



Society of Vertebrate Paleontology

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Subject: White House takes first step to restoring paleontology at Grand Staircase-Escalante and Bears Ears national monuments

The White House today issued a proclamation that restores the boundaries of two US national monuments in Utah that are closely linked to paleontological science, Grand Staircase-Escalante and Bears Ears.

Paleontological work at Grand Staircase-Escalante has transformed our understanding of the Mesozoic world that dinosaurs inhabited prior to their extinction. In the 1980s, paleontologists first discovered fossil mammals there and by 1996 when the monument was created, important fossils had been identified in 20 out of the 24 of its geological formations, and more than 3,500 fossil localities have been documented since then. Jeff Eaton, the vertebrate paleontologist who made many of the first mammal discoveries, described Grand Staircase-Escalante as "a remarkable record of unique vertebrates that spans more than 20 million years, including intervals of time from which no specimens have been recovered anywhere else in the world."

Extinct species of mammals, birds, lizards, plesiosaurs (extinct marine reptiles), sharks and rays, ray-finned fishes, plants, and insects were discovered there, as well as 13 new dinosaur species like *Diabloceratops*, a devilish-looking horned dinosaur, and *Lythronax*, the so-called "King of Gore." The rate of fossil recovery shows that we are still in the initial discovery phase, with many more yet to come. The completeness of these ecosystems taught us how the Earth recovered from its largest extinction, how oxygen depletion decimated Cretaceous oceans ~94 million years ago, and how Earth's ecosystems became "modern" in a process now known as the Cretaceous Terrestrial Revolution. "Paleontology is like a forensic investigation where the order of events, the positions of the bodies, the tracks in the ground, and the chemical evidence scattered throughout matter. Monument status is important because it keeps this context intact for scientific investigation," said David Polly, paleontologist at Indiana University and a former president of the Society of Vertebrate Paleontology.

The fossils have not only benefited scientists, but they have also engaged the world. YouTube© hosts literally thousands of videos about *Lythronax* alone. One Grand Staircase researcher, Dr. Scott Sampson, is known to millions from his role as the paleontologist presenter ("Dr. Scott") of the PBS children's television series *Dinosaur Train*.

Bears Ears National Monument has already yielded spectacular sites from even more ancient times. At Valley of the Gods, Cedar Mesa, and Indian Creek, scientists study the ecosystems of ancient vertebrates before the Earth's largest mass extinction 252 million years ago, and in Red Canyon and Indian Creek. They have uncovered evidence of how life recovered to be dominated

by the archosaurs of the Mesozoic. Bears Ears has the same potential as Grand Staircase to teach us about the Earth's history for many years to come.

Monument status was critical to that scientific success because national monuments do not just protect fossil sites, but they also conserve them. Monument management actively enhances the scientific value of the paleontological resources by requiring inventories of fossil potential, by deploying funding from National Conservation Lands to prioritize important research, and by facilitating collaboration among the scientific specialists who study the fossils and geology.

In December 2017, more than 1,400 paleontological sites were excised from Grand Staircase-Escalante and Bears Ears along with an unknown number of undiscovered sites in areas yet to be inventoried, including many of the original rare mammal sites that led to the establishment of Grand Staircase-Escalante. The immediate impacts on science were confusion over permits and uncertainty about upcoming field seasons; the long-term impacts were the loss of priority for paleontological resources, which could ultimately result in loss of the sites themselves, and of research funding that proactively enhances their value.

These detrimental impacts led the Society of Vertebrate Paleontology (SVP) to join eight other plaintiff groups, including Utah Diné Bikéyah, Grand Staircase Partners, and Patagonia Works, to take legal action to restore the monument boundaries. Four years later, the courts have still not taken any action yet, but today President Biden at the advice of Secretary of the Interior Deb Haaland did just that.

The damage to the scientific potential to these regions is not yet undone, however. The cuts resulted in new management plans in place that put low priority on research. SVP seeks to replace these at both monuments with ones that prioritize inventory of fossils overseen by trained scientists who facilitate collaboration and dissemination of findings to the scientific community and to the public. SVP would also like the Department of Interior to enhance fossil protection on all US public lands by issuing regulations under the 2009 Paleontological Resources Preservation Act (PRPA) that are now 12 years overdue.

SVP (<https://vertpaleo.org>) is a non-profit international organization of scientists, students, and fossil enthusiasts whose mission is to advance the science of vertebrate paleontology and to encourage the protection of vertebrate fossils and fossil sites.

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