



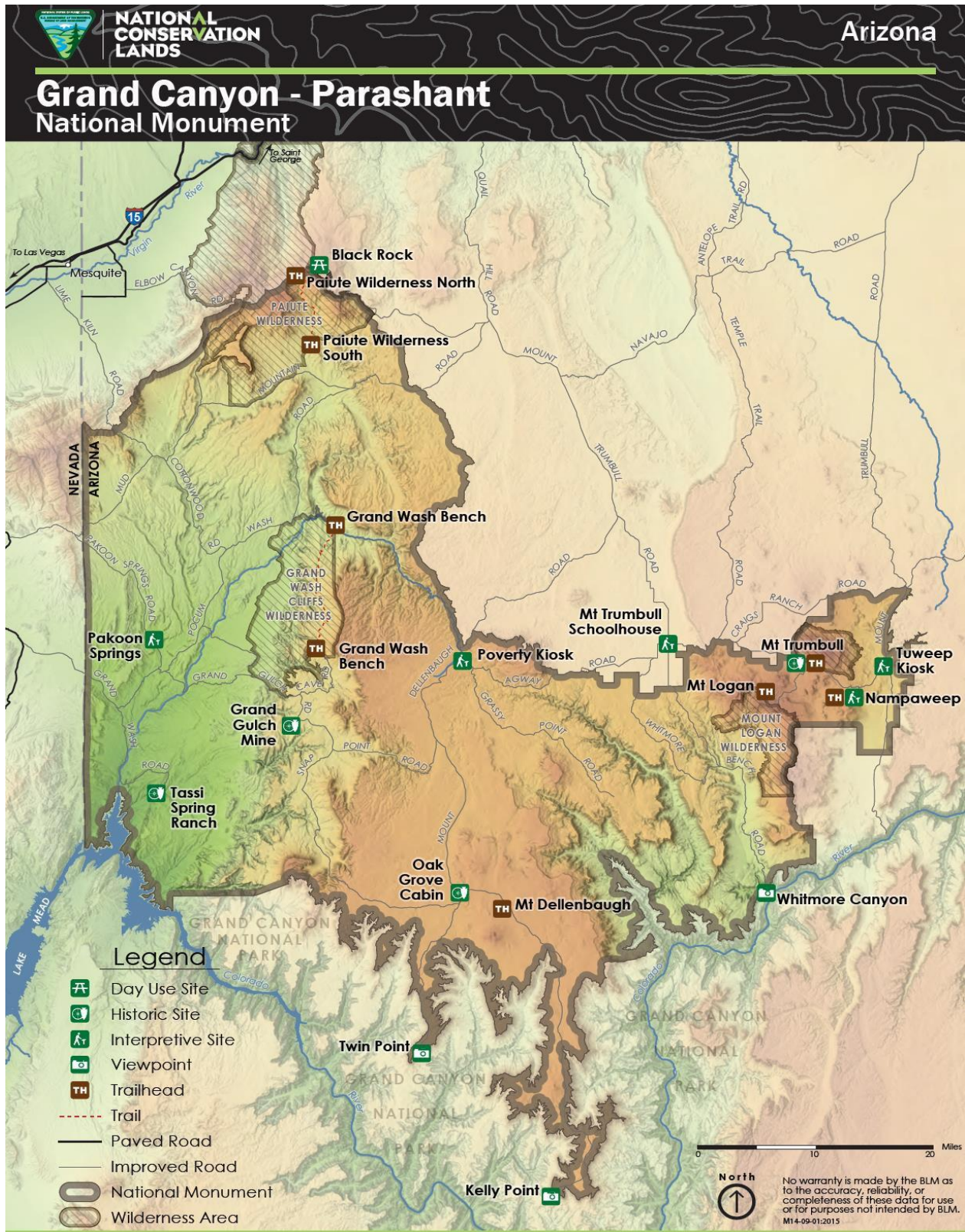
NATIONAL CONSERVATION LANDS

Arizona
2022: Annual Manager's Report

Grand Canyon-Parashant National Monument



Map



Accomplishments

Grand Canyon-Parashant National Monument (Monument) had many accomplishments this year, a few of which are listed below.

Starting in spring 2022, a new population of the rare relict leopard frog was established at Pakoon Springs. Working with the State of Arizona, Fish and Wildlife Service (FWS), universities, and other partners, one of the main long-term goals of the Pakoon Springs restoration project was achieved with their introduction. Additionally, an important step in the protection of the spring complex core, a burro-resistant pipe rail fence (a 3-4 rung fence made of well pipe), was completed with materials supplied by the Arizona Game and Fish Department and a combination of Bureau of Land Management (BLM) and National Park Service (NPS) staff and funds.

The Parashant Interpretation and Visitor Services program published a new 32-page guide booklet on the history and geology of the Grand Gulch Mine. It was published with funds from Special Recreation Permit revenue as a benefit to the public to help them better learn about the significance of this historic mine as they explore the site. This replaces the need for ground disturbance and costs associated with installing a series of wayside exhibits to tell the story while preserving the early 20th century viewshed of historic structures and mineworks.

Three new vault toilets at Tassi Ranch, Nampaweap Petroglyph Site, and the Grand Gulch Mine Airstrip were installed. These vaults were purchased through grant funding from the Arizona State Parks.



Challenges

The intensity and frequency of the “seven-year” flash flood events at the historic Tassi Ranch, a public use site, are increasing. Further, previous efforts in dealing with the drainage and control of the upslope spring waters have failed. Personnel from the Water Resources Division of the NPS are scheduled to assess possible mitigation efforts for the cyclical flash flooding and ongoing spring water issues in fiscal year 2023. The ranch house needs to be assessed for safety by a professional engineer before any removal of flood debris and sediments can occur.



Visitors

Monument visitation increased in 2022, with an estimated 91,188 visitors. The estimate is based on an array of traffic and trail counters across the Monument. These estimates were used to calculate 159,773 visitor days. Recreation staff purchased new traffic and trail counters that will gather more detailed data about visitor demographics and activities. Many visitors are public land permittees either through the grazing program or recreation. Solo hunters and guides are also counted as visitors.



Partnerships

Several partners worked with Monument staff during 2022. The Monument has long been associated with Southern Utah University's Intergovernmental Internship Cooperative (IIC). The IIC receives funding from the BLM and NPS through assistance agreements to support internships on the Monument. Both the BLM and NPS's funds are used to support Monument-wide internships under the Service First authority. In 2022, five interns worked on range, ecology, and recreation projects. BLM funding for youth internships that focused on tribes was used to connect the public to tribal cultures. The IIC interns installed interpretive kiosk panels about the Southern Paiute at the Nampaweap Petroglyphs Public Use Site in 2022.

The Monument has hosted the Yevingkarere Southern Paiute Youth Camp, at Mt. Trumbull, part of the tribes' ancestral homelands since 2007. The tribal youth, ages 10-12, are taught traditional ecological and cultural knowledge by elders. In 2020 and 2021, camps were cancelled to protect tribal elders during the COVID-19 pandemic. The camp resumed in 2022 with 18 youth in attendance. Two Monument volunteers spent 250 hours each configuring a large, enclosed trailer with complex wood shelving for camp supplies. This trailer was designated by the BLM for exclusive camp use. A close partnership with Southern Paiute tribes continues to help the Monument staff with projects that may affect tribal interests. Through consultations on various National Environmental Policy Act (NEPA) projects, Monument staff ensure that tribal concerns are heard, and that project implementation includes mitigation measures to protect tribal sacred sites.

The Public Lands Information Center (PLIC) in St. George, Utah, is an interagency visitor center that provides recreation information about federal, state, and local public lands in southwest Utah and northwest Arizona. This is also where the public gets permits for activities on BLM and U.S. Forest Service (USFS) lands for mineral collection and forest products. The PLIC had historically been run by the BLM Arizona Strip District Office and the Dixie/Arizona Strip Interpretive Association. In 2021, a Memorandum of Understanding tasked the NPS, BLM, and USFS to work cooperatively to manage the center, with direct oversight provided by the NPS. This has continued to be a success in 2022 as the three entities enjoy a productive and close working relationship to serve the public at the PLIC. Plans are now underway to transition the operation to a new building (currently under construction). This includes planning for interagency-focused interpretive and orientation maps as well as wall displays. New exhibits will be Americans with Disabilities Act and Architectural Barriers Act Accessibility Standard compliant.

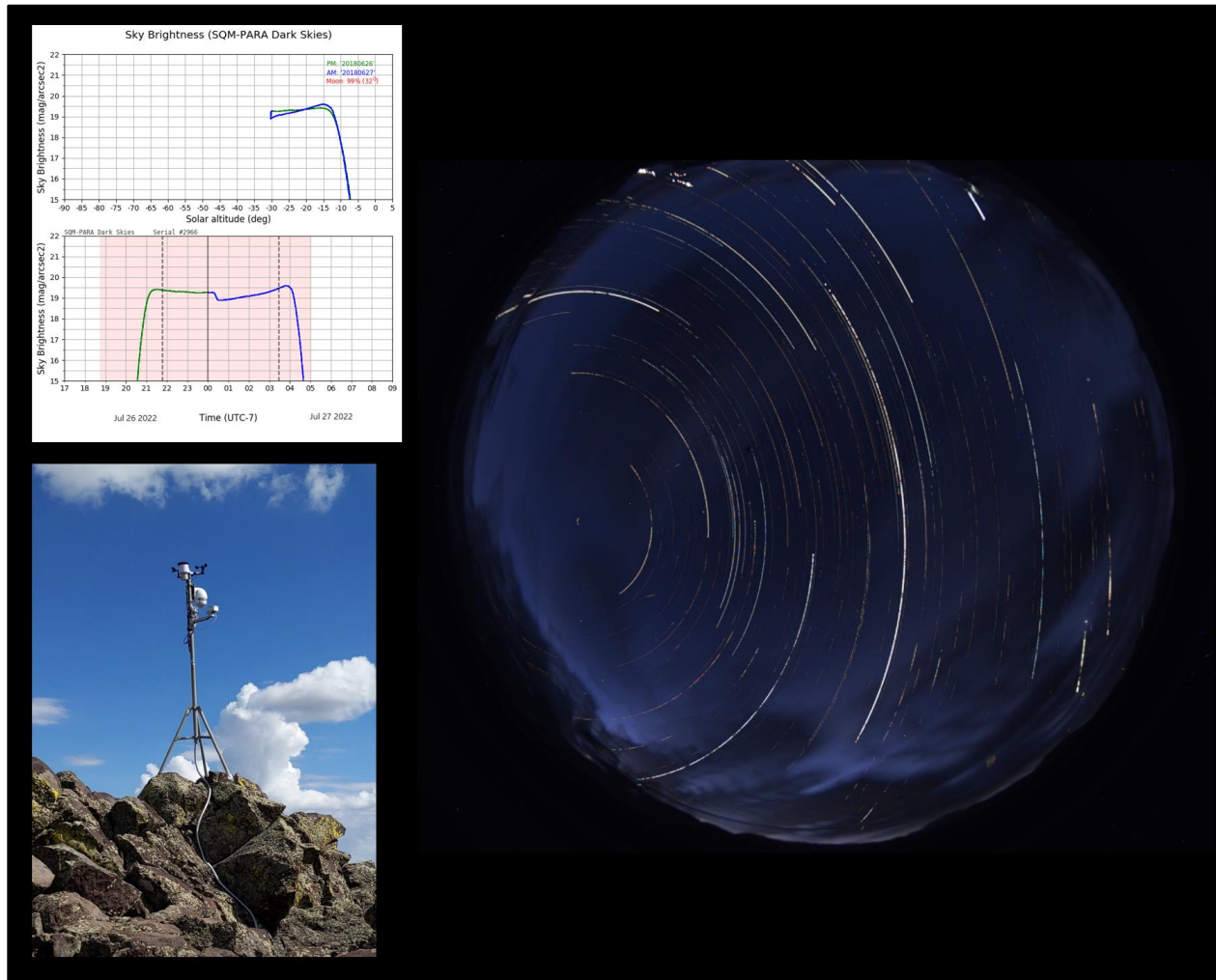


Science

Emerging disease among our bat populations came into focus as annual monitoring efforts detected traces of the White Nose Syndrome causing fungus, *Pseudogymnoascus destructans (Pd)*, at three different locations while netting over various stockponds. Additional sampling within bat roosts in caves has not yet detected contamination. The FWS predicted the arrival of *Pd* in the Monument by 2023 as the fungus propagates via bat populations. However, it was alarming to researchers to see the 40-mile distance between contaminated sites. Ongoing research efforts are continuing into 2023 to determine the extent of spread of the fungus and the effect on our 18 species of bats.



Dark sky monitoring, the process of taking metrics of light pollution, which is emitted from nearby urban centers, underwent an upgrade in 2022. Typically, this monitoring is conducted with a photometer, a handheld device pointed skyward, at opportunistic seasonal to annual intervals. In 2022, the Monument installed three stations of continuous dark sky photometers, capable of sampling at one-minute intervals. In addition, statistical data sampling includes that for cloud scatter, moon phase, trends, and deviations. Data is transmitted live to hosting websites.



Hydrologic studies were developed in 2022 at our Pakoos Springs area. This project seeks to further understand how the spring discharge physically shifts over time by monitoring the numerous seeps. These soil saturation levels are pivotal to understanding their influences on the nearby riparian plant growth, soil temperature, transport of saline compounds, and groundwater recharge. Fourteen soil moisture sensors are deployed 0.5 meters subsurface over a 148-acre site. Sensors are positioned to target the semi-saturated interface of a seep zone as they transition to arid soil surroundings. Data is retrieved across the entire site every 5 minutes and transmitted online.



In partnership with the NPS Mojave Desert Inventory and Monitoring Network (MOJN), long-term monitoring of water quality continued at one large spring and water quantity at ten springs. A new long-term riparian vegetation monitoring protocol was established at two springs. The MOJN-Parashant bat acoustic monitoring program was able to sample at 12 sites.

In partnership with Arizona Game and Fish Department, an environmental DNA (eDNA) surveillance project for invasive American bullfrog was conducted in the springs and seeps surrounding the newly established relict leopard frog site of Pakoon Springs. Bullfrogs were found at only one location, a private inholding on the border between the Monument and Gold Butte National Monument.

Climate Impacts

Regional climate change models for the southwestern United States are well suited to model temperature changes. However, these predictive models are less clear on precipitation trends, even less so on the summer monsoonal patterns. Snowfall is also expected to shift along with temperature trends, with decreasing snowfall, replaced by more rain events during the winter months. Less snowfall affects ecology with altered soil moisture availability to roots along with soil temperatures. Ongoing snow depth monitoring is underway at three locations within the Monument's Ponderosa Pine ecosystem. Winter 2021-2022 remained below average, with about a third less snow than average, continuing the ongoing drought trends in the Southwest.



Events

Staff participated in the 5th Annual Southwest Astronomy Festival in partnership with the Red Hills Desert Garden, Cedar Breaks National Monument, and the St. George Astronomy Group. During the August 27th solar viewing at the Red Hills Desert Garden, the Monument staff provided information about the sun and scientific exploration of our nearest star while also encouraging visitors to participate in the Dark Sky Junior Ranger program.

National Public Lands Day was held on September 24, 2022. Monument staff and volunteers worked on maintaining and repairing about a quarter mile of fencing on a forage reserve east of Nampaweap, near county road 5.





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