

December 26, 2016

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**Re: Docket No. NPS-2016-0003. RIN 1093-AA-16.** Comment on proposed Rule on Paleontological Resources Preservation Act of 2009.

To Whom It May Concern:

This letter is written by the Rocky Mountain Federation of Mineralogical Societies (RMFMS) with support from other organizations and professionals concerned with preserving, responsibly collecting, managing, or studying paleontological material. RMFMS has over 8600 dues-paying members throughout the Rocky Mountain region. Many RMFMS members work closely with their local museums as volunteers, docents, and fossil preparators assisting with fossil curation. To advance our goals of research and education, RMFMS members use their personal collections in presenting programs to clubs and organizations through the Midwest, including public elementary schools and community groups. In addition, RMFMS members have donated their extensive collections to local museums.

RMFMS is a member of both the American Federation of Mineralogical Societies (AFMS). RMFMS represents 8600 dues-paying members of the over 50,000 members nation-wide. Clubs in the RMFMS have agreed to sign this letter not only because of values shared in common concerning paleontological resources and member participation in avocational paleontology, but also because the proposed regulation under the Paleontological Resources Preservation Act of 2009 (PRPA) addresses in some places provisions of the Federal Land Policy and Management Act of 1976 (FLPMA), which therefore, might be construed to have application to collecting and managing geological and (non-commercial) mineral resources (“rock collecting” or “rockhounding”).

On behalf of the members of RMFMS and AFMS affiliate clubs, and other paleontology societies and professionals, we respectfully request your consideration of the comments herein concerning the Department of the Interior’s proposed regulation under PRPA.

First, we fully support the conservation objectives afforded by this landmark Act. We also fully understand and support a comprehensive set of standards applied to managing paleontological resources on public lands and a coordinated approach between the different federal agencies that administer them.

We are encouraged that the proposed regulation demonstrates careful review and thoughtful effort invested in clarifying the objectives of the PRPA. However, we do have several concerns with the proposed regulation, and we feel some clarification or emendation is necessary to administer the regulation consistently and fairly. Our primary areas of concern are addressed in this letter:

- 1.) Aligning the mission and values concerning fossil collecting between the paleontology community and PRPA.**
- 2.) Semantic clarification of “invertebrate” and “vertebrate” fossils/fossil collecting.**
- 3.) Definition of terms: “Casual collector/ing”, “common,” “reasonable amount” and “negligible disturbance.”**
- 4.) Access to federal lands for casual collecting: permits and prohibitions.**
- 5.) Protective designations.**

**1.) Aligning the mission and values concerning fossil collecting between the paleontology community and PRPA.**

Paleontological resources (“fossils”) have importance as both material patrimony and intellectual patrimony. The intent of PRPA is to balance both values. The intellectual values – educational, social, and recreational – flourish only when fossils can be discovered, collected, and studied. PRPA protects such values through accommodation of casual fossil collecting. The proposed regulation is to implement the PRPA of 2009. One stated purpose of this statute was “To ensure that amateur collecting of rocks, minerals, and invertebrate and plant fossils on Federal lands is not affected by this Act.”

During development of the law, the merits and value of amateur paleontology were recognized, and the final law provides that “casual collecting” without a permit is to be allowed on BLM and National Forest lands, except as determined necessary to limit or restrict it within specific areas for the protection of other values and resources.

The proposed regulations conflict with the letter and intent of the 2009 Act, where the BLM proposes prohibiting casual collecting within broad categories of land management area without specific justification, or throughout large areas where the prohibition is not justified by a specific need for the entire area.

The draft EA for the proposed regulation states: “Casual collecting activities are not anticipated to cause adverse impact to paleontological or other natural or cultural resources. However, if the BLM is aware that a paleontological resource may be depleted, the bureau may take action to prevent further depletion of the resource, either by closing the area to casual collection, or by limiting or restricting the definition of reasonable amount or negligible disturbance for that area.” The BLM may exercise discretion to close areas to collecting or to restrict collecting on a case-by-case basis. This provision enables overly broad prohibitions or even universal restrictions that may be unnecessary to protect designated resources. Area-specific management plans need to state the area-specific rules and the justification for them, and those management plans are required to be easily accessible for public reference.

The proposed regulation tips the balance between “material” and “intellectual” at the expense of the latter. In general, the proposed regulation appears to regard *in situ* preservation of fossils as an ideal and collecting as a “damaging” activity, or at least, an activity to be discouraged. However, fossils *in situ* are not necessarily protected by remaining in place. In a dynamic setting near the earth’s surface, fossils

tend not to maintain equilibrium with an environment that is neither continuously neutral nor sufficiently static to remain intact. Erosion, which exposes fossils at the surface, has a natural destructive force that can quickly damage or destroy them if they are not recovered, especially after emplacement at or near the surface. Regarding their intellectual value, little can be learned about most fossils *in situ*, and accurate identification of invertebrate fossils is often impossible in the field. To protect and preserve both the material and intellectual value of fossils, they need to be found and collected.

The proposed regulation seems to restrict collecting commensurate with mis-use, over-use, or abuse associated with “night diggers” or claim jumpers, and not the behavior of responsible hobbyists. Where has the deleterious impact of responsible amateur collectors been demonstrated to justify the degree of restrictions proposed? The paleontological community is small. Are there data to suggest abuse by members of our community has occurred which warrants such severe constraints? The impact of casual collecting, before implementation of the PRPA, was determined to be minimal, and no action was recommended to curb casual collecting. If there is serious abuse/mis-use, we would like to see the data. We do not think that paleontological resources on federal lands have or will disappear through responsible collecting practices. Commercial collecting or other abuse is not casual collecting, and rules exist to prevent or control such commercial enterprise.

The proposed regulation restricts collecting in a manner that is impractical in the field. Where the proposed regulation under PRPA incorporates impractical or onerous restrictions on casual collecting (section 49.810), it actually conflicts with the 2009 statute. Please refer to the published discussion on development of that law, where casual collecting is a protected activity, except when in specific and limited areas it is found to be inconsistent with other goals or values.

We believe that mineral, rock, and fossil collecting has educational and social value that inspires young people to become our future scientists and stewards of public lands. It provides opportunity to better understand the processes of Nature’s laboratory through direct experience of its geologic wonders. It is an activity of exploration and discovery that enriches their knowledge about the geology and paleontological resources of the earth.

Mineral, rock, and fossil collecting is often thought of as a “gateway science” – when introduced to children, it not only enriches their understanding of the natural world and its geology and paleobiology, but it instills the knowledge that will make them better-informed adults who learn to appreciate society’s role in protecting our environment. Mineral and fossil collecting has been known to lead enthusiastic children to choose career paths or develop avocational interests in the sciences.

We would like to emphasize that recreational fossil collecting is an activity compatible with the guidelines articulated in the United States Forest Service’s document of June, 2010, “A Framework for Sustainable Recreation.” The AFMS Code of Ethics is consistent with federal guidelines concerning recreational use of federal lands. On RMFMS affiliate-sponsored field trips, participants sign a waiver adhering to the AFMS Code of Ethics, which stipulates that collecting activities should “cause no willful damage to collecting material” and participants will “...take home only what ...[they] can reasonably use,” “practice conservation and ...utilize fully and well the materials...collected and ...recycle...surplus for the pleasure and benefit of others,” and “appreciate and protect our heritage of natural resources.” On RMFMS club-sponsored field trips participants are expected to pack out what they pack in, pick up trash, mind habitat and vulnerable natural features, observe all laws and regulations – in short, we teach and practice responsible stewardship of our public lands.

Finally, we would like to put into perspective the impact the fossil-collecting community has on federal lands. This year, myFOSSIL.org has listed a membership of approximately 72 networked fossil clubs and societies in the United States that are devoted to the casual collecting of paleontological resources. In its “Draft Environmental Assessment for Two Definitions for Casual Collecting of Paleontological Resources on BLM-Administered Lands, Proposed 43 Code of Federal Regulations Part 49 Subpart I,” the BLM has calculated for purposes of analysis an average

membership of 100 members per rock-mineral-fossil club in the United States. Based on this calculus, approximately 7,200 members of fossil-collecting communities potentially visit federal lands each year to collect. Certainly, other recreationists who do not self-identify as “paleontologists” may collect fossils as part of their recreational experience (e.g., rockhounds), but it seems clear that the total number of fossil collectors who visit federal lands is small and their potential impact is small contrasted against the estimated 62.4 million recreation-related visits to public lands in 2015.

## 2.) Semantic clarification of “invertebrate” and “vertebrate” fossils/fossil collecting.

We ask that the terms “invertebrate” and “vertebrate” fossils are never conflated together for the sake of administering guidelines concerning collecting of fossils/paleontological materials as a broad category. These important distinctions help to differentiate characteristics and associated values (e.g., pecuniary, rarity, complexity to excavate) of very different materials that should not be managed according to identical one-size-fits all standards.

## 3.) Definition of terms: “casual collector/ing, common, reasonable amount, and negligible disturbance.”

In general, the criteria for casual collecting are reasonable. However, the critical/operative terms used are vague, and their meanings are subjective. We recommend clearly defining the terms and applying them consistently throughout the regulation and from one agency to another. We suggest the emendations or clarifications for specific terms or phrasing discussed below.

**Reference 43 CFR, Part 49, Subpart I, §49.810:** *“What is casual collecting?” (a) Casual collecting means the collecting without a permit of a reasonable amount of common invertebrate or plant paleontological resources for non-commercial personal use, either by surface collection or the use of non-powered hand tools, resulting in only negligible disturbance to the Earth’s surface or paleontological or other resources.”*

§49.810 (a)(2): *“Reasonable amount means a maximum of 25 pounds per day per person, not to exceed 100 pounds per year per person. Pooling of individuals’ daily amounts to obtain pieces in excess of 25 pounds is not allowed.”*

**“Reasonable amount”.** RMFMS members, like the rest of the amateur community, adhere to the AFMS Code of Ethics and do not take more from a collecting site than they can reasonably use. But the “reasonable” amount of material may vary from one site and one situation to another. In many instances, we agree that the weight maximum of 25 pounds may be appropriate. We acknowledge that there may be sensitive sites where an agency might appropriately set a low weight amount. However, as a general standard, the proposed weight limit of 25 pounds is impractical, due to fossils often being imbedded in heavy matrix that cannot be removed in the field. Unique local conditions at any given site are understood best by the local agency. Therefore, we recommend deferring to the local administrative agency to depart from the low limit of 25 pounds and make “reasonable amount” more reasonable for invertebrate fossil collecting: 100 pounds with specimen in matrix or attached to host rock.

Petrified wood is governed by 43 CFR part 3622, which allows for 25 pounds per day plus one piece of any weight but not to exceed a total of 250 pounds per year. That 43 CFR part 3622 takes precedence over these new regulations (see p. 88175, *Federal Register*) should be made explicit. How will the differing daily and annual total pounds rules be combined or reconciled if both petrified wood and other fossils are collected by an individual?

**“Negligible disturbance”.** Replace “negligible disturbance” with “low impact disturbance.” This would comport with BLM’s standard and aligns with BLM’s study (in progress) on Disturbance Caps (est. May 2017, Barstow, CA field office). BLM characterizes amateur rockhounding as a “low impact disturbance” activity contrasted against “high impact disturbance” caused by commercial mining activity. The high and low impact disturbance can be differentiated visually from aerial surveying at different elevations. We recommend applying to invertebrate fossil collecting the same

“low impact disturbance” standard used for rockhounding.

§49.810 (a) (1): *“Common invertebrate or plant paleontological resources are invertebrate or plant fossils that have been established as having ordinary occurrence and wide-spread distribution. Not all invertebrate or plant paleontological resources are common.”*

**“That have been established”**. The phrase “that have been established” is troublesome – established by whom? The regulation should stipulate a standard authority or reference on common species.

**“Common”**. If “Not all invertebrate or plant paleontological resources are common,” then the regulation should either stipulate the uncommon species that are specifically out of bounds or cite the authority reference where they are listed.

In part III, “Section-by-Section Analysis of the Proposed Rule,” page 88182 of the *Federal Register*, Vol. 81, No. 235, dated Wednesday, December 7, 2016, the BLM states:

“It may not always be possible for a collector to identify in the field whether a fossil is common. When in doubt, collectors should err on the side of caution and collect only the resources that they know are common. The bureaus may hold a trained amateur, avocational paleontologist, or professional to a higher standard of knowledge than the general public about whether or not a fossil is common.

“[...] if a knowledgeable collector makes an unanticipated discovery of an uncommon paleontological resource while casually collecting, that collector shall not collect that resource because he or she is not authorized to do so.”

This language is problematic, because it is inconsistent with the actual manner in which discovery in the field customarily occurs; amateurs as well as professionals are often unable to make an identification in the field. Sometimes an identification can only be made later, with the aid of references or after the specimen has been cleaned and prepared. (See also below: §49.300 of Subpart D, Prohibited Acts).

**“Err on the side of caution”**. We believe that amateur collectors should exercise scrupulous judgement and care in the field, but this admonition effectively discourages collecting by hobbyists. It may even inadvertently limit collecting to professional paleontologists.

As a natural result of continuing erosion, fossils previously buried below the earth’s surface are uncovered each year. If amateur collectors should discover an “uncommon” fossil unexpectedly, we think it is neither practical nor advisable to leave the fossil *in situ* and to instead report it to the proper authorities, and then hope it will be retrieved. Should someone return to retrieve it later, the fossil may be difficult to locate, or if found, it may be damaged from exposure

**“...surface collection or the use of non-powered hand tools”**. We recommend emending the sentence to: “surface collection or the use of non-powered hand tools for shallow excavating (digging) or removing overburden.”

§49.810(a)(3): *Negligible disturbance means little or no change to the surface of the land and minimal or no effect to natural and cultural resources, specifically:*

- (i) *In no circumstances may the surface disturbance exceed 1 square yard per individual collector*
- (ii) *For multiple collectors, each square yard of surface disturbance must be separated by at least 10 feet;*
- (iii) *All areas of surface disturbance must be backfilled with the material that was removed so as to render the disturbance substantially unnoticeable to the casual observer.*

**“Negligible disturbance”**. (See also comment in preceding section.)

We understand the PRPA was modeled after the Archaeological Resources Protection Act of 1979 (ARPA). While it is a useful model, in some respects the occurrence (deposition) or handling of paleontological and archaeological resources are quite different. Therefore, the regulation should

modify the standard appropriate for paleontological material. Because the nature of deposition and exposure of resources can be so different, the standards for “negligible disturbance” and confining “surface disturbing” activity to “1 square yard” are impractical.

Certainly, concerning sub-paragraph (i), the area limit of “1 square yard” is impractical. Fossil remains are rarely distributed evenly or contiguously. Often, they are found in one thin stratigraphic layer that may have been uplifted, folded, and otherwise changed over time. As a result, the fossil site can have any size, shape, or configuration. Given the nature of deposition, collecting fossils, therefore, often requires trying different areas (exploratory digging). The proposed regulation needs to accommodate surface collecting over a larger area than “1 square yard.”

The draft EA for the proposed regulations correctly states that the “PRPA requires the bureaus to allow casual collection and to define negligible disturbance.” It also discusses a range of spatial areas greater than zero up to five acres. Obviously, one square yard is much closer to zero than to five acres (using rules for geological surveys as a reference is not demonstrably relevant). The draft EA concludes that “Casual collecting activities are not anticipated to cause adverse impact to paleontological or other natural or cultural resources.” Therefore, again, it seems unnecessary for the spatial area collectors may examine to hew toward the low-end value (zero). In fact, instead of a quantitative value, we think the “low impact disturbance” standard BLM applies to rockhounding and limitation applied to collecting using simple hand tools are adequate standards of constraint.

Sub-paragraph (ii) requires that multiple collectors should be separated by a distance of least ten feet. For the aforementioned reasons, this is not possible. A fossiliferous area may be small, and it may have only one small accessible surface exposure. For most of our SPCA’s collecting trips, we have between 3 and 12 participants. If they were required to spread out according to this proposed rule, many of our participants might be out of range of the fossil site. This situation varies from site to site, from one stratigraphic formation to another, and a one-size-fits-all rule cannot adequately address each situation.

Sub-paragraph (iii) requires that all surface disturbance must be backfilled with the material that was removed so as to render the disturbance unnoticeable to the casual observer. The AFMS Code of Ethics requires that members backfill holes because those holes may cause injury to wildlife. Whether to protect wildlife or to leave the environment looking untouched, backfilling is certainly a reasonable requirement.

Concerning §49.810(d), any additional “limitations” need to be communicated to the public and to be consistent as interpreted and applied by BLM personnel. They should be clearly written and accessible for public reference, with an explanation of their justification.

#### **4.) Access to federal lands for casual collecting: permits and prohibitions.**

**Reference 43CFR, Part 49, Subpart I, §49.800:** *“Is casual collecting allowed on lands administered by NPS or FWS? Casual collecting of paleontological resources is not allowed on lands administered by NPS or FWS. On those lands, collecting must be conducted in accordance with a permit as described in subpart B of this part.”*

We recognize that the proposed regulation must conform to the 2009 PRPA statute, but we would like to state that we think there are wildlife refuges where casual collecting is compatible with the goals and purpose of the refuge. One example is the Desert National Wildlife Refuge, administered by the U.S. Fish and Wildlife Service (FWS) and located north of Las Vegas, Nevada. The public is allowed both on- and off-trail throughout most of this vast refuge, and incidental surface collecting of rocks or fossils has not been shown to be negatively impactful to bighorn sheep, which the refuge was established to protect. However, currently, collecting is not allowed.

In addition, the National Park Service (NPS) administers large tracts as National Recreation Areas and is proposing to add substantial acreage around urban areas, such as the “Rim of the Valley”

proposal for Los Angeles and Ventura Counties. We believe that casual collecting of rocks and fossils is a recreational activity compatible with other activities allowed in National Recreation Areas. There is a need for publically-accessible areas that enable educational nature study activities near urban populations.

These two aforementioned areas, one administered by FWS and one by NPS, are cited as examples of the need for critical consideration of the policy that currently does not allow any casual collecting on lands under the administration of these two federal bureaus.

**§49.300 of Subpart D, Prohibited Acts:** *“A person may not: (a) Excavate, remove, damage, or otherwise alter or deface or attempt to excavate, remove, damage, or otherwise alter or deface any paleontological resource located on federal land unless this activity is conducted in accordance with the Act and this part.”*

Authorization could be given in the form of a permit or allowed as casual collecting consistent with subpart I of this part. In Subpart E, Criminal Penalties, and Subpart F, Civil Penalties, fines and potential imprisonment are listed as the penalties for these prohibited acts. Whether identification applies to a common invertebrate fossil, a common plant fossil, or a significant invertebrate or plant fossil, dire penalties would discourage casual collecting, when such collecting should be encouraged. The paleontological community has clearly benefited from collecting done by amateurs. Such benefits can continue to redound to the paleontological community only if amateur collecting is supported, not penalized.

As discussed previously, we are concerned that the proposed regulation under PRPA may inadvertently discourage or even prohibit collecting by amateurs / casual collectors. In some instances, amateur collecting may be allowable only with sponsorship of a professional paleontologist. What sensible professional would accept personal responsibility (liability) for a casual collector?

## **5.) Protective designations.**

Land use amendment plans and travel management plans have proliferated in recent years (e.g. DRECP, WMRNP in California). New protective designations have been created (e.g., under DRECP). The development and deployment of Planning 2.0 initiative (in progress) will necessitate review and possible revision of other existing plans to bring them into compliance with Planning 2.0 and consistent with FLPMA or PRPA, as applicable. We understand that WMRNP, for example, will be re-visited to conform with Planning 2.0.

Because the proposed regulation to PRPA will have wide application across the agencies of the federal system, and because there is now so much confusion among the public about what is or is not permissible – and where – we respectfully request preparation of a document listing all the protective designations and accommodation of invertebrate fossil collecting in each one of them.

### **For the record – contributions of amateur collectors**

To demonstrate the invaluable contribution of amateur collectors to the field of paleontology, please consider some important case studies presented below. They attest to the historically productive nature of the relationship between amateur and professional. They attest to the invaluable role amateurs have had in preserving material patrimony and extending intellectual patrimony of paleontological resources.

One of the stated purposes of most paleontological societies, including RMFMS, is to encourage responsible stewardship of earth’s paleontological resources and to promote scientific research, communication, and public education. The professional paleontological community is small (as mentioned previously). It has a long history of cooperation with and reliance upon amateur paleontologists to be its “boots on the ground.”

Over the decades, countless specimens, common and rare alike, have been found by amateurs. For

example, recently a Cretaceous-aged fossil crab was discovered by an amateur member of the RMFMS and brought to the attention of paleontologists. It turned out to be a new species and was described in a professional paleontological journal in December of 2016. Other new species have been identified and new localities for known species have been found. What to do in such circumstances? Amateurs frequently share their finds with museums or other repositories. Amateurs publish papers in newsletters, club bulletins, or journals, and they provide specimens for research and educational purposes to the professional community.

Members of the more than 70 clubs and societies in the RMFMS share in common the same values and interests in paleontology; although, different groups may have a different focus. They enjoy learning about paleontology, which includes the excitement of discovery through collecting in the field. The RMFMS is committed to education and collaboration with the county museums in the Rocky Mountain area. Not only do amateurs find and share their discoveries of new species and new localities, but by the number of specimens they provide, they allow a more accurate statistical analysis of species distribution. We cannot overstate how important it is not to incorporate language into the proposed regulation under the PRPA that marginalizes serious amateur or casual fossil collectors.

We are grateful for the thoughtful drafting of the proposed regulation under the PRPA. We appreciate having the opportunity to provide comments on the Proposed Rule to amend Title 43 of the CFR by adding a new part 49, and we look forward to seeing the interests and values of the community of amateur fossil collectors reflected in the final version of Part 49. We look forward to being given the opportunity to review the next draft and provide input.

Sincerely,

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