



**NATIONAL
CONSERVATION
LANDS**

Gold Butte

National Monument



Nevada

Annual Manager's Report – Fiscal Year 2019

Table of Contents

Gold Butte Fact Sheet.....	ii
Gold Butte Overview.....	1
Programs and Accomplishments.....	4
Science.....	11
Resources, Objects, Values and Stressors.....	12
Summary of Performance Measure.....	31
Manager’s Letter.....	32



U.S. Department of the Interior
Bureau of Land Management

Gold Butte

National Monument

Designating Authority

Designating Authority: Presidential Proclamation – Establishment of the Gold Butte National Monument 9559

Date of Designation: December 28, 2016

Additional Designations

There are two designated wilderness areas, one wilderness study area, one instant study area, and a Backcountry Byway within the boundary of Gold Butte National Monument (GBNM).

Site Description

GBNM is located 80 miles northeast of Las Vegas and 20 miles south of the City of Mesquite. GBNM encompasses nearly 300,000 acres of remote and rugged desert landscape in southeastern Nevada, where dramatic red sandstone, twisting canyons, and tree-clad mountains punctuate desolate stretches of the Mojave Desert. The sandstone provides a canvas for the area's famous rock art. The area is popular for outdoor recreation and visitors to the monument can hike to rock art sites, drive the Backcountry Byway to the area's namesake mining ghost town, hunt desert bighorn sheep, or tour the area's peaks and canyons on horseback.

Monument Offerings

GBNM has more than 300 miles of designated routes, including a 64-mile Backcountry Byway, which provides the public access to a variety of features. Some of those features include:

Whitney Pocket

This is a popular camping destination with the most well-known and accessible Aztec sandstone formations in the monument. Of note are the rock stories carved into stones by ancient indigenous peoples, and structures built in the 1930s by the Civilian Conservation Corps.

Devil's Throat

An unusual geologic feature along the main Gold Butte road, Devil's Throat is a large, 100-foot-deep sinkhole that continues to grow from underground water dissolving the minerals in the soil.

Gold Butte Townsite

Building foundations and mining equipment for crushing ore are all that are left of the mining boom of the early 1900s at the Gold Butte Townsite. They are a reminder of the rich mining and ranching history of this area.

Year Accomplishments

- Developed an interpretive kiosk for Devil's Throat sinkhole.
- Volunteers installed barriers at a camping/vehicle staging area during the National Public Lands Day event.
- Potholes along the Gold Butte Backcountry Byway were repaired with the assistance of Clark County Public Works, Great Basin Institute, and volunteers from the Friends of Gold Butte.
- Entered into a memorandum of understanding (MOU) with the Virgin Valley Water District that established a vision, common goals, and objectives to meet water delivery and conservation needs for the communities of Bunkerville and Mesquite.
- Hosted a field trip with the Moapa Band of Paiutes and Twenty-Nine Palms Band of Mission Indians as part of the Gold Butte National Monument Historic Properties Protection Project.
- Installed six safety and 14 directional signs in GBNM with assistance of the Friends of Gold Butte through a grant from the Nevada Off-Highway Vehicle Grant Program.

Future Priorities and Opportunities

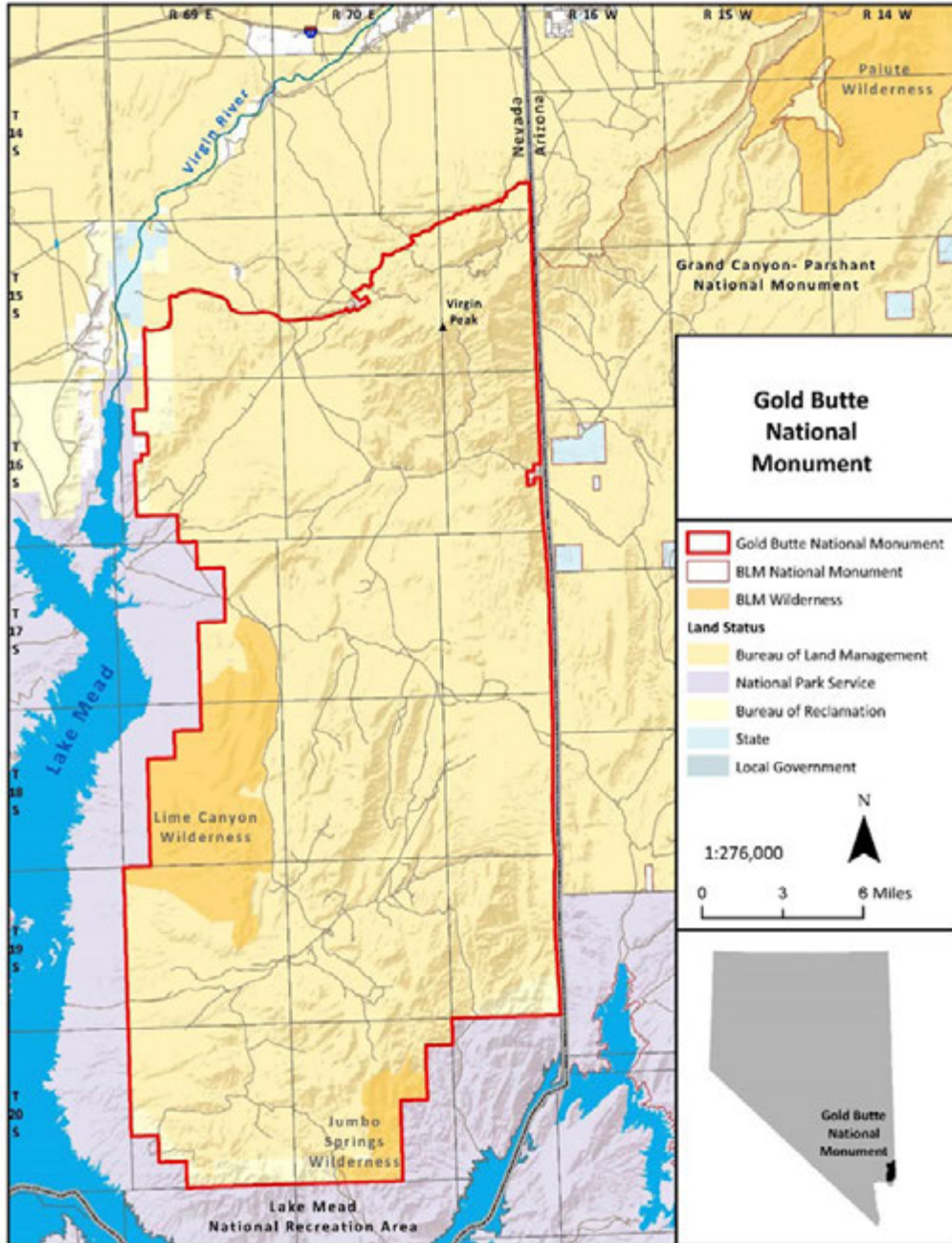
The Bureau of Land Management (BLM) will focus on the following priorities for Fiscal Year (FY) 2020:

- Community Outreach
- Volunteer Opportunities
- Restoration
- Interpretation and Education
- Road Signing and Maintenance
- Protection of Cultural Sites

**Gold Butte
National Monument**
Southern Nevada District Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
Phone: 702-515-5000
Unit Manager: Lee Kirk

Site Web Address: <https://www.blm.gov/programs/national-conservation-lands/nevada/gold-butte>

Map of Gold Butte



1 Gold Butte Overview

Acreage

Total Acres in Unit	296,937
BLM Acres	285,158
Other Federal Acres	11,779
State Acres*	0
Private Acres*	0

*State and Private Acres are not part of the total unit acres

Budget

Budget Title	Code	Funding
Monuments & Conservation Areas	1711	\$112,797.22
Other (Southern Nevada Public Land Management Act BL 85 6-3)	5861	\$77,861.15
Total Budget		\$190,658.37

Current Areas of Focus

Recreational use continues to increase within GBNM which impacts cultural resources. The BLM will finalize an environmental assessment (EA) and Historic Properties Treatment Plan (HPTP) in fiscal year (FY) 2020 to provide for interpretation and recreation amenities at the Falling Man, Kirk's Grotto, and Whitney Pocket cultural sites. The recreational amenities could include interpretive kiosks, bathrooms, and trails.

Planning and NEPA

Resource Management Plan

The BLM received approval for funding (\$1.6 million) through the Southern Nevada Public Land Management Act (SNPLMA) to develop an Integrated Activity Plan, complete a cadastral boundary survey and land tenure adjustment, enhance the existing volunteer program, and develop new visitor education materials. This project will be initiated in FY 2020.

The integrated activity plan will consolidate information and analysis that has been collected over the years by the BLM and will include measures for the protection of the objects and values of the monument. The plan will respond to these preliminary questions:

- **Cultural and Historic Resources:** How should the cultural or historic resources and traditional cultural sites of the area be protected, preserved, or restored,

while still allowing for appropriate public visitation, outreach, and educational efforts? What level of management should the BLM apply to restore and enhance post-contact historical resources?

- **Tribal Resources:** What management measures are needed to ensure continuation of tribal activities and traditional use of sacred sites?
- **Wildlife and Special Status Species:** What management is needed to restore, maintain, or enhance priority species and their habitats, including critical habitat for listed species such as the desert tortoise?
- **Vegetation Resources:** What goals, objectives, and management actions are necessary to maintain and improve vegetation, biological crusts, and native plant communities? Which treatments should be considered to reduce the spread of exotic or invasive species?
- **Recreation:** How will areas of high visitation be managed to protect sensitive resources? How should future Special Recreation Permits be managed? Are any facilities, such as campgrounds or trails, needed for current recreation use, or should the issues be deferred to a detailed, implementation-level recreation plan?
- **Lands and Realty:** What management actions are necessary to ensure that water delivery facilities from valid existing water rights can be renewed, operated, and maintained, replaced, modified, or upgraded while protecting resources?

Travel Management Plan

A Travel Management Plan was completed in 2008 to designate routes for Areas of Critical Environmental Concerns located in the northeast portion of the Southern Nevada District Office (SNDO). The Travel Management Plan designated 812 miles of routes as open to motorized use, with 300 miles of those routes located in GBNM.

National Environmental Policy Act (NEPA)

A Draft Environmental Assessment (EA) DOI-BLM-NV-S010-20019-0096-EA was prepared and made available for a 30-day public review and comment period. The Draft EA analyzed interpretation and recreation amenities at the Falling Man, Kirk's Grotto, and Whitney Pocket cultural sites. The recreational amenities could include interpretive kiosks, bathrooms, and trails.

Staffing

An Acting Monument Manager has been assigned to assist with initial management of GBNM until a table of organization is approved. Below is the proposed organizational structure submitted to the State Director for review and approval:

- Monument Manager (GS-12)

-
- Archeological Technician or Tribal Liaison (GS-9)
 - Park Ranger (GS-7)
 - Park Ranger (GS-7)

The SNDO staff (e.g. wildlife biologist, law enforcement, botanist, maintenance) provides key support to the operation and management of GBNM in the form of management recommendations for protecting or enhancing the natural resources of GBNM and addressing maintenance concerns.

2 Programs and Accomplishments

General Accomplishments

In 2019 the BLM worked with a variety of partners to achieve the accomplishments described below. By continuing to leverage the interest and abilities of tribes, federal agencies, local agencies, universities, friends' groups, and volunteers in the successful management of GBNM, the BLM was able to make continuous progress meeting numerous program needs. For example, the annual Nevada Bat Blitz, hosted by the Nevada Department of Wildlife (NDOW), was set in GBNM in 2019 and was a great success. Twelve different bat species were recorded over the four-day survey period. The BLM continued implementation of the SNPLMA funded Gold Butte Historic Properties Protection Project, including funding a tribal liaison, presenting to local town advisory boards, and developing and issuing a draft Environmental Assessment.

General Accomplishments Table

	Number of Visitors	Education Participants	Interpretative Participants	Visitor Center/Contact Station Visits	Hours of Volunteers			
TOTALS	29,650	N/A	N/A	N/A	4,000			

Education, Outreach, and Interpretation

The BLM is improving efforts to engage the community through outreach by attending local town board and city council meetings. Information is provided regarding current and future projects within GBNM during the meetings.

Fish and Wildlife

Abandoned mine closures were conducted in GBNM with input from Nevada Department of Wildlife (NDOW) to ensure the mines providing habitat for wildlife remained accessible to wildlife. Forty (40) mines were closed during the operation, including 30 bat compatible closures, and three tortoise compatible gates. After closures were completed, a tortoise was observed exiting a mine through one of the tortoise accessible gates.

NDOW continues to document environmental conditions (temperature, humidity, etc.) in some mines for on-going White-nose Syndrome surveillance. White-nose Syndrome is a fungal infection which can be fatal to bats and has decimated bat populations across the United States.

NDOW hosted their annual Bat Blitz in GBNM. The event rotates locations across Nevada to intensely survey for bats in a region. This year, approximately 60 people from multiple agencies (including multiple BLM field offices, U.S. Fish and Wildlife Service, U.S. Forest Service, National Park Service, Nevada State Museum and others) along with volunteers, participated in the four-day Bat Blitz in GBNM. Thirty (30) sites scattered across GBNM were surveyed over the four-day period identifying 530 total bats representing 12 different bat species. The species captured are all special status species and include: California Leaf-nosed bat (*Macrotus californicus*), California Myotis (*Myotis californicus*), Canyon bat (*Parastrellus hesperus*), Pallid Bat (*Antrozous pallidus*), and Yuma Myotis (*Myotis yumanensis*).



Pallid Bat (*Antrozous pallidus*) captured during 2019 Bat Blitz in GBNM. (Photo credit Corey Lange BLM Biologist)

NDOW, in cooperation with BLM, conducts regional surveys to assess population trends of different species, and several surveys occur in GBNM. NDOW has a winter raptor survey route through GBNM. The route usually records a low number of raptors but the following species were observed: red-tailed hawk (*Buteo jamaicensis*), American kestrel (*Falco sparverius*), Cooper's hawks (*Accipiter cooperii*), and Northern Harriers

(*Circus hudsonius*). NDOW also has volunteers assist with road surveys in GBNM to record herpetofauna in the area. The following species were sighted during this past year: Sidewinders (*Crotalus cerastes*), Mojave rattlesnakes (*Crotalus scutulatus*), long-nosed snakes (*Rhinocheilus lecontei*), gopher snakes (*Pituophis catenifer*), and patch-nosed snakes (*Salvadora hexalepis*) as well as banded geckos (*Coleonyx variegatus*).

Seasonal nocturnal point count surveys for relict leopard frog (*Lithobates onca*) were conducted, in partnership with University of Nevada Las Vegas, at multiple springs within GBNM to assess habitat conditions and monitor tadpole, juvenile, and adult frog populations at release sites. Populations at some sites persist with evidence of active recruitment while other sites exhibit population declines for numerous reasons (e.g. erratic spring flow, heavy impacts from cattle, horses, and burros, predation, invasive plants, loss of adequate habitat, etc.).

Desert Tortoise

Within GBNM is land designated critical habitat for desert tortoise, a federally listed threatened species. Designated by U.S. Fish and Wildlife Service in 1994, approximately 46% of GBNM is considered critical habitat for desert tortoise. Desert tortoise critical habitat was designated because this area of GBNM contains features essential to the conservation of desert tortoises. This habitat is characterized as sparse creosote bush scrub on gentle slopes which allows for herbaceous plant growth. Efforts to protect and improve this habitat include habitat restoration, weed/invasive management, fire/fuels management, as well as promoting proper grazing allotment and horse and burro management, all of which are discussed below.

Grazing

There are two active grazing allotments on the GBNM. Lime Spring Allotment is entirely within the GBNM and consists of approximately 3,596 acres of public land. It is administered by the Arizona Strip Field Office (ASFO) through agreement with Nevada BLM. The agreement for allotment management by ASFO pre-dates the creation of the GBNM. The Lime Spring Allotment is designated as available for livestock grazing as an ephemeral allotment in the ASFO Resource Management Plan (2008). The allotment has a term grazing permit for ephemeral use; as such grazing is authorized on a year-by-year basis dependent on available forage. This allotment was authorized for use in FY 2019. It is expected that the grazing permittee would apply to use the allotment in FY 2020 and in the foreseeable future.

The Mesquite Community Allotment is also administered by the ASFO. Approximately 6,515 acres, or 13 percent, of the Mesquite Community Allotment is within the GBNM. The rest of the allotment is divided between the Grand Canyon-Parashant National Monument and the ASFO in Arizona. The allotment is designated as available for

grazing in the ASFO Resource Management Plan (2008). There is an active term grazing permit for the allotment. The allotment was grazed in FY 2019. It is expected that grazing use would continue in the reasonably foreseeable future.

No grazing permit renewals were completed in either allotment in FY 2019. The Mesquite Community Allotment was monitored in FY 2019 but there are no monitoring locations within the GBNM. The Lime Spring Allotment was not monitored in FY 2019.

There were no new range improvement projects completed on either allotment within the GBNM in FY 2019. Regular maintenance of existing improvements was completed through cooperative agreement with grazing permittees.

There has been no change to authorized Animal Unit Months (AUMs) since the creation of the GBNM.

Partnerships

Friends of Gold Butte

The mission of Friends of Gold Butte (FOGB) is “to promote the responsible enjoyment of the Gold Butte National Monument through education, stewardship, advocacy, and preservation of natural and cultural resources.”

The BLM has entered a Memorandum of Understanding (MOU) with the FOGB as a joint effort to protect, monitor, and sustain the natural and cultural resources; increase public awareness, increase educational and interpretive resources; enhance and restore areas that have experienced human-caused or natural adverse effects; and enhance the quality of recreational opportunities in GBNM in a way that also protects the landscape.

Friends of Nevada Wilderness

The mission of Friends of Nevada Wilderness (FONW) is “preserving all qualified Nevada public lands as wilderness, protecting all present and potential wilderness from ongoing threats, educating the public about the values of and need for wilderness, and improving the management and restoration of wild lands.”

The FONW led and participated in various volunteer projects that included habitat restoration, portal sign installation, fence repair, and parking area delineation.

Partners in Conservation

The mission of Partners in Conservation (PIC) “is an information conduit that fills the gap between rural communities and government entities; develops specific partnerships to resolve conservation, recreation, and public land issues; PIC also

develops specific partnerships and administers common-sense projects that provide win-win opportunities for all involved.”

PIC provides the BLM insight on the thoughts and concerns from the rural communities that surround GBNM.

Virgin Valley Water District

The Virgin Valley Water District (VVWD) has numerous water rights within the monument. These water rights are critical to meet the future water needs of the communities of Bunkerville and Mesquite. The Las Vegas Field Office continues to work collaboratively with the VVWD to ensure that rights-of-way for water delivery needs are authorized. The VVWD and BLM developed a Memorandum of Understanding that established a vision, common goals, and objectives to meet water delivery and conservation needs.

Volunteers

Volunteers installed barriers at a camping/vehicle staging area during the National Public Lands Day event.

Volunteers conducted restoration in Jumbo Springs Wilderness with the assistance of Friends of Nevada Wilderness. They repaired a 110-foot long barrier and restored 657 linear feet of unauthorized vehicle incursions.

A total of 80 volunteers, for a total of 4,000 hours, participated on various volunteer projects that included habitat restoration, seed collection, fence repair, trash pickup, and sign installations.

Wild Horse and Burro

The Acceptable Management Level (AML) for wild burros in the Gold Butte herd management area (HMA) is 22-98 animals. Current population estimates as of September 2019 are approximately 400 wild burros. These numbers include animals that reside on BLM-administered lands within the HMA and do not account for animals that may be residing on lands administered by the National Park Service or land outside of their HMA, either publicly or privately owned. The last aerial population inventory of Gold Butte HMA was conducted in 2019.

Public Access

Six safety and 14 directional signs were installed along Gold Butte Backcountry Byway with the assistance of the FOGB. The signs were funded through a grant from the Nevada Off-Highway Vehicle (OHV) Grant Program.

Habitat Restoration

GBNM is part of a landscape-scale re-vegetation project undertaken by the BLM SNDO in conjunction with the U.S. Geological Survey (USGS), the National Park Service, and the Great Basin Institute. The goal of the project is to re-establish three important shrub and yucca species that have not recovered well since wildfires burned thousands of acres of habitat in 2005. The project uses established and novel restoration approaches. During FY 2019, BLM seeded and planted 24 “habitat islands” (each covering approximately 2.5 acres) distributed across an approximately 500-acre area. If successful, the habitat islands will eventually provide seed and other ecological functions for surrounding burned areas.

In October 2018, prior to seeding and planting, herbicide was aerially applied to approximately 75 acres to suppress non-native annuals and create fuel breaks. Half of the habitat islands were placed in these treated areas. USGS researchers will monitor the habitat islands over a five-year period to determine if herbicide treatments aid the recovering of native treatments and/or reduce the risk of subsequent fires.

SNDO is expanding on this research project by also studying weed treatments in unburned areas. SNDO has partnered with Department of Agriculture’s Agriculture Research Service (USDA - ARS) to study how weed treatments in areas invaded by invasive annual grasses and invasive annual plants affect native plant communities. A pre-emergent herbicide treatment was completed for 150 acres in Gold Butte in November 2019. Researchers will study the effects of the treatment in the spring of 2020.

Weed Management

The Backcountry Byway was inventoried for weeds and invasive plant species within GBNM. Tamarisk, or salt cedar, continues to be an issue in many previously treated springs. No new springs were inventoried in FY 2019. Heavy populations of salt cedar occur along the Virgin River and near Lake Mead. Sahara mustard continues to be found spreading into GBNM along the Backcountry Byway. Small infestations have been detected as far into the Monument at Whitney Pocket. Puncturevine has also been spotted along the Backcountry Byway. These infestations are currently small. Tamarisk at springs continue to be monitored and treated. About 80 Malta starthistle plants were removed at one spring in 2019. In 2019, dense populations of red brome and cheatgrass were found throughout GBNM in both burned and unburned areas.

Fire Management

The first large fire since 2005 burned in southern GBNM in 2019. The Bonelli Peak Fire was caused by lightning on July 24, 2019 and was contained on July 29, 2019. The fire burned 4,465 acres on public lands within the GBNM. The fire was managed with a full-

suppression strategy by ground and air resources including a Nevada Type 3 Team. Little to no suppression damage occurred because poor access, rugged terrain, and extreme daytime temperatures limited on-the-ground suppression activities. Use of aviation firefighting resources proved critical in the suppression of this fire. The fire damaged the Gold Butte HMA as well as desert tortoise, desert bighorn sheep, and Gambel's quail habitat. An emergency stabilization and rehabilitation (ESR) plan was completed. ESR treatments and activities are scheduled for FY 2020.

3

Science

Science

The BLM has partnered with Northern Arizona University (NAU) to study the restoration of rare plants using biological soil crusts on gypsum soils within GBNM. NAU obtained funding through the National Landscape Conservation System's annual grant program in the amount of \$25,000. Their work will try to restore impacted gypsum soils that have been crushed by illegal OHV use or by trampling by wild burros or non-permitted cattle. The project is important because three of the sensitive species in GBNM (one of which is state listed as endangered) only grow on gypsum soils and are often associated with healthy biological soil crust (BSC) communities. These BSCs are important in helping the rare plants to obtain nutrients and hold water. Results of this study will improve habitat for rare plants within the GBNM and give the BLM more information about how to restore habitat for these rare plants elsewhere.

Researchers with the U.S. Geological Survey are currently collecting data on vegetation responses, herbicide effects, small mammal distribution, and costs and benefits associated with three experimental restoration techniques. Final implementation of the project in fall 2019 will be followed by three years of vegetation sampling, analysis, and several planned publications. The project is the first attempt at landscape-scale restoration in Mojave Desert tortoise habitat. The carefully planned associated studies will help the BLM develop best management practices for restoration of burned habitat.

4

Resources, Objects, Values and Stressors

Cultural/Archeological

GBNM contains an extraordinary variety of diverse and irreplaceable historic and prehistoric cultural resources, including many sites important to the history and identity of Native Americans, and remnants of our Western mining and ranching heritage. The landscape reveals a story of thousands of years of human interaction with this harsh environment and provides a rare glimpse into the lives of Nevada's first inhabitants, the rich and varied indigenous cultures that followed, and the eventual arrival of Euro-American settlers.

GBNM's dynamic environment has provided food and shelter to humans for at least 12,000 years. Remnants of massive agave roasting pits, charred remains of goosefoot and pinyon pine nuts, bone fragments, and projectile points used to hunt big horn sheep and smaller game serve as evidence of the remarkable abilities of indigenous communities to survive across this desert landscape. GBNM contains ancient rock shelters and hearth remnants concealed in the area's Aztec Sandstone formations. This sandstone is the canvas for the area's spectacular array of rock art, depicting human figures, animals, and swirling abstract designs at locations like the famed Falling Man petroglyph site and Kohta Circus. Pottery sherds and other archaeological artifacts scattered throughout the landscape reveal the area's role as a corridor for the interregional trade of pottery, salt, and rare minerals.

By the time Spanish explorers arrived in the region in the late eighteenth century, the GBNM was home to the Southern Paiute people, who to this day retain a spiritual and cultural connection with the land and use it for traditional purposes such as ceremonies and plant harvesting. Hunters and settlers of European descent followed the explorers and Mormon pioneers had built settlements in the region by 1865.

Early settlers grazed livestock and explored GBNM's unique geology in pursuit of mining riches. Their activities left behind historic sites and objects that tell the story of the American West, including the Gold Butte Townsite, a mining boomtown established in the early 1900s, but mostly abandoned by 1910. Several building foundations and arrastras – large flat rocks used for crushing ore – remain at the townsite today. Settlers built corrals out of wood or stone, some of which are still standing in GBNM, including one near the Gold Butte Townsite and one at Horse Springs along the Gold Butte Backcountry Byway. In the 1930s, the Civilian

Conservation Corps was put to work in the area, leaving behind a variety of historic features including a dam and remnants of a camp in the Whitney Pocket area in the northeastern region of GBNM.

These world-renowned archeological sites and objects are helping scientists to better understand interactions between ancient cultural groups.

Cultural/Archeological Status and Trend Table

Status of Resource, Object, or Value	Trend
Fair	Slowly declining

Cultural/Archeological Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
296,937	31,196	539	30

Stressors Affecting Cultural/Archeological

Cultural resource sites are under imminent threat from the impacts of recreational use, which have already resulted in the dismantling of archeological features and other damages due to foot traffic and unauthorized artifact collection. Sites most affected by this unauthorized collection are rockshelters with associated artifact scatters, as well as areas that are likely to contain human burials. Common impacts to petroglyph areas in the region are graffiti and scratching on the panels and glyphs. Other impacts to the sites in GBNM are trash/dumping, firearm use, campfires, unauthorized vehicle use, and non-permitted cattle grazing.

Desert Tortoise

Habitat for the Mojave population of the desert tortoise is below 4,500 feet elevation in the creosote bush-bursage series of the Mojave desert scrub biome. Dominant plants are creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*). Desert tortoise habitat may also include various cacti species (*Opuntia* spp.), saltbush (*Atriplex* spp.) scrub, and Joshua tree (*Yucca brevifolia*) forests at elevations up to approximately 5,000 feet.

Primary constituent elements for the desert tortoise are those physical and biological attributes that are necessary for the long-term survival of the species. These elements are: sufficient space to provide for movement, dispersal, and gene flow; sufficient quantity and quality of forage species and the proper soil conditions to provide for the

growth of such species; suitable substrates for burrowing, nesting, and overwintering; burrows, caliche caves, and other shelter sites; sufficient vegetation for shelter from temperature extremes and predators; and habitat protected from disturbance and human-caused mortality.

Mojave desert tortoises are typically active during the day and when annual plants are most abundant—during spring and early summer; however, they can also be active following rain events and unseasonably warm periods during fall and winter. If rain events occur at night, tortoises may emerge from their burrows to drink. Female desert tortoises construct nests during the late afternoon and evening and any desert tortoise may emerge from its burrows at night during extreme heat. Desert tortoises usually spend the remainder of the year in shelter sites escaping the extreme weather conditions of the Mojave Desert.

Desert Tortoise Status and Trend Table

Status of Resource, Object, or Value	Trend
Good	Stable

Desert Tortoise Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
186,909	186,909	186,909	45,000

Stressors Affecting Desert Tortoise

GBNM continues to experience an increase in visitation. Increased visitor use and vehicle traffic increase risks to tortoise and their habitat by direct mortality and disturbance through use by visitors in occupied tortoise habitat.

Motorized recreation results in mortality and permanent habitat loss from activities that fragment and degrade habitats, which include the proliferation of roads and trails and increased habitat invasion by nonnative invasive species.

Non-motorized recreation such as camping, hunting, target shooting, rock collecting, hiking, horseback riding, biking, and sightseeing can also result in impacts to both tortoise and their critical habitat from increased visitation.

Increased frequency of wildfire due to the invasion of non-native plant species has burned thousands of acres of tortoise habitat. Changes in plant communities caused

by non-native plants and recurrent fire can negatively affect the desert tortoise by altering habitat structure and species available as food plants.

Vegetation

The 296,937-acre GBNM ranges in elevation from 1,420 feet – 8,051 feet and hosts a diversity of plant and wildlife species due in part to the convergent vegetation influences of the Mojave, Great Basin, and Sonoran deserts and the Colorado Plateau. The steep elevation gradients and complex orthography of the basin and ranges can affect localized seasonal temperature and precipitation patterns. The most common habitat types include Mojave mixed scrub and creosote (*Larrea tridentata*) – bursage (*Ambrosia dumosa*) desert scrub. Substantial wash systems and geomorphologic formations such as rocky outcrops, erosional highlands and sand sheets provide a unique range of habitat types for many organisms and plant communities.

There are seven sensitive plant species within GBNM; Las Vegas bearpoppy (*Arctomecon californica*), Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*), three-cornered milkvetch (*Astragalus geyeri* var. *triquetrus*), Blue Diamond cholla (*Cylindropuntia multigeniculata*), Beaver Dam breadroot (*Pediomelum castoreum*), sticky buckwheat (*Eriogonum viscidulum*), and chalk liveforever (*Dudleya pulverulenta*). There is also a sensitive moss, *Didymodon nevadensis*, which occurs on gypsum soils within the monument. Two of these plant species are state endangered. This is the highest concentration of sensitive plant resources that occurs within a special protection area in southern Nevada, with exception of Ash Meadows National Wildlife Refuge (which has one of the highest rates of endemism in the country).

Large-scale fires in 2005 burned many acres of native vegetation in the GBNM, most of which has become a monoculture of red brome, an invasive grass species. These fires and the coupling of invasive species' presence is detrimental to native plant communities. Additionally, heavy grazing pressure exists in the GBNM from over 15 years of non-permitted cattle grazing and overpopulated herds of wild burros. BLM Assessment, Inventory, and Monitoring (AIM) data over the last seven years shows high cover of invasive annual grasses throughout the GBNM, almost no native perennial grasses where one would expect to see high cover of perennial grasses due to the site potential, and moderate to extreme departures from reference conditions due to all of these factors.

Vegetation Status and Trend Table

Status of Resource, Object, or Value	Trend
Poor	Stable

Vegetation Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
296,937	296,937	296,937	150,000

Stressors Affecting Vegetation

Fire, invasive species, overpopulated wild burros, and non-permitted cattle grazing are all responsible for negatively impacting vegetation resources. Negative feedback loops exist between all four issues. Invasive species, most notably red brome, have become monocultures in burned areas from large fires in 2005 in the GBNM. These plants are more susceptible to future fires and crowd out native plants. Non-permitted cattle grazing has put pressure on native plant communities, particularly forage plants, for the past 15 years. This vast grazing pressure, on top of grazing pressure by wild burros, reduces the amount of forage plants (notably perennial grasses), that remain on the landscape.

When added to the amount of area burned in the GBNM, very little native forage remains for native wildlife species and native plant communities are not able to recover from fire or grazing. These heavily impacted vegetation communities are not resilient to other outside stressors and therefore, cannot recover easily after fire, OHV intrusion, or climate impacts. Over time, these other stressors will further degrade vegetation communities in GBNM unless serious steps are taken to alleviate these pressures.

Wild Horse and Burro

Wild horses and burros can be found throughout 10 western states, including Nevada. The wild burros (burro is the term used for a wild donkey) are the descendants of donkeys that were released by miners who resided within the area during the late 19th/early 20th century.

Wild Horse and Burros Status and Trend Table

Status of Resource, Object, or Value	Trend
Good	Stable

Wild Horse and Burros Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
170,354	Acres inventoried within the herd management area (HMA) are limited to vehicle accessibility and therefore, vary. Key forage species are inventoried each spring in 15-25 different areas within the HMA to monitor the amount of forage being consumed within the HMA.	170,354	Acres monitored within the herd management area (HMA) are limited to vehicle accessibility and therefore, vary. A full aerial survey of the HMA was conducted in FY19. With the use of a helicopter, transect lines spaced ½ to ¾ of a mile apart are flown throughout the entirety of the HMA and the surrounding areas using the simultaneous double count method. Data is then verified and analyzed by the United States Geological Survey before distribution to the BLM and the public.

Stressors Affecting Wild Burros

Wild burros are dependent upon vegetation and natural spring resources found within GBNM. The drought that has occurred over the past several years has affected both resources in a negative way. Wildfire has affected vegetation production within the HMA, creating room for invasive species, such as red brome and cheat grass that have replaced more highly palatable species, such as *Ephedra nevadensis*, big galleta, and Indian ricegrass. The drought has affected the hydrology of the HMA and as a result many water resources go dry, either temporarily or in some cases permanently. This has resulted in many of the burros moving to and residing permanently on National Park Service and private lands.

Overpopulation may be affecting wild burro populations due to the limited resources that are present within the national monument. Wild burro populations double every four years due to having very few natural predators and having a highly successful rate of raising foals. As herd numbers increase it puts further strain on the limited resources within the Mojave Desert ecosystem. Acceptable Management Levels (AML) are established based off modern rangeland monitoring and scientific methods and are periodically updated to ensure that rangeland health standards are being met within herd management areas. For wild burros, the AML is 22-98 animals.

Invasive Species/Noxious Weeds

Nevada State listed noxious weed species found in GBNM include Malta starthistle (*Centaurea melitensis*), saltcedar (*Tamarix ramosissima*), Sahara mustard (*Brassica tournefortii*) and puncturevine (*Tribulus terrestris*). The Nevada Department of Agriculture categorizes state listed noxious weeds into three categories: A, B, and C. Category A noxious weeds are subject to active exclusion and eradication wherever found, Category B weeds require active exclusion where possible, and Category C weeds require active eradication from the premises of a dealer of nursery stock. Malta starthistle is classified Category A, indicating the occurrence of these species is limited throughout the state, thus all infestations must be actively controlled with the goal of eradication. Sahara mustard is classified Category B and must be excluded where possible. Saltcedar and puncturevine are Category C noxious weeds, indicating the species are generally well established and widespread in Nevada. Historically, puncturevine populations have been small in southern Nevada but appear to be expanding. Tamarisk and Sahara mustard are known to contribute to wildfire problems. Puncturevine "fruit" have spines which can cause injury to livestock and humans and can also puncture tires. Puncturevine foliage can be toxic to livestock.

There are also species in Gold Butte that are non-native and invasive but legally not designated as noxious by the State of Nevada. The following invasive plant species

can be found in GBNM: Various brome species (*Bromus rubens*, *Bromus tectorum*, and *Schismus spp.*), London rocket (*Sisymbrium irio*), African mustard (*Malcolmia africana*), and Russian thistle (*Salsola spp.*). Tamarisk, or salt cedar, has re-sprouted in many previously treated springs. No new springs were inventoried in FY2019. Heavy tamarisk populations occur along the Virgin River and near Lake Mead. Sahara mustard was found spreading into Gold Butte along the scenic byway. Small infestations were detected as far into the monument as Whitney Pocket. Puncturevine has also been spotted along the byway. These infestations are reported as small. In 2019, above average brome grass populations contributed to heavy fine fuel loading which led to the Bonelli Peak Fire.

Invasive Species/Noxious Weeds Status and Trend Table

Status of Resource, Object, or Value	Trend
Fair	Declining

Invasive Species/Noxious Weeds Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
296,937	40,000	30,000	5

Stressors Affecting Invasive Species/Noxious Weeds

GBNM is an important regional destination and more people are expected to visit Gold Butte. Increased visitation will potentially bring more disturbance and invasive plant seeds to the area. This could increase the amount of invasive and weed species already in the area and bring new invasive species to the area. OHV can disturb soils which will create an area for invasive species to grow. Wildfires create large swaths of disturbance where invasive species thrive, and native species have very poor recruitment. The effects of previous fires are still obvious. Weather patterns in the area of GBNM are critical because changes in precipitation patterns and temperature affect plant communities. Increased precipitation can help native species in a harsh environment but can also lead to an increased grass crop that contributes to the annual grass-fire cycle. Above average precipitation in the spring of 2019 resulted in an above average brome grass in 2019. Non-permitted cattle grazing is contributing to the spread of invasive annual grass, other fire prone invasive species, and noxious weeds. Gold Butte AIM data is showing that the area is trending towards type conversion from native plant species to invasive annual grass. Increased brome grass is likely to lead to an expanding invasive annual grass fire cycle.

Wildland Fire and Fuels

Wildfires can benefit ecosystems or damage them. Much of the Mojave Desert, including much of the GBNM, is not fire adapted. The desert tortoise and its habitat are not fire adapted. Historically, infrequent low to moderate severity fire played a role in some native plant communities, promoting plant and wildlife habitat diversity in a mosaic pattern. Most native plant populations in the Mojave Desert are discontinuous and usually do not support fire spread. As a result, wildfires under normal conditions tend to be small. This condition has changed in the presence of plant invaders.

Wildfire size in Gold Butte has ranged from 0.1 to over 80,000 acres. In 2005, over 100,000 acres burned in GBNM during the Southern Nevada Complex, primarily due to the abundance of invasive annual grass present at that time. In 2019, extensive invasive annual grass filled in native plant interspaces and created a continuous combustible fine fuel bed, especially in previously burned areas. This resulted in the first large fire in GBNM since 2005. The 2019 Bonelli Peak Fire had the potential to re-burn much of the area burned in 2005 however, firefighters were able to contain and control the fire at less than 5,000 acres through safe and effective fire response.

The primary fuels and fire management objective in GBNM is for public and firefighter safety through safe and effective fire response. Fuels management and restoration activities seek to reduce wildfire risk by maintaining or restoring native plant communities and preventing or reducing invasive plant infestations. Also important is preventing human caused fires through enforcement, education, and outreach activities.

Fire/Fuels Status and Trend Table

Status of Resource, Object, or Value	Trend
Fair in unburned areas. Poor in burned areas.	Declining

Fire/Fuels Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
296,937	50,000	50,000	0

Stressors Affecting Fire/Fuels

Previously burned areas have not recovered and invasive brome grass dominates burned areas. Years of non-permitted cattle grazing have contributed to decreased

land and ecosystem health through direct impacts to native plant communities. This is supported by BLM AIM data. Native GBNM grasses are considered ephemeral, which means they only occur when favorable weather conditions such as sufficient precipitation are present to promote growth. The GBNM is within the Mojave ecoregion. The Mojave Desert is known for its very low annual precipitation. Native and invasive plant species are very dependent on precipitation frequency and occurrence. Cattle are known vectors for spreading noxious and invasive plant species including cheatgrass and red brome. The conversion of native plant communities to fire prone invasive annual grass is the primary stressor. Wildfires burning in cheatgrass or red brome typically remove and replace native vegetation. Because of invasive annual grass, propagule pressure, and the presence of noxious weeds on adjacent lands, future wildfires will continue to be problematic.

There is a need for increased enforcement, public outreach and education on wildfire hazards and the impacts of wildfire to the environment. Human caused fires account for more than 50 percent of all wildfires in southern Nevada. Future increased visitor use is likely to increase human caused fires in GBNM.

GBNM AIM data has documented a significant shift from native plant species to highly combustible plant invaders. This trend means an expanding annual grass fire cycle is likely to result in type conversion to invasive annual grass at the landscape level. Increased presence of invasive annual grass above historic levels is an indicator there is an increased risk for large, catastrophic fires in the GBNM. LVFO's Restoration Program has initiated the Burn Area Recovery Project with the intent to promote and restore native vegetation and reduce invasive annual grass in burned areas. The Bonelli Peak Fire Emergency Stabilization and Rehabilitation (ESR) Plan includes measures to control plant invaders and promote natural recovery.

Hydrologic Conditions

GBNM is located within the Colorado River hydrographic region or basin. The region is further divided into three hydrographic areas (listed below) which are partially contained within the planning area.

Hydrographic Area	Region/Basin	Number
Virgin River Valley	Colorado River Basin	222
Gold Butte Area	Colorado River Basin	223
Greasewood Basin	Colorado River Basin	224

The three hydrographic areas within the Colorado River Basin are tributaries to the Colorado River. Approximately 210,000 acres, or 71 percent, of the national monument

drain into the Gold Butte Area Hydrographic Basin and 70,000 acres, or 24 percent, drain into the Greasewood Basin, both of which contribute to Lake Mead and the Colorado River. The remaining 15,000 acres, or 5 percent, of the GBNM drain into the Virgin River Valley Hydrographic Basin and eventually into the Virgin River and to the Colorado River.

Surface Water

Surface water occurrence is far less abundant than groundwater and is limited to springs and ephemeral streams. Streams such as Nickel Creek and Cabin Canyon Creek, during most years, flow short distances for short periods of time, primarily during early spring. Numerous ephemeral washes transect the area, conveying flows only in response to storm events. These drainages are subject to short-duration, high-intensity thunderstorms which produce rapid runoff and, at times, flash flooding of downslope areas. Mud Wash and Quail Spring Wash are the more significant drainages; however, there are no drainages or areas within the monument that are classified as Flood Hazard Areas by the Federal Emergency Management Agency (FEMA).

High-intensity thunderstorms often produce rapid runoff and flash flooding which can result in floodwater and sediment damage within the region. Flash flooding, which has been on the increase, usually occurs from tropical depressions out of the south or southwest.

Springs are important water sources in the monument as with the rest of southern Nevada. A total of 128 springs have been identified within the planning area. The average flow of these springs is less than one (1) gallon per minute (gpm), with some springs being nothing more than a seep area with little discernable flow, while others measured as high as three (3) gpm.

Groundwater

Groundwater is vital in this region of few surface water sources. Depth to water varies throughout the monument, but it can be generally characterized as ranging from at or near the surface to several hundred feet.

Most groundwater recharge in southern Nevada is derived from winter and spring precipitation, representing approximately one-half of the total annual precipitation. The moisture is stored in snowpack at elevations of 7,000 feet and higher. Precipitation reaches the groundwater reservoirs by way of streams which eventually discharge onto alluvial aprons or by infiltrating directly into consolidated rock and percolating vertically and laterally to the valley fill aquifer. Additional inflow is received from

localized intense storms and groundwater discharge from adjacent areas. Natural discharge of groundwater in the basins occurs as a result of transpiration from phreatophytes (deeply rooted plants that obtain water from the water table or the soil layer just above it), spring discharge, evaporation from bare soil, interbasin flow, and base flow to streams.

Water Quality

In southern Nevada, one critical water resource problem is the poor quality of much of the surface and ground water. Several factors contribute to the high quantities of chemicals and solids in the regional water. High evaporation rates leave concentrations of salts at or near the soil surface after rainfall. The composition of rocks and soils, often containing calcium, magnesium, carbonates, silicates, metallic and nonmetallic minerals, also affects water quality. As water moves slowly into and through the soil profile, it dissolves and acquires these constituents. In addition, dust containing salts is blown from playas onto standing surface water and onto soil where it enters both surface and groundwater.

Levels for turbidity, total dissolved solids, sulfate, chloride, manganese, iron, and nitrate nitrogen exceeded Federal standards in several springs. Many of these levels do not pose health hazards; only nitrate nitrogen is potentially dangerous.

The quality of groundwater varies throughout the GBNM, as it does in the remainder of the state. In general, groundwater in areas of recharge has low chemical concentrations, but as it moves through the groundwater system to discharge areas (i.e. valley bottoms), it dissolves sediment and rock materials. The extent to which chemical constituents are dissolved is largely determined by these factors: 1) the solubility, volume, and distribution of the materials; 2) the length of time that the water is in contact with the materials; 3) the distance that the water travels from the point of recharge; and 4) the temperature and pressure within the groundwater system.

Hydrologic Conditions Status and Trend Table

Status of Resource, Object, or Value	Trend
Poor	Stable

Hydrologic Conditions Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
N/A	N/A	N/A	N/A

Stressors Affecting Hydrologic Conditions

Impacts to surface water resources result from both natural and anthropogenic forces. Natural impacts include erosion from wind and water, wildland fire, disturbance from wildlife, and high precipitation events resulting in high flow. Anthropogenic impacts include driving off-road vehicles; grading for rights-of-ways, unsustainably high numbers of wild burros and non-permitted livestock; roads, trails and associated drainage; dumping; invasive weeds; and water use by water rights holders.

Riparian/Wetlands

Riparian and wetland areas are sensitive vegetative or physical ecosystems that develop in association with surface or subsurface water. Riparian and wetland ecological systems comprise only a small portion of the GBNM, but they are among the most important, productive, and diverse ecosystems on the landscape. Benefits from riparian/wetland ecosystems are essential to both human and wildlife values and includes the following:

- Maintaining clean renewable water supplies;
- Providing for diverse plant and wildlife ecosystems, including special status species;
- Importance in cultural and historic values;
- Greenbelt-associated recreation and scenic values;
- Thermal/shade protection, which is especially important within the arid Southwest.

Riparian and wetland areas include, but are not limited to, areas adjacent to waterways (whether waters are surface, subsurface, or ephemeral), springs, potholes, wet meadows, floodplains, and reservoirs. Riparian areas are recognized as a form of wetland transition between permanently saturated wetlands and upland areas. For BLM purposes, riparian and wetland areas are referred to synonymously unless specifically discerned. The BLM utilizes various tools to describe, analyze, and evaluate riparian/wetland ecosystems relative to their potential and capability to achieve a properly functioning and healthy ecosystem.

Riparian habitats are fragile resources and are often among the first landscape features to reflect impacts from management activities. These habitats are used as indicators of overall land health and watershed condition. A healthy riparian system will filter and purify water as it moves through the riparian zone; reduce sediment loads and enhance soil stability; reduce destructive energies associated with flood events; provide physical and thermal micro-climates in contrast to surrounding

uplands; and contribute to groundwater recharge and base flow. Within most riparian systems in the arid southwest, the potential of a riparian ecosystem is strongly dependent upon the availability of water. The degree, timing, and source of water availability, among other physical factors, is commonly referred to in terms of perennial (yearlong), interrupted (perennial flow discontinuous in space), intermittent (seasonal), or ephemeral (storm) water sources.

Riparian/Wetlands Status and Trend Table

Status of Resource, Object, or Value	Trend
Poor	Stable

Riparian/Wetlands Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
500	500	500	1

Stressors Affecting Riparian/Wetlands

Riparian resources within the monument are limited. These resources are managed for conservation and public use. Impacts to surface water resources result from both natural and anthropogenic forces. Natural impacts include erosion from wind and water, wildland fire, disturbance from wildlife, and high precipitation events resulting in high flow. Anthropogenic impacts include driving off-road vehicles; grading for rights-of-ways, unsustainably high numbers of non-permitted livestock as well as wild burros; roads, trails and associated drainage; dumping; invasive weeds; and water use by water rights holders.

Soils

Throughout the GBNM area, there is a sharp contrast in physiography between mountainous areas and lowlands. Soils in the area developed under different environmental influences. Under the arid conditions which prevail at all but the highest elevations, little downward movement of the soluble constituents of the soil occurs. Most leaching is confined to the translocation of the soluble material (usually lime) from the surface to the subsoil, with the resultant formation of a hardpan. These soluble salts are usually leached only to a depth of one to two feet.

In this climate, rocks tend to break down by disintegration rather than by decomposition. Mechanical breakdown (spalling) is more common than chemical action. As a result, mountains are covered with a thin veneer of rock fragments. Cloud

bursts and showers sweep large quantities of this material into ravines and valleys, forming alluvial fans of the coarser material. Finer-grained sediments are washed into the lowlands.

Wind is also an active agent in soil genesis. Wind-blown sand is common, with the greatest accumulations found in the lower valleys, often forming dunes. Wind-blown silts, mixed with the fine alluvium washed down from the slopes, comprises the soil mantle of the lowlands. The term "blow sand" arises from the fact that much of the surface soil is wind deposited.

Organic matter in most desert soils is far less than the average 3 to 5 percent by weight contained in soils formed in humid regions. Even in a wet year when spring annuals are abundant, much of the vegetal matter is oxidized by the summer heat before it can be turned into humus. A gravelly surface, referred to as "desert pavement", can be found in the monument. A desert pavement is an arid land surface that is covered with closely packed, interlocking angular or rounded rock fragments of pebble and cobble size. A notable feature of desert pavements is the development of the so-called "vesicular A" soil horizon just below the surface of pebbles, gravels, and small stones that form the ground surface of desert pavement. The soil horizon layer consists of dust-sized wind-deposited particles underneath the pavement. Most of the particulate matter consists of very fine silt and fine sand. The desert pavement surface is stable and resistant to erosion when not disturbed. Erosion is normally active on surfaces lacking a desert pavement. The sparse cover of vegetation does little to reduce wind and water velocities. Wind erosion is a major factor in recharging surface soils with carbonates through the movement and deposition of calcareous dusts.

Soils in the monument are primarily Entisols and Aridisols. These are described in detail below. The Entisols have little or no evidence of development of pedogenic horizons. They are located in areas where the soils are actively eroding (steep slopes) or receiving new deposits of soil materials (alluvial fans and floodplains).

Aridisols have one or more pedogenic horizons that may have formed in the present environment or that may be relics from a former pluvial period. These soils do not have water available to plants for long periods of time and the surface is generally bare. Aridisols are often associated with desert pavement.

Some areas of the GBNM support biological soil crusts (biocrusts: a soil surface consortium of cyanobacteria, mosses, and lichens) which can also be reduced or destroyed by fire. Biocrusts perform a variety of relevant functions which enhance habitat quality. They aggregate soil, reducing erosion susceptibility, a function that is

especially relevant where soils are naturally erodible, and rock cover is sparse. Biocrusts also create and maintain soil fertility. In some ecosystems present in GBNM, biocrusts enhance infiltration rates compared to uncrusted soils. Finally, they may also discourage invasion by exotic annual grasses. Restoration of soil health would be expected to promote vegetation recovery.

Soils in the GBNM have been surveyed previously by the Natural Resources Conservation Service (NRCS). Soils were mapped as a part of the Soil Survey of Clark County, Nevada, in 2006. The surveys contain detailed soils descriptions, supporting data, and maps.

Soil erosion involves two processes: 1) a detachment or loosening influence, and 2) transportation by means of floating, rolling, dragging, and splashing. Freezing and thawing; flowing water; and rain impact provide the detaching agents. Raindrop splash and especially running water facilitate the carrying away of loosened soil. On comparatively smooth soil surfaces, the beating of rain drops results in most of the detachment.

During the high intensity, short duration thunderstorms that are common in the region, raindrop impact tends to destroy soil aggregates, enhance sheet and rill erosion, and encourage considerable transportation by splashing. A hard crust often develops upon drying. This crust impedes seedling emergence, greatly reduces infiltration for the next storm, and limits the possibilities for vegetative shielding which, by absorbing the energy of rain impact, prevents the loss of both water and soil and reduces degranulation to a minimum. However, in some desert locations, this surface crust does cover loose, fine soil particles, resulting in limited protection from wind erosion. In the vegetation types offering generally sparse cover, little interception of precipitation or protection from overland flow of water occurs.

As is the case with water erosion, the loss of soil by wind movement also involves detachment and transportation. The abrasive action of the wind results in some detachment of tiny soil grains from the granules or clods of which they are a part. When the wind is laden with soil particles, its abrasive action is greatly increased. The impact of these rapidly moving grains dislodges other particles from soil clods and aggregates. The cutting and abrasive effects, especially of sand, upon tender leaves and vegetation is harmful.

Erosion susceptibility is a measure of the erosion potential of a soil whose surface has been disturbed. Wind and water erosion potential are used to determine susceptibility

in an area. Soil surveys conducted by the National Resource Conservation Service, were used in the development of erosion susceptibility ratings for the area.

Soils Status and Trend Table

Status of Resource, Object, or Value	Trend
Poor	Stable

Soils Inventory, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
296,937	296,937	296,937	0

Stressors Affecting Soils

Impacts to soil resources result from both natural and anthropogenic forces. Natural impacts include erosion from wind and water, wildland fire, disturbance from wildlife, and high precipitation events resulting in high flow. Anthropogenic impacts include driving off-road vehicles; grading for rights-of-ways, unsustainably high numbers of wild burros as well as non-permitted livestock; roads, trails and associated drainage; dumping; and invasive weeds preventing the formation of natural soil crust.

Wilderness

Within the Gold Butte National Monument there are two designated wilderness areas: Jumbo Springs and Lime Canyon Wilderness. These areas were added to the National Wilderness Preservation System by the Clark County Conservation of Public Lands and Natural Resources Act of 2002 (Public Law 107-282; November 6, 2002). The total acres of the two areas are: 4,760 Jumbo Springs Wilderness and 23,710 Lime Canyon Wilderness. Monitoring was not completed in either of these wilderness areas as there was no wilderness staff in FY 19.

Wilderness Status and Trend Table

Status of Resource, Object, or Value	Trend
Good	Stable

Wilderness, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
28,470	0	28,470	0

Stressors Affecting Wilderness

Various stressors affecting the wilderness character of each area are identified below. Wilderness character which are identified in the Wilderness Act are: untrammeled, natural, undeveloped, solitude or primitive and unconfined recreation, and unique/supplemental value. These qualities of wilderness character are best defined in “Keeping It Wild 2, An Updated Interagency Strategy to Monitoring Trends in Wilderness Character across the National Wilderness Preservation System.”

Impacts to wilderness character of both the Lime Canyon Mountain and Jumbo Springs Wilderness are identified below:

Untrammeled:

In FY 2019 there was no known trammeling actions; either administrative or unauthorized.

Natural:

Vehicle intrusions continue to remain a threat to wilderness character in the two areas. Invasive non-native vegetation, primarily cheat grass and red brome, continue to degrade wilderness character in the two areas.

The big horn sheep population in the wilderness areas remain viable, and hunting of them continue; however, these species continue to have potential threats to herd health.

Undeveloped:

Existing two-track routes remain in the areas.

Opportunities for solitude or primitive and unconfined recreation:

The areas continue to offer pristine opportunities for solitude and primitive and unconfined recreation. Jumbo Springs Wilderness is one of the most remote locations within the Southern Nevada District Office.

Helicopter use over these areas continues to degrade this wilderness character in these areas.

Unique/supplemental value:

Interest in cultural resources and potential collection or destruction, continue to remain a threat to this wilderness character.

Wilderness Study Areas

Wilderness Study Areas (WSAs) are part of the BLMs National Conservation Lands System (NCLS). WSAs are identified as containing wilderness characteristics and are managed in a manner that would not impair the suitability of the areas for preservation as wilderness, while these areas are under review by congress. While designated wilderness is managed to preserve wilderness character, WSAs differ in that they are identified as containing wilderness characteristics and managed by a non-impairment standard until congress acts on the areas. Within the GBNM there are two areas managed as WSAs, the Million Hills WSA and the Virgin Mountain Instant Study Area (ISA). The total acres of the two areas are: 21,692 in the Million Hills WSA and 6,560 in the Virgin Mountain ISA. There was no monitoring in any of these areas in FY 19, as there was no wilderness staff.

Wilderness Study Areas Status and Trend Table

Status of Resource, Object, or Value	Trend
Good	Stable

Wilderness Study Areas, Assessment, Monitoring Table

Acres in Unit	Acres Inventoried	Acres Possessing Object	Acres Monitored in FY
28,252	0	28,252	0

Stressors Affecting Wilderness Study Areas

Few stressors remain in the WSAs - primarily new motorized vehicle surface disturbance. In FY 2019 there were no administrative action and no known unauthorized action that would impair these areas from wilderness designation, if congress chooses to act.

5

Summary of Performance Measure

Please provide a brief qualitative summary of the status of Resources, Objects and Values listed in the previous section. This summary and the below table are intended to provide a simple overview of the prior section—no additional information is being requested here.

Resources, Objects, and Values Status Summary Table		
Resource, Object, or Value	Status	Trend
Cultural/Archeological	Fair	Slowly declining
Desert Tortoise	Good	Stable
Vegetation	Poor	Stable
Wild Horse and Burro	Good	Stable
Invasive Species/Native Weeds	Fair	Declining
Fire/Fuels	Fair	Declining
Hydrologic Conditions	Poor	Stable
Riparian/Wetlands	Poor	Stable
Soils	Poor	Stable
Wilderness/Wilderness Study Area	Good	Stable

6

Manager's Letter

It was very important to continue public outreach because of the sensitivity of the area. Moving forward, the BLM will continue to inform the surrounding communities and tribal governments regarding the projects and activities occurring within GBNM through attending tribal and town board meetings. These meetings have helped to bridge the information gap between the BLM and the surrounding communities and tribes.

As projects and activities move forward, the BLM will continue working closely with partners to build the volunteer program. The volunteer program and community support are essential elements of the GBNM management as current staff and resources within the BLM are limited.

As public interest in the GBNM grows, and visitation increases, the need for a permanent Monument Manager to provide regular attention to the resources, objects, and values of the GBMN becomes greater. The declining trends documented in this report are likely to continue without a long-term proactive management approach. Cultural resources will continue to be at risk from irresponsible visitation, graffiti, and theft. The expansion of noxious and invasive species will continue to increase the risk of wildfires.

The population in Las Vegas valley and the surrounding area continues to grow and with it the interest in outdoor recreation opportunities and tourism is increasing. Already popular southern Nevada destinations such as Red Rock Canyon, Lake Mead National Recreation Area, and Mount Charleston, are becoming ever more crowded. It is not uncommon for the scenic drive at Red Rock Canyon to restrict access during weekends and holidays when capacity is exceeded. Gold Butte is a true treasure in southern Nevada, and while it is unlikely to see the visitation numbers occurring at Red Rock Canyon, visitation will increase. Maintaining and improving upon the resources and experiences that are currently available will be important factors in the long-term planning and management of the GBNM.

Lee Kirk
Monument Manager (Acting)
Las Vegas Field Office
Southern Nevada District



**NATIONAL
CONSERVATION
LANDS**

Gold Butte

National Monument

Southern Nevada District
Bureau of Land Management
Las Vegas Field Office
4701 N. Torrey Pines Drive
Las Vegas, NV 89130
Phone: 702-515-5000

January 10, 2020

The mention of company names, trade names, or commercial products does not constitute endorsement or recommendation for use by the federal government.