Shivwits Plateau

Landscape Restoration Project

Preliminary Project Summary

March 2021

United States Department of the Interior
National Park Service
Bureau of Land Management
Grand Canyon-Parashant National Monument
345 East Riverside Drive
St. George, Utah 84790

BACKGROUND

An Environmental Assessment (EA) is being prepared for the Shivwits Plateau Landscape Restoration Project, located within the Grand Canyon-Parashant National Monument (GCPNM or Monument), Mohave County, Arizona. The Monument is cooperatively managed by the National Park Service (NPS) and the Bureau of Land Management (BLM).

Monitoring of vegetation and soils indicate that vegetation conditions on BLM and NPS managed lands have changed over time; including weed infestations, overgrown juniper and ponderosa pine trees, decadent sagebrush, and a reduction of desirable native plants. The project planning area is approximately 322,000 acres with an estimated 40-60,000 acres to be treated (see overview map).

This project is designed to address the above concerns and implement direction contained in the Grand Canyon-Parashant National Monument General Management Plan/Resource Management Plans (GMP/RMP), approved on January 29, 2008 (USDOI 2008).

PURPOSE AND NEED FOR THE PROPOSED ACTION

Using data collected from land health evaluations and field observations, GCPNM has determined that vegetation across much of the project area is not meeting desired conditions. Based on this information, GCPNM identified several purposes integral to achieving the vegetation management goals for wildlife habitat and vegetation resources in the GMP/RMP for the Shivwits Plateau Landscape Restoration Project (SPLRP) including:

- Improving woodland, rangeland, and forest health and functionality.
- Managing pinyon-juniper woodlands, ponderosa pine woodlands, and sagebrush vegetation communities to enhance soil nutrient cycling and productivity.
- Continuing to move vegetation communities toward more natural ranges of composition, structure, and function.
- Managing and enhancing wildlife habitat to provide the necessary forage and cover for healthy self-sustaining wildlife populations.
- Continuing to restore wildfire as an integral part of the ecosystem, particularly in the ponderosa pine forest.
- Improving plant community resilience to, or capacity to recover from, wildland fire, drought, and other disturbances.

CONFORMANCE WITH LAND USE PLANS, STATUTES, AND REGULATIONS

The alternatives being developed are required to be in conformance with the Grand Canyon – Parashant Nation Monument GMP/RMP, approved January 29, 2008 (USDOI 2008). Please see the GMP/RMP at https://eplanning.blm.gov/public_projects/lup/95159/129855/157882/ApprovedPlan_Ch_2.pdf for a complete listing of all decisions that provide direction for this project. The EA will also be prepared in accordance with the National Environmental Policy Act and applicable Federal, State, and local statutes.

COOPERATING AGENCIES

The Council on Environmental Quality regulations [40 CFR 1508.5] define a cooperating agency as any federal agency (other than the lead agency) and any state or local agency or Indian tribe with jurisdictional authority or special expertise with respect to any environmental impact involved in a proposal. Federal and state agencies, tribal governments, and county governments with jurisdiction by law or with special expertise relevant to the SPLRP were solicited at the beginning of the NEPA process to determine their interest in participating as a cooperating agency.

Twenty-seven agencies, including tribal agencies, were invited to collaborate for this project. To date, Arizona Game and Fish Department and Mohave County Board of Supervisors have indicated their interest in working as a cooperating agency.

PROJECT AREA DESCRIPTION

The SPLRP area extends north from the rim of the Grand Canyon to the northern boundary of GCPNM near Poverty Knoll and Hidden Hills and is bounded by Andrus Canyon on the east and the Grand Wash Cliffs to the west. The project area includes approximately 322,000 acres within both the NPS and BLM managed areas of GCPNM (see overview map), excluding private and state lands. The project area is a mix of pinyon-juniper woodlands, ponderosa pine woodland and sagebrush vegetation communities.

PRELIMINARY PROPOSED ACTION

The proposed actions have been developed to attain the specific management goals outlined in the GMP/RMP. Included in the Proposed Action are design features and conservation measures to mitigate potential impacts.

GCPNM would use a combination of manual and mechanical treatments, prescribed fire, herbicide and seeding to address the purpose and need to move the project area toward desired conditions. Proposed treatments would be implemented in a staggered fashion over time and would range from several acres to several thousand acres depending on the resource management goals, funding, and desired outcomes for specific treatment areas. An area may be treated more than once during this project, as necessary. Treatments may target a particular species, like

ponderosa pine, or a particular ecosystem subtype within larger areas, such as early seral juniper patches within an otherwise mixed stand of late seral juniper woodland. In some areas, treatments may be combined. For example, mechanical mowing may be preceded or followed by seeding. Proposed treatments are described below, listed by treatment type. All treatment types, when applied at a particular location, would use natural vegetation and landscape features and practices. Treatments in mule deer habitat may be adapted from techniques described by Bender (2012) and others, to promote wildlife use and passage into the treated area. Efforts would be made to minimize visual contrast and erosion, protect sensitive areas, and maximize positive ecosystem response to treatment.

Manual Treatment

Manual treatments would typically be used in shrublands, pinyon juniper woodlands, sagebrush and chapparal where vegetation to be treated is sparse and not overly dense (see attached vegetation map). Manual treatment involves the use of hand tools and hand-operated power tools to cut, clear, or prune vegetation. Treatments typically include cutting undesired plants and trees above ground level, and pulling, grubbing, or digging out root systems of undesired plants to prevent sprouting and regrowth below ground level. Manual treatments are highly selective and can be used in sensitive areas or areas inaccessible to vehicles.

The 'lop and scatter' technique proposed as part of this alternative is a type of manual treatment in which small trees would be cut with chainsaws or other hand-held tools, and the resultant slash would be scattered on the ground in a manner that maximizes soil-biomass contact to the extent practicable to aid in water retention, promote herbaceous species growth, and reduce erosion. Scattered branches and slash may be piled along roadways and trails or burned to reduce visual impacts and maintain prescribed fire treatment boundaries.

Mechanical Treatment

Mechanical treatments can used in shrublands, pinyon juniper woodlands, sagebrush, and chapparal where vegetation to be treated is dense (see attached vegetation map). Mechanical treatments are designed to reduce vegetation, usually juniper trees, to favor growth of seeded or existing vegetation. Leave areas, where no treatment would be conducted, would be designed around areas of sensitive resources, and slopes greater than 30% or on cliffs and scree slopes. Mechanical treatments involve the use of vehicles such as wheeled tractors or front-end loader types, chipper/shredder/bull hog, crawler-type tractors, mowers, and specially designed vehicles with attached mulching/chipping implements that cut or chop existing vegetation (like trees and shrubs) over large areas of thick vegetation and scatter the debris (mulch) on site. The selection of a particular mechanical method would be based on the characteristics of the vegetation, seedbed preparation and revegetation needs, topography and terrain, soil characteristics, and weather conditions and availability by contractors.

The lop and scatter technique proposed as part of the proposed action is considered a mechanical treatment if small equipment, such as a skid-steer vehicle, are used. If a mechanical lop and scatter method is selected as most appropriate for the unit, small skid-steer vehicles would be used to shear small trees. Scattered branches and slash could also be piled along roadways and trails and burned to reduce visual impacts and maintain prescribed fire treatment boundaries.

Harrow seeding may be used. Harrow seeding is a broadcast method of applying seed, followed by pulling a series of spikes (usually attached in rows to a metal frame) along the ground to cover the seed and smooth the soil. This action improves the seeding success and is typically used in larger treatment units.

Chemical Treatment

The BLM would use the Programmatic EIS on Vegetation Treatments Using Herbicides on BLM lands in 17 Western States (USDOI 2007) to guide actions for this project. Chemical treatments on lands managed by the NPS would be approved by the NPS Regional of National Integrated Pest Management (IPM) Coordinator. All standard operating procedures (including following herbicide product label instructions) for each herbicide proposed for use as part of this project would be adhered to.

Herbicide applications are designed to minimize potential for impacts to non-target plants and animals, while achieving project objectives. They can be applied using a variety of techniques (including aerial or hand application) under carefully controlled rates of application. Treatment objectives, site topography, vegetation conditions, and other factors would be considered prior to any chemical application. The most appropriate application method would be determined by the weed being treated, the herbicide being applied, the skills of the applicator, and the application site (Tu et al. 2004). Methods of application can be broadly classified as follows:

- Foliar application where herbicide is applied to intact, green leaves
- Spot application using a precise tool such as a backpack applicator or spray bottle
- Broadcast application using boom or boomless sprayers to distribute herbicide over a relatively large area depending on the treatment area
- Basal bark application where herbicide is applied to intact bark around the circumference of the trunk
- Cut stump treatment where the tree or stem is first cut straight across then the herbicide is applied to the freshly cut stump for transport to the root system
- Pelletized treatment where herbicide is made into a pellet that is implanted at the plant's base
- Pre-emergent where the herbicide is applied to the soil before the target species seeds germinate and emerge

Prescribed Fire

Prescribed fire treatments would typically be focused on fire-adapted ponderosa pine stands. Pinyon juniper areas, within proposed wilderness on NPS-managed lands, may also be treated with prescribed fire. Prescribed fire is the intentional application of fire to vegetation under specified weather conditions. Fuel moisture, humidity, temperature, windspeed, and other environmental variables are used to guide prescribed fire treatments. Prescribed fire typically would follow a mechanical or manual treatment to prepare the site for favorable treatment outcomes or may take place with limited pre-treatment site preparation.

Prescribed fire treatments include broadcast burning and burning of hand-stacked piles. Techniques include hand, land, and/or aerial ignition operations (burn piles, landscape burns, drip torch, terra torch, Heli torch, etc.). Prescribed fire would reduce hazardous fuel loads, reduce vegetation density, stimulate the rejuvenation of herbaceous species, and assist in seed preparation. Prescribed fire could be conducted at any time of the year, provided that favorable conditions are present to produce a vegetative response that meets resource objectives. Each prescribed fire is subject to a written, management approved prescribed fire plan that includes specific objectives for undertaking the burn, as well as prescriptions for fire behavior and operational details.

Seeding

Seeding would be applied by a variety of methods, including manual (hand seeders) or mechanical application (like rangeland drills, drag covering implements), aerial application, and may be in conjunction with herbicide application for invasive non-native plant species such as cheatgrass. Seeding would be used in areas where the onsite seed source is inadequate to ensure successful revegetation of the site. Seed mixes would primarily be composed of native species, although non-native species may be used per NPS and BLM policy (GMP/RMP 2008). Seed selection would be based on site potential as indicated by known species composition in the area and potential vegetative community components as indicated in USDA Ecological Site Descriptions, and GMP/RMP objectives.

Preliminary Design Features

Design features are included to minimize potential environmental impacts. Features would be developed to limit or avoid impacts to wildlife, negative effects on vegetative communities, maintain visitor safety, and protect cultural or archeological resources.

Potential design features may include:

- Vehicles and equipment would be power washed off-site before treatment activities begin to minimize the risk of spreading noxious weeds. This would include cleaning all equipment before entering the Arizona Strip.

- The project areas would be monitored by the Monument for noxious weeds for a minimum of two years following completion of the project and would be re-treated as needed.
- No treatment would be undertaken until an appropriate level of cultural inventory for the proposed treatment area has been completed.
- Any cultural (historic/prehistoric site or object) or paleontological resource (fossil remains of plants or animals) discovered within the project areas that has not be determined to be previously documented and noted during project planning would immediately be reported to the Monument Manager or Superintendent and the GCPNM archeologist or their designee. All operations in the immediate area of the discovery shall be suspended until written authorization to proceed is issued. An evaluation of the discovery shall be made by a qualified archeologist or paleontologist to determine appropriate actions to prevent the loss of scientifically significant cultural or paleontological values.
- If any human remains, funerary objects, sacred objects, or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (Public Law 101-601; 104 Stat. 3048; 25 U.S.C. 3001) are discovered, operations in the immediate area of the discovery would stop, the remains and objects would be protected, and the PARA Manager (or designee) and the PARA archeologist would be immediately notified. The immediate area of the discovery would be protected until notified by the PARA Manager (or designee) that operations may resume.
- Existing snags would be retained within the project area to provide a more diverse habitat for wildlife.
- No hazing or harassment of wildlife is permitted.
- Treatment boundaries would be irregularly shaped (i.e., not in straight lines, unless using roads and fences as a boundary) to minimize the level of change to the characteristic landscape, avoid creating obvious lines of extreme visual contrast, and avoid attracting the attention of the casual observer.
- All seed would be certified as “weed free”.
- Mechanical work would not take place when ruts greater than 4 inches form on roadways adjacent to work areas.
- Areas of dense biological soil crust coverage would be avoided to the greatest extent practicable.
- Mastication or lop and scatter biomass (e.g. wood chips) to a discontinuous low depth of 24 inches or less in order to maintain biomass to soil contact and encourage decomposition of slash and eventual conversion to soil organic matter, except in units where prescribed fire would follow lop and scatter treatments. In such cases, continuous biomass would aid in the spread of prescribed fire.

PRELIMINARY ISSUES

Below are potential issues related to the proposed actions that have been identified by the NPS and BLM interdisciplinary team for the project.

- Areas Managed to Maintain Wilderness Characteristics
- Fuels/Fire Management
- Livestock Grazing
- Soil Resources
- Vegetation, Including Noxious Weeds and Invasive, Non-native Species
- Visual Resources
- Proposed Wilderness (NPS managed lands)
- Wildlife (including BLM Sensitive Species, Species of Greatest Conservation Need, and Migratory Birds

PRELIMINARY ALTERNATIVE DEVELOPMENT

Preliminary alternatives being considered include:

- No Action Alternative (continuation of current management)
- Proposed Action (combination of vegetation treatments using an adaptive management approach)
- Prescribed fire only treatment in proposed wilderness areas

As issues are identified, additional alternatives may be developed or combined into other alternatives. All alternatives are required to meet the purpose and need of the project.

REFERENCES

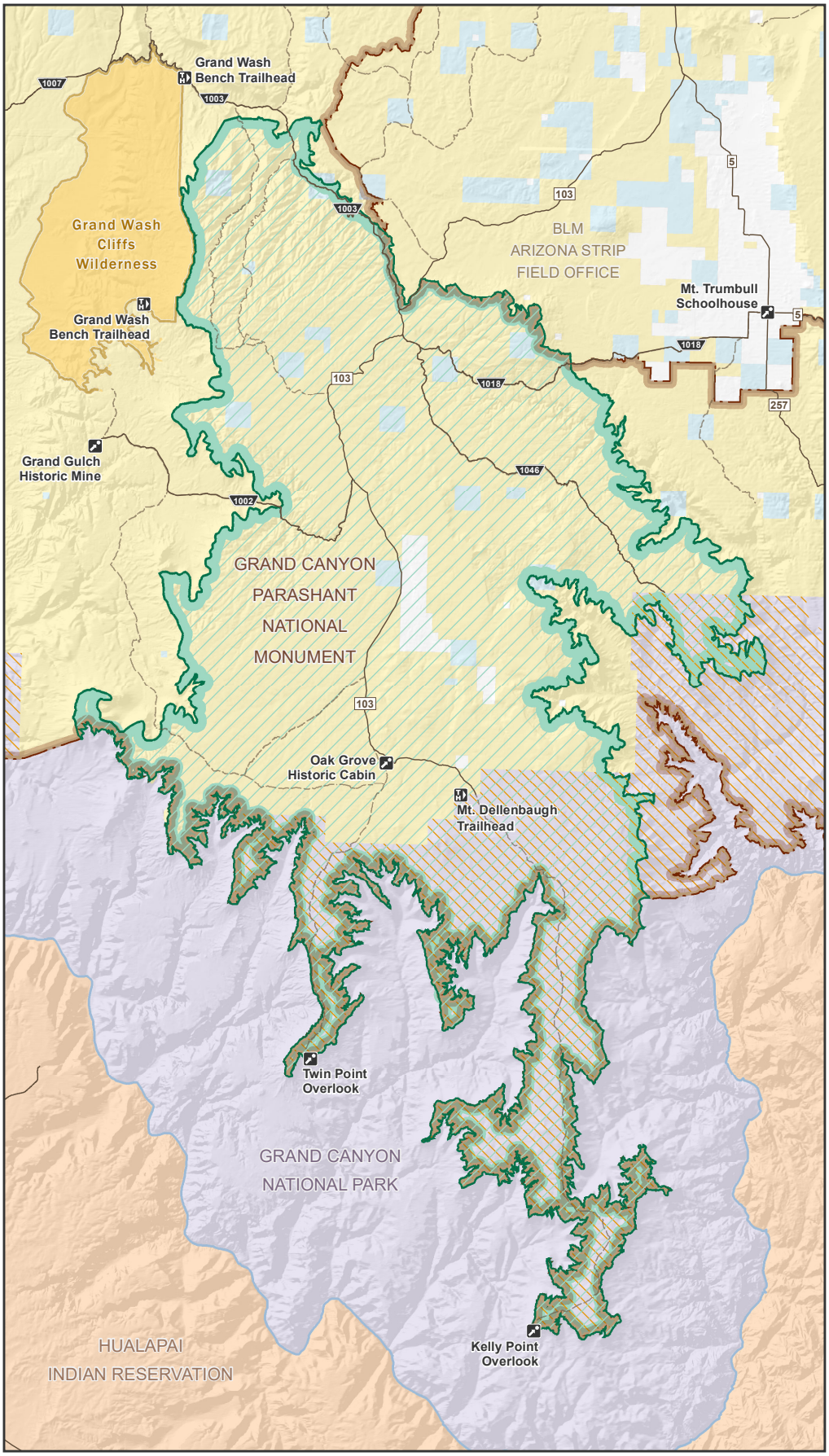
Bender, L. C. 2012. Guidelines for Management of Habitat for Mule Deer: Pinon-juniper, Chihuahuan desert, arid grasslands, and associated arid habitat types. New Mexico State University Cooperative Extension Service Circular 662.

Tu, M., Hurd, C., & J.M. Randall, 2001. Weed Control Methods Handbook. The Nature Conservancy, http://tncweeds.ucdavis.edu, Version: April 2001.

U.S. Department of the Interior, Bureau of Land Management and National Park Service. 2008. Grand Canyon-Parashant National Monument: record of decision, approved resource management plan. St. George, Utah.

U.S. Department of the Interior, Bureau of Land Management. 2007. Vegetation Treatments on BLM Lands in 17 Western States Programmatic Environmental Impact Statement.

Shivwits Plateau Landscape Restoration Project - Overview Map
NEPA Project Numbers DOI-BLM-AZ-A030-2021-0005-EA and PEPC-98370
Bureau of Land Management and National Park Service - Grand Canyon-Parashant National Monument



- Shivwits Plateau Landscape Restoration Project Planning Area
- Grand Canyon-Parashant National Monument
- BLM Wilderness Area Boundary
- Federal Land within BLM Wilderness Area
- NPS Proposed Wilderness

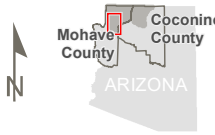
Surface Management Agency
- Bureau of Land Management
- National Park Service
- Indian Reservation
- State
- Private

Major Transportation Routes
- Unpaved Road
- Secondary Unpaved Road

Recreation Sites
- Day Use Site
- Trailhead

0 5 10 Miles
0 5 10 Kilometers

Map Produced by BLM Arizona Strip District
File: SPLRP_PublicScoping_Overview_8x11_2021.mxd
Coordinate System: NAD 1983 UTM Zone 12N
Reference System: U.S. PLSS GSRB&M
Scale: 1:385,000 at 8.5x11 page output
Date: 3/1/2021

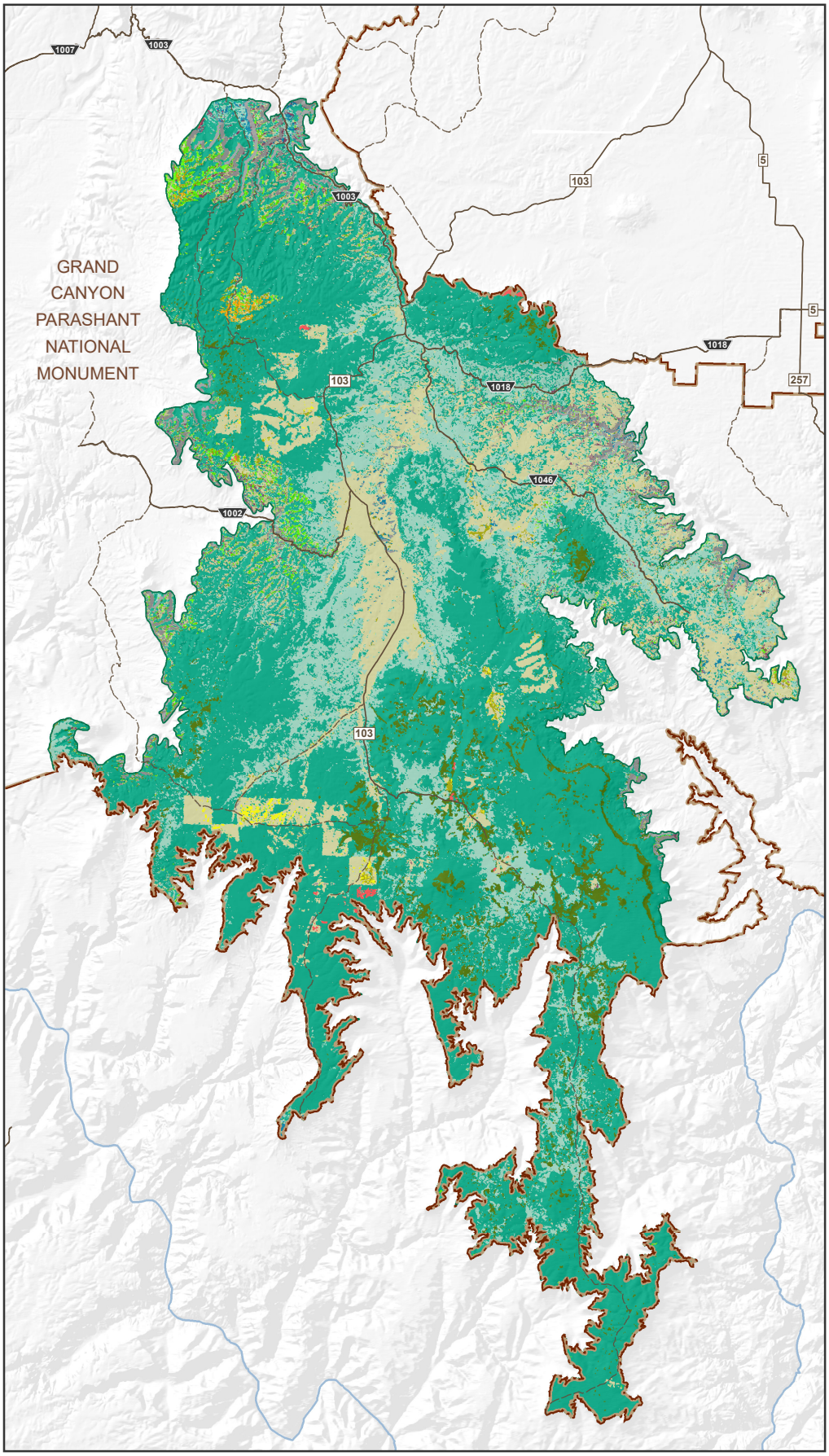


No warranty is made by the Bureau of Land Management (BLM) regarding the accuracy or completeness of this map. This map is representational and is to be used as intended by the BLM. Map data compiled from various sources. This map and the data from which it was derived are not binding on the BLM and may be revised at any time.

Shivwits Plateau Landscape Restoration Project - Vegetation Map

NEPA Project Numbers DOI-BLM-AZ-A030-2021-0005-EA and PEPC-98370

Bureau of Land Management and National Park Service - Grand Canyon-Parashant National Monument



Vegetation Type

- Ponderosa Pine Woodland
- Oak Shrubland
- Pinyon-Juniper Woodland
- Pinyon-Juniper Savanna
- Sagebrush Shrubland
- Sagebrush Grassland
- Grassland - Native or Introduced
- Shivwits Chaparral
- Blackbrush Mixed Shrubland
- Mojave Transition Shrubland
- Recent Fire or Treatment Disturbance
- Cliff and Scree Slopes

- Shivwits Plateau Landscape Restoration Project Planning Area
- Grand Canyon-Parashant National Monument

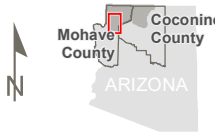
Major Transportation Routes

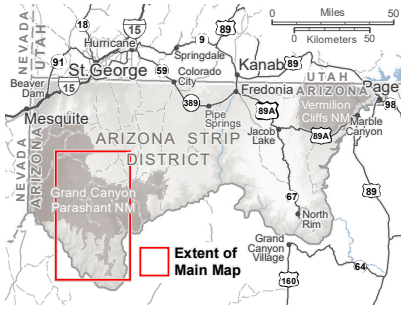
- Unpaved Road
- Secondary Unpaved Road

0 5 10 Miles

0 5 10 Kilometers

Map Produced by BLM Arizona Strip District
File: SPLRP_PublicScoping_Vegetation_8x11_2021.mxd
Coordinate System: NAD 1983 UTM Zone 12N
Reference System: U.S. PLSS GSRB&M
Scale: 1:355,000 at 8.5x11 page output
Date: 3/5/2021





No warranty is made by the Bureau of Land Management (BLM) regarding the accuracy or completeness of this map. This map is representational and is to be used as intended by the BLM. Map data compiled from various sources. This map and the data from which it was derived are not binding on the BLM and may be revised at any time.