
superintendent's corner

Fossils – The NPS's Forgotten Resource

**By Joe L. Kennedy, Superintendent,
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The Park Service is rightfully proud of the great natural areas it protects for posterity. However, amid all these treasures, one important resource has been almost totally forgotten. That resource is fossils. At least 10 units have been established to protect fossils or contain significant fossil deposits within their boundaries. The rich record of past life preserved on NPS lands ranges from 220 million-year-old conifers, reptiles and amphibians (Petrified Forest National Monument) to 140 million-year-old dinosaurs (Dinosaur National Monument) to a 60 million-year-old fish (Fossil Butte National Monument) to 35 million-year-old beetles and butterflies (Florissant National Monument). Such deposits have long been recognized by paleontologists worldwide as superlative examples of particular episodes in the history of life.

Specimens from these areas have contributed and continue to contribute to our understanding of evolutionary processes, extinction, migration, adaptation, functional morphology, comparative anatomy, evolutionary relationships, paleogeography, paleoclimatology and paleoecology (and the like) to mention a few. Clearly, these materials are international treasures.

Nevertheless, protection and management of fossil resources have generally been less than adequate and often performed in a vacuum. We would like to briefly touch on what we see as the common problems faced by all those managing fossil resources, regardless of the taxa involved:

Sun, wind, rain, ice, and snow are the traditional enemies of fossils. However, over the last 15 years additional threats have arisen. There now exists a lucrative international trade in fossils of all kinds, ranging from trilobites glued to magnets for use on refrigerators to entire dinosaur skeletons selling for \$150,000. A patchwork of federal and state regulations, a high profit margin and weak penalties have combined to produce a new and ominous threat. Some managers strongly suspect that illegal collecting is occurring in NPS units. These are not the occasional visitors who pick up a souvenir, but commercial collectors. This loss of fossil specimens is unacceptable to both the NPS and the scientific community and must be addressed.

As budgets continue to tighten and funding becomes ever more difficult to obtain, it becomes imperative that fossil resources be properly addressed in Resource Management Plans. The baseline data needed to evaluate and manage fossils include:

- a) What is the geologic and geographic distribution of fossils within the park?
- b) What is the scientific significance of the material?
- c) What areas represent depositional environments having a high potential for producing significant fossil materials?
- d) Which localities and/or specimens are threatened with irreparable damage or loss through erosion, theft, and/or vandalism?

These questions should be answered in each

NRMP. If they can not, then these questions should form the basis for funding requests for gathering baseline data. Without such data, adequate management and protection is impossible.

Although the subject matter is dead, the science of paleontology is not. With more researchers active now than in all of the past combined, new data is constantly appearing. NPS-6 directs us to insure that our interpretation reflects the highest standards of scientific research. Yet keeping up with the highly technical literature published in professional journals is difficult for the non-specialist. What are the methods by which interpreters can successfully breach the interface between themselves and the professional paleontological community? How can we effectively transmit that "uncommon knowledge" to the visiting public?

An exchange of ideas, techniques, experiences, expertise, and services has been almost non-existent among units with significant fossil resources. Many park service managers are not even aware that a professional paleontologist, Dan Chure, is stationed here at Dinosaur and serves as Park Service Paleontologist. With such poor communication, all aspects of management and interpretation may be negatively impacted by repeated attempts to invent the wheel or misguided actions taken due to lack of knowledge or expertise. A sharing of skills in the collecting, protecting and preserving of fossils will enhance their care Servicewide.

In spite of these common problems and threats, there never has been a Servicewide meeting of NPS personnel involved in managing and interpreting fossil resources. Such a gathering could address the above-stated concerns and serve to mesh professional paleontologists (both within and outside the service) with resource managers, interpreters and protection rangers. We strongly feel that the time has come for such a meeting at which fossil resource management in the NPS will finally come of age.

Editor's Note: Superintendent Kennedy has offered to make available for consultation the services of his fulltime professional paleontologist, Dan Chure, to other park areas with similar resources and problems.