



Society of Vertebrate Paleontology

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Subject: Comments from the Society of Vertebrate Paleontology on BLM’s Rock Springs Field Office Draft Resource Management Plan Revision and Draft Environmental Impact Statement.

To U.S. Bureau of Land Management,

The following comments (**Appendix 1**) on the draft Resource Management Plan (**RMP**) and Environmental Impact Statement (**EIS**) for the Rock Springs Field Office (**RSFO**)—DOI-BLM-WY-D040-2011-0001-RMP-EIS (<https://eplanning.blm.gov/eplanning-ui/project/13853/570>)—are submitted on behalf of the approximately 2,000 members of the Society of Vertebrate Paleontology (**SVP**: <http://vertpaleo.org>). SVP is a non-profit international scientific organization consisting of researchers, educators, students, and enthusiasts, 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. Thus, SVP is an important stakeholder in U.S. federal lands, including in much of Wyoming, where a number of SVP members have active research, either in the field or in collaboration on specimens repositied in public collections.

The areas considered in the Rock Springs plan include fossiliferous Cretaceous and Eocene rocks. The Eocene units have the highest possible Potential Fossil Yield Classification (PFYC) rating of “5”, indicating that those areas are exceptionally important paleontological sites (see Map 3-15 of the draft RMP and EIS document). The Cretaceous units around Rock Spring also have a relatively high PFYC rating of “3” or “4”. Thus, as described in Appendix 1, SVP prefers Alternative B in general in this report specifically in regards to paleontological resources (Pages 2-103 through 2-106) as it offers the greatest ability to manage their preservation and protection.

Paleontological resources are nonrenewable and irreplaceable once destroyed. Because of the ongoing scientific importance of the area, SVP is concerned with management changes that would jeopardize sites or that would diminish the effectiveness of scientific research at those sites. Questions concerning our letter and comments should be addressed to any one of us or Dr. Kenshu Shimada (SVP’s Government Affairs Committee) at svp@vertpaleo.org. Thank you for the opportunity to comment.

Yours sincerely,

Margaret E. Lewis, Ph.D.

Stuart S. Sumida, Ph.D.

Jessica M. Theodor, Ph.D.

A handwritten signature in blue ink, appearing to read "M. E. Lewis".

A handwritten signature in blue ink, appearing to read "Stuart S. Sumida".

A handwritten signature in blue ink, appearing to read "Jessica M. Theodor".

SVP President

SVP Vice President

Past SVP President

APPENDIX 1

SVP's Comments on Draft RMP and EIS

The draft RMP and EIS document lists a total of 23 types of resources or “affected environments.” After the preamble below describing the paleontological context of public lands managed by RSFO, SVP’s point-by-point comments and recommendations for each resource type from the perspective of paleontological resource management are presented:

Preamble—The land administered by the RSFO has been a paleontological treasure trove at least ever since the railroad allowed easy access to this area. Early paleontological expeditions followed the railroad’s charge westward in the late 1860s resulting in many of the earliest vertebrate fossil discoveries in this part of the state, which tend to be close to the Union Pacific’s rail lines. Examples include Bitter Creek Promontory in the Eocene Wasatch Formation described by Edward D. Cope in 1873 and Othniel C. Marsh in 1876 and the early discovery of the famed Green River Formation fish beds, first discovered as part of the Union Pacific’s track-building endeavors and described by Ferdinand V. Hayden in 1871. Over 150 years of paleontological exploration has created a wealth of accumulated knowledge that is still expanding as new discoveries are being made by both field researchers and mitigation paleontologists. The local Eocene formations are particularly significant scientifically because they have provided vertebrate paleontology with reference biostratigraphic zones for the early Eocene time, called North American Land Mammals Ages, including the Wasatchian and Bridgerian ages.

Air Resources (Pages 2-5 through 2-9)

While SVP supports the requirements to maintain healthy air resources, issues concerning air resources are largely irrelevant from the paleontological standpoint, except where surface disturbances, that may impact paleontological resources at or near ground surfaces (if any) are involved. Therefore, SVP prefers Alternative A for MA# 1010 (Page 2-7) in light of the fact that how ground disturbances will be handled is not clear in Alternative B. SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Soil and Geologic Resources (Pages 2-9 through 2-13)

Extraction of paleontological resources generally involves some level of ground-disturbing activities, but following an excavation, it is typical for the site to be restored and for any disturbance to be mitigated. Therefore, SVP prefers management alternatives that allow for some temporary soil disturbance and/or make exceptions for scientific research. Below are SVP’s comments and preferences:

- Because paleontological resources may occur in different settings, SVP prefers Alternative A for MA#s 1107 and 1108 (Page 2-10) where soil disturbance is avoided but not prohibited, allowing flexibility to conduct carefully managed surface disturbance activities, such as paleontological excavations. For example, important fossil localities may be located in areas

with greater than 25% slopes; therefore, Alternative B which prohibits surface disturbances where slopes are greater than 25% is not preferred by SVP.

- While SVP supports the requirement for a soil health and restoration plan, discoveries of paleontological resources generally take place where erosion of rocks takes place; therefore, for MA# 1112 (Page 2-11), Alternative C is adequate from a purely paleontological standpoint.
- For all other MA#s with different alternatives, SVP is fine with Alternative B preferred by BLM.

SVP asks that any decision-making should be made in consultation with the bureau's own paleontologists in the region.

Water Resources (Pages 2-13 through 2-22)

While SVP supports the requirements to maintain healthy water resources, issues concerning water resources are largely irrelevant from the paleontological standpoint, except for alternatives that would have scenarios completely prohibiting surface disturbance activities. Alternative B of MA#s 1302, 1313, and 1325 (Pages 2-14, 2-16, and 2-22) are such examples SVP does not prefer. Alternative A for MA# 1302, Alternative C or D for MA# 1313, and Alternative D for MA# 1325 (= equivalent to Alternative D of MA# 1320: Page 2-20) would be more sensible from the paleontological standpoint (and thus preferred here) by providing flexibility (on a case-by-case basis or 'avoid' but not necessarily prohibit) to conduct carefully managed surface disturbing activities, such as paleontological surveys, mitigations, and excavations. SVP asks that any decision-making should be made in consultation with the bureau's own paleontologists in the region.

Lands with Wilderness Characteristics (Pages 2-22 through 2-25)

While SVP supports the requirements to maintain lands with wilderness characteristics and particularly alternatives that would prohibit mineral explorations (e.g., Alternative B of MA# 1502), SVP finds most of the alternatives in this entire section (Pages 2-23 through 2-25) to be vague in relation to how the paleontological activities can be carried out. Because paleontological resources commonly occur in such wilderness areas, having no management in those areas as suggested in Alternative C of MA#s 1501–1517 would be problematic. SVP prefers an alternative (e.g., Alternative D where 'Manage for multiple use' is noted) that would allow paleontological inventories/surveys, excavations, and mitigations, that may involve some degree of surface disturbances, on a case-by-case basis. SVP asks that any decision-making should be made in consultation with the bureau's own paleontologists in the region.

Mineral Resources (in general: Pages 2-25 through 2-47)

SVP prefers an alternative that would prohibit, or minimally strongly discourage or limit, any forms of mineral resource activities where very high potential for paleontological resources exists, particularly if areas of interest have the Potential Fossil Yield Classification (PFYC) rating of "4" or "5". For any lands of interest, no mineral activity permits should be issued prior to each mineral activity without proper paleontological surveys and any necessary excavations/mitigations by qualified paleontologists, including BLM paleontologists. While 'no mineral activities' is the most preferred option for SVP, we must note that an elaborate plan for best practices for mineral (including oil, gas, and coal) explorations at paleontologically sensitive sites must be in place if

alternatives that allow such explorations are selected. We have attached below (**Appendix 2**) our generic paleontological resources management plan that pertains to energy and mineral activities, including oil and gas explorations. SVP hopes BLM will adopt the suggested best practices in Appendix 2 for the areas of concern in this present case (DOI-BLM-WY-D040-2011-0001-RMP-EIS) in consultation with the bureau's own paleontologists in the region.

Wildland Fire and Management (Pages 2-47 through 2-50)

While SVP supports any necessary fire management plans (Pages 2-47 through 2-50), it should be noted that fire has the capacity to damage or destroy paleontological resources and sites. Therefore, if any prescribed fire (controlled burns) of lands need to be conducted, such lands should be expeditiously, but properly and adequately, surveyed for paleontological resources (and mitigated or excavated if necessary) by qualified paleontologists, including BLM paleontologists, prior to the burn.

Forest and Woodlands (Pages 2-50 through 2-55)

Paleontological resources are not common in heavily vegetated areas such as forests and woodlands (Pages 2-50 through 2-55). Therefore, SVP does not have any specific comments as long as those areas have been properly evaluated for paleontological resources and do not have the Potential Fossil Yield Classification (PFYC) rating of "4" or "5". However, SVP asks that any decision-making should be made in consultation with the bureau's own paleontologists in the region.

Vegetation – Grassland and Shrubland Communities (Pages 2-55 through 2-58)

Paleontological resources are not common in vegetated areas, but they nevertheless do occasionally such as in grasslands. Therefore, although SVP does not have any specific preferences in regard to different proposed alternatives (Pages 2-50 through 2-55), such areas should be properly surveyed for paleontological resources by qualified paleontologists, including BLM paleontologists. If any prescribed fire of such lands is needed (e.g., Alternative A of MA#s 4103–4109), such lands should be expeditiously, but properly and adequately, surveyed for paleontological resources (and mitigated or excavated if necessary) by qualified paleontologists prior to the burn.

Invasive Species and Pest Management (Pages 2-58 through 2-60)

Riparian and Wetland Resources (Pages 2-61 through 2-62)

Fish and Wildlife (Pages 2-61 through 2-75)

Special Status Species (Pages 2-76 through 2-85)

Wild Horses (Pages 2-85 through 2-86)

Because SVP does not have a direct interest or expertise in these resources, we will defer to the evaluations provided by groups that do. However, we note that trampling by wild horses can have a negative impact on paleontological resources at or near the ground surface. SVP asks that any decision-making should be made in consultation with the bureau's own paleontologists in the region.

Cultural Resources (Pages 2-86 through 2-91)

Specific Cultural Resources (Pages 2-91 through 2-102)

Sacred, Spiritual and/or Traditional Cultural Properties (Pages 2-102 through 2-103)

SVP supports tribal stewardship and traditional uses of cultural landscapes and other resources on BLM lands and elsewhere. If and when the management of paleontological resources overlaps with tribal stewardship and resource use, trained and qualified paleontologists should be consulted so that the significance of tribal cultural heritage can be further enhanced also to encompass scientific significance.

One additional general comment is with the use of the word ‘prehistoric.’ The draft RMP document defines “Prehistoric” as “Information about past events prior to the recording of events in writing. The period of prehistory differs around the world depending upon when written records became common in a region” (Page GL-23). While this definition is appropriate, we also point out that the word also occurs appropriately in the definition of “Fossil” which reads “Any remains, trace, or imprint of a plant or animal that has been preserved in the Earth’s crust since some past geologic or prehistoric time (AGI Glossary of Geology)” (Page GL-12). However, while it is somewhat contradictory for the definition of “Historic Properties” that reads “Any prehistoric or historic district, site, building, structure, or object...” (Page GL-14), if the word ‘prehistoric’ is used in the RMP, it should be explicit if it is used in the archaeological context, paleontological context, or both, in order to increase clarity. For example, all alternatives of MA# 5008 (Page 2-89) use the word “prehistoric” once or twice, and while it is in the context of archaeology, it may be better to be explicit about that in order to avoid any possible confusion.

Paleontological Resources (Pages 2-103 through 2-106)

SVP prefers management actions that offer strong protection of paleontological resources but also the flexibility to conduct scientific investigations and necessary extractions of paleontological resources by qualified researchers under the Paleontological Resources Preservation Act of 2009. With these preferences in mind, SVP endorses all the goals and objectives (HR-17 through HR-24 as well as MA# 5300 and 5301) in the proposed RMPs for Paleontological Resources and prefers Alternative B for MA#s 5302–5309 (Pages 2-103 through 2-106). In particular, SVP would be delighted to further enhance its long-standing partnership with BLM as expressed in Alternative B for MA# 5306 (i.e., “The BLM would actively solicit paleontological research”: Page 2-105).

From the SVP’s viewpoint, Alternative A may be acceptable. Alternative C would require more paleontological monitoring and mitigation which may enhance new fossil discoveries and new paleontological activities; however, it is less preferred compared to Alternative A or B which would provide better preservation and protection of paleontological resources and sites. SVP strongly discourages Alternative D at least for some instances. For example, Alternative D of MA# 5302 states “No similar action (action required under existing law, regulation and policy)”, which can be interpreted that paleontological sites would not be managed for their paleontological resources. Alternative D of MA# 5308 states: “Allow surface disturbing activities, on a case-by-case basis, in the Farson Fossil Fish Beds, subject to adequate mitigation of impacts following BLM mitigation policies.” SVP points out that, not only this alternative would allow the scientifically significant fossil fish bed to be disturbed, but it also appears contradictory to the statement for the alternative in the sixth paragraph on Page 4-162 which reads: “Under Alternative D, management of paleontological resources would have impacts similar to Alternative A; however, additional management for the Farson Fossil Fish Beds could protect the paleontological site.” SVP is uncertain how it (i.e., Alternative D of MA# 5308) could protect the fossil site by allowing surface disturbing activities. However, it should be added that one notable possible exception is Alternative D of MA# 5309 (Page 2-106), which reads “Institute periodic law enforcement patrol and other efforts to protect

sites under the Paleontological Resources Protection Act”, that would add extra protection to paleontological resources. Taking all these pieces of information into account, again, SVP prefers Alternative B in general in regard to paleontological resources with a possible exception of Alternative D of MA# 5309. Regardless, SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Visual Resources (Pages 2-106 through 2-109)

Because SVP does not have a direct interest or expertise in these resources, we will defer to the evaluations provided by groups that do. However, where surface disturbances are involved, SVP prefers alternatives that would offer flexibility to conduct paleontological surveys, mitigations, and excavations (e.g., those that allow surface-disturbing activities in MA# 5411). SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Lands and Realty (Pages 2-109 through 2-113)

The use of off-road vehicles (ORV) has great potential to harm paleontological resources at or near the ground surface, so SVP prefers alternatives that specifically restrict or close access for the use (e.g., Alternatives A or D of MA# 6000). Where ORV access is permitted, SVP prefers that vehicles be used only on preexisting vehicle trackways unless specific permission to go off them is granted.

Land development typically has a negative impact on paleontological resources, and thus SVP prefers alternatives that limit land development. Furthermore, SVP prefers alternatives that would retain BLM lands as public land, particularly areas with the Potential Fossil Yield Classification (PFYC) rating of “4” or “5”, and does not prefer those that consider land withdrawals. If land withdrawals are considered, the decision should be made in consultation with the bureau’s own paleontologists in the region. Retention of public lands by BLM will ensure the preservation and protection of paleontological resources under the Paleontological Resources Preservation Act of 2009. SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Renewable Energy (Pages 2-113 through 2-114)

Rights-of-Way and Corridors (Pages 2-114 through 2-117)

Backcountry Byways (Pages 2-117 through 2-118)

Less regulated ROW would make it easier for people to purposefully or unwittingly disturb paleontological sites or remove paleontological resources, particularly in the absence of increased law enforcement activities or paleontological monitoring. Land development and land use typically have a negative impact on paleontological resources. Therefore, SVP prefers alternatives that would limit ROW, including activities pertaining to renewable energy and backcountry byways. If new ROW corridors are suggested to be developed, SVP asks that BLM paleontologists be consulted for the most optimal pathways that will eliminate, or at least minimize, the potential for damages to paleontological resources, if any, in the area.

Livestock Grazing Management (Pages 2-118 through 2-124)

Grazing, especially trampling by livestock and vehicular access to grazing areas can have a negative impact on paleontological resources near the surface. Alternatives that expand the area open to

grazing or that increase its intensity are discouraged by SVP, and we prefer alternatives that reduce the acreage available for livestock grazing and/or alternatives that protect paleontological resources from the impacts of grazing (e.g., “Reduce total authorized livestock use to the highest level” in Alternative C of MA# 6404). This is particularly true for areas with the Potential Fossil Yield Classification (PFYC) rating of “4” or “5”, and SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Recreation (Pages 2-124 through 2-138)

The impacts of recreation on paleontological resources are variable depending on the type of activity and the location. SVP asks that any allowed recreational activities be consonant with the protection of paleontological resources and that areas with important paleontological sites or high Potential Fossil Yield Classification (PFYC) ratings (i.e., rating of “4” or “5”) but excluded from recreational activities that are likely to result in degradation. In this regard, SVP prefers Alternative B for most of the MA#s for ‘Recreation’, we point out a few specific issues below:

- Alternative B of MA# 6504 states “other resource values” where SVP expects that these include paleontological resources.
- Alternative B of MA# 6505 states “Close areas to camping if resource damage occurs”, but because paleontological resources are nonrenewable, detailed management plans must be in place to eliminate the possibility of damage to paleontological resources in such areas in the first place.
- Alternative B of MA# 6514 states “Consider development of permanent recreational sites and facilities in undeveloped recreation use areas”; however, SVP asks that such development in areas with the Potential Fossil Yield Classification (PFYC) rating of “4” or “5” should be avoided and that BLM paleontologists be consulted for any land use decision-making processes on BLM-managed public lands.
- Alternative B of MA# 6516 states “Prohibit surface disturbing activities within three miles or the visual horizon, whichever is closer, of developed recreation sites unless such activities are determined to be compatible with or are done for meeting recreation objectives for the area.” SVP hopes that paleontological surveys, mitigations, and excavations that will likely cause some degree of surface disturbance to be allowed.
- Alternative B of MA# 6520 states that “Allow recreational activities involving gold panning or casual use relating to prospecting and other similar activity (with the exception of sluice boxes) in those parts of the planning area.” SVP encourages well-managed casual collecting of common paleontological resources, such as plant and invertebrate fossils, under the Paleontological Resources Preservation Act of 2009, as an integral part of promoting paleontological and geological education, particularly in areas with the Potential Fossil Yield Classification (PFYC) rating of “3” or below. However, the information must be clearly disseminated to the public that collecting of vertebrate fossils requires BLM’s permit and is generally limited to qualified researchers.

SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Off-Highway Vehicles (Pages 138 through 2-142)

As noted above in the context of off-road vehicles (ORV), OHV use can cause significant damage to paleontological resources near the surface, including those on the surface that are critical for locating

sites during surveys. Furthermore, vehicular transport makes it easier for people to purposefully or unwittingly disturb fossil sites or steal material from them, particularly in the absence of increased law enforcement activities or paleontological monitoring. However, research, excavation, and mitigation of paleontological resources can require access by vehicles, especially for moving heavy equipment and/or specimens. SVP prefers alternatives that balance the need to protect BLM objects like paleontological resources from damage caused by the presence of roads and OHVs, with the need for reasonable access. Therefore, SVP is generally fine with BLM-preferred Alternative B for MA#s ranging from 6606 to 6620, but one clarification must be made regarding Alternative B of 6606 that reads:

“Where off-road vehicles are causing or will cause considerable adverse effects upon soil, vegetation, wildlife, wildlife habitat, cultural resources, historical resources, threatened or endangered species, wilderness suitability, other authorized uses, or other resources, the affected areas shall be immediately closed to the type(s) of vehicle causing the adverse effect until the adverse effects are eliminated and measures implemented to prevent recurrence.”

It must be noted that paleontological resources are nonrenewable, so detailed management plans must be in place to eliminate the possibility of damage to paleontological resources in such areas in the first place. SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

Congressionally Designated Trails (Pages 2-142 through 2-151)

Wilderness Study Areas (Pages 2-152 through 2-153)

Wild and Scenic Rivers (Pages 2-153 through 2-160)

Management Areas (Pages 2-161 through 2-174)

ACECs (Pages 2-174 through 2-212)

Economics and Public Safety (Pages 2-213 through 2-268)

Because SVP does not have a direct interest or expertise in these resources, we will defer to the evaluations provided by groups that do. However, SVP’s preferences are alternatives that would provide flexibility on a case-by-case basis to access paleontological sites (potentially including the use of motorized vehicles and devices like jackhammers and rock saws) and to conduct carefully managed surface disturbing activities, such as paleontological surveys, mitigations, and excavations. SVP asks that any decision-making should be made in consultation with the bureau’s own paleontologists in the region.

APPENDIX 2

Best Practices Guidelines: Paleontological Resource Management on Public Lands in Areas Where Energy and Mineral Activities Are Unavoidable

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. In the U.S., the Paleontological Resources Preservation Act (PRPA) of 2009 does not protect sites or paleontological resources from destruction in cases where leases for mineral extraction have been granted. Many public lands include exposures of geological units that are especially rich in scientifically important paleontological resources, and which are known to contain commercially viable mineral resources, such as uranium, coal, petroleum, and natural gas.

Destruction of scientifically important paleontological sites or fossils by mineral extraction activities shall not be permitted unless a rigorous mitigation strategy has been adopted. This provision is especially important for the exploitation of non-paleontological resources where mining or fracking activities inevitably impact or even destroy resources above and below the target resource. Mitigation should consist of preliminary surveying and collecting of whatever significant 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 permits issued by land-management government agencies, 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 relevant government agency 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 operations shall not begin until the chief manager or authorized officer carefully reviews and accepts recommendations made by the senior paleontologist of that agency 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 paleontologist of the agency 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 manager or authorized officer to request an emergency excavation to collect the paleontological resources in question.

C. Individual Mineral Activities

Casual mineral collection could easily extend to fossils in the minds of collectors. Individuals with rights to collect minerals may only do so within the limits of any existing laws and regulations (e.g., note that PRPA in the U.S. applies to all Federal lands and explicitly excludes paleontological resources from the definition of minerals). Individuals should immediately report to one of the agency paleontologists any paleontological resources they suspect of having scientific importance.

D. Authority

A qualified senior agency paleontologist should commission a paleontological resource survey should a mining proposal be submitted for an area of protected public lands.