic & Historic Trails					
Old Spanish NHT	Protection of significant sites/segments and retention of landscape character	Number of miles protected	<ul style="list-style-type: none"> • Visual inspection • VRM contrast rating 	<ul style="list-style-type: none"> • Annually for inspections • Project-by-project for VRM 	<ul style="list-style-type: none"> • N/A
Wild & Scenic Rivers					
Paria River	Free-flowing river	Recommended suitable river miles remaining free-flowing	<ul style="list-style-type: none"> • Other resource data • NEPA process 	<ul style="list-style-type: none"> • Project-by-project 	<ul style="list-style-type: none"> • N/A
Paria River	Protect identified outstandingly remarkable objects	Number of identified outstandingly remarkable values remaining intact	<ul style="list-style-type: none"> • Other resource data • NEPA process • Field surveys 	<ul style="list-style-type: none"> • Project-by-project • Every 5 years 	<ul style="list-style-type: none"> • N/A
Wilderness Characteristics					
Monument-wide	Maintenance of wilderness characteristics	Naturalness, outstanding opportunities for primitive recreation and solitude	<ul style="list-style-type: none"> • NEPA process • Existing NAU protocols for naturalness (rapid site inventory, human impact site monitoring) • Actual counts for solitude 	<ul style="list-style-type: none"> • Project-by-project • Every 3-5 years for rapid site inventory • Every year to 2 years for human impact site monitoring and solitude 	<ul style="list-style-type: none"> • N/A
Visual Resources					
Monument-wide	Management of targeted visual classes	Degree of contrast (landscape change) created	<ul style="list-style-type: none"> • VRM contrast rating 	<ul style="list-style-type: none"> • Project-by-project 	<ul style="list-style-type: none"> • N/A
Soundscapes					
Baseline inventory & selected site long-term monitoring on	Maintenance of natural ambient sound characteristics: audibility, intensity, duration, frequency	Change in natural ambient sound: audibility, duration	<ul style="list-style-type: none"> • Measure human-caused intrusions: loudness/intensity (dBA) • % Time above Ambient • % Time Audible • # of intrusions & duration 	<ul style="list-style-type: none"> • Every 3-5 years following initial baseline inventory • Project basis as needed 	<ul style="list-style-type: none"> • Modify activities under Monument authority • Seek relief from agencies with regulatory authority

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
NPS lands					
T/E Species: Mexican Spotted Owl					
Canyon habitats	Assess potential MSO nesting sites based on suitable habitats identified by 2001 Willey model.	Document MSO nesting site suitability and presence or absence of MSO.	<ul style="list-style-type: none"> • Protocol established by MSO recovery team • 5-10 sites per year 	<ul style="list-style-type: none"> • Repeat annually 	<ul style="list-style-type: none"> • Contributes to range-wide recovery efforts and planning, could lead to RMP amendment
T/E Species: Southwestern Willow (SW) Flycatcher					
Riparian habitats	Assess all suitable and potential SW flycatcher nesting sites	Document SW flycatcher nesting site suitability and presence or absence of SW flycatchers	<ul style="list-style-type: none"> • Protocol established by SW flycatcher recovery team • 11 sites 	<ul style="list-style-type: none"> • Repeat every other year 	<ul style="list-style-type: none"> • Contributes to range-wide recovery efforts and recovery planning, could lead to RMP amendment
T/E Species: Peregrine Falcon					
Canyon eyrie sites	Assess specific nesting sites as assigned by AGFD and USFWS.	Document presence or absence of peregrine falcon.	<ul style="list-style-type: none"> • Protocol established by peregrine monitoring team • Up to 4 sites 	<ul style="list-style-type: none"> • Repeat every year 	<ul style="list-style-type: none"> • Contributes to range-wide recovery efforts and recovery planning, could lead to RMP amendment
T/E Species: Listed and Special Status Plants					
Monument-wide	To assess effects of management actions on populations of plants	Demography, counts, mortality, man-induced impacts	<ul style="list-style-type: none"> • Macroplots with tagged plants, macroplots, and transects using counts. 	<ul style="list-style-type: none"> • Annually for listed plants, 1-3 years for special status plants 	<ul style="list-style-type: none"> • Down trends (demographic or counts) caused by man induced impacts
Vegetation					
Monument-wide	Management of authorized uses	<ul style="list-style-type: none"> • Vegetative trend of key species • Precipitation 	<ul style="list-style-type: none"> • Permanent photo plots, and Frequency transects, dry weight rank • Rain Can & Remote Automated Weather Station 	<ul style="list-style-type: none"> • Every 4-8 years • Quarterly 	<ul style="list-style-type: none"> • Up or down trend of key or undesirable species • Meeting or not meeting desired plant

TABLE 3.1: PRELIMINARY MONITORING STRATEGIES					
Location(s)	Issue/Objective	Indicator (what)	Protocol (how – methods)	Frequency (when)	*Trigger/Action
					community objectives
Livestock grazing (BLM lands)					
Monument-wide	Management of livestock grazing	Vegetation utilization level	<ul style="list-style-type: none"> • Grazed class method 	<ul style="list-style-type: none"> • Annually in use pastures 	<ul style="list-style-type: none"> • Use levels in excess of 45%
Baseline inventory & selected site long-term monitoring on NPS lands under grazing permit	Prevent impairment (DO-12); Maintain ecologic integrity of soils and vegetation	Plant utilization; soil integrity; deviation from plant community ecological potential	<ul style="list-style-type: none"> • TBD through study; • In concert with BLM Arizona Standards and Guidelines for Livestock Grazing Management 	<ul style="list-style-type: none"> • TBD through research study 	<ul style="list-style-type: none"> • TBD through research study
Fire and Fuels Management					
Monument-wide	Assess the effects of fire	Prescribed fire Fire use	<ul style="list-style-type: none"> • Long term photo plots • Vegetation plots • Burn severity • Others as needed 	<ul style="list-style-type: none"> • Pre, during and post monitoring 	<ul style="list-style-type: none"> • Planning of ignition • Ignition
Monument-wide	Assess the effects of fire	Wildfire	<ul style="list-style-type: none"> • Long term photo plots • Vegetation plots • Burn severity • Others as needed 	<ul style="list-style-type: none"> • Mostly post monitoring 	<ul style="list-style-type: none"> • Ignition
*Trigger/Action – What would trigger an action/What the BLM would do if monitoring shows an undesirable direction or action.					

ADAPTIVE MANAGEMENT

Adaptive management is a decision process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. Careful monitoring of these outcomes both advances scientific understanding and helps adjust policies or operations as part of an iterative learning process. Adaptive management also recognizes the importance of natural variability in contributing to ecological resilience and productivity. It is not a “trial and error” process; rather, it emphasizes learning while doing. Adaptive management does not represent an end in itself: it represents a means to more effective decisions and enhanced benefits. Its true measure is in how well it helps meet environmental, social, and economic goals, increases scientific knowledge, and reduces tensions among stakeholders (U.S. Department of the Interior [DOI] 2007).

Adaptive management involves ongoing, real-time learning and knowledge creation, both in a substantive sense and in terms of the adaptive process itself. Though it is commonly thought that an adaptive approach can produce results quickly at low cost, the opposite is more likely to be true. An initial investment of time and effort will increase the likelihood of better decision-making and resource stewardship in the future, but patience, flexibility, and support are needed over the life of an adaptive management project. For these reasons, it is important to carefully consider the potential use of an adaptive approach, and to engage in careful planning and evaluation when adaptive management is used (DOI 2007).

Adaptive management involves synthesizing existing knowledge, exploring alternative actions, and making explicit forecasts about their results. Management actions and monitoring programs are carefully designed to generate reliable feedback and clarify the reasons underlying results. Actions and objectives are then adjusted based on this feedback and improved understanding to continue to try to achieve the desired future conditions. In addition, decisions, actions, and results are carefully documented and communicated to others, so that knowledge gained through experience is passed on rather than lost when individuals move or leave the organization.

The Monument staff and management will involve interested stakeholders in implementing the decisions in this Approved Plan and commit to an adaptive management process that will work toward achieving the identified management objectives. Results from ongoing monitoring and assessment will be used to adjust and improve these management decisions.