

1. Dr. Polly, your testimony mainly referred to the impacts of the monument review on scientific research and resources at Grand Staircase. When President Obama designated Bears Ears National Monument in 2016, he stated that "the paleontological resources in the Bears Ears area are among the richest and most significant in the United States."

a. How does the alteration of Bears Ears National Monument impact the study of archaeological and paleontological resources in the area?

The effects on science of the cuts at Bears Ears are broadly similar to those at Grand Staircase, but there are several important differences. I will comment on paleontology since that is my expertise, but I believe the situation is similar for archaeology.

As described at length in my written testimony, the paleontological resources at Bears Ears are indeed rich and significant. Briefly, the Bears Ears paleontology covers the Pennsylvanian through Cretaceous periods of Earth history and their scientific importance is that they document early vertebrate on land, the events leading up to the largest mass extinction ever (about 251 million years ago), and the recovery of ecosystems after the extinction. Hundreds of scientifically important paleo sites are already known from within the 2016 boundaries of the monument (I have been able to document 430) and about 40% of those were cut by the Trump administration in 2017. The cuts removed many of the paleo resources that were specifically named in the 2016 proclamation (see Table 3 in my written testimony).

Monument status does more than protect resources, it actively enhances their scientific value. Bears Ears has not yet benefitted from that enhancement, which will provide scientific supporting staff for the Monument and funding streams for field research (notably funding through the National Conservation Lands system). Those resources will not be available for scientific work, which will keep the scientific potential of Bears Ears from being realized. Furthermore, at least one scientist working there, Robert Gay, has already had funding declined because of the uncertainty about the status of the excised areas.

b. Does the alteration place these resources at risk of vandalism or even un-intentional damage?

Yes, in several ways.

First, the management situation at Bears Ears is substantially different than at Grand Staircase. Department of Interior never completed the initial Monument Management Plan following the 2016 designation, which means that all of Bears Ears is still being managed as it was before. (In contrast, all of Grand Staircase, including the excised portions, is still being managed under the old plan until Interior issues revised management plans later this year). The enhancements and protections that accompany monument status have never been put in place at Bears Ears.

Second, the Bears Ears area has been notorious for vandalism and theft of paleontological resources for decades. Without increased staffing and attention that accompanies monument status, this vandalism will at best continue and at worst increase. For example, in 1989 a site in the northern Indian Creek area of Bears Ears was discovered that preserved an immense fossilized log jam in an ancient stream deposit where petrified logs were preserved with the skeletons of ancient amphibians and pelycosaur trapped within them. By 1999 that site had been completely ransacked with all of the fossilized plant and

animal remains taken (Sumida et al., 1999; https://ugspub.nr.utah.gov/publications/misc_pubs/mp-99-1.pdf). More recently, an already ransacked phytosaur skeleton was found in Bears Ears, which was then matched to an illegally collected skull that had been turned in at Petrified Forest National Park almost a decade earlier (<https://www.sltrib.com/news/environment/2018/02/24/a-search-for-an-ancient-crocodile-in-utahs-bears-ears-leads-to-a-major-discovery-of-triassic-fossils/>). The richness of the fossils and the remoteness of the area has resulted in such destruction. Monument status is expected help by increasing the region's staffing and monitoring. The cuts to the monument means that staff will not be responsible for monitoring most of the area and one imagines that fewer staff will be hired.

Finally, by focusing widespread public attention on the paleontological resources at Bears Ears (and Grand Staircase), the Trump administration has increased the likelihood of vandalism. More than ever, this area should receive special protection because these resources are an extraordinary and unique part of our natural heritage.