

**PROPOSED PALEONTOLOGICAL RESOURCES
PRESERVATION REGULATIONS, 43 CFR PART 49**

**ECONOMIC ANALYSIS IN SUPPORT OF
E.O. 12866 AND REGULATORY FLEXIBILITY ACT COMPLIANCE**

Developed by:
National Park Service
Bureau of Land Management
Bureau of Reclamation
U.S. Fish and Wildlife Service

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I. Introduction

This analysis concerns publication of the U.S. Department of the Interior's (DOI) proposed rulemaking, "Paleontological Resources Preservation," 43 CFR Part 49. This rulemaking is required by the Paleontological Resources Preservation Act (PRPA), which was enacted as Title VI Subtitle D of the Omnibus Public Land Management Act of 2009 and codified at 16 U.S.C. §470aaa - §470aaa-11. PRPA sets forth standards for the management and protection of paleontological resources on lands administered by the Department of Interior (DOI) and the Department of Agriculture (USDA).

The proposed rulemaking is intended to implement PRPA on lands administered by the DOI, specifically lands administered by the Bureau of Land Management (BLM), the Bureau of Reclamation (Reclamation), the National Park Service (NPS), and the U.S. Fish & Wildlife Service (FWS). The proposed rulemaking is a joint rulemaking because it applies to all four bureaus. The analysis below includes a statement of need for the proposed rulemaking, an analysis of alternative approaches, an analysis of expected costs and benefits, and an evaluation of economic impact on small entities. The analysis concludes that:

- Under Executive Order 12866, the proposed rulemaking is not a significant federal action because it is not estimated to have an annual effect on the economy of \$100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; it will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; it will not materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients; and it will not raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this Executive Order; and
- Under the Regulatory Flexibility Act, the proposed rulemaking is estimated to not have a significant economic impact on a substantial number of small entities.

II. Statement of Need for the Proposed Rulemaking

According to Senator Daniel Akaka, the original sponsor of the Paleontological Resources Preservation Act in the 107th Congress, the purpose of PRPA is to:

“... help protect and preserve the nation’s important fossil resources that are found on Federal lands for the benefit of our citizens.....[A]t this time there is no unified policy regarding the treatment of fossils by Federal lands management agencies which would help protect and conserve fossil specimens. We risk the deterioration or loss of these valuable scientific resources. This act will correct that omission by providing uniformity to the patchwork of statutes and regulations that currently exist. It will create a comprehensive national policy for preserving and managing fossils and other artifacts found on Federal lands, and will prevent future illegal trade.” (Congressional Record, January 15, 2009, p. S426.)

PRPA enacted this comprehensive national policy by prescribing the following components of paleontological resource management. First, PRPA directed the Secretaries of the Interior and Agriculture to manage and protect paleontological resources using scientific principles and expertise, establish appropriate plans for inventory and monitoring, and establish a program to increase public awareness. Second, PRPA required that paleontological resource collection from lands administered by the DOI and USDA be conducted in accordance with a permit, but authorized collection without a permit of limited amounts of common invertebrate and plant paleontological resources from lands administered by the BLM, Reclamation, and the U.S. Forest Service. PRPA contained requirements, terms, and conditions for permits, and mandated curation of the collected specimens in approved repositories. Third, PRPA required that specific paleontological resource locality data remain confidential unless the release of such data is determined by the agencies to meet three specific criteria. Fourth, PRPA authorized new criminal and civil penalties for prohibited actions such as fossil vandalism, theft, and sale, and additionally authorized the application of collected civil penalties to rewards and/or the restoration of damaged sites and resources. Fifth, PRPA directed the two Secretaries to coordinate in implementation of the Act. Lastly, PRPA expressly directed the Secretaries to issue regulations as appropriate to carry out the Act, providing opportunities for public notice and comment (see 16 U.S.C. § 470aaa-9).

The proposed rulemaking would comply with PRPA’s express requirement for regulations (16 U.S.C. §470aaa-9). In addition to being required by the law, the proposed rulemaking is needed because absent the regulation, paleontological resources would not necessarily be protected and/or be entered in federal collections for curation in compliance with the law. The rulemaking will provide additional notice to the public, scientists, and land managers about the provisions of PRPA, and will facilitate PRPA’s implementation by explaining and interpreting those provisions.

Absent intervention in the market by the Department, sales of paleontological resources removed from federal lands would continue and individuals would have little incentive to provide collected paleontological materials and associated scientific data to approved repositories or

other public entities. Instead, they would have a strong incentive to quickly excavate and sell as many paleontological resources as possible to other private entities for lucrative financial gain.

A potential alternative for implementing the PRPA, instead of regulations, would be administrative guidelines. This alternative would rely on the enforcement mechanisms in PRPA and the Department's ability to enforce the law's legal requirements. However, such guidelines would not have the authority of duly-promulgated regulations issued in conformance with the Administrative Procedure Act, and would not provide notice to agencies and the public about the Departments' responsibilities under the PRPA.

The proposed regulations do provide an incentive structure to conserve paleontological resources on and removed from Department-administered lands by providing the public with notice and clarification about law enforcement consequences associated with unauthorized activities related to these non-renewable resources. Thus, the proposed regulations provide the most appropriate mechanisms and incentives to ensure that paleontological resources on or from lands administered by the Department of the Interior are protected in accordance with PRPA.

The proposed rulemaking would also provide a set of unified standards necessary to implement the comprehensive national policy envisioned by Congress. DOI and USDA staff worked together in 2009-2010 to develop the initial draft of both agencies' proposed regulations. Although USDA proposed and finalized its version of the regulations prior to DOI (see USDA proposed regulation at 78 Fed. Reg. 30810 (May 23, 2013) and USDA final regulation at 80 Fed. Reg. 21588 (April 17, 2015)), the USDA and DOI versions of the regulations will be similar in scope, language, and intent. Together, the two sets of regulations will provide the comprehensive, standardized national approach required by the PRPA.

III. Alternatives to the Proposed Rulemaking

The proposed DOI rulemaking contains nine subparts (Subparts A through I). Subparts A through C contain definitions and would implement PRPA's requirements to:

- Manage and protect paleontological resources using scientific principles and expertise and to foster knowledge and public education;
- Develop plans for paleontological resource inventories, monitoring, and scientific and educational uses;
- Coordinate when appropriate with other agencies, non-federal partners, the scientific community, and the public;
- Implement permitting and curation standards; and
- Protect information about the nature and specific location of fossils where warranted.

Subparts D through H:

- Restate PRPA's list of prohibited actions;
- Restate the criminal penalties authorized by PRPA;
- Explain the processes associated with imposition of the civil penalties authorized by PRPA;
- Explain the valuation of damaged or destroyed resources or sites; and

- Restate PRPA’s provision regarding the use of collected penalties as rewards for persons who furnish information leading to a finding of civil violation or criminal conviction.

Subpart I implements the casual collecting provisions of PRPA on certain lands administered by the BLM and Reclamation.

In the course of developing the proposed DOI rulemaking, the Department considered three other alternatives. The first alternative was no-action, or no promulgation of regulations. The second alternative was a rulemaking with few regulatory provisions. The third was a more detailed set of regulatory provisions. The reasons for rejecting these three alternatives are explained below.

A. Alternative 1 (no action/no proposed rulemaking): Under this alternative, there would be no rulemaking. The Department determined that the “no action” alternative is not feasible because it would be contrary to PRPA, which expressly directed DOI and USDA to issue regulations as appropriate to carry out the Act (see 16 U.S.C. § 470aaa-9). Several sections of PRPA indicate that regulatory language is necessary for implementation of the law, including the PRPA sections regarding casual collecting (16 U.S.C. §470aaa), permit application and issuance (16 U.S.C. §470aaa-3), civil penalties (16 U.S.C. §470aaa-6), and reward payments (16 U.S.C. §470aaa-7). The Department also determined that promulgating regulations to implement other sections of PRPA would be advisable in order to provide the public with adequate notice. These sections address repository approval (16 U.S.C. §470aaa-4), area closures (see 16 U.S.C. §470aaa-3), and criminal penalties (see 16 U.S.C. § 470aaa-5). In addition, not promulgating regulations would likely lead to inconsistent implementation of the remaining provisions of PRPA across and possibly within the bureaus, undermining the fundamental purpose of the law, which is to promote consistency across federal lands.

In addition, the bureaus’ existing paleontological resources management programs, without the proposed rulemaking, represent the “no action” alternative. Because each bureau’s program is based on different legal authority, the scientific community and the public will experience difficulty in understanding and complying with each bureau’s current requirements and policies. Promulgation of one set of regulations to implement PRPA across all four bureaus would standardize and clarify federal paleontological resource management for the public, scientific community, and other entities.

B. Alternative 2 (fewer provisions in the proposed rulemaking): The Department also considered the possibility of including fewer provisions in the proposed rulemaking. Under this scenario, the only provisions included in the proposed rulemaking would be those expressly required by PRPA, including the definitions of “reasonable amount,” “common invertebrate and plant paleontological resources,” and “negligible disturbance” (see 16 U.S.C. §470aaa), permit application and issuance (16 U.S.C. §470aaa-3), the determination of civil penalties (see 16 U.S.C. § 470aaa-6), and the payment of rewards (see 16 U.S.C. §470aaa-7). Under Alternative 2, none of the other provisions of PRPA would be implemented by the proposed regulations.

This alternative could result in uncertainty and confusion on the part of the Department and bureaus, the scientific community, and the public about the Act’s other requirements and processes. For example, excluding a full set of definitions from the proposed rulemaking could

potentially result in differing interpretations by the bureaus, the regulated community, law enforcement officials, and courts of key terms such as “fossilized” or “authorized officer.” Excluding the curation sections from the proposed rulemaking would force the bureaus to implement these provisions of PRPA not at all or via administrative guidance, which would not accomplish the goal of consistency among the bureaus. Excluding the lists of prohibited acts and criminal penalties from the proposed rulemaking would reduce notice to the public, law enforcement, and the courts, and might lead to variable applications of key PRPA terms such as “scientific value” and “commercial value,” undermining enforcement actions and weakening the effectiveness of the law.

C. Alternative 3 (additional provisions in the proposed rulemaking): Lastly, the Department considered adding certain provisions to the proposed rulemaking, including (1) a process for determining which fossils are, or are not, paleontological resources, (2) exclusions of microfossils and geologic units from the definition of paleontological resources, and (3) extra definitions, such as a definition of the term “paleontological interest.”

The DOI decided to not include these provisions in the proposed regulations for the following reasons. First, it is not advisable to add a process for determining which fossils are, or are not, paleontological resources because this determination is a scientific decision that may evolve over time with changes in scientific knowledge, tools, and techniques. Second, adding this process to the regulations is unnecessary. Under the Act and regulatory definition of “paleontological resources,” it is presumed that all fossilized remains, traces, or imprints of organisms preserved in and on the Earth’s crust are paleontological resources unless they meet one of the three statutory exceptions. The public, scientists, and the bureaus thus have ample notice that most fossils on federal lands are “paleontological resources,” and therefore are subject to the proposed regulations. Because fossils on federal lands will generally be presumed to be paleontological resources, it is unnecessary to add a process to the regulations that would achieve the same result as that presumption.

Second, the DOI considered excluding from the definition of paleontological resources certain fossils, specifically non-vertebrate microfossils and conodonts, that are individually too small to be studied without a microscope, and geological units, including but not limited to limestones, diatomites, chalk beds, and fossil soils (i.e., paleosols). However, these provisions could have added confusion and uncertainty to the regulations, and were also unnecessary because the same end result is achieved by other provisions in the regulations, namely the provisions which define paleontological resources and the provisions which list the exemptions to the rule. Therefore, the Department decided not to list these specific types of fossils in the regulations.

Third, the DOI decided not to include a definition of “paleontological interest” in the proposed rulemaking because this, like the process for determining which fossils should be excluded from the definition paleontological resources, is a scientific determination that may evolve over time. Fossils may be deemed as having paleontological interest at one point in time but not at other points in time due to changing conditions of the fossils, redundancy with subsequently collected fossils, changing laboratory technologies, or other factors. Trying to define this term in the regulations broadly enough to remain relevant over time would result in a definition that would be too vague to be scientifically or legally helpful or meaningful. In addition, the definition of

paleontological interest is unnecessary because of the Act's and regulation's presumption that most fossils are paleontological resources and therefore are already presumed to have paleontological interest. Therefore, the term "paleontological interest" is not included in the proposed rulemaking.

For all of the above-stated reasons, the proposed DOI rulemaking represents DOI's best possible alternative for implementing PRPA.

IV. Cost-Benefit Analysis of the Proposed Rulemaking

A. Estimated Costs of the Proposed Rulemaking

The bureaus' current legal authorities, policies, practices, and costs for paleontological resource management provide the baseline for evaluating the costs associated with the proposed regulation.

Because PRPA was enacted in 2009, the baseline condition includes compliance with the provisions of this law that apply even in the absence of the proposed regulations. These provisions address inventory and monitoring, planning, public education, management based on scientific principles and expertise, confidentiality, and criminal penalties. The baseline condition does not include the provisions of PRPA that require regulations for implementation: casual collecting under PRPA, issuing permits under PRPA, deposit in an approved repository as required under PRPA, and imposition of the civil penalties authorized by PRPA.

Under the baseline condition, the bureaus collectively administer thousands of paleontological localities,¹ resources, and collected fossil specimens in accordance with existing laws, policies, and regulations. There are more than 25,000 recorded localities on BLM-administered lands, 187 recorded paleontological localities on Reclamation-administered lands,² approximately 4,210 recorded paleontological localities on NPS-administered lands,³ and approximately 900 recorded paleontological localities within National Wildlife Refuges.⁴

Managing these localities and the specimens collected therefrom involves some or all of the following activities, as appropriate and as funding allows:

- Inventorying and monitoring the locations and condition of paleontological resources, which promotes targeted management, protection, and planning;
- Planning, addressing policy issues, conducting National Environmental Policy Act and other compliance as necessary, and conducting other programmatic activities to establish direction, resolve questions, and promote well-informed and proactive management;

¹ Paleontological localities or sites are areas containing paleontological resources. "Recorded" localities, resources, and sites means that the bureau has physical documentation about those localities, resources, and sites. The bureaus are aware that there are many more localities, resources, and sites than these numbers indicate, but staffing and budget constraints preclude physically documenting (recording) those additional localities, resources, and sites.

² Bureau of Reclamation records as of 2015.

³ NPS FY2011 Budget Justification.

⁴ U.S. Fish and Wildlife Service, Refuge System Annual Performance Plan 2012 (same for 2014).

- Managing impacts from human activities, natural processes, or other factors, which promotes the conservation of paleontological resources and data for current and future generations;
- Public education programs, which increase awareness of the importance of paleontological resources and their scientific, educational, and recreational values;
- Issuance of permits under existing laws and regulations for collection or surface disturbance, which assures that appropriately qualified researchers perform work in accordance with defined research goals, reduces collateral impacts to other resources, tracks scientific progress, and maintains Federal ownership of collected materials;
- Curation, which involves the care of Federal paleontological resources after they have been excavated, preserves associated records, provides opportunities for future research and study, and maintains the resources for public education and exhibits;
- Maintaining the confidentiality of information about the nature and specific location of paleontological resources, which helps protect the resources from unauthorized excavation, theft, and/or damage;
- Law enforcement, which deters unauthorized activities and promotes the conservation of paleontological resources for the future; and
- Casual collecting (collection of common invertebrate and plant fossils without a permit for personal use) on some BLM lands.

Table 1 shows the estimated annual costs of the Department's existing paleontological resource management activities. Appendix 1 of this document contains a detailed explanation of these activities and costs bureau-by-bureau.

Table 1: Baseline Condition – Current Activities and Estimated Average Costs Associated with Paleontological Resource Management on DOI Lands

Bureau / DOI Paleontological Resource Management Activities <ul style="list-style-type: none"> • Management (inventories, monitoring, planning/compliance, policy development, mitigation of impacts, and public education). • Administration of Permits • Curation Oversight • Maintenance of Confidentiality • Law Enforcement • Administration of casual collecting (if allowed) 	\$3,289,600
Permittee Activities <ul style="list-style-type: none"> • Apply for permits to collect paleontological resources on DOI lands • Comply with permit terms and conditions 	\$239,840 ⁵
Curation <ul style="list-style-type: none"> • Comply with 411 DM 	\$270,000 ⁶

DOI expects that, under the proposed rulemaking, the bureaus' paleontological resource management activities and costs will change slightly. The costs of management may increase if activities such as public education programs, permit applications, casual collecting, and requests for specific locality data increase. The cost of the proposed regulations to permittees is expected to remain the same as costs experienced to date, or to decrease because the permitting provisions and forms in the proposed regulations are more clear, streamlined, and consistent across bureaus than the status quo. Permit-related costs, such as compliance, will likely remain the same because compliance is required under the status quo and will continue to be required under the proposed regulations. Lastly, the Department's cost of curating collected specimens is expected

⁵ This cost estimate is derived from summing the bureau-by-bureau permitting costs described in Table A-1 of this document. Note these costs are voluntary because permit applicants could choose to apply to collect fossils from other lands instead of DOI lands.

⁶ This cost estimate is based on the following data and assumptions: As of end of FY 2013, paleontological resource curation costs for Reclamation were approximately \$10,000 annually to curate 24,520 objects and 19,224 associated records (43,744 total) located at 13 museum facilities. NPS has approximately 581,000 fossil specimens in collections or backlog catalog, which is about 13 times more than Reclamation's total number of objects. The analysis estimates the repository costs for NPS specimens as being roughly 13 times higher than Reclamation's curation cost, or \$130,000. A similar assumption is made here to develop an estimated cost (\$120,000) of curating BLM's 400,000 specimens. Paleontological specimens collected from FWS lands are curated under non-paleontological curation agreements, but a \$10,000 annual cost is a reasonably good approximation. The four estimates (\$10,000 + \$10,000 + \$130,000 + \$120,000) are summed to reach the \$270,000 estimate in Table 1. This estimate is supported by the DOI Museum Property Management Summary Report FY 2013, available at <http://www.doi.gov/museum/upload/FY-2013-DOI-Museum-Property-Annual-Report-fnl.pdf>. The Report states that funding for DOI curation ranged from \$.14/object to \$.30/object between FY11 and FY13 (see Figure 8, pg. 8). Assuming this per object cost is accurate, the DOI curation costs for the 345,000 paleontological objects in bureau facilities and 999,000 paleontological objects in non-bureau (usually non-federal) facilities (see Report, pp. 5 and 32), would range from \$189,000 to \$430,000. The \$270,000 estimate falls within that range.

to remain constant after promulgation of the proposed regulations because the proposed regulations preserve, rather than change, existing curation standards.

Table 2 contains these cost projections. Appendix 1 of this document contains a detailed explanation of these activities and costs bureau-by-bureau.

Table 2: With Regulations – Estimated Changes in the Annual Cost of Paleontological Resource Activities and Costs Relative to the Status Quo

Bureau / DOI Paleontological Resource Management Activities <ul style="list-style-type: none">• Management (inventories, monitoring, planning/compliance, policy development, mitigation of impacts, maintenance of confidentiality, and public education).• Administration of Permits• Curation Oversight• Maintenance of Confidentiality• Law Enforcement• Administration of casual collecting (if allowed)	< \$300,000 increase in costs.
Permittee Activities <ul style="list-style-type: none">• Apply for permits to collect paleontological resources on DOI lands• Comply with permit terms and conditions	No projected change in costs, or possibly a decrease in costs due to the new clarity and inter-bureau consistency of permit application process and permit-related forms that will result from the rulemaking.
Repository Activities <ul style="list-style-type: none">• Comply with 411 DM	No projected change in cost of maintaining collections due to use in the rulemaking of existing curation standards.

As Tables 1 and 2 demonstrate, it is estimated that the annual cost of the proposed regulation compared to the annual cost of the baseline would be less than \$300,000. At most the annual additional cost of administering the various provisions of the regulation would be \$1.58 million, although this cost increase would be realized only if both BLM and NPS request and receive new appropriations (see Appendix I). This cost increase is much less than \$100 million/year.

B. Projected Benefits of the Proposed Rulemaking: The proposed rulemaking will have multiple benefits for paleontological resource management, scientific study, and public awareness and education, although it is not possible to quantify or place a monetary value upon these benefits. Overall, the major benefit of the proposed rulemaking is that it would provide a consistent set of information to the public regarding the actions, responsibilities, and processes under which the bureaus will manage these non-renewable resources to meet the mandates of PRPA. In addition, the proposed rulemaking would contain clear information for the public, researchers, and casual collectors, which will create incentives to reduce inadvertent violations of the Act, reduce damage to paleontological and other resources, stimulate the public's awareness and curiosity about these resources, and possibly increase visitation to museums and federally-managed areas with fossils. Specific benefits may include the following:

- The proposed rulemaking provides consistent definitions for many of the terms used in PRPA, including paleontological resource, terms related to casual collecting, terms related to curation such as approved repository, and terms related to penalties.
- The permitting provisions of the proposed rulemaking will streamline the permit application, review, and approval process; clarify how paleontological resources may be collected from bureau-administered lands; ensure that paleontological resource research and collection activities are conducted consistently on all of these lands; and further Departmental policies of scientific integrity.
- The rulemaking's curation standards will enhance the standard of care for federal paleontological resources after they have been excavated, prepared, and studied by permittees; reduce confusion about the fact that paleontological resources from federal lands are federal property; provide opportunities for future research and study when new technologies and theories are developed, and enhance educational and exhibit opportunities for the public.
- The list of prohibited acts and the civil and criminal penalty provisions of the proposed rulemaking will clarify which activities are permissible and which are prohibited on DOI bureau-administered lands, set forth consistent criteria and processes for assessing penalties, and act as an effective deterrent to future violations.
- The proposed rulemaking furthers the goal of PRPA regarding coordinated and consistent application across the bureaus, and between the Departments of the Interior and Agriculture. The proposed rulemaking establishes consistent definitions and procedures to the extent possible across Departmental lines, reducing potential for confusion by the general public and researchers.

C. Conclusions

As demonstrated by the above cost-benefit analysis, the proposed rulemaking is not a significant federal action under Executive Order 12866 because it will not have an annual effect of \$100 million or more on the economy. In addition, the rulemaking will have multiple benefits, as explained above.

The rulemaking will not adversely affect in a material way the economy (or a sector of it), productivity, competition, jobs, the environment, public health or safety, or state, local, or tribal governments or communities.

This rulemaking will not raise novel legal or policy issues. All provisions of the rulemaking are based directly on PRPA, and therefore do not raise novel issues from a legal perspective. In addition, the provisions which apply to collection, permitting, scientific management, and education are not novel from a policy perspective because they clarify and consolidate the bureaus' existing paleontological resource management practices. On BLM lands, for example, the proposed regulations mirror existing BLM policy in BLM Manual Section 8270 and Handbook H-8270-1. The provisions of the rulemaking which apply to curation are not novel from a policy perspective because they utilize existing DOI requirements defined in 411 DM. The provisions of the rulemaking which apply to confidentiality, penalties, rewards, and forfeiture are not novel from a legal perspective because they are based directly on PRPA or

from a policy perspective because they are similar to existing DOI regulations governing other resources.

The rulemaking reduces controversy because it does not apply to activities permitted under the mining and mineral-related laws. In addition, the rulemaking restates the Act’s preservation of the bureaus’ preexisting authorities under other laws to provide protection for paleontological resources on bureau-administered lands. For all of these reasons, the rulemaking avoids raising novel legal or policy issues.

This rulemaking will not create a serious inconsistency or otherwise interfere with an action taken or planned by another agency. The rulemaking, like the Act, applies only to paleontological resources, and only to those resources on lands controlled or administered by BLM, Reclamation, NPS, and FWS (DOI bureaus). Paleontological resources on these lands are not generally under the jurisdiction of other agencies. Moreover, the rulemaking, like the Act, does not apply to Indian lands. Additionally, the bureaus within the Department collaborated together and with the U.S. Forest Service in the development of this joint rulemaking, reducing the opportunities for conflicts between the rulemaking and other programs and goals of the bureaus, as well as the programs and goals of the U.S. Forest Service.

This rulemaking does not alter the budgetary effects of entitlements, grants, user fees, or loan programs or the rights and obligations of their recipients. Although this rulemaking does contain eligibility, qualification, application, and performance standards for scientific personnel seeking permits for the collection and curation of paleontological resources on lands controlled or administered by the four DOI bureaus, these standards are similar to the Department’s or those bureaus’ own existing standards for both paleontological and other permits.

The conclusions here are similar to the conclusions reached by the Department of Agriculture in its analysis of its own proposed paleontological resources rulemaking. USDA certified that its proposed rule was not significant for purposes of Executive Order 12866, and was not subject to OMB review.⁷

V. Effect of the Proposed Rulemaking on Small Entities

When an agency issues a rulemaking proposal, the Regulatory Flexibility Act (RFA) requires the agency to “prepare and make available for public comment an initial regulatory flexibility analysis” which will “describe the impact of the proposed rule on small entities” (5 U.S.C. § 603(a)). Section 605 of the RFA allows an agency to certify a rule, in lieu of preparing an analysis, if the proposed rulemaking is not expected to have a significant economic impact on a substantial number of small entities.

The Department of the Interior does not expect this proposed rule to have a significant economic impact on a substantial number of small entities. The Department’s determination is the same as the certification made by the Department of Agriculture. The Department of Agriculture certified that its proposed and final rulemaking for PRPA would not have a significant economic

⁷ See <https://www.federalregister.gov/articles/2013/05/23/2013-12173/paleontological-resources-preservation>.

impact on a substantial number of small entities as defined by Executive Order 13272 and the Small Business Regulatory Fairness Act of 1996.⁸

The effect of the proposed rule will be to implement PRPA, which contains very specific direction to the bureaus for managing paleontological resources. The Department expects the impact of the proposed rule to be a unified, consistent approach among the bureaus that reduces confusion, uncertainty, and costs for regulated entities, including small entities. The Department invites comment from members of the public who believe there will be a significant economic impact on permittees, repositories, collectors, or other small entities.

As a threshold matter, many of the provisions of the proposed rule are interpretative (they re-state statutory language from PRPA), or they apply to bureau internal management activities rather than to the public. The basis for this conclusion is described in Table 3.

Table 3: Description of rulemaking subparts and potential economic impact on small entities

<p><i>Subpart A, Managing, Protecting, and Preserving Paleontological Resources</i>-- Contains policy statements and describes what the proposed rule would do. Defines 20 terms (five of which repeat the definitions provided in 16 U.S.C. § 470aaa of the Act). Re-states the Act's provisions regarding inventory and monitoring (16 U.S.C. § 470aaa-1(a)), use of scientific principles and expertise (16 U.S.C. § 470aaa-1(a)), public education and awareness (16 U.S.C. § 470aaa-2), area closures (16 U.S.C. § 470aaa-3(e)), confidentiality (16 U.S.C. § 470aaa-8), limitations on scope (16 U.S.C. § 470aaa-10), and limitations on third party lawsuits (16 U.S.C. § 470aaa-10(6)).</p>	<p>Summarizes the proposed regulations or directly re-states the Act and therefore does not impose new requirements on small or large entities.</p>
<p><i>Subpart B, Permitting Requirements for Paleontological Resources</i>-- Implements the permitting provisions of the Act (16 U.S.C. § 470aaa-3). Re-states the Act and contains additional permitting-related details.</p>	<p>Analyzed below for its potential impact on small entities.</p>
<p><i>Subpart C, Management of Paleontological Resource Collections</i>-- Implements the Act's requirements to deposit paleontological resources collected under a permit into an approved repository (16 U.S.C. § 470aaa-4).</p>	<p>Analyzed below for its potential impact on small entities.</p>
<p><i>Subpart D, Prohibited Acts</i>-- Re-states the prohibited act provisions of the Act (16 U.S.C. § 470aaa-5(a) and (b)).</p>	<p>Does not impose new requirements on small or large entities.</p>
<p><i>Subpart E, Criminal Penalties</i>-- Re-states the criminal penalty provisions of the Act (16 U.S.C. § 470aaa-5(c)-(e)).</p>	<p>Does not impose new requirements on small or large entities.</p>
<p><i>Subpart F, Civil Penalties</i>-- Implements the civil penalty authority of the Act (16 U.S.C. § 470aaa-6(a)-(c)) by describing the administrative process and timelines that will be used by the bureaus to implement the Act's civil penalty authority.</p>	<p>Analyzed below for its potential impact on small entities.</p>
<p><i>Subpart G, Determining Values and the Costs of Response, Restoration, and Repair</i>-- Explains how the bureaus will determine the scientific and commercial values of paleontological resources that are affected by prohibited actions. Explains how the bureaus will determine the costs of response, restoration, and repair of a paleontological resource or site that is affected by a prohibited</p>	<p>Analyzed below for its potential impact on small entities.</p>

⁸ See USDA proposed rule (78 Fed. Reg. 30810 (May 23, 2013)) and final rule (80 Fed. Reg. 21588 (April 17, 2015)).

action. These internal determinations would establish the type of criminal penalties that will be pursued against someone who violates the provisions of the Act or regulations or a permit issued under the Act, and serve as a starting point in establishing the amount of any civil penalties that will be pursued against someone who violates the provisions of the Act or regulations or a permit issued under the Act.	
Subpart H, <i>Forfeiture and Rewards</i> -- Re-states the forfeiture and reward authorities contained in 16 U.S.C. § 470aaa-7 of the Act.	Does not impose new requirements on small or large entities.
Subpart I, <i>Casual Collecting of Common Invertebrate or Plant Paleontological Resources on Bureau of Land Management and Bureau of Reclamation Administered Lands</i> – Implements the two casual collecting provisions of the Act at 16 U.S.C. § 470aaa(1) and § 470aaa-3(a)(2).	No economic impact on any entities because casual collecting is, under existing regulations and the proposed regulations, collection for noncommercial personal use, not commercial use.

Based on the above descriptions of the proposed regulations, it is evident that the only entities potentially affected economically by the proposed regulations are (1) permit applicants and permittees who must comply with the regulations' permitting provisions in order to collect paleontological resources, (2) the approved repositories (museums) that will curate the collected resources, and (3) any violators of the regulations. However, we have determined that the economic impacts on these entities are not significant.

The following factual basis supports the Department's certification. As recommended by the Small Business Administration Office of Advocacy's document entitled *Guide for Government Agencies: how to Comply with the Regulatory Flexibility Act* (May 2012), this factual basis describes the number of affected entities and the size of the economic impacts and why both the number of entities and the size of the impacts justify the "no significant economic impact on a substantial number of small entities" certification.

1. Permittees

A. Number of Affected Entities

The proposed regulations' permit provisions would apply to paleontologists or other appropriately qualified persons who propose to collect paleontological resources from or disturb paleontological sites on the lands administered by the bureaus in order to further paleontological knowledge, public education, or management of the resource. The persons affected by these provisions would be those holding a graduate degree in paleontology or related field of study with a major emphasis in paleontology, or other training and experience necessary to undertake the proposed activity.

Quantifying the number of such persons in the United States is difficult. The Paleontological Society of America (PSA) estimates that there are 4,000 working paleontologists in the United States (the sum of the 2,300 members of the Society of Vertebrate Paleontology and the 1,500 members of the Paleontological Society, most of which are U.S. citizens, plus a few hundred more to cover students). Other estimates of the number of working paleontologists in the United States, found on the internet, range from 1,000 to 4,000. Based on these estimates, the

Department concurs with the PSA number and assumes that there are 4,000 working paleontologists in the United States.

There is no central source of information describing the portion of these paleontologists that currently or in the future would collect, disturb, or otherwise study paleontological resources on the lands affected by the proposed regulations (lands managed by the BLM, Reclamation, NPS, and FWS, except for Indian lands). The bureaus currently receive, and under the proposed regulations will continue to receive, permit applications and reports from personnel in the federal government, state governments, public universities and colleges, private universities and colleges, non-governmental organizations, large and small private business entities, and a few private individuals. The bureaus have no need to know the ratio of permit applicants to the overall number of paleontologists in the United States, and so have not developed an efficient and effective quantitative way to determine it. Nonetheless, based on input from the Paleontological Society of America and the Department's own experience, the Department assumes for purposes of this analysis that 50% of the estimated 4,000 working paleontologists in the United States, or 2,000 paleontologists, collect or otherwise study paleontological resources on federal, state, and private lands each year.

To determine how many of these 2,000 paleontologists would apply for permits to work on the lands managed by the four DOI bureaus, the Department compiled the numbers of permits issued by the bureaus in recent years for collection, disturbance, or study. Table 4 shows the average number of permits issued by the bureaus for paleontological resource collection and disturbance.

Table 4: Average number of annual permits issued by the bureaus.

BUREAU	AVERAGE NUMBER OF PERMITS ISSUED/YEAR
Reclamation	2
BLM	376
NPS	60
FWS	2
TOTAL	440

For purposes of this analysis, the bureaus will assume that the number of issued permits will increase slightly in future years with the proposed regulations in place, due to the fact that the proposed regulations will reduce potential confusion on the part of permit applicants and permittees regarding the permit application process, permit decision criteria, and permit terms and conditions. This analysis will assume that the number of permits issued will increase to 450 per year. 450 is 22.5% of 2,000, which means that the Department will potentially issue permits to 22.5% of the estimated 2,000 working paleontologists in the United States who conduct research, collect, inventory, or disturb paleontological resources on federal, state, or private lands.

B. Determination of whether these Permittees are “Small Entities”

There is no available data that would indicate whether the 450 projected annual permittees qualify as “small entities” as defined in the Regulatory Flexibility Act. According to the

Paleontological Research Institute (www.priweb.org), most professional paleontologists in the United States are college and university professors, although some work in museums, for governmental entities, or for industries such as oil companies. Bureau paleontologists believe that many paleontologists also work for independently owned scientific research organizations and providers of field science education.

Colleges and museums are considered as a “small business” if annual receipts are less than \$25.5 million. Research and development in physical science firms are considered “small” if they have fewer than 500 employees. Environmental consulting firms are considered “small” if annual receipts are less than \$14 million.⁹

With such high thresholds for “small entity” status, and such a wide range of employers, the Department will assume that 50% of the projected 450 permittees are “small entities.” This would mean that 225 permittees are “small entities.” This is not a substantial number on its own or when compared to the estimated 2,000 paleontologists who, based on the assumptions and data explained above, conduct research, inventory, disturb, and/or collect fossils from federal, state, and private lands.

C. Economic Impacts

The Department does not expect that the economic effect of the permitting provisions of the rulemaking would be significant on these small entities, or on any other entities, for the following reasons.

First, the permitting provisions of the proposed rulemaking are based on the provisions of the PRPA. PRPA requires a permit for collection. It requires that permit applicants be qualified, undertake the activity for the purpose of furthering paleontological knowledge or public education, that collection is consistent with federal land management plans, and that the collecting methods will not threaten significant natural and cultural resources. PRPA then imposes three conditions on collection – federal ownership, preservation of collected resources in an approved repository, and confidentiality of specific locality data. The proposed rulemaking restates the PRPA requirements, and adds several more requirements, but the majority of the rulemaking’s permit requirements come directly from the law. Therefore, any economic effect of the permitting provisions is not a result of the rulemaking, but instead is a result of the law.

Second, PRPA’s and the proposed rulemaking’s requirement that most collection be conducted under a bureau-issued permit is not new. The NPS, FWS, and Reclamation already require all paleontological resource collection to be conducted in accordance with bureau-specific permits, and BLM requires most paleontological resource collection to be conducted in accordance with a permit. Some paleontologists may argue that, under the bureaus’ previous regulations, they were “not required” to obtain permits and therefore the new permit requirements will have an economic impact. This is incorrect. Permits have always been required for the collection of all paleontological resources on NPS, Reclamation, and FWS lands, and for the collection of most paleontological resources on BLM lands. If researchers or other entities were not obtaining such

⁹ Small Business Size Standards by North American Industry Classification Systems (NAICS) codes, 13 C.F.R. § 121 .201 (April 2014). See codes 541620 (environmental consulting services), 541711 (research and development in physical, engineering and life sciences), 611310 (colleges), and 712110 (museums).

permits, they were in violation of existing law and regulations. The Department cannot quantify the number or amount of unpermitted collection in order to compare that information to the condition that will be in place under the proposed regulations, because there is no feasible way to track collection in the absence of permits.

Third, the Department does not expect that the economic effect of the permitting provisions of the rulemaking will be significant, because the bureaus have already developed the new Departmental forms that will be used by permit applicants and permittees under the rulemaking, and these forms are concise, simple, and efficient. The names of these forms and the estimated times for filling them out are listed in Table 5.

Table 5: New Department Paleontological Forms and Estimated Hourly Burdens per Form

Name of Form	Estimated Hourly Burden
DI-9002 (Paleontological Resource Permit Application);	4
DI-9003 (Paleontological Use Permit)	<1 (completed by bureau)
DI-9004 (Paleontological Locality Form)	1
DI-9005 (Paleontological Report Summary Sheet)	5
DI-9006 (Paleontological Consulting Report Summary Sheet)	5
DI-9007 (Notice to Proceed)	<1 (completed by bureau)
DI-9008 (Repository Receipt for Collections (Paleontology))	1

The estimated hourly burdens in Table 5 are based on BLM and NPS permit-related experience. BLM permit applicants and permittees have told BLM that completing the existing BLM paleontological use permit application takes approximately 5 hours, and that completing BLM reports takes approximately 9 hours. On the other hand, NPS estimates that NPS permit applicants and permittees need only two hours to complete a permit application and an annual report¹⁰ (this may be because the NPS research permitting system is electronic and efficient for users). The permitting provisions of the proposed regulations are streamlined, consistent, and efficient but not yet electronic, and therefore the Department will assume that the hourly burden for permit applicants and permittees under the proposed rulemaking will be less than the current BLM burden and more than the current NPS burden. It is important to note that the time spent on permit applications and report will be project-specific. Some permit applications and reports will require less time to complete than the times presented in Table 5, and some will require more.

Assuming that an average permit applicant or permittee earns \$40/hour, the cost of completing an application, a locality form, a report, and a repository receipt would be \$440 (\$40/hour x 11 hours) over the course of a project. This cost is not large in terms either of personnel time or

¹⁰ NPS Supporting Statement A for Paperwork Reduction Act Submission, OMB Control # 1024-0236 (Nov. 3, 2010). The NPS permit system is electronic. Once the other DOI bureaus' permit systems are likewise internet-based, the hourly burden will decrease.

materials cost. The bureaus also believe that this cost is the same, or less than, the current estimated average costs to applicants and permittees of applying for permits, submitting reports, and preparing other documentation on lands administered by BLM, Reclamation, and FWS.

Fourth, any economic impact of the permitting provisions is likely to be beneficial because of the new clarity and consistency across the four DOI bureaus. For the first time, permit applicants will have a unified set of instructions on how to apply for and comply with paleontological resource permits. This will streamline and simplify the permit application, evaluation, and implementation process. In addition, the proposed regulations are likely to have a positive economic impact on paleontological consulting companies because of the increased attention to these resources.

Fifth, the permitting provisions of the proposed regulations apply only to applicants who propose to conduct scientific research and collecting or science education in bureau-administered areas to address the applicants' own specific research questions or science education purposes. To comply with bureau mandates and responsibilities for resource protection and visitor safety, the bureaus must be assured that permit applicants are qualified, that the proposed project is appropriate and will be conducted without damaging other resources, and that any collected resources will be adequately curated for future scientific work and public education. Without requiring such information in the permit applications and conditions of approval, the bureaus will be unable to issue any permits and neither the applicants nor the bureaus will be able to achieve the mutually desired purpose of conducting paleontological resource research and collecting activities and public education.

For all of these reasons, the proposed permitting provisions are not expected to have a significant economic impact on a substantial number of small entities.

Repositories

A. Number of Affected Entities

Subpart C of the proposed rulemaking pertains to repositories (museums, colleges, universities, historical societies, institutions, and other entities) seeking to curate paleontological resources collected from federal lands under the authority of the Act. The proposed rulemaking would require that such repositories must comply with Departmental and bureau museum management standards.

This analysis focuses on non-federal repositories, since federal repositories would not be considered “small entities.” As of FY2013, Departmental collections are housed in 839 non-bureau repositories, the majority of which are non-federal museums and universities.¹¹ Not all of these repositories hold DOI paleontological collections, however. The Department believes that DOI paleontological resource collections are housed at 160 to 200 non-federal repositories. This

¹¹ DOI Museum Property Management Summary Report FY 2013 (<http://www.doi.gov/museum/upload/FY-2013-DOI-Museum-Property-Annual-Report-fnl.pdf>).

number is based on NPS 32 I&M Network based paleontological resource inventories, which documented 161 non-federal repositories with NPS paleontological collections. The bureaus believe that many of those non-federal repositories also hold BLM, Reclamation, and FWS paleontological collections. To be on the safe side, the Department will estimate that approximately 200 non-federal repositories hold DOI paleontological collections.

B. Determination of whether these Repositories are “Small Entities”

The Department then tried to determine the number of these non-federal repositories that qualify as “small entities.” Based on the Small Business Administration’s size standards, museums are considered “small” when annual revenues are less than \$25 million. According to the American Alliance of Museums, the median size of museums by operating revenue is approximately \$1.25 million. For natural history/anthropology museums, the median is approximately \$3-\$3.5 million. Based on this information, it is reasonable to assume that the majority of the 200 non-federal facilities holding DOI paleontological collections are “small entities.”

This assumption is supported by the Department’s recent finding that only 120 of the 860 non-bureau repositories with DOI collections are accredited by the American Alliance of Museums. The process and awarding of accreditation implies a high level of staffing and resources, and thus the Department assumes that these 120, or 13.9%, of the 860 non-bureau facilities with DOI collections, are not “small entities.” This would mean that 86.1% of those facilities are “small entities.” The Department believes that it would be reasonable to assume that the same percentage, 86.1%, of the estimated 200 non-federal repositories holding DOI paleontological collections, are likewise “small entities,” which would mean that 172 of the non-federal repositories holding DOI paleontological collections are “small entities.”

One-hundred seventy two (172) “small entity” repositories represent less than 1% of the total number of museums in the U.S.¹² and about 10% of the 1,734 museums and other institutions nationwide estimated to hold vertebrate, invertebrate, and paleobotany collections.¹³ Thus, the Department does not consider the number of “small entity” repositories affected by the regulations to be substantial.

¹² See <http://www.aam-us.org/about-museums/museum-facts>. These “museums” include aquariums, arboretums/botanic gardens, art museums, children’s museums, anthropology museums, cultural museums, halls of fame, historic houses, historic sites, historical societies, battlefields, nature centers, natural history museums, planetariums, presidential libraries, science/technology centers, specialized museums, visitor centers, and zoos.

¹³ According to a survey conducted by the Heritage Preservation, <http://www.heritagepreservation.org/>, an organization which conducted a comprehensive survey titled the “Heritage Health Index” in 2004 about the location and condition of natural history collections, and extrapolations of its findings, 1,734 museums nationwide contain vertebrate paleontological specimens, 1,480 museums nationwide contain invertebrate paleontological specimens, and 1,117 nationwide contain paleobotany specimens. These figures cannot be added together because the museums may contain each of these types of collections, so the Department will instead simply use the 1,734 number. Although this survey was conducted in 2004, this is the most recent comprehensive source reasonably available to DOI, and it is unlikely to have significantly changed since that date.

C. Economic Impacts

Even if the number of “small entity” repositories affected by the regulations is substantial, the economic impact is expected to be negligible because the proposed regulations do not impose new curation requirements on repositories. Instead, the proposed regulations require repositories to meet pre-existing DOI policies and professional practices required and customary for museums and institutions curating Departmental collections. In addition, there are situations where bureaus pay curation fees and service charges to the repositories, which can be revised to account for increased costs. These costs cannot be meaningfully estimated or quantified at this time; they will depend on the repository, the specimens, and other variable factors.

Qualitatively, the proposed rulemaking utilized long-accepted professional and Departmental curation practices/standards, and applies those practices and standards to paleontological resources. It will not change current specimen preparation, cataloguing, data entry, or placement practices. The rulemaking’s provisions regarding scopes of collection, inventories, curatorial standards, and documentation will help repositories correctly anticipate costs of curation and charge appropriate fees to manage the collection per the regulations, or decline the collection in advance of curation.

Finally, the curation provisions of the proposed rulemaking do not compel any action. The curation of DOI collections is either by mutual agreement to a DOI request for curation of collections, or requested by the repository in cases where a researcher associated with the institution has applied for a permit to conduct paleontological studies and excavations on bureau-administered land.

For all of the reasons discussed above, the proposed repository provisions are not expected to have a significant economic impact on a substantial number of small entities.

Violators of the Act, Proposed Rules, or Permits

A. Number of Affected Entities

Subparts F and G of the proposed regulations contain the provisions for assessing civil penalties on persons who violate the Act, regulations, or permits issued under the Act and regulations, and also contain the provisions for determining scientific and commercial values of paleontological resources and sites damaged or destroyed by such violators, as well as the cost of repairing, responding, or restoring these damaged or destroyed resources or sites. These subparts apply only to persons who have violated the provisions of the Act or regulations or a permit issued under the Act.

Under current laws and regulations, the NPS documented nearly 900 incidents of paleontological resource theft or vandalism from 2003 through 2013 (the annual number of incidents fluctuates widely). Reclamation and FWS had no documented incidents during that time frame. BLM had 500 documented incidents during that time. It is impossible for the bureaus to know whether these numbers will increase or decrease under the proposed regulations. However, the Department anticipates that the numbers will decrease, because both the Act and the proposed regulations are extremely clear about what is allowed, what is prohibited, and the criminal and

civil consequences of violating those prohibitions. This clarity should serve as an effective deterrent to would-be violators and keep the number of violations low.

B. Determination of whether Violators are “Small Entities”

The Department cannot meaningfully predict how many violators would qualify as “small entities.”

C. Economic Impacts

Even if the number of “small entity” violators is substantial, the Department does not anticipate a significant economic effect on these violators. The proposed regulations authorize the bureaus to prevent or address permit violations by modification, suspension, cancellation, or revocation of the permits, as well as consider past permit compliance when evaluating new permit applications. All of these provisions will facilitate permittee compliance with the regulations and reduce the likelihood of permit violations.

In addition, the civil penalty subpart allows violators to reduce the economic consequences of their violation (i.e., penalties) by taking mitigation actions such as returning the stolen resources to the bureau of jurisdiction, or by providing information to assist the Department. To the extent that these violators are assessed penalties, such penalties are calculated directly based on the factors prescribed by the Act (16 U.S.C. § 470aaa-6(a)(2)-(4)). Lastly, the civil penalty subpart is procedural in nature and is designed to protect violators’ due process rights and promote adequate administrative and judicial review (16 U.S.C. § 470aaa-6(b)). Therefore, even if economic impacts on a particular violator are significant, those impacts have been minimized to the extent practicable while still meeting the goals of PRPA.

Conclusion

For the reasons set forth above, the Department certifies that this rule will not have a significant economic impact on a substantial number of small entities.

Appendix 1

Bureau-by-Bureau Paleontological Resource Management Activities and Costs: Comparison of “Baseline” Condition to “With Regulations in Place” Condition

Baseline Condition¹⁴

Bureau of Land Management:

BLM manages paleontological resources under the Federal Land Management and Policy Act (FLPMA), the provisions of the Paleontological Resources Preservation Act that are implementable without regulations, and other authorities.

- Management: BLM employs 8 FTEs nationwide dedicated to all aspects of paleontological resource management (inventories, monitoring, planning, compliance, policy development, mitigation, public education, permit administration, and curation oversight). For example, these FTEs are responsible for BLM’s public education activities which include signs, pamphlets, websites, and visitor contacts. BLM also has 120 other employees who, as part of their job functions, occasionally coordinate paleontological resource management activities. BLM estimates that these employees spend, on average, one day per year in such coordination activities.
- Permitting: The BLM FTEs dedicated to paleontological resource management also evaluate and, where appropriate, issue permits under FLPMA for collection of all vertebrate paleontological resources and scientifically significant invertebrate and plant fossils. BLM issues an average of about 376 new applications for paleontological research, consulting, and survey permits per year.
- Curation: Collections are curated at repositories approved by BLM officials consistent with Departmental curation standards at 411 DM and federal property management laws, regulations, guidelines, and standards. BLM manages collected resources as federal property. BLM maintains approximately 400,000 specimens in collections in 100 approved repositories and 25 non-approved repositories.
- Law Enforcement: BLM law enforcement personnel respond as needed to paleontological resource protection issues. The number of responses and related misdemeanors and felonies is not tracked.
- Casual Collecting: BLM currently allows casual collection of up to 100 pounds of common invertebrate and plant paleontological resources under FLPMA.

Bureau of Reclamation:

Prior to passage of PRPA, Reclamation had no specific authority to manage paleontological resources. Reclamation’s regulations, 43 CFR 423, *Public Conduct on Bureau of Reclamation Facilities, Lands, and Waterbodies*, prohibit collection of natural resources, including fossils, on Reclamation land.

- Management: Reclamation does not currently dedicate any FTE solely to paleontological resource management. Instead, approximately 20 cultural resources program staff address paleontological resource management requirements as collateral duty.

¹⁴ The information provided was collected in 2015 using the most recently available information. No meaningful change has occurred since that date.

Paleontological duties primarily involve issuing and administering permits, and collections management. On average, staff at management areas rich in fossil resources may spend approximately one month of effort per year on paleontological resource management; elsewhere staff effort is typically one week or less annually.

Paleontological resource management occurs to address impacts from new or on-going actions. Analysis of effects typically occurs in association with other actions that have triggered NEPA analysis (i.e., new construction, land use planning, etc.) and will occur in locations where existing information or geological conditions indicate there is a potential for paleontological resources. It also occurs upon a report of damage to a significant paleontological resource site. Where scientifically important paleontological deposits exist, Reclamation identifies and implements necessary resource management actions as funding allows. Reclamation maintains confidentiality of sensitive locational data in accordance with PRPA. Costs to address data management are minimal, and are not tracked. One bureau-funded public education effort has occurred; costs were not specifically tracked. Management actions in 2009 through 2013 included salvage excavation (1 site), documentation (1 site), construction monitoring (1 project), and development of a site management database. Total associated costs for these management actions, including in-house staff efforts, volunteers, and contractors, was \$53,224. Collateral duty staff costs for routine activities are not separately tracked, but are roughly estimated to be \$50,000 for half of 1 FTE annually bureau-wide.

- Permitting: Reclamation requires permits for any type of paleontological investigation and will issue permits only to those with appropriate professional qualifications for actions that will benefit the public. Reclamation received eight permit applications in 2009 through 2013, and issued seven permits during those five years (resulting in an average of 1-2 permits issued/year).
- Curation: As of the end of FY 2013, Reclamation curated 24,520 paleontological objects and 19,224 associated records in 13 approved repositories. Collections are curated at repositories approved by agency officials consistent with 411 DM. As needed, specific curatorial actions occur; for example, in 2010 a Reclamation office paid \$30,000 for a full inventory of a collection of 31,709 objects and associated records. Fossils from Reclamation lands are in use in exhibits at several museums, at no cost to the bureau.
- Law Enforcement: Reclamation does this on an as-needed basis.
- Casual Collecting: Not allowed in Reclamation-administered areas under the baseline condition, pursuant to 43 CFR 423.

National Park Service:

NPS currently protects, preserves, and manages paleontological resources under the NPS Organic Act as amended, park enabling laws, the provisions of the Paleontological Resources Preservation Act that are implementable without regulations, the National Environmental Policy Act (NEPA), and NPS regulations which prohibit damage to natural resources.

- Management: The National Park Service employs 9 FTEs nationwide dedicated to all aspects of paleontological resource management (inventories, monitoring, planning, compliance, policy development, mitigation, public education, research & collecting permit administration, and curation oversight). As one example of current NPS paleontological resource management activities, the NPS has completed a Servicewide literature-based inventory of paleontological resources in repositories, in situ, and

elsewhere, and is now in the process of updating these reports. NPS also evaluates impacts to paleontological resources in NEPA documents and reduces reasonably foreseeable impacts through avoidance and mitigation measures. A third example of current NPS management is that NPS already protects the confidentiality of the nature and specific locations of paleontological resources under the National Parks Omnibus Management Act of 1998 which expressly directs NPS to protect confidentiality of all paleontological resources in parks, the Federal Cave Resources Protection Act, and NPS policies. Current NPS public education programs include park-by-park paleontological interpretation, NPS coordination of National Fossil Day, and websites.

- Permitting: NPS uses its overall scientific research and collection permit (OMB Control # 1024-0236) to permit collection of paleontological resources. NPS receives on an average about 66 paleontological resource permit applications per year and issues approximately 60 permits per year. NPS spends an estimated \$3,625 in administering each issued permit.
- Curation: As of the end of FY 2013, NPS managed 580,684 cataloged fossils as federal property in 161 repositories. NPS applies 411 DM and federal property management laws, regulations, guidelines, and standards. Collections are curated at repositories approved by NPS officials consistent with Departmental curation standards at 411 DM.
- Public Education and Outreach: The National Park Service coordinates the National Fossil Day partnership which consists of over 300 partners nationwide. National Fossil Day supports the educational mandates with PRPA and reaches several million children annually.
- Law Enforcement: NPS law enforcement personnel respond as needed to paleontological resource protection issues. The numbers per year are not tracked.
- Casual Collecting: Not allowed in NPS-administered areas under the baseline condition.

U.S. Fish and Wildlife Service:

The U.S. Fish and Wildlife Service (FWS) currently manages paleontological resources under its general statutory authorities.

- Management: FWS does not currently employ any FTEs dedicated solely to paleontological resource management. Instead, approximately one FTE at each of the nine FWS regions spends approximately one month per year on paleontological resource management.
- Permitting: FWS requires permits for collection of all paleontological resources. Permits are issued under 16 U.S. C. § 668dd-ee and 16 U.S. C. § 460k-460k-4. FWS processes an average of 1-2 permits per year for paleo-related activities.
- Curation: Manages collected resources as federal museum property. Maintains 4.4 million museum objects, which include paleontological materials, in 117 federal repositories and 135 non-federal repositories. Collections are curated at repositories approved by FWS officials consistent with Departmental curation standards at 411 DM.
- Law Enforcement: FWS law enforcement personnel respond as needed to paleontological resource protection issues.
- Casual Collecting: Not allowed in FWS-administered areas under the baseline condition.

Table A-1: Baseline Condition -- Detailed Paleontological Resource Activities and Costs, Bureau-by-Bureau

Baseline (without regulations): Paleontological Resource Management Costs	BLM	Reclamation	NPS	FWS
Bureau costs <ul style="list-style-type: none"> • Management (inventories, monitoring, planning/compliance, policy development, mitigation of impacts, maintenance of confidentiality, and public education). • Administration of Permits • Curation in Compliance with 411 DM standards • Law Enforcement • Administration of casual collecting (if allowed) 	\$900,000/year for 8 FTEs.	\$ 120,000/year for one-half FTE of staff time, planning and NEPA inventory and monitoring, and curation.	\$2,200,000/year ¹⁵ for 9 FTEs.	\$ 69,600/year for 1/12 th of nine FTEs' salaries.
Permittee costs <ul style="list-style-type: none"> • Application for and Compliance with Collection 	Estimated: \$210,560 ¹⁶	Estimated: \$1,440 ¹⁷	Estimated: \$26,400. ¹⁸	Estimated: \$1,440 ¹⁹

¹⁵ NPS FY11 budget justification. NPS manages the 4210 localities at a cost of \$2.2 million, or \$520 per locality.

¹⁶ This cost estimate is based on the following information and assumptions: BLM issues, on average, 376 permits/year. Based on 2008-2010 information, BLM estimates that approximately 5 hours are needed to complete each permit application and approximately 9 hours are needed to prepare annual reports. Assuming that the average hourly wage of permit applicants is \$40, the total cost for them, nationwide, to fill out a permit application is estimated to be \$75,200. Assuming that the average hourly wage for permittees is also \$40, the total cost to the permittees to prepare the required annual reports is estimated to be \$135,360. When summed together, these costs equal \$210,560.

¹⁷ This cost estimate is based on the following information and assumptions: Reclamation received eight permit applications between 2009 and 2013. Based on that data and for purposes of this analysis, we will assume that Reclamation issues two permits/year. Assuming that the two annual Reclamation permit applicants need approximately 5 hours to complete each permit application and that the average hourly wage is \$40, the total cost for them, nationwide, to fill out a permit application is estimated to be \$400. Assuming that the two annual Reclamation permittees need 13 hours to prepare annual reports, and that the average hourly wage of these permittees is \$40, the cost to them is estimated to be \$1,040. Thus the total would be \$1440.

¹⁸ As stated above, an estimated 66 permit applications/year are submitted to NPS each year, and approximately 60 permits/year are issued. These figures are based on 2005-2010 data, which show that 396 permits with the term "paleo" mentioned somewhere in the application were issued during this timeframe. When broken down into annual averages, this equals issuance of approximately 60 new permits each year. Because the NPS permit system is online, the application process is simple and requires only 2 hours for applicants. See U.S. National Park Service, FY 2011 Budget Justification, Performance Table, p. ONPS-28; NPS Search IARS web page,

<https://science.nature.nps.gov/research/ac/search/iars/IarSearch>, last accessed Jan. 6, 2011; NPS Supporting Statement A for Paperwork Reduction Act Submission, OMB Control # 1024-0236 (Nov. 3, 2010);

http://www.reginfo.gov/public/do/PRAViewICR?ref_nbr=201008-1024-004. For purposes of this analysis, NPS will err on the side of caution and assume that a total of 10 hours is required for applicants and permittees to apply for permits and prepare their annual reports. Assuming that the average hourly wage of permit applicants and permittees is \$40, the total cost of the NPS permit requirement to permittees and applicants nationwide is \$26,400 (\$40/ hr x 10 hrs x 66 people).

¹⁹ This cost estimate is based on the following information and assumptions: FWS estimates that it issues two permits/year. Assuming that the time requirements for permit applications and report preparation on FWS lands are the same as the requirements for permits and reports on Reclamation lands, and that the average hourly wage for permit applicants and permittees is \$40, the total cost to permittees and applicants on FWS lands nationwide is estimated for purposes of this analysis to be \$1,440.

Baseline (without regulations): Paleontological Resource Management Costs	BLM	Reclamation	NPS	FWS
Permits				

With Regulations in Place

Bureau of Land Management:

In the short-term, BLM will implement the regulations with existing staff and funds.

- Management: BLM will not change its management of paleontological resources, because it already manages these resources in the manner required by the proposed regulations. BLM will continue to rely on existing FTEs for all aspects of management.
- Permitting: The new permit requirements of the regulations will impose the same workload on BLM staff as the bureau's existing permit requirements, and would be implemented by existing FTEs. For permit applicants, there would be no cost increase because the proposed regulations would require adherence to the same terms and conditions as BLM already requires in policy. In fact, the time required to fill out permit applications and reports may decrease because these forms have been simplified and standardized across BLM, Reclamation, and FWS.
- Curation: The proposed regulations do not impose new standards on repositories; instead they are based on existing Departmental museum standards. Existing BLM staff will continue to oversee curation of paleontological resources. Collections will continue to be curated at repositories approved by BLM officials consistent with Departmental curation standards at 411 DM and federal property management laws, regulations, guidelines, and standards. Therefore, the regulations will not increase costs for either BLM or repositories.
- Law Enforcement: BLM law enforcement personnel will continue to respond as needed to paleontological resource protection issues, but BLM anticipates that these issues may decrease due to the clear language of the proposed regulations that should act as a deterrent to many would-be violators. In cases involving violations, best available information indicates that no FTEs in BLM or the Department of Justice would be hired to implement the civil or criminal penalties provisions of the regulations.
- Casual Collecting: This will continue to be allowed under the regulations, but BLM may need to implement new education and enforcement efforts to ensure widespread understanding and compliance.

Bureau of Reclamation:

Reclamation anticipates that only minor changes will occur to already existing internal programs and procedures, except that some areas may be opened as special use areas where casual collecting is allowed.

- Management: Little change from baseline. Reclamation will prepare bureau-specific policy and standards as needed to implement the regulations. Reclamation offices will likely continue to utilize existing FTEs to implement permitting, resource management, data confidentiality protection, and collection management requirements. These activities are anticipated to change little from practices implemented since passage of the Act in 2009, thus requiring little or no additional funding. Policy and standards will be performed as part of normal policy staff duties, so will require no additional funding. Actions and costs to implement casual collecting on Reclamation land is addressed below.
- Permitting: Little change from baseline. Reclamation's current permit requirements are very similar to those in the proposed regulation, so effort to implement permitting requirements is not anticipated to meaningfully increase. In fact, the time required to fill out permit applications and reports may decrease because these forms have been simplified and standardized across BLM, Reclamation, and FWS. Reclamation offices will likely continue to utilize existing FTEs to review permit applications and oversee permitted actions.
- Curation: No change from baseline. Collections will continue to be curated at repositories approved by Reclamation officials consistent with Departmental curation standards at 411 DM. Existing bureau staff will continue to oversee curation of paleontological resources. Reclamation typically already requires permittees to prepare collections at their own cost. Therefore, the regulations will not increase costs for permittees, repositories, or Reclamation. Reclamation would continue to approve non-destructive educational use of collections by partners.
- Law Enforcement: No change from baseline. Reclamation would not define a law enforcement program focused on paleontological resources, but instead would typically investigate incidents of resource damage reported by the public or bureau staff or partners working on the land.
- Implementation of casual collecting: This is a change from the baseline that will require staff time and funding to implement. Reclamation has not previously allowed unpermitted collection of non-renewable resources on bureau land. The change will be to implement actions to open selected areas for casual collecting that are presently closed to such use under 43 CFR 423. After the regulation is final, Reclamation will maintain closure of bureau lands, prepare internal bureau policy for implementing casual collecting, and then will take steps to determine where it might be appropriate to authorize casual collecting within special use areas. Casual collecting will be authorized for an area only after considering the resource protection requirements of PRPA as well as the requirements of all other applicable mandates and their implementing regulations, as well as Departmental and Reclamation policy. Other applicable mandates would include the National Historic Preservation Act (NHPA), Executive Order 13007 on *Indian Sacred Sites*, the Endangered Species Act, and NEPA. Casual collecting authorizations would occur using processes for creating special use areas defined in 43 CFR 423, Subpart E. NEPA would be completed for each action. Public notification and education actions, boundary survey and posting, and other actions may be needed when

establishing special use areas. Preparation of bureau policy and procedure and public outreach materials will be completed using in-house staff as part of normal duties, and will result in little additional cost. It may be possible to establish some casual collecting special use areas after only research using existing literature and after consultations to comply with laws such as NHPA, and using a simple form of NEPA. Such “simple” actions could potentially be completed by in-house staff with assistance from contractors. It is estimated that each such “simple” action to establish a special use area for casual collecting might cost no more than \$50,000. However, establishing the use area may create additional costs associated with boundary survey and marking and increased initial monitoring to educate users and assess user impacts. Therefore an additional \$50,000 is estimated for opening a casual collecting special use area. It is not possible to determine how many of such simply-defined areas might exist. Estimating that four to eight such “simple” research efforts may occur within the first 10 years after promulgation of the regulation, and assuming unanticipated additional costs and inflation, then for the purposes of this analysis it is estimated that approximately \$1,000,000 would be expended over this period for this prior to implement casual collecting use on Reclamation land. Due to budget limitations and staffing constraints, it is unlikely that areas that require Reclamation to complete scientific studies to assess if casual collecting is appropriate can be accommodated in the near future.

National Park Service:

Based on a Servicewide inventory conducted 2002-2012, which determined that 246 NPS units contain paleontological resources, NPS paleontological staffing levels are insufficient to adequately manage, protect, and preserve these resources. Absent additional funding, NPS will implement PRPA and the regulations with existing staff and funds.

- Management: NPS already manages these resources under the same concepts that are contained in the proposed regulations. For example, NPS already uses scientific principles and expertise, conducts inventory and monitoring, and withholds information about the nature and specific location of paleontological resources from requests made under the Freedom of Information Act and other laws, unless the disclosure of such information will not result in harm to the resources.
- Permitting: NPS will use its existing scientific research and collection permit system to implement the regulations’ permit requirement. Existing FTEs will continue to evaluate, issue, and monitor permits, resulting in the same workload as the bureau’s existing permit requirements. For permit applicants and permittees, there would be no cost increase because they will be continuing to apply for, and comply with, existing NPS permits.
- Curation: Collections will continue to be curated at repositories approved by NPS officials consistent with Departmental curation standards at 411 DM and federal property management laws, regulations, guidelines, and standards. Existing NPS staff will continue to oversee curation of paleontological resources. Therefore, the regulations will not increase costs for permittees, repositories, or NPS staff.
- Public Education & Outreach: Given the NPS role in public education and the mandates associated with public awareness about fossils in PRPA, the bureau is experiencing some increased public interest and demands. In order to adequately respond to the growing public interest in paleontology, through National Fossil Day and the NPS Junior

Paleontologist Program, the NPS will need some modest funding (<\$100,000) to sustain and support the public education goals related to paleontology.

- Law Enforcement: NPS law enforcement personnel will continue to respond as needed to paleontological resource protection issues, but NPS anticipates that these issues may decrease due to the clear language of the proposed regulations that should act as a deterrent to many would-be violators. In cases involving violations, best available information indicates that no FTEs in NPS or the Department of Justice would be hired to implement the civil or criminal penalties provisions of the regulations.
- Casual Collecting: No change from the baseline condition. Casual collecting will still not be allowed in NPS-administered areas. Therefore, there will be no new costs for the NPS as a result of this part of the regulations.

U.S. Fish and Wildlife Service:

FWS intends to implement the regulations with existing staff and funds.

- Management: FWS will not change its management of paleontological resources, because it already manages these resources in the manner required by the proposed regulations. FWS will continue to rely on existing FTEs for all aspects of management.
- Permitting: The new permit requirements of the regulations will impose the same workload on FWS staff as the bureau's existing permit requirements, and would be implemented by existing FTEs. The time required for permit applicants and permittees to fill out permit applications and reports may decrease because these forms have been simplified and standardized across BLM, Reclamation, and FWS. Existing FTEs will continue to evaluate, issue, and monitor permits.
- Curation: Collections will continue to be curated at repositories approved by FWS officials consistent with Departmental curation standards at 411 DM and federal property management laws, regulations, guidelines, and standards. Existing FWS staff will continue to oversee curation of paleontological resources.
- Law Enforcement: FWS law enforcement personnel will continue to respond as needed to paleontological resource protection issues, but FWS anticipates that these issues may decrease due to the clear language of the proposed regulations that should act as a deterrent to many would-be violators. In cases involving violations, best available information indicates that no FTEs in FWS or the Department of Justice would be hired to implement the civil or criminal penalties provisions of the regulations.
- Casual Collecting: No change from the baseline condition. Casual collecting will still not be allowed in FWS-administered areas.

Table A-2: With Regulations in Place – Estimated Changes in the Annual Cost of Paleontological Resource Activities and Costs, Bureau-by-Bureau

With Proposed Regulations: Paleontological Resource Management Costs	BLM	Reclamation	NPS	FWS ²⁰
Bureau costs	< \$100,000 to	< \$100,000	< \$100,000 to	No change in costs.

²⁰ FWS baseline costs may increase under the new regulation as more requests for information and permit actions increase, however it will be captured case-by-case. An agency-wide estimate for any increase is not available at this time.

<ul style="list-style-type: none"> • Management (inventories, monitoring, planning/compliance, policy development, mitigation of impacts, maintenance of confidentiality, and public education). • Administration of Permits • Curation in Compliance with 411 DM standards • Law Enforcement • Administration of casual collecting (if allowed) 	<p>implement public education activities. In the long run, may seek additional \$400,000 in appropriations.</p>	<p>increase in costs (all due to implementation of new casual collecting authority).</p>	<p>implement public education activities. In the long run, may seek additional \$1,200,000 in appropriations.</p>	
<p>Permittee costs</p> <ul style="list-style-type: none"> • Application for and compliance with collection permits 	<p>No change or slight decrease in costs.</p>	<p>No change or slight decrease in costs.</p>	<p>No change or slight decrease in costs.</p>	<p>No change or slight decrease in costs.</p>