



NATIONAL CONSERVATION LANDS

Utah
2022: Annual Manager's Report

Grand Staircase-Escalante

National Monument



Map

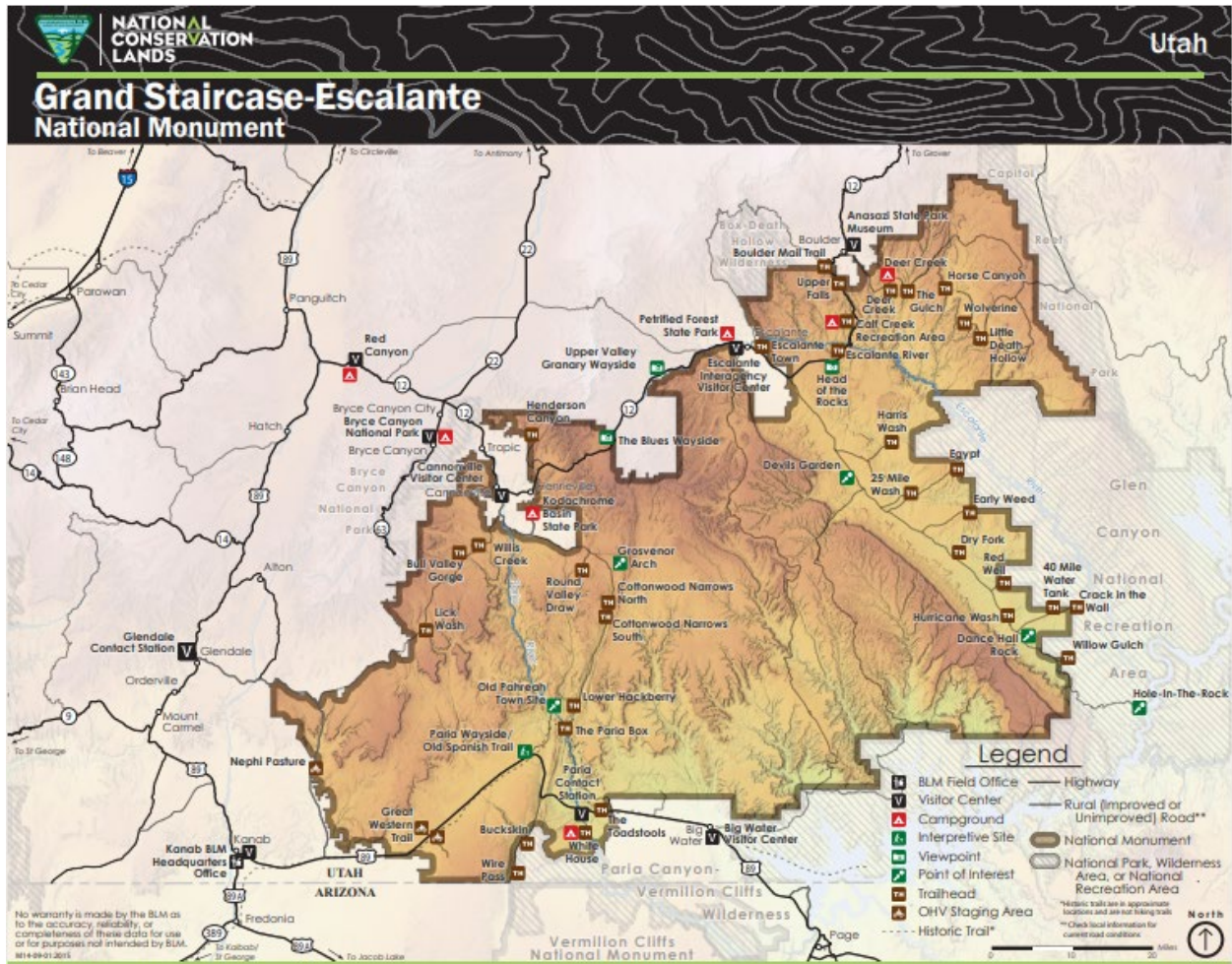


Figure 1: Map for Grand Staircase-Escalante National Monument.

Accomplishments

Grand Staircase-Escalante National Monument (GSENM) had many accomplishments in Fiscal Year 2022 (FY22). Noteworthy endeavors include several high-profile scientific publications, the most significant of which was headed up by the renowned MIT Geochemist Jahandar Ramezani. Ramezani et al. used radiometric dates obtained from GSENM and other important basins throughout North America to revise our basic understanding of the ages and correlations of Cretaceous rock strata. The paper was published in the internationally prestigious journal Nature.

For the 10th year, GSENM participated in the BLM's Artist in Residence Program. GSENM is one of the first National Conservation Lands units to develop an Artist-in-Residence program. The program is a partnership-based model because the residency is co-sponsored with the local Escalante Canyons Art Festival and the Glen Canyon Conservancy. Claire Giordano (pictured below) was GSENM's 2022 Artist in Residence.



Figure 2: Photo of 2022 Artist in Residence Claire Giordano painting in GSENM.

Challenges

On October 8, 2021, President Biden issued [Presidential Proclamation 10286](#) restoring Grand Staircase-Escalante National Monument (GSENM) to the original boundaries that were created in 1996. For purposes of protecting and restoring the objects identified in Proclamation 10286 and in [Presidential Proclamation 6920](#), the Proclamation directs the Secretary of Interior to prepare and maintain a new management plan for the entire monument, which spans across 1.87 million acres and is the largest monument managed by the Bureau of Land Management (BLM).

BLM published a Notice of Intent to prepare a Resource Management Plan (RMP) and Environmental Impact Statement for GSENM on July 29, 2022, kicking off another multi-year planning effort that will carry into FY24. The Director of the BLM issued a memorandum to the BLM Utah State Director on December 16, 2021, that provides BLM with Interim Management Guidance for managing GSENM and directs BLM to begin preparing a new RMP, with a goal of finalizing the new plan no later than March 1, 2024. This goal allows BLM approximately 19 months to complete the plan from the date of NOI publication. This relatively short timeline creates a compressed schedule, which results in heavy workloads for BLM specialists and managers. These heavy workloads include time intensive internal work sessions, document reviews, public meetings, etc., all of which reduces time for BLM to physically manage the lands within GSENM. BLM specialists are asked to prioritize planning workloads over field work, resulting in missed workload measures for monitoring and inventory targets across all resources.

Another one of GSENM's biggest challenges is managing increased visitation within the monument while trying to protect the sensitive resources. Sensitive cultural sites, which are sacred to Tribal Nations, are primary objects of the Proclamation, many of which have yet to be surveyed. In addition to sensitive cultural resources, the area's geographic features and stunning landscapes are also listed as primary objects. GSENM does not currently have enough staff to manage such resources and visitors spread across a monument of this size. Field staff continued to observe that visitors can easily access more areas throughout GSENM, due to the popularity of off-highway vehicles. Additional factors contributing to recreation and visitation impacts to monument objects include publication of site locations on social media and impacts from heavy visitor use, such as dispersed parking, camping, and social trailing.

Lack of staffing, four physical visitor centers, increased visitation, and increased exploration, make it challenging for the BLM to properly manage and protect the monument objects. Existing staff levels are not sufficient to inventory, monitor, manage, and protect GSENM's objects.

Without additional funds to support existing infrastructure and increase staffing, BLM managers will have to make difficult decisions to either close visitor centers in order to

place more park rangers in the field, or station park rangers at visitor centers and reduce BLM field presence. The four original visitor centers continue to be outdated and need upgrades to the displays and buildings. There are only eight (8) career seasonal employees to run these four visitor centers. The current level of staffing and heavy visitation makes effective operation of visitor centers difficult, and the remoteness of the positions in areas without affordable housing, results in high staff turnover and recruitment difficulties. GSENM continues to request additional funding annually. The request details the need for increased annual labor and operational funding to meet its important obligations, including improving tribal engagement.

Visitors

Over the past 25 years, Grand Staircase-Escalante National Monument has seen a dramatic increase in public recreation. For example, in 2000, GSENM had just 600,000 visitors; in FY20, despite COVID-19, the monument recorded 950,000 visitors. In FY21, visitation topped out at over 1.3 million. In FY22, visitation slightly decreased with 1,029,000 visitors recorded.

Visitor use will continue to increase within GSENM. High visitation areas like the Calf Creek Recreation Area and Dry Fork Slot Canyons are at maximum capacity most weekends and especially holidays. In recent years, Calf Creek Recreation Site has experienced continually increasing demand for both day use and camping. Demand for camping and hiking to Lower Calf Creek Falls far exceeds the campground and parking capacity through most of the visitation season. Combined visitation for the trail and campground in the last five years has been 35,000 to 40,000 annually. As such, vehicles are often parking along a busy road up to a half-mile away from the entrance, creating safety hazards along the highway and sometimes blocking traffic.

The Bureau of Land Management issued a decision record for Calf Creek Recreation Site deferred maintenance and improvements. The decision authorizes much-needed maintenance and site improvements. The project is funded in part by Great American Outdoors Act investments and is designed to meet public demand and increased visitation at the Calf Creek Recreation Area.

Many popular trailheads remain undeveloped with little or no visitor facilities. The Toadstools trailhead located directly off US HWY 89 is an example of a high use recreation destination that remains undeveloped. Due to being easily accessible from the highway, the trailhead receives approximately 37,000 visitors a year which is comparable to the amount of visitation that occurs at the designated and developed Calf Creek Recreation Area. The undeveloped trailhead consistently cannot support vehicle parking demands, which leads to visitors parking in a highway right-of-way, creating a safety issue. Additionally, the trailhead does not provide restroom facilities and has resulted in an inordinate amount of solid human waste and toilet paper near the trailhead and along

the trail to the rock features. In FY22, BLM partnered with the Kane County Office of Tourism to provide portable toilets that are serviced multiple times a month. Recognizing that this is a temporary solution, BLM will need funding to support possible relocation of the Toadstools Trailhead to provide adequate parking and restroom facilities to meet public demand while protecting monument objects and resources.

Partnerships

Grand Staircase-Escalante National Monument continues to partner with a variety of organizations and agencies. The Utah Cultural Site Stewardship (UCSS) program was turned over to the Utah Historic Preservation Office (SHPO) in FY21, with the purpose of administering, coordinating, and training volunteers in archaeological site monitoring activities. This partnership has allowed GSENM to transition administration of its long-standing site steward program to UCSS, freeing up staff time for work on other cultural resource priorities. This year a total of 92 archaeological sites were monitored to assess site conditions by a total of 33 site steward volunteers and BLM staff.

GSENM worked alongside Grand Staircase Escalante Partners (GSEP) for several education and outreach events. Events included kids' science camps and involved GSENM staff such as park rangers and a soil scientist. Graffiti remediation events drew 25 volunteers who worked 750 hours remediating hundreds of square feet of graffiti, picking up trash from along trails, and installing signs along the Escalante River Trail to aid visitors in staying on the trail and protecting monument resources.

GSENM and interagency partners are experiencing increased resource degradation (i.e. graffiti and off-road vehicle incursions), likely due to increased visitation and uninformed users. GSENM is partnering with Utah's Office of Tourism, Garfield County and Kane County tourism departments, and several non-governmental organizations on the Forever Mighty Campaign to promote principles of responsible recreation.



Figure 3: GSENM Park Ranger Bob Stevenson works with a group of volunteers discussing user-created trail rehabilitation, near Escalante, Utah.

The Paleontology Program continued its long-term partnership with the Natural History Museum of Utah (BLM's official paleontology repository in Utah), who were able to double the output of the program over the course of the year, preparing and curating hundreds of important fossil specimens.

Science

In FY2022, a total of 44 research permits were active in GSENM. Half of these were for paleontological research, while the remainder were evenly divided between geological and biological research.

GSENM's in house Paleontology Program actively collaborated on five different research projects (tyrannosaur taxonomy, tyrannosaur social behavior, early mosasaur taxonomy, giant turtle taxonomy, and ecology of ancient seafloor methane seeps). The following peer reviewed papers were also published over the course of the year:

- Beveridge, T.L., Roberts, E.M., Ramezani, J., Titus, A.L., Eaton, J.G., Irmis, R.B., Sertich, J.J.W. 2022. Refined geochronology and revised stratigraphic nomenclature of the Upper Cretaceous Wahweap Formation, Utah, U.S.A. and the age of early Campanian vertebrates from southern Laramidia. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 591 (1 April 2022), 110876. <https://doi.org/10.1016/j.palaeo.2022.110876>
- Ferguson, A.L., Tapanila, L. 2022. Rare clutch of Cretaceous turtle eggs preserved in the Kaiparowits Formation of southern Utah. *Cretaceous Research*, Volume 135, July 2022, 105197. <https://doi.org/10.1016/j.cretres.2022.105197>
- Maccracken, S.A., Miller, I.M., Johnson, K.R., Sertich, J.J.W., Labandeira, C.C. 2022. Insect herbivory on *Catula gettyi* gen. et sp. nov. (Lauraceae) from the Kaiparowits Formation (Late Cretaceous, Utah, USA). <https://doi.org/10.1371/journal.pone.0261397>.
- Ramezani, J., Beveridge, T.L., Rogers, R.R., Eberth, D.A., Roberts, E.M. 2022. Calibrating the zenith of dinosaur diversity in the Campanian of the Western Interior Basin by CA-ID-TIMS U–Pb geochronology. *Scientific Reports (Nature)* volume 12, Article number: 16026 (2022).
- Yun, C. 2022 (published online in November 2021). Frontal bone anatomy of *Teratophoneus curriei* (Theropoda: Tyrannosauridae) from the upper Cretaceous Kaiparowits Formation of Utah. *Acta Palaeontologica Romaniae* v. 18(1), p. 51-64. <https://doi.org/10.35463/j.apr.2022.01.06>

A large manuscript on the world's oldest known plioplatecarpine mosasaur fossil was also finished by a BLM-Southern Methodist University team in late FY22 and was submitted for publication in early FY2023.

Additionally, the Colorado Plateau Archaeological Association (CPAA) and GSENM completed limited test excavations in Johnson Canyon. This project will answer research questions regarding the nature and distribution of early dry-farming Basketmaker II agricultural sites in the region. The project also enabled BLM to gather and evaluate baseline archaeological data critical for monument management purposes. The BLM anticipates that the final report will be completed in FY23.

An interagency agreement between BLM and USDA-Agriculture Research Service began its first year of data collection in FY22. The project focuses on hydrology and erosion effects on sagebrush steppe enhancement projects on the Skutumpah Terrace within GSENM. This was the first year of data collection that will quantify changes in vegetative cover, soils, infiltration, runoff, and erosion processes across similar landscapes before and after vegetation treatment. This research is ongoing, and GSENM anticipates comparative results once work is completed in FY23.

Work resumed in FY22 for the interagency agreement between BLM and USGS to complete retention pond (salinity ponds) sediment yields using Structure from Motion photogrammetry. Base flights and measurements were completed on selected ponds and will provide quantitative sediment yield measurements once work is completed in FY23.

Lastly, GSENM completed year 4 of a 5-year water quality monitoring contract. Under a Memorandum of Agreement with Utah Department of Water Quality (UDWQ), water quality field parameters (i.e., discharge, water temperature, pH, specific conductivity, and dissolved oxygen), water chemistry samples, and bacteriological E. coli samples were collected, and water temperature sensors were also installed. Ongoing project data will be utilized in Proper Functioning Condition (PFC) and rangeland health determinations that inform management decisions in both natural resources and recreation management.

Climate Impacts

Ongoing climate change and severe Western drought conditions are still impacting wildlife populations within GSENM, although the effects were less in 2022. Mule deer fawn and adult survival which were down drastically in 2021 due primarily to drought, rebounded somewhat in 2022 due to a mild winter and the return of the summer monsoon moisture which boosted vegetation growth ahead of the breeding season and the oncoming winter. Mule deer obtain much of their water needs from the vegetation they consume. Last year, fuel-moisture levels rebounded from the near all-time lows in 2021.

Other measured wildlife population numbers were also down. Breeding bird surveys conducted in May and June 2022 had the lowest overall bird numbers and species diversity in many decades of record keeping. Most birds nest between April and early July, prior to the arrival of monsoon moisture. At the time of the surveys, GSENM was in extremely dry conditions.

Potential climate change impacts have been observed in several water systems throughout GSENM. Calf Creek has been an EPA 303(d) listed waterway since 2008 due to high water temperatures in a system that supports cold water aquatic life. Harmful Algal Blooms (HAB) have also been detected and sampled throughout GSENM with some

containing potentially harmful toxins. These HABs are similar to what has been found in the nearby Zion National Park.

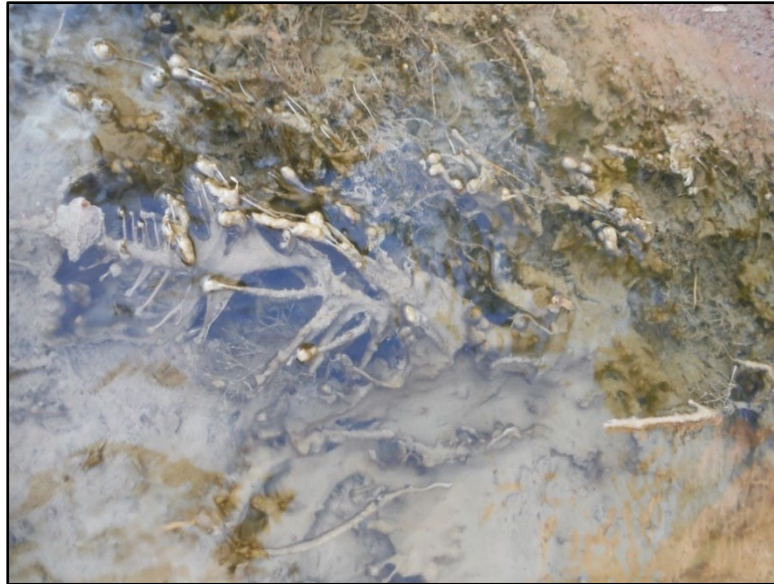


Figure 4: Harmful algae bloom in a stream, GSENM.

Climate Resiliency

Grand Staircase-Escalante NM applied for and received funding from Utah's Watershed Restoration Initiative (WRI) for the construction of an additional wildlife watering facility (guzzler) in the Buckskin Mountain area, east of Kanab. The guzzler, located within crucial mule deer winter range for the Paunsaugunt mule deer herd is nearing completion. The new guzzler should help mitigate some drought impacts to wildlife in this area.



Figure 5: Guzzlers are critically important to mule deer and other wildlife on GSENM.

Under an MOU with the Utah Department of Water Quality, GSENM contracted work in 2022 collecting water quality data from 9 different stream sites once a month from May to October. Bacteriological E. coli samples were also collected at 4 sites as well as water temperature on Calf Creek. GSENM also annually conducts BLM Assessment Inventory and Monitoring (AIM) to evaluate condition and trend data of terrestrial and aquatic resources under a standardized protocol. Under AIM, data collection includes soil physical properties, soil stability, vegetation composition, bare ground, vegetation height, stream substrate, water temperature, macroinvertebrates, etc. Monitoring data, when coupled with management decisions and climate analysis can help GSENM better understand climate impacts to all its resources.

Social and Environmental Justice

Local Economies

Grand Staircase-Escalante NM is located entirely within Kane and Garfield Counties, Utah. About 68% of GSENM is in Kane County, while the remaining 32% is in Garfield County. Conversely, about 49% of Kane County and 18% of Garfield County lie within the monument boundaries. The lands in Garfield County are 93% federally-owned – 1 of 3 counties nationwide with such a high concentration (Federal lands consist of National Park Service, BLM and Forest Service lands). Eighty-five percent of land in Kane County is federally owned. The high percentage of public lands in both counties presents a unique set of issues and opportunities. Small rural gateway communities such as Kanab, Boulder, Escalante, and Cannonville continue to rely on public land commodities, such as grazing, timber, and mineral extraction. However, these more traditional uses have declined over the past decade, with more and more jobs devoted to the hospitality and leisure sector.

The remoteness of GSENM and the lack of adequate living wage jobs, affordable quality housing, infrastructure, and inadequate access to goods and services is problematic for all land management agencies in the area. Tourists come from all over the world to enjoy the world-class scenery, but jobs in the leisure and hospitality industry are typically low paying, and these positions experience high turnover with most recruitment to these positions coming from outside the local area. This does little to help the local economy because many of these positions are seasonal or temporary with little opportunity for long-term employment and a higher-than-average cost of living. As an example, Garfield County's median household income is 41% lower than the state average, while Kane County median household income is 33% lower than the Utah average. Both counties report approximately 10% of the population living below the poverty level (compared to 7% statewide).

GSENM continues to see an increase in visitation, largely because of overflow from more overcrowded, neighboring National Parks, such as Capital Reef, Bryce Canyon and Zion. GSENM continues to work with local communities to support traditional uses while also providing public land ethics messaging to visitors.

Tribal Engagement

During FY22, GSENM consulted regularly with 12 federally-recognized Tribes: All Pueblo Council of Governors, Kaibab Band of Paiute Indians, Navajo Nation, Hope Tribe of Arizona, Ute Indian Tribe of the Uintah and Ouray Reservation, Shivwits Band of Paiute Indians, Paiute Indian Tribe of Utah, San Juan Southern Paiute Tribe of Arizona, Pueblo of Acoma, Pueblo of San Felipe, Pueblo of Tesuque, and the Zuni Tribe of the Zuni Reservation. With increased emphasis on understanding and protecting traditional landscapes and sacred places, GSENM expects to engage with more tribes during the development of the new resource management plan and subsequent implementation level management plans to follow.

Events

Grand Staircase-Escalante NM, in collaboration with Glen Canyon National Recreation Area celebrated the 13th anniversary of National Fossil Day on October 8, 2022. National Fossil Day is an annual celebration held to highlight the scientific and educational value of paleontology and the importance of preserving fossils for future generations. This year's celebration was a huge success and very well attended with nearly 300 members of the public taking part. The activities included free entertainment and activities for all ages and highlighted the importance of paleontological resources on public lands.



Figure 6: Display at the 2022 Fossil Day Event at the Big Water Visitor Center in Big Water, Utah.

Words from the staff

Wildlife

In June 2022, after receiving two separate reports of juvenile owls thought to be abandoned within one of our local canyons, GSENM wildlife staff conducted a site visit. Not only were the owls not abandoned, but they were found to be Mexican Spotted Owls (MSO) which are a threatened species under the Endangered Species Act. In total, two juvenile and two adult MSO were discovered within the canyon. This is the first confirmed breeding pair within the canyon and an exciting discovery.



Figure 7: Left and right, juvenile Mexican Spotted Owls within a GSENM canyon.



Figure 8: An adult Mexican Spotted Owl intently watches BLM wildlife staff from high above in a GSENM canyon.

MSO breeding territories are federally protected within a Protected Activity Center (PAC). With the discovery of the new breeding territory, a new PAC was created, bringing the total number of PACs within the GSENM to eight.

Paleontology

The program was honored by being featured in National Geographic’s “Drain the Oceans” program, which is National Geographic’s fourth most popular show (average 300,000 viewers per episode) and is in the 95th percentile of documentary shows in the USA. Filming took place in July 2022 and the episode (Season 6, episode 3: Secrets of the Dinosaurs), which features GSENM research on tyrannosaurs of the Rainbows and Unicorns Quarry, debuted March 19th, 2023.



Figure 9: Dr. Alan Titus in the field filming for “Drain the Oceans-Secrets of the Dinosaurs.”



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[Grand Staircase-Escalante National Monument Flickr Album](#)

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