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FEIN: 06-0906643

November 14, 2018

Subject: Comments from the Society of Vertebrate Paleontology on the draft Monument Management Plans and Environmental Impact Statement for the Shash Jáa and Indian Creek units of the Bears Ears National Monument.

To U.S. Bureau of Land Management and U.S. Forest Service,

The following comments (**Appendix 1**) on the draft Monument Management Plans (**MMPs**) and Environmental Impact Statement (**EIS**) for the new Indian Creek and Shash Jáa monument units of the Bears Ears National Monument (**BENM**), as well as comments on management of Federal lands previously included in the Monument that are now excluded from the monument boundaries, are submitted on behalf of the Society of Vertebrate Paleontology (**SVP**). Our comments are largely like the ones we submitted in March during the initial consultation on the scoping process (see [http://vertpaleo.org/GlobalPDFS/SVP-Response-Letter-\(BENM\)-Final.aspx](http://vertpaleo.org/GlobalPDFS/SVP-Response-Letter-(BENM)-Final.aspx)).

SVP is a non-profit international scientific organization whose membership is made up of more than 2,200 researchers, educators, students, and enthusiasts. Our mission is to advance the science of vertebrate paleontology and to support and encourage the discovery, preservation, and protection of vertebrate fossils, fossil sites, and their geological and paleontological contexts. SVP is a key stakeholder with regard to the paleontological resources at BENM. Paleontological resources are nonrenewable and irreplaceable once destroyed. Because of the ongoing scientific importance of the monument, SVP is concerned with management changes that would jeopardize sites or that would diminish the effectiveness of scientific research at those sites.

The comments attached here pertain primarily to Volume 1 (Chapters 1–4) and Volume 2 (Literature Cited, Glossary, and Appendices) of the Draft MMPs and EIS. In our comments, we use the acronym '**BENM**' referring to the original 2016 boundaries of Bears Ears National Monument. Questions concerning our letter and comments should be addressed to Drs. Emily Rayfield and David Polly (Present and Past SVP Presidents: svp_president@vertpaleo.org) or Dr. Kenshu Shimada (Chair of SVP's Government Affairs Committee: kshimada@depaul.edu). Thank you for the opportunity to comment.

Sincerely yours,

A handwritten signature in black ink that appears to read "Emily J. Rayfield".

Emily J. Rayfield, Ph.D.
SVP President

A handwritten signature in black ink that appears to read "Jessica M. Theodor".

Jessica M. Theodor, Ph.D.
SVP Vice President

A handwritten signature in black ink that appears to read "P. David Polly".

P. David Polly, Ph.D.
Past SVP President

Appendix 1

SVP's comments on BLM-USFS's draft MMPs and EIS for the Indian Creek and Shash Jáa units of the BENM.

Preamble

As summarized in the original 2016 proclamation, BENM contains significant paleontological resources spanning approximately 230 million years of geological time. These include the Late Pennsylvanian and Early Permian periods in the southern and northern portions of the original monument; the Triassic and Early Jurassic periods throughout the entirety of the current monument and in the northern area now excluded; the Late Jurassic and Early Cretaceous periods in the north and east of the former BENM region; and Quaternary deposits across the current and former BENM region. These resources document an interval of Earth's history in which the first truly terrestrial tetrapods (four-legged vertebrates) emerged and then experienced and recovered from two of the greatest mass extinctions our planet has yet known.

SVP Comments on Draft MMPs and EIS

1. Areas outside the new monuments that contain key paleontological resources should be specially managed. The density and importance of the paleontological resources at BENM is remarkable, even in the excluded areas of the monument. These sites reveal the history of life on Earth between the Pennsylvanian and Cretaceous periods and are part of our national heritage, as well as being scientifically important. Because of their scientific importance, it is imperative that the excluded areas continue to be managed at a level above that mandated by the Paleontological Resources Preservation Act (**PRPA**). The following areas are already known contain world-class paleontological resources that, with proper scientific development, have the potential to revolutionize our understanding of the late Paleozoic and early Mesozoic periods:

- Beef Basin
- Comb Ridge
- Dark Canyon
- Elk Ridge
- Fry Canyon
- Harts Draw
- Indian Creek north of Route 211
- Johns Canyon
- Lockhart Basin
- Slickhorn Canyon
- Valley of the Gods
- White Canyon

Specific paleontological resources from these areas were described in Proclamation 9558 and others are described in **Appendix 2** of these comments. Resources at these sites are vulnerable to mineral extraction activities, off-road vehicles, and other uses without specific paleontological management plans in place. Where these areas are not already classified as Wilderness Study Areas (**WSAs**), they should be designated as Areas of Critical Environmental Concern (**ACEC**) where they occur on BLM land or as Special Interest Areas (**SIA**) where they occur on USFS lands in order to better protect their paleontological resources. These areas should be managed under the same rules as those within the two current monument units, including withdrawal from commercial mineral activities and limiting grazing and off-road vehicle use. Because so much of the rest of BENM has strong paleontological potential, the procedures described in **Appendix 3**, which is copied from the comments we submitted during the scoping process, should be used for assessment and mitigation in the event of mining or other potentially destructive activities.

2. More personnel are required to satisfactorily manage paleontological resources at BENM, both in the new monuments and the excluded areas. We recommend that:
 - four full-time paleontologists in the model of the monument paleontologist at Grand Staircase-Escalante National Monument, be hired to coordinate research, surveying and permitting (one each for the Shash Jáa and Indian Creek units of the new monument, and one each for the BLM and USFS lands in the excluded areas); and
 - additional staff be taken on to augment enforcement of paleontological regulations for the entire BENM area. The suggestions for enforcement that we submitted during the scoping process remain relevant and are included in **Appendix 4**.
3. While field collecting is explicitly covered in the draft MMP, what happens after fossils have been collected were not. Like in the 1999 EIS for Grand Staircase-Escalante National Monument, the MMPs, RMPs, and EIS for the BENM units should include specific plans to ensure that paleontological resources achieve their full potential as scientific objects and national treasures. **Appendix 5** contains relevant excerpts from the suggestions we made during the scoping process. Important provisions that should be inserted into the MMPs and EIS include:
 - paleontological research be funded for the entire BENM at the same level as in the new monuments (i.e., with increased funding for the excluded areas to offset losses from being removed from the National Conservation Lands system) to facilitate inventorying, field collecting, preparing, curating, and publishing;
 - BLM and USFS paleontologists should actively cultivate and coordinate partnerships with external researchers to effectively manage of paleontological resources;
 - BLM and USFS should provide financial and logistical support to communicate research findings through public programs, exhibits, interpretative materials, and scientific publications and presentations targeting local, regional, national, and international audiences;
 - policies for paleontological collecting techniques, preparation, and research methods should be as flexible as possible;

- molding, casting, and digitization should be considered routine parts of the scientific study of paleontological resources, as should free dissemination of digital resources created by these processes; and
 - BLM and USFS for partnerships with non-Federal public-trust repositories to prepare, preserve, and curate specimens, and to make non-sensitive data on these specimens available to the public through the electronic dissemination in online databases.
4. The draft MMPs consistently makes inappropriate use of the Potential Fossil Yield Classification (**PFYC**) system. Requirements for when and where to survey and mitigate with regard to PFYC are written policy (see Instructional Memorandum 2016-124, <https://www.blm.gov/policy/im-2016-1240> and 8270 Program Guidance and Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management). Therefore, it is inappropriate to structure alternative treatments of paleontological resources around PFYC categories because there can be no “alternatives” to written policy. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Further, BLM must “mitigate adverse impacts to paleontological resources as necessary” (section .06 policy, A 4) and “vigorously pursue the protection of paleontological resources from theft, destruction and other illegal or unauthorized uses” (section .06 policy, A 7). In particular, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.
5. **Chapter 1, Page 2, Section 1.3.1, Sentence 1 of Paragraph 2, and Section 1.3.2, Sentence 1 of Paragraph 2:** Regarding primary existing land uses, there is no mention of scientific exploration as a primary use. Scientific study of soils and vegetation is mentioned in Indian Creek, but there is no mention of extensive paleontological (or archaeological) research in both units, even though paleontological sites are known in both Indian Creek and Shash Jáa units and a number of paleontological research permits are active for both areas. We suggest specifically adding paleontological exploration/study as one of the primary existing land uses.
6. **Chapter 1, Page 2, third line from the bottom that states “Scientific research is being conducted on soil and vegetation resources in the area”:** Scientific research into the paleontology of the BENM has a long history, beginning in the mid-1800s and explicitly recognized in both Presidential Proclamations 9681 and 9682. SVP is concerned that this rich history is ignored in this statement, in favor of sciences that are often used in relation to economic uses of public lands (e.g., grazing) which neither are called out in the proclamations, nor have a deep history of scientific study in the area.
7. **Chapter 1, Page 3, ‘Paleontological and geological resources’ in Table 1-1:** The row ‘Paleontological and geological resources’ in Table 1-1 asks “What management actions are necessary to protect the paleontological and geological objects and values of the BENM?”

whereas for the row ‘Recreation,’ it asks, in part, “How would the BLM and USFS provide both private and commercial recreational access to the BENM...” Scientific access for paleontological research is often difficult and different from many other forms of field science, because removing heavy fossil specimens often necessitates the use of four wheel drive vehicles and, occasionally, helicopters. These rare but necessary forms of access should be protected in any management plan and permitting process.

8. **Chapter 2 in general:** There is no mention of some of the most fundamental facets of protecting paleontological resources in the monument: i.e., site stewardship and education/interpretation. Site stewardship is called out for certain archaeological resources, such as Alternative D of Table 2.9 (Page 17), but site stewardship programs and education/interpretation for paleontological resources must also be implemented in the new monuments and the excluded areas of BENM for their long-term management.
9. **Chapter 2, Page 8, Section 2.4.3.3, regarding the location of Right-of-Ways:** Right-of-Ways (**ROWS**) are a potential threat to paleontological resources if the ROW passes over fossiliferous strata, but vehicle access is often needed to conduct paleontological field research, especially for removing fossils from the field. Thus, criteria for granting an ROW should include avoidance of paleontological (and archaeological/cultural) resources. It could be that this is what is meant by “The proposed ROW would be consistent with the objects and values of the monument”, and if so, Alternative C and D are acceptable with respect to protection of paleontological resources. Alternative B for the Shash Jáa Unit is also acceptable. However, Alternative B for the Indian Creek Unit does not explicitly remark on avoiding paleontological (and archaeological/cultural) resources, and this should be included in order to provide adequate protection for paleontological resources. Alternative C may be a reasonable compromise.
10. **Chapter 2, Page 9, Section 2.4.3.3, regarding Unmanned Aerial Vehicles Systems:** Unmanned Aerial Vehicles Systems (**UAVSs**) are a valuable tool for scientific research (e.g., vegetation mapping, stratigraphic mapping, surveying for paleontological resources, etc.), and in some cases, they allow for lower-impact research activities. Alternative B—namely, case-by-case permitted use of UAVSs—is the best alternative for paleontological research (but see our comment below about the wording used on p 3-21 of the management plan that seems to imply that permitting is not allowed under Alternative B).
11. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 1:** We prefer Alternative D for two reasons. To avoid confusion and double-standards within single monument units, BLM should adopt the same standard as the National Forest System with regard to casual collecting of paleontological resources stated in the same option (i.e., Alternative A in Row 1). Also, invertebrate and plant fossils can provide invaluable information about the context of a vertebrate fossil locality, and thus the National Forest System’s rule is considered a rigorous preservation standard, while allowing paleontological research with a permit.
12. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 1:** In Alternative D, specific statements should be added that mechanized tools (e.g., jackhammers, generators, rock saws, and other tools), as well as hand tools (e.g., picks, shovels, hammers, and chisels), may be

permitted for research purposes (under a valid paleontological research permit) if deemed necessary (see “A. Field Collecting and Permitting” in Appendix 5).

13. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 1:** Alternative D states: “Permits would be considered and issued at the field office level in the absence of a regional paleontologist.” Whoever issues permits needs to have paleontological training, whether that is at the regional or field office level. We prefer Alternative D, but recommend that both of the new monuments and the excluded areas have dedicated paleontologists on staff as recommended above in our general comments.
14. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 2:** None of these alternatives are acceptable because, as described above in our general comments, it is inappropriate to structure alternatives around PFYC categories. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.
15. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 3:** Under Alternatives B and C, recreational climbing routes could be closed if unmitigatable impacts were found to be affecting paleontological resources in Indian Creek. Under Alternative D, there is no provision that a route can be closed. While we understand that closures of routes may still be possible at the field office level, Alternative D offers no management guidance. Additionally, this means that, purely on an administrative level with staff turnover in Moab Field Office, a route could be closed then reopened without additional survey work. Alternative D is therefore insufficient for protection of scientifically significant paleontological resources and fossil sites. Alternative C is the preferred option from the perspective of paleontology.
16. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 4:** For Alternative D, the draft MMPs apply only to one side of Indian Creek, Shay Canyon. We prefer Alternative B that trails would be re-routed or closed where their use impacts significant paleontological resources.
17. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Rows 3 and 4:** Inventory and monitoring is required under PRPA (Public Law 111-11, Title VI, Subtitle D; 16 U.S.C. §§ 470aaa - 470aaa-11). Further, knowingly allowing a person to deface or damage a fossil is a violation of PRPA. Thus, BLM and USFS are compelled by PRPA to inventory and monitor fossils that may be impacted by climbing and hiking routes, and to take any necessary action (e.g., by re-routing or closing routes) if these activities damage paleontological resources.
18. **Chapter 2, Page 11, Section 2.4.6.3, Table 2-6, Row 5:** None of these alternatives are acceptable. OHV uses is a potential threat to paleontological resources if the route passes over fossiliferous strata, but vehicle access is often needed to conduct paleontological field

research, especially for removing fossils from the field. OHV use should only be allowed in the monuments for management activities or by special permit for activities consistent with the protection of Monument objects and values.

19. **Chapter 2, Page 28, Section 2.4.16.3, Table 2-16, Row 4:** PFYC categories cannot be used in this way by policy. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.
20. **Chapter 3, Page 21, Line 8:** Does “non-administrative UAVS use” preclude permitted use of UAVs for scientific research? This section appears to suggest that Alternative B would restrict UAVSs to administrative (BLM and/or USFS) use only. As in our comment above about use of UAVs, we prefer they be restricted to administrative and permitted uses.
21. **Chapter 3, Page 24, Section 3.8.2.2:** There are some restrictions on surface disturbance in lands managed for wilderness characteristics, but it is unclear what the extent of those restrictions are. For example, we are uncertain whether paleontological excavations would be precluded from lands with wilderness characteristics, or if short-term (multi-week) surface disturbance would be allowed, so long as the area is returned to their prior conditions. While clarifications are needed, we advocate for permitted multi-week paleontological excavations on a case-by-case basis.
22. **Chapter 3, Page 24, Section 3.8.2.2:** Regarding new roads in areas with wilderness characteristics, we are uncertain about the mode of transportation that would be permitted for access to paleontological sites. In some cases, temporary access by vehicle would be necessary for paleontological excavations as excavation equipment can be prohibitively large/heavy. While clarifications are needed, we advocate for permitted temporary access by vehicle for paleontological excavations on a case-by-case basis.
23. **Chapter 3, Page 31, Lines 3–4 of Paragraph 2 in Section 3.10.1:** The sentence reads “Over 300 paleontological localities, ranging from invertebrates to plants have been recorded in the two units.” However, this statement is not accurate and should be re-written to read “Over 300 paleontological localities, including invertebrates, vertebrates, plants, and trace fossils, have been recorded in the two units.”
24. **Chapter 3, Page 31, Section 3.10.1, Line 3 in Paragraph 3:** The sentence reads “The BENM also contains Pleistocene epoch sediments in which traces of mammoths, short-faced bears, ground sloths, and camels have been found.” For accuracy, we suggest that this sentence be elaborated to “The BENM also contains Pleistocene and Holocene epoch sediments in which fossils of large mammals, such as mammoths, short-faced bears, ground

sloths, and camels, as well as a wide variety of small vertebrates, have been found.”

25. **Chapter 3, Page 31, Section 3.10.1, Table PAL-1:** PFYC is an evolving classification in which the classification of any unit is intended to be updated as new information becomes available. In regards to the distribution of PFYC 2–5 Areas in the Shash Jáa and Indian Creek Units, Table PAL-1 should make clear that the acreage listed is *as of* the date of publication of the document, and is likely to change in coming years.
26. **Chapter 3, Page 32, Table PAL-2:** PFYC cannot be used as a categorical guide for management alternatives. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.
27. **Chapter 3, Page 32, Section 3.10.2.2.1, paragraphs 2 and 3:** Guidelines for when and where to survey, and how to mitigate on-going or expected damage to paleontological resources, are established BLM policy and described in multiple documents, specifically: Instructional memorandum 2016-124, 8270 program guidance and Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, and PRPA (Public Law 111-11, Title VI, Subtitle D; 16 U.S.C. §§ 470aaa - 470aaa-11).
28. **Chapter 3, Page 33, Section 3.10.2.2.2:** All areas of the new monuments should be closed to OHV travel except for administrative or permitted purposes consistent with management of the monuments’ designated resources (including paleontology).
29. **Chapter 3, Page 33, Section 3.10.2.2.2, Table PAL-3:** PFYC cannot be used as a categorical guide for management alternatives. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.
30. **Chapter 3, Page 33, Section 3.10.2.2.3:** PRPA (Public Law 111-11, Title VI, Subtitle D; 16 U.S.C. §§ 470aaa - 470aaa-11) requires inventory and monitoring, as well as mitigation of known damage to fossils.

31. **Chapter 3, Page 34, Table PAL-4 in Section 3.10.2.2.4:** PFYC cannot be used as a categorical guide for management alternatives. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site. All areas should be surveyed regardless of PFYC class before grazing is permitted.
32. **Chapter 3, Page 33, Section 3.10.2.2.2, Table PAL-5:** PFYC cannot be used as a categorical guide for management alternatives. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.
33. **Chapter 3, Page 34, Row 3 of Table PAL-5 in Section 3.10.2.2.5:** The table shows a decrease in total area excluded from ROW development in PFYC Classes 4 and 5, from 1,101 to 510 acres between Alternative A (no action) and Alternative D (preferred action). Our understanding is that this change in acres primarily comes from the southwest corner of Bridger Jack Mesa, an area rich in Triassic fossils and one of the most productive areas for current paleontological research into this time period in the Indian Creek Unit. Further reducing protections from a “No Action” condition is detrimental for the resources and objects to be preserved within the Monument, and counter to both the purpose of designating this Monument and the intention of the Antiquities Act.
34. **Chapter 3, Page 34, Section 3.10.2.3:** PFYC cannot be used as a categorical guide for management alternatives. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.

35. **Chapter 3, Page 45, Section 3.11, regarding recreational target shooting:** Target shooting poses a serious threat to paleontological resources, depending upon the location and whether there is risk of outcrop being struck. Shooting toward geologic features and paleontological resources must be prohibited.
36. **Chapter 3, Page 48, Section 3.11.2.3, Lines 10–11 of Paragraph 3:** The document states “Under Alternative A, a new campground called Shay Mountain Vista Campground would be constructed in the Indian Creek Unit”, but it is unclear where the proposed campsite would be. We must note that a campground near Shay Canyon could be a serious threat to paleontological (and cultural) resources at Shay Canyon. Therefore, proposed development of any new campground must be in consultation with Monument paleontologists, which the Monument currently lacks.
37. **Chapter 3, Pages 75–76, Section 3.16, regarding “categories of stakeholders”**
Paleontological resource researchers should be identified as important stakeholders distinct group from the five groups. This is because management of paleontological resources requires a unique combination of knowledge and expertise that is very different from that required for ‘cultural resources’ or any other categories covered in the listed stakeholder categories. We strongly recommend ‘Paleontological resource research stakeholders’ be added as a sixth group formally identified by BLM and USFS.
38. **Glossary (Volume 2): Page Glossary-4, definition of “Fossil”:** “Fossil” in the glossary is defined as “Any remains, trace, or imprint of a plant or animal that has been preserved in the Earth’s crust since past geologic or prehistoric time.” Besides the fact that a fossil may not necessarily be represented by a plant or animal, we recommend that the definition be replaced with something simpler and more straightforward: ‘Fossil: Any remains or trace of prehistoric life.’
39. **Glossary (Volume 2): Page Glossary-6, definition of “Paleontology”:** “Paleontology” in the glossary is defined as “A science dealing with the life forms of past geological periods as known from fossil remains.” We should note that fossils may not necessarily be preserved as ‘remains’ but also traces (e.g., foot prints). Furthermore, “past geologic periods” precludes the current geologic period for which we also have relevant paleontological information. In conjunction with re-defining ‘Fossil’ and ‘Paleontological resource’, we recommend that the definition be replaced with something simpler and more straightforward: ‘Paleontology: The scientific study of prehistoric life based on the fossil record.’

- 40. Appendices (Volume 2), Page A-17, regarding ‘Objects’ under ‘Paleontological Resources’:** The list of ‘Objects’ showing examples of paleontological resources in this table is excessively simplified, especially since Proclamation 9681 specifically recognizes those objects named in Proclamations 9558. We suggest replacing the list (that currently has only three bullet-points) with the following simple, but more accurate list that better reflects the full significance of the paleontological resources at BENM:

| Objects |
|--|
| <p>Specific objects that would be considered under Presidential Proclamation 9558, as modified by Presidential Proclamation 9681, include, but not limited to, the following:</p> <ul style="list-style-type: none"> ● Petrified wood, leaf fossils, marine invertebrates (e.g., echinoderms, brachiopods, bivalves, gastropods), and vertebrate bones found at Indian Creek, Arch Canyon, and elsewhere in the monuments ● Plant fossils, vertebrate tracks, and vertebrate bones and teeth, including remains of extinct amphibians found at Bears Ears Buttes, Indian Creek, and elsewhere. ● Prehistoric plant debris and petrified wood, plant root casts, leaf impressions, coquinas (debris of shelled animals), animal burrows and trackways, and vertebrate bones and teeth, including the only known procolophonid skull found at Bridger Jack Mesa, Cathedral Butte, Comb Ridge, Indian Creek, Lavender Canyon, and elsewhere. ● Vertebrate tracks and trackways, vertebrate burrows, root and plant casts found at Indian Creek, Butler Wash, and elsewhere ● The type locality and only occurrence of the dinosaur <i>Seitaad ruessi</i> at Indian Creek ● Numerous Quaternary deposits, including prehistoric packrat middens in natural cliff alcoves, found in Davis and Lavender Canyons, Cathedral Butte and its vicinity, and elsewhere |

- 41. Appendices (Volume 2): Page B-31 (Map 2-27):** The level of off-highway vehicle (OHV) access outlined in Alternative A threatens paleontological resources because: 1) OHVs could drive over paleontological resources, and 2) it would allow easy access to areas with high paleontological resource yield. We prefer Alternative B (Page B-33, Map 2-29), which would allow OHV users to connect with other existing routes (e.g., Salt Creek Mesa and Beef Basin Roads) without unnecessary unconstrained OHV access.

- 42. Appendices (Volume 2), Page J-3, Table 1-1, Rows 5–8 (“Paleontological Resources”):** PFYC cannot be used as a categorical guide for management alternatives. According to Handbook H-8270-1 General Procedural Guidance for Paleontological Resource Management, paleontological resources must be given “full and equal consideration” in “land use planning and decision making” (section .06 policy, A 2) regardless of PFYC category. Furthermore, the PFYC guidelines state that “PFYC assignments should be considered as only a first approximation of the potential presence of paleontological resources, subject to change based on ground verification”, and “The [PFYC] classification is not intended to be applied to specific paleontological localities or small areas within units.” Thus, site-level assessment and survey is required for any activities that could impact paleontological resources, regardless of the PFYC of the geological units represented at the site.

Appendix 2

Some examples of paleontological resources, known by SVP members, found on Federal lands now excluded from the monument boundaries. Note that the list below represents over 100 separate localities condensed in an abbreviated format and is by no means exhaustive, while much of the region has yet to be surveyed by well-trained, qualified paleontologists.

Cutler Group (Upper Pennsylvanian to Lower Permian) along Lockhart Road, at Comb Ridge, and in Beef Basin and Johns Canyon: Known paleontological resources include petrified wood, plant imprints, marine invertebrates (e.g., echinoderms, brachiopods, bivalves, and gastropods), animal burrows, dental and skeletal elements of sharks and ray-finned bony fishes, and bones of amphibians, diadectomorphs (closest relatives to primitive reptiles), primitive reptiles, and pelycosaurs ('mammal-like reptiles').

Moenkopi Formation (Middle Triassic) in White Canyon and Fry Canyon: Known paleontological resources include invertebrate burrows, vertebrate traces, and vertebrate bones, scales, and teeth.

Chinle Formation (Upper Triassic) south of the Dark Canyon and northwest of Natural Bridges as well as in Harts Draw, White Canyon, and Fry Canyon: Known paleontological resources include well-preserved, intact petrified trees, plant root casts, coquinas (debris of shelled animals), animal burrows and trackways, and vertebrate bones.

Morrison Formation (Upper Jurassic) in Brushy Basin: Numerous vertebrate and plant fossil localities, as well as type sections for several members of the Morrison Formation.

Quaternary deposits in natural cliff alcoves near Shay Mountain and Peters Ridge as well as Harts Draw: Known paleontological resources include prehistoric packrat middens containing fossil pollen, plant macrofossils, animal coprolites, terrestrial gastropods, insects, and vertebrate bones and teeth.

Appendix 3

Excerpts the Paleontological Resource Management Plan that SVP submitted to BLM as part of the scoping consultation that lay out important principles for management Transportation, Access, and Mineral Resources with regard to paleontological resources on Federal lands now excluded from BENM.

IV. TRANSPORTATION AND ACCESS

Unregulated uses of street legal motorized vehicles (including four-wheel-drive) and mechanized vehicles (including bicycles) as well as off-highway vehicles (OHV), also called all-terrain vehicles (ATV), including snowmobiles, have the potential to damage paleontological resources and sites, especially away from designated routes. Even foot traffic and horseback rides may harm paleontological resources. Therefore, an appropriate management plan to regulate traffic within the new monument units and the lands now excluded from the former BENM boundaries is critical to avoid or minimize damage to paleontological resources and paleontologically sensitive sites.

A. Public Access.

Within the Monument—Public access to off-road areas with known paleontological resources within the monument units shall be restricted to dispersed foot-traffic only in order to minimize damage to the resources by vehicles and other modes of transportation.

Areas now excluded from BENM—Paleontological resources in areas now excluded from the former BENM boundaries shall be identified and evaluated for sensitivity to motorized vehicular access, non-motorized vehicular access, and recreational access not involving vehicles. These conditions also apply to casual collection of paleontological resources to the extent allowed by PRPA and all other public uses within the limit of existing laws and regulations. However, areas with high paleontological sensitivity shall be considered for restrictions that would protect the resources. Examples include, but not limited to, White and Fry Canyons, along and south of UT-95, portions of Indian Creek, and Valley of the Gods, that contain abundant paleontological resources requiring such protection.

B. Research Access

Within the Monument—Access to field areas for all paleontological research shall be conducted under permit. Exploration, collection, and excavation activities shall be permitted to qualifying institutions after review by BLM in keeping with agency guidelines. Access by motorized vehicles, non-motorized vehicles, and other modes of transportation such as horseback, shall be restricted as necessary to provide reasonable protection for the paleontological resources. Access needs shall be evaluated on a case-by-case basis, to encourage efficiency and to ensure responsible exploration and excavation with reasonable safety.

Areas now excluded from BENM—Access to field areas for paleontological research in areas excluded from the former BENM boundaries shall be conducted under permit. Areas with high sensitivity shall be considered for restrictions that protect resources but allow for vehicular access by roads, two-tracks, and foot trails, under conditions that minimize impacts on the resources. Vehicular access shall be considered in the permitting process.

C. Commercial and Mining Access

Within the Monument—Access to areas in the monument units with paleontological resources for non-paleontological commercial purposes such as grazing, film production, and mineral extraction shall be conducted only where paleontological resources will not be adversely affected. Access to all areas within the new monument units with paleontological resources shall be restricted to existing roads. Particularly sensitive areas include exposures of highly fossiliferous formations, such as the Cutler Group, Chinle Formation, and Morrison Formation.

Areas now excluded from BENM—Access to areas outside the new monument units for non-paleontological purposes such as grazing, film production, and mining, shall be restricted to existing roads except as permitted, after review of potential impacts on paleontological resources and salvage of fossils in impacted areas. Access to areas identified for exploration or mineral extraction shall be permitted with conditions that minimize impact; and where impact is inevitable, with conditions that mitigate such impacts beginning with on-the-ground surveys, surface collection, and excavation. BLM shall solicit professional advice for situations that require extensive deliberation or mitigation. Costs of mitigation shall be borne by the entity applying for a commercial-use permit.

D. Management Exceptions

Within the Monument—BLM should permit a reasonable range of collecting techniques, including judicious yet appropriate use of wheeled and/or motorized vehicles as necessary to protect, preserve, and recover paleontological resources if there is justifiable reason. In addition, handheld motorized equipment, such as portable jackhammers and rock saws should be permitted within the monument units for paleontological survey and excavation. All such permitting shall be done on a case-by-case basis in consultation with the monument paleontologist, where decisions shall take into account other possible alternatives, least impact, and reasonable safety for participants and resources. Delivery of supplies and equipment, and transportation of fossils or blocks at the completion of excavation, may be permitted as needed, including helicopter transport if surface modes of transport are not possible or not practical.

Areas now excluded from BENM—Off-road vehicle access to paleontological exploration areas and excavation sites shall be considered on a case-by-case basis, including helicopter transport if other options are not practical. Access shall be permitted only where BLM determines that other resources will not be impacted, or where resource impact will be minimal and can be mitigated. Motorized equipment, such as jackhammers, and heavy equipment such as tractors or bulldozers, may be permitted on a case-by-case basis for paleontological survey and excavation. Road construction and surface modification (e.g., drainage control) for extraction sites such as a mine or well pad shall follow a route with minimal impact to fossil resources. Construction of facilities and infrastructure (e.g., buildings, warehouses, holding tanks, pipe lines, power lines) shall be situated where impact to fossil resources is minimized or otherwise mitigated with appropriate salvage. BLM shall solicit professional advice for situations that require extensive deliberation or mitigation.

E. Authority

Decisions over transportation and access within the monument units should be managed directly by the chief monument manager, who would work in conjunction with monument paleontologists. Decisions for Federal lands now excluded from the former BENM boundaries

should be made by a single BLM officer, who would work in conjunction with monument paleontologists. Applicable laws such as the National Environmental Policy Act (NEPA) and PRPA provide clarification and guidance for establishment of activities on Federal lands that contain paleontological resources.

V. ENERGY AND MINERAL ACTIVITIES

Paleontological resources are non-renewable and can often occur in intermittent concentrations. Damage to scientifically important paleontological sites from energy and mineral exploration and extraction operations must be avoided. Although energy and mineral extraction are prohibited within the boundaries of the new monument units, the areas that were previously included within the 2016 boundaries of BENM are rich with scientifically important paleontological sites, many of which have not yet been studied. PRPA does not protect sites or paleontological resources from destruction in cases where leases for mineral extraction have been granted. The excluded areas include broad exposures of geological units that are especially rich in scientifically important paleontological resources and are known to contain commercially viable mineral resources: the Chinle Formation (which contains commercially viable uranium deposits), the Cutler Group (which often forms the surficial rock layer where oil and gas wells are installed, and is closely associated with the uranium-rich Chinle Formation in many parts of the former BENM), and the Morrison Formation (which contains commercially viable uranium deposits).

Destruction of scientifically important paleontological sites or fossils by mineral extraction activities shall not be permitted in the excluded areas until a mitigation strategy has been adopted. This provision is especially important for exploitation of non-paleontological resources where mining activities inevitably impact or even destroy resources above and below the target resource. Mitigation should consist of preliminary surveying and collecting of whatever paleontological resources can be identified prior to the beginning of mineral extraction work; on-site survey and collection during extraction; and salvage collection after extraction. Fossils collected by mitigation activities should be processed and deposited in an appropriate public-trust repository. Under permit issued by BLM (or a relevant Federal agency if not on BLM-administered Federal lands), mitigation activities shall be conducted only by qualified organizations and by individuals with a strong background in paleontology. Costs shall be borne by the industry contractor. Paleontological information shall be collected by extractive industries during exploration, sampling, and extraction, and shall be deposited at BLM headquarters and evaluated for potential mitigation.

A. Prior to Commercial Energy and Mineral Activities

Preliminary mitigation surveys should cover the entire proposed area of disturbance, including proposed access roads, parking, spoil banks, and other infrastructure. Adequate time, normally at least one field season, should be allowed for each survey. The duration shall be extended (1) if inclement weather conditions prevent conducting an adequate survey during that field season, (2) if the proposed area is excessively large for the crew size to complete an adequate paleontological resource survey in one field season, or (3) if a large-scale excavation of paleontological resources by paleontologists prior to the proposed mining activity is required. Energy or mineral mining operation shall not begin until the chief monument manager or

authorized officer carefully reviews and accepts recommendations made by the senior monument paleontologist based on the results of the paleontological resource survey.

B. During Commercial Energy and Mineral Activities

In cases where extraction activities are being conducted in areas with high potential for yielding paleontological resources as determined by the preliminary survey, periodic inspections by a professional paleontologist should be conducted to ensure scientifically important paleontological resources are not inadvertently destroyed or unlawfully extracted. These inspections should include newly disturbed areas and their spoil banks. Mining workers during operation must immediately report to the designated monument paleontologist should they encounter any paleontological resources that are suspected of having scientific importance. If the discovery is determined to be scientifically important, the paleontologist shall immediately report to the senior paleontologist who will then request the chief monument manager or authorized officer to request an emergency excavation to collect the paleontological resources in question.

C. Individual Mineral Activities

Casual mineral collection, especially in the newly excluded areas of the former BENM, could easily extend to fossils in the minds of collectors. Individuals with rights to collect minerals may only do so within the limits of PRPA, which applies to all Federal lands and which explicitly excludes paleontological resources from the definition of minerals. Individuals should immediately report to one of the monument paleontologists any paleontological resources they suspect of having scientific importance.

D. Authority

The monument senior paleontologist should determine who would serve to direct a paleontological resource survey should a mining proposal be submitted for an area of Federal lands previously included in BENM that are now excluded from the former BENM boundaries. The senior paleontologist shall directly report to the chief monument manager.

Appendix 4

Excerpts the Paleontological Resource Management Plan that SVP submitted to BLM as part of the scoping consultation that lay out important resource solutions for managing paleontological resources on Federal lands now excluded from BENM.

I. RESOURCE NEEDS

Collaborative partnerships with volunteers, universities, and other research institutions as well as law enforcement should be pursued for the purposes of documenting, preserving, monitoring, and interpreting paleontological sites in a manner consistent with the overall objective of protecting paleontological resources. In addition to disseminating paleontological findings through conventional scientific channels, they should be disseminated to the public through appropriate educational and interpretative venues to improve visitors' understanding of paleontological resources and to prevent damage. To achieve these objectives, adequate personnel, funding, and protection enforcement are necessary.

A. Personnel

Presently, the BLM does not have any professional paleontologists on its staff to manage assigned solely to manage the paleontological resources at BENM, despite the central importance that those resources played in establishing the original monument (and its revised units). At least one full-time (FT) paleontologist is necessary for each of the new monument units, in addition to one FT senior monument paleontologist who would coordinate them and oversee paleontological resources at the excluded Federal lands. These staff should be charged with preserving, studying, interpreting the paleontological resources of the two monument units, and coordinating the activities of external researchers and other BLM paleontologists. Each of the three unit paleontologists should be assisted by at least one trained FT monument paleontology technician. In addition, the two monument units combined need at least one FT education and outreach coordinator to promote the monument units' paleontology program and the awareness of paleontological resources protection and preservation to the general public. The senior monument paleontologist would oversee the entire paleontology program in the two monument units and the areas now excluded from the former BENM boundaries, and would prioritize tasks of each unit paleontologist and the education and outreach coordinator. Each paleontology unit should have relevant support staff housed at monument facilities.

Paleontological resources also occur in the area on Federal lands that are not managed by BLM (e.g., U.S. Forest Service). If such non-BLM Federal agencies do not have professional paleontologists dedicated to the area, BLM monument paleontology staff should be given jurisdiction over those lands as well, or they should work closely with the non-BLM agencies to protect and preserve paleontological resources and facilitate research, education, and outreach on those lands.

B. Funding

In order to maximize the public and scientific value of the paleontological resources at the new monument units and the excluded areas, funding must be available not only to support monument paleontology staff (e.g., paleontologists, technicians, and coordinators), but also to facilitate paleontological resource surveys and monitoring programs, research, education and

outreach (including internship opportunities), site protection and preservation, specimen collection, and specimen curation. In addition, there must be reliable annual funding to support sharing of research results with the public to demonstrate the effectiveness of monument research programs and integration of local communities with activities in the monument units (e.g., paleontology staff and interns' participation in professional conferences and/or workshops, sponsoring education and outreach activities, and presentations to the public and interested groups).

Specimens from the new monument units and excluded areas should continue to be curated in public-trust repositories. When cases where collection, preparation, and curation of a discovery are beyond the resources (financial or otherwise) of BLM (or a relevant Federal agency, if the paleontological resource in question is not from BLM-managed Federal land) alone, finding such resources, including possible cost sharing or cooperation with non-Federal public-trust repositories, is the responsibility of BLM (or that relevant Federal agency). This includes cases of illegally collected paleontological resources seized through law enforcement activities where their curation is deemed necessary. In addition, funding to digitize paleontological specimens originating from the monument units should be available to researchers, and such digital representations should be freely available to researchers and the general public.

To these ends, National Conservation Lands funds and other sources of BLM funding should be made available to appropriate projects selected by existing application procedures, in addition to other funding streams that may be available from other Federal and non-Federal programs.

Owing to the joint management nature of BENM, NCL grant funding should be eligible for use on both BLM and non-BLM portions of the monument.

C. Protection Enforcement

The protection of paleontological resources and enforcement of paleontological protections should be maintained in accordance with their value as non-renewable scientific and educational resources. All monument paleontology staff should work closely with appropriate law enforcement to protect paleontological resources, active excavations, and access to sensitive areas. Effective communication between monument paleontologists and law enforcement may include regular trainings and updates by paleontology staff. Enforcement of paleontological regulations should be among the highest priorities of law enforcement. A minimum of two BLM law enforcement officers (LEOs) should be assigned to BENM exclusively (one per monument unit) to ensure protection of BENM resources. Each LEO shall undergo additional training from monument paleontology staff on the significance and distribution of fossil resources within BENM, as well as training on how to detect and field stabilize looted fossil sites.

Appendix 5

Excerpts the Paleontological Resource Management Plan that SVP submitted to BLM as part of the scoping consultation that lay out important principles for Research, Education, and Collection with regard to paleontological resources on Federal lands now excluded from BENM.

II. RESEARCH AND EDUCATION

Because paleontological resources were one of the major justifications for the creation of BENM, greater protection for paleontological resources is needed not only in the Indian Creek and Shash Jáá monument units, but also on surrounding Federal lands that have been excluded from the former BENM boundaries. Many of BENM's most important scientific paleontological sites are in the excluded areas, some of which suffered from looting before 2016. In order to increase public awareness of the significance of paleontological resources on those lands, it is critical to disseminate scientific findings made by both monument staff and external partners as well as associated education and outreach, in the form of news media coverage, documentary television programs, websites, museum exhibits, and visitor center exhibits. Many areas of the monument units still have not been surveyed for their paleontological resources. Establishing well-structured and well-funded research, education, and outreach programs should be a high management priority to ensure that the paleontological resources of the new monument units and the lands now excluded can be appreciated, protected, and shared.

A. Engagement and Support

One of the primary purposes for establishing BENM was to protect the scientific resources described in the original 2016 Proclamation. The BLM shall enhance its partnerships with external organizations such as museums and universities that can be effective for cost-sharing, maximizing efficiency, and ensuring that appropriate experts oversee relevant paleontological research. In fact, the BLM's partnerships with external scientists have been crucial for exploration, conservation, and interpretation of paleontological resources within the monument units. As such, the monument units should facilitate research to the fullest extent possible, in accordance with monument policy and all applicable laws, including the Paleontological Resources Preservation Act (**PRPA**: P.L. 111-011 Omnibus Public Land Management Act of 2009). BLM staff who approve permitting should have relevant scientific degrees and appropriate paleontological research experience. Monument officials should review and render a rapid decision on all paleontological collection permit applications falling under their purview. Similarly, the staff who review special requests related to research on paleontological resources and related materials from the monument units (e.g., loans, consumptive sampling, specimen replication) should have similar professional qualifications and process requests within a reasonable timeframe. Facilitation of collaborative work among researchers with similar research objectives, and avoidance of antagonistic relationships, should also be among the objectives of monument oversight.

The process for evaluating proposed research should consider whether it can be carried out in a manner consistent with the protection of the monument units' other resources, and whether the disturbance proposed is the minimum necessary to achieve the desired research objective. All research and related educational activities shall require special-use permits. Data collection standards should be established by the chief monument manager, and data should provide

information that feeds directly into the adaptive management framework. Except where specifically prohibited (e.g., in relict plant areas and wildlife protected activity centers), BLM shall consider exceptions during the special-use permitting process for extremely high-value scientific research opportunities, especially for those opportunities that may not be available elsewhere. Research projects focused on protecting paleontological resources at risk should also be considered for exceptions.

Recognizing that the tools available for paleontological research, such as 3D scanning and elemental analyses, are changing rapidly, novel research methods should be encouraged, with a particular emphasis on making the resulting data available to the scientific community and general public with minimal restrictions. Appropriate restrictions on site data to protect paleontological resources, in accordance with PRPA, should be applied. However, both field and laboratory work often rely upon the exchange of detailed site data among researchers. As such, all reasonable requests for locality data, or the exchange of locality information, should be granted to qualified researchers for legitimate research and/or management purposes.

B. Education and Outreach

The BLM should engage in education and outreach in a manner consistent with ongoing efforts in the state of Utah and in BLM's paleontology program nationwide. Public education and interpretation should be emphasized to improve visitor understanding of paleontological resources and to prevent damage. Collaborative partnerships with volunteers, universities, and other research institutions should be pursued to document, preserve, monitor or interpret sites consistent with the overall objective of protecting paleontological resources. All investigators conducting research in the two monument units and intervening lands should be encouraged to engage in, or initiate, education and outreach activities.

The BLM should establish at least one visitor center at each of the two monument units to promote understanding of the cultural and scientific resources of the area, including paleontology. Results of paleontological research should be disseminated to visitors through interpretative public displays, public programming, exhibitions, publications, and discussion forums. Each visitor center should include exhibits and programs on the paleontology of the monument and surrounding areas, especially in the region around the center, embedded with tribal interpretations of the land, its history, and its fossils. In addition, the BLM should work with its local and regional partner organizations to develop educational programs for grades K-12, emphasizing the area's scientific and cultural resources, as well as for undergraduate and graduate programs at universities as resources permit. The results of paleontological research should also be communicated to the broader public, including the scientific community, via news releases, publications, traveling exhibits, and other kinds of media. Special outreach efforts should focus on local and regional communities and on underserved communities around the nation. A monument website, educational brochures and publications, and collaboration with non-Federal organizations (e.g., universities) offering experiential-learning field courses and internships, should be incorporated into management programs to the fullest extent possible. The BLM should permit and encourage molding and casting as well as 2D and 3D digitization of paleontological resources from the monument units and the excluded areas for research and educational purposes. Dissemination of digital representations of paleontological resources should be made available for free. Whether physical replicas or through photographs or digital files printable on a 3D printer, such activities enhance public knowledge of the monument units' paleontological resources and reduce potential damage to material in repositories (i.e., by

reducing handling) or those still in the ground (i.e., by providing an alternative to poaching and vandalism). Furthermore, they expand the ability of outside entities to provide hands-on access to physical replicas and digital representations of paleontological resources from the monument units, enhancing the types of educational opportunities relating to the monument units that are available at local, regional, and national levels.

C. Authority

The senior paleontologist should (1) report directly to the chief monument manager; (2) work with and keep other BLM paleontologists informed; (3) work with and keep informed the state paleontologist for the state of Utah; (4) consult and articulate with similarly acting monument archaeologists as their activities overlap; (5) coordinate activities of permittees within the boundaries of the former BENM, ensuring that research is conducted in such a way as to minimize interference among different projects. Unit paleontologists should report to the senior paleontologist, with technical assistants reporting to their corresponding unit paleontologist. The education-outreach coordinator for paleontology should work directly under the senior paleontologist and alongside the unit paleontologists.

III. COLLECTION

Collecting and conserving paleontological resources require special skills and resources that are not only critical for scientific research and education but also for properly preserving America's natural heritage. This process includes proper field collecting, site preservation, specimen preparation and curation, logistical support for researchers and educators, management and dissemination of contextual data associated with paleontological resources, and consulting with law enforcement officers when paleontological resources received by a repository appear to have been collected or transported illegally. Funded partnerships between BLM and external institutions are critical for achieving these objectives.

A. Field Collecting and Permitting

The collection of vertebrate and non-vertebrate paleontological resources must be conducted in accordance with PRPA. Collecting of paleontological resources without a permit should be prohibited within the boundaries of the new monument units. As stipulated in PRPA, collecting vertebrate fossils should only be conducted by qualified individuals under permit for research and/or educational purposes. Commercial collecting is prohibited on all federally administered lands.

Individuals receiving permits to conduct research on paleontological resources should have qualifications consistent with existing Federal guidelines outlined in PRPA, such as an advanced academic degree in paleontology or equivalent evidence of advanced paleontological knowledge and experience. Projects approved for permits should be compatible with management plans and whatever policies are applicable to the Federal land concerned. Projects should be compatible with the protection of other natural and cultural resources. Permits should indicate that all paleontological resources that are collected in the course of the project remain the property of the United States and should be preserved for the public in a public-trust repository along with associated data. Specific site data should remain confidential to researchers except as specified in the (pending) PRPA regulations.

Collecting of paleontological resources may require the use of special tools and techniques. Given the remote location of many fossil-bearing rocks as well as the techniques required to stabilize, excavate, and remove paleontological resources, management of these activities requires appropriate flexibility. Hand tools (e.g., picks, shovels, hammers, and chisels) are often sufficient to safely remove small specimens (i.e., those typically covered under a surface collection permit). However, small power tools (e.g., jackhammers, generators, rock saws, and other tools) are often required to safely stabilize, collect, and prepare larger paleontological specimens for transport, in both front country and back country areas. Importantly, these small power tools may result in less net disturbance to the ground by permitting a quicker and more focused excavation than would be allowed by hand tools. Thus, all management plans should allow for flexibility in collecting techniques with reasonable justification. Similarly, management plans should allow for judicious yet appropriate use of wheeled and/or motorized vehicles and heavy equipment as necessary to protect, preserve, and recover paleontological resources.

B. Site Preservation

Because irreplaceable paleontological resources are regularly exposed by erosion, and are at risk of damage by erosion or vandalism once exposed, regular monitoring of paleontological sites are strongly advised as part of an ongoing resource management plan. A monument paleontologist from the relevant management unit should coordinate efforts to maximize preservation of the site's context. For projects involving surveying and surface collection, there should be only limited disturbance, with little or no digging in accordance with existing BLM and PRPA regulations. For projects involving excavation, waste material should be piled immediately next to dig sites, and excavated sites should be cared for post-excavation to protect fossil-bearing pockets and to restore the outcrop to its pre-disturbance state. Whenever possible, each excavation permit should estimate the necessary amount of paleontological resources that are required to complete the project. Sites should not be marked by graffiti, and rock cairns should be dismantled when encountered in order to protect sites from potential vandalism.

Each management unit should also staff law enforcement to assist in site protection and monitoring. Law enforcement staff should be sufficiently trained in such protection and knowledgeable of laws governing natural and cultural resources on Federal public lands, including the Federal Land Policy and Management Act (FLPMA) and PRPA.

C. Repository

Applications for research permits should include a repository agreement granted by an appropriate public-trust repository. Any paleontological resource collected under a permit as well as associated field records (e.g., photographs, field notes, and excavation maps) should be stored by that repository. Proof of receipt of these paleontological resources by the repository should be provided to the senior monument paleontologist and managing Federal office by the permittee in the form of an institutional accession number and an inventory of fossils collected (to be provided with annual and final reports). However, prior to formal accessioning, the repository should be allowed to discard paleontological resources that are determined not to be scientifically significant upon their preparation or evaluation. Such paleontological resources should ideally be transferred to educational collections to maximize their utility. Formally curated and catalogued paleontological resources shall not be deaccessioned or discarded without permission of the BLM.

The BLM should financially support partnerships with non-Federal public-trust repositories to prepare, conserve, and curate Federal specimens and make non-sensitive data on these specimens available to the public through the electronic dissemination of these data in online databases. Day-to-day management of research on Federal specimens should be assigned to the repository with terms negotiated via the permittee's repository agreement, Memoranda of Understanding, or other approved agreement. To facilitate efficiency, each repository should be given permission to make basic collection-based decisions (including consumptive or destructive sampling) without requiring prior Federal approval, while still working with the concerned Federal agency to ensure that such decisions are documented. Which and how many repositories may house paleontological resources from the monument units will depend on the scope and nature of the proposed project(s) and on the collections scope of the participating institutions acknowledged on the permit(s). Because the Utah BLM, which currently oversees Federal lands of the former BENM, has no existing infrastructure to curate and reposit scientific specimens, there is no expectation that the existing multi-repository policy should change. Paleontological resources from the entire Federal lands of the former BENM should continue to be curated and housed by multiple public-trust repositories (Federal and non-Federal), sustaining those diverse collections and long-term projects. This is particularly true for management areas having high paleontological sensitivity and varied research priorities.

D. Authority

Decisions about collecting activities should be managed directly by the senior monument paleontologist in conjunction with other appropriate Federal officers as well as non-Federal partners and institutions.