

## **Attachment I**

# **Paleontological Resource Protection Act Potential Fossil Yield Classifications**

**PALEONTOLOGICAL RESOURCE PROTECTION ACT and  
POTENTIAL FOSSIL YIELD CLASSIFICATION**

**PALEONTOLOGICAL RESOURCES PRESERVATION ACT  
123 STAT. 1174 PUBLIC LAW 111–11—MAR. 30, 2009**

**Subtitle D—Paleontological Resources Preservation**

**SEC. 6301. DEFINITIONS.**

(1) CASUAL COLLECTING.—The term “casual collecting” means the collecting of a reasonable amount of common invertebrate and plant paleontological resources for non-commercial personal use, either by surface collection or the use of nonpowered hand tools resulting in only negligible disturbance to the Earth’s surface and other resources. As used in this paragraph, the terms “reasonable amount”, “common invertebrate and plant paleontological resources” and “negligible disturbance” shall be determined by the Secretary.

(2) FEDERAL LAND.—The term “Federal land” means—  
(A) land controlled or administered by the Secretary of the Interior, except Indian land; or  
(B) National Forest System land controlled or administered by the Secretary of Agriculture.

(3) INDIAN LAND.—The term “Indian Land” means land of Indian tribes, or Indian individuals, which are either held in trust by the United States or subject to a restriction against alienation imposed by the United States.

(4) PALEONTOLOGICAL RESOURCE.—The term “paleontological resource” means any fossilized remains, traces, or imprints of organisms, preserved in or on the earth’s crust, that are of paleontological interest and that provide information about the history of life on earth, except that the term does not include—

- (A) any materials associated with an archaeological resource (as defined in section 3(1) of the Archaeological Resources Protection Act of 1979 (16 U.S.C. 470bb(1)); or
- (B) any cultural item (as defined in section 2 of the Native American Graves Protection and Repatriation Act (25 U.S.C. 3001)).

(5) SECRETARY.—The term “Secretary” means the Secretary of the Interior with respect to land controlled or administered by the Secretary of the Interior or the Secretary of Agriculture with respect to National Forest System land controlled or administered by the Secretary of Agriculture.

(6) STATE.—The term “State” means the 50 States, the District of Columbia, the Commonwealth of Puerto Rico, and any other territory or possession of the United States.

**SEC. 6302. MANAGEMENT.**

(a) IN GENERAL.—The Secretary shall manage and protect paleontological resources on Federal land using scientific principles and expertise. The Secretary shall develop appropriate plans for inventory, monitoring, and the scientific and educational use of paleontological resources, in accordance with applicable agency laws, regulations, and policies. These plans shall emphasize interagency coordination and collaborative efforts where possible with non-Federal partners, the scientific community, and the general public.

(b) COORDINATION.—To the extent possible, the Secretary of the Interior and the Secretary of Agriculture shall coordinate in the implementation of this subtitle.

**SEC. 6303. PUBLIC AWARENESS AND EDUCATION PROGRAM.**

The Secretary shall establish a program to increase public awareness about the significance of paleontological resources.

**SEC. 6304. COLLECTION OF PALEONTOLOGICAL RESOURCES.**

**(a) PERMIT REQUIREMENT.—**

(1) **IN GENERAL.**—Except as provided in this subtitle, a paleontological resource may not be collected from Federal land without a permit issued under this subtitle by the Secretary.

(2) **CASUAL COLLECTING EXCEPTION.**—The Secretary shall allow casual collecting without a permit on Federal land controlled or administered by the Bureau of Land Management, the Bureau of Reclamation, and the Forest Service, where such collection is consistent with the laws governing the management of those Federal land and this subtitle.

(3) **PREVIOUS PERMIT EXCEPTION.**—Nothing in this section shall affect a valid permit issued prior to the date of enactment of this Act.

**(b) CRITERIA FOR ISSUANCE OF A PERMIT.**—The Secretary may issue a permit for the collection of a paleontological resource pursuant to an application if the Secretary determines that—

- (1) the applicant is qualified to carry out the permitted activity;
- (2) the permitted activity is undertaken for the purpose of furthering paleontological knowledge or for public education;
- (3) the permitted activity is consistent with any management plan applicable to the Federal land concerned; and
- (4) the proposed methods of collecting will not threaten significant natural or cultural resources.

**(c) PERMIT SPECIFICATIONS.**—A permit for the collection of a paleontological resource issued under this section shall contain such terms and conditions as the Secretary deems necessary to carry out the purposes of this subtitle. Every permit shall include requirements that—

- (1) the paleontological resource that is collected from Federal land under the permit will remain the property of the United States;
- (2) the paleontological resource and copies of associated records will be preserved for the public in an approved repository, to be made available for scientific research and public education; and
- (3) specific locality data will not be released by the permittee or repository without the written permission of the Secretary.

**(d) MODIFICATION, SUSPENSION, AND REVOCATION OF PERMITS.**—

- (1) The Secretary may modify, suspend, or revoke a permit issued under this section—
  - (A) for resource, safety, or other management considerations; or
  - (B) when there is a violation of term or condition of a permit issued pursuant to this section.
- (2) The permit shall be revoked if any person working under the authority of the permit is convicted under section 6306 or is assessed a civil penalty under section 6307.

(e) AREA CLOSURES.—In order to protect paleontological or other resources or to provide for public safety, the Secretary may restrict access to or close areas under the Secretary's jurisdiction to the collection of paleontological resources.

**SEC. 6305. CURATION OF RESOURCES.**

Any paleontological resource, and any data and records associated with the resource, collected under a permit, shall be deposited in an approved repository. The Secretary may enter into agreements with non-Federal repositories regarding the curation of these resources, data, and records.

**SEC. 6306. PROHIBITED ACTS; CRIMINAL PENALTIES.**

(a) IN GENERAL.—A person may not—

(1) excavate, remove, damage, or otherwise alter or deface or attempt to excavate, remove, damage, or otherwise alter or deface any paleontological resources located on Federal land unless such activity is conducted in accordance with this subtitle;

(2) exchange, transport, export, receive, or offer to exchange, transport, export, or receive any paleontological resource if the person knew or should have known such resource to have been excavated or removed from Federal land in violation of any provisions, rule, regulation, law, ordinance, or permit in effect under Federal law, including this subtitle; or

(3) sell or purchase or offer to sell or purchase any paleontological resource if the person knew or should have known such resource to have been excavated, removed, sold, purchased, exchanged, transported, or received from Federal land.

(b) FALSE LABELING OFFENSES.—A person may not make or submit any false record, account, or label for, or any false identification of, any paleontological resource excavated or removed from Federal land.

(c) PENALTIES.—A person who knowingly violates or counsels, procures, solicits, or employs another person to violate subsection (a) or (b) shall, upon conviction, be fined in accordance with title 18, United States Code, or imprisoned not more than 5 years, or both; but if the sum of the commercial and paleontological value of the paleontological resources involved and the cost of restoration and repair of such resources does not exceed \$500, such person shall be fined in accordance with title 18, United States Code, or imprisoned not more than 2 years, or both.

(d) MULTIPLE OFFENSES.—In the case of a second or subsequent violation by the same person, the amount of the penalty assessed under subsection (c) may be doubled.

(e) GENERAL EXCEPTION.—Nothing in subsection (a) shall apply to any person with respect to any paleontological resource which was in the lawful possession of such person prior to the date of enactment of this Act.

**SEC. 6307. CIVIL PENALTIES.**

(a) IN GENERAL.—

(1) HEARING.—A person who violates any prohibition contained in an applicable regulation or permit issued under this subtitle may be assessed a penalty by the Secretary after the person is given notice and opportunity for a hearing with respect to the violation. Each violation shall be considered a separate offense for purposes of this section.

(2) AMOUNT OF PENALTY.—The amount of such penalty assessed under paragraph (1) shall be determined under regulations promulgated pursuant to this subtitle, taking into account the following factors:

(A) The scientific or fair market value, whichever is greater, of the paleontological 24 resource involved, as determined by the Secretary.

(B) The cost of response, restoration, and repair of the resource and the Paleontological site involved.

(C) Any other factors considered relevant by the Secretary assessing the penalty.

(3) MULTIPLE OFFENSES.—In the case of a second or subsequent violation by the same person, the amount of a penalty assessed under paragraph (2) may be doubled.

(4) LIMITATION.—The amount of any penalty assessed under this subsection for any 1 violation shall not exceed an amount equal to double the cost of response, restoration, and repair of resources and paleontological site damage plus double the scientific or fair market value of resources destroyed or not recovered.

(b) PETITION FOR JUDICIAL REVIEW; COLLECTION OF UNPAID ASSESSMENTS.—

(1) JUDICIAL REVIEW.—Any person against whom an order is issued assessing a penalty under subsection (a) may file a petition for judicial review of the order in the United States District Court for the District of Columbia or in the district in which the violation is alleged to have occurred within the 30-day period beginning on the date the order making the assessment was issued. Upon notice of such filing, the Secretary shall promptly file such a certified copy of the record on which the order was issued. The court shall hear the action on the record made before the Secretary and shall sustain the action if it is supported by substantial evidence on the record considered as a whole.

(2) FAILURE TO PAY.—If any person fails to pay a penalty under this section within 30 days—

(A) after the order making assessment has become final and the person has not filed a petition for judicial review of the order in accordance with paragraph (1);

or

(C) after a court in an action brought in paragraph (1) has entered a final judgment upholding the assessment of the penalty, the Secretary may request the Attorney General to institute a civil action in a district court of the United States for any district in which the person if found, resides, or transacts business, to collect the penalty (plus interest at currently prevailing rates from the date of the final order or the date of the final judgment, as the case may be). The district court shall have jurisdiction to hear and decide any such action. In such action, the validity, amount, and appropriateness of such penalty shall not be subject to review. Any person who fails to pay on a timely basis the amount of an assessment of a civil penalty as described in the first sentence of this paragraph shall be required to pay, in addition to such amount and interest, attorneys' fees and costs for collection proceedings.

(c) HEARINGS.—Hearings held during proceedings instituted under subsection (a) shall be conducted in accordance with section 554 of title 5, United States Code.

(d) USE OF RECOVERED AMOUNTS.—Penalties collected under this section shall be available to the Secretary and without further appropriation may be used only as follows:

- (1) To protect, restore, or repair the paleontological resources and sites which were the subject of the action, and to protect, monitor, and study the resources and sites.
- (2) To provide educational materials to the public about paleontological resources and sites.
- (3) To provide for the payment of rewards as provided in section 6308.

**SEC. 6308. REWARDS AND FORFEITURE.**

(a) REWARDS.—The Secretary may pay from penalties collected under section 6306 or 6307 or from appropriated funds—

- (1) consistent with amounts established in regulations by the Secretary; or
- (2) if no such regulation exists, an amount up to 1/2 of the penalties, to any person who furnishes information which leads to the finding of a civil violation, or the conviction of criminal violation, with respect to which the penalty was paid. If several persons provided the information, the amount shall be divided among the persons. No officer or employee of the United States or of any State or local government who furnishes information or renders service in the performance of his official duties shall be eligible for payment under this subsection.

(b) FORFEITURE.—All paleontological resources with respect to which a violation under section 6306 or 6307 occurred and which are in the possession of any person, shall be subject to civil forfeiture, or upon conviction, to criminal forfeiture.

(c) TRANSFER OF SEIZED RESOURCES.—The Secretary may transfer administration of seized paleontological resources to Federal or non-Federal educational institutions to be used for scientific or educational purposes.

**SEC. 6309. CONFIDENTIALITY.**

Information concerning the nature and specific location of a paleontological resource shall be exempt from disclosure under section 552 of title 5, United States Code, and any other law unless the Secretary determines that disclosure would—

- (1) further the purposes of this subtitle;
- (2) not create risk of harm to or theft or destruction of the resource or the site containing the resource; and
- (3) be in accordance with other applicable laws.

**SEC. 6310. REGULATIONS.**

As soon as practical after the date of enactment of this Act, the Secretary shall issue such regulations as are appropriate to carry out this subtitle, providing opportunities for public notice and comment.

**SEC. 6311. SAVINGS PROVISIONS.**

Nothing in this subtitle shall be construed to—

- (1) invalidate, modify, or impose any additional restrictions or permitting requirements on any activities permitted at any time under the general mining laws, the mineral or geothermal leasing laws, laws providing for minerals materials disposal, or laws providing for the management or regulation of the activities authorized by the aforementioned laws including but not limited to the Federal Land Policy Management Act (43 U.S.C. 1701–1784), Public Law 94–429 (commonly known as the “Mining in the Parks Act”) (16 U.S.C. 1901 et seq.), the Surface Mining Control and Reclamation Act of

1977 (30 U.S.C. 1201–1358), and the Organic Administration Act (16 U.S.C. 478, 482, 551); 26

(2) invalidate, modify, or impose any additional restrictions or permitting requirements on any activities permitted at any time under existing laws and authorities relating to reclamation and multiple uses of Federal land;

(3) apply to, or require a permit for, casual collecting of a rock, mineral, or invertebrate or plant fossil that is not protected under this subtitle;

(4) affect any land other than Federal land or affect the lawful recovery, collection, or sale of paleontological resources from land other than Federal land;

(5) alter or diminish the authority of a Federal agency under any other law to provide protection for paleontological resources on Federal land in addition to the protection provided under this subtitle; or

(6) create any right, privilege, benefit, or entitlement for any person who is not an officer or employee of the United States acting in that capacity. No person who is not an officer or employee of the United States acting in that capacity shall have standing to file any civil action in a court of the United States to enforce any provision or amendment made by this subtitle.

**SEC. 6312. AUTHORIZATION OF APPROPRIATIONS.**

There are authorized to be appropriated such sums as may be necessary to carry out this subtitle.

## POTENTIAL FOSSIL YIELD CLASSIFICATION (PFYC) SYSTEM

Occurrences of paleontological resources are closely tied to the geologic units (i.e., formations, members, or beds) that contain them. The probability for finding paleontological resources can be broadly predicted from the geologic units present at or near the surface. Therefore, geologic mapping can be used for assessing the potential for the occurrence of paleontological resources. Using the Potential Fossil Yield Classification (PFYC) system, geologic units are classified based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils and their sensitivity to adverse impacts, with a higher class number indicating a higher potential. This classification is applied to the geologic formation, member, or other distinguishable unit, preferably at the most detailed mappable level. It is not intended to be applied to specific paleontological localities or small areas within units. Although significant localities may occasionally occur in a geologic unit, a few widely scattered important fossils or localities do not necessarily indicate a higher class; instead, the relative abundance of significant localities is intended to be the major determinant for the class assignment.

The PFYC system is meant to provide baseline guidance for predicting, assessing, and mitigating paleontological resources. The classification should be considered at an intermediate point in the analysis, and should be used to assist in determining the need for further mitigation assessment or actions. The descriptions for the classes below are written to serve as guidelines rather than as strict definitions. Knowledge of the geology and the paleontological potential for individual units or preservational conditions should be considered when determining the appropriate class assignment. Assignments are best made by collaboration between land managers and knowledgeable researchers.

**Class 1 – Very Low.** Geologic units that are not likely to contain recognizable fossil remains.

- Units that are igneous or metamorphic, excluding reworked volcanic ash units.
- Units that are Precambrian in age or older.

(1) Management concern for paleontological resources in Class 1 units is usually negligible or not applicable.

(2) Assessment or mitigation is usually unnecessary except in very rare or isolated circumstances.

The probability for impacting any fossils is negligible. Assessment or mitigation of paleontological resources is usually unnecessary. The occurrence of significant fossils is non-existent or extremely rare.

**Class 2 – Low.** Sedimentary geologic units that are not likely to contain vertebrate fossils or scientifically significant nonvertebrate fossils.

- Vertebrate or significant invertebrate or plant fossils not present or very rare.
- Units that are generally younger than 10,000 years before present.
- Recent aeolian deposits.
- Sediments that exhibit significant physical and chemical changes (i.e., diagenetic alteration).

(1) Management concern for paleontological resources is generally low.

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(2) Assessment or mitigation is usually unnecessary except in rare or isolated circumstances.

The probability for impacting vertebrate fossils or scientifically significant invertebrate or plant fossils is low. Assessment or mitigation of paleontological resources is not likely to be necessary. Localities containing important resources may exist, but would be rare and would not influence the classification. These important localities would be managed on a case-by-case basis.

**Class 3 – Moderate or Unknown.** Fossiliferous sedimentary geologic units where fossil content varies in significance, abundance, and predictable occurrence; or sedimentary units of unknown fossil potential.

- Often marine in origin with sporadic known occurrences of vertebrate fossils.
- Vertebrate fossils and scientifically significant invertebrate or plant fossils known to occur intermittently; predictability known to be low. (or)
- Poorly studied and/or poorly documented. Potential yield cannot be assigned without ground reconnaissance.

**Class 3a – Moderate Potential.** Units are known to contain vertebrate fossils or scientifically significant nonvertebrate fossils, but these occurrences are widely scattered. Common invertebrate or plant fossils may be found in the area, and opportunities may exist for hobby collecting. The potential for a project to be sited on or impact a significant fossil locality is low, but is somewhat higher for common fossils.

**Class 3b – Unknown Potential.** Units exhibit geologic features and preservational conditions that suggest significant fossils could be present, but little information about the paleontological resources of the unit or the area is known. This may indicate the unit or area is poorly studied, and field surveys may uncover significant finds. The units in this Class may eventually be placed in another Class when sufficient survey and research is performed. The unknown potential of the units in this Class should be carefully considered when developing any mitigation or management actions.

(1) Management concern for paleontological resources is moderate; or cannot be determined from existing data.

(2) Surface-disturbing activities may require field assessment to determine appropriate course of action. This classification includes a broad range of paleontological potential. It includes geologic units of unknown potential, as well as units of moderate or infrequent occurrence of significant fossils. Management considerations cover a broad range of options as well, and could include pre-disturbance surveys, monitoring, or avoidance. Surface-disturbing activities will require sufficient assessment to determine whether significant paleontological resources occur in the area of a proposed action, and whether the action could affect the paleontological resources. These units may contain areas that would be appropriate to designate as hobby collection areas due to the higher occurrence of common fossils and a lower concern about affecting significant paleontological resources.

**Class 4 – High.** Geologic units containing a high occurrence of significant fossils. Vertebrate fossils or scientifically significant invertebrate or plant fossils are known to occur and have been documented, but may vary in occurrence and predictability. Surface disturbing activities may adversely affect paleontological resources in many cases.

**Class 4a –** Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two acres. Paleontological resources may be susceptible to adverse impacts from surface disturbing actions. Illegal collecting activities may

impact some areas.

*Class 4b* – These are areas underlain by geologic units with high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.
- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 4 is moderate to high, depending on the proposed action.

(2) A field survey by a qualified paleontologist is often needed to assess local conditions.

(3) Management prescriptions for resource preservation and conservation through controlled access or special management designation should be considered.

(4) Class 4 and Class 5 units may be combined as Class 5 for broad applications, such as planning efforts or preliminary assessments, when geologic mapping at an appropriate scale is not available. Resource assessment, mitigation, and other management considerations are similar at this level of analysis, and impacts and alternatives can be addressed at a level appropriate to the application.

The probability for impacting significant paleontological resources is moderate to high, and is dependent on the proposed action. Mitigation considerations must include assessment of the disturbance, such as removal or penetration of protective surface alluvium or soils, potential for future accelerated erosion, or increased ease of access resulting in greater looting potential. If impacts to significant fossils can be anticipated, on-the-ground surveys prior to authorizing the surface disturbing action will usually be necessary. On-site monitoring or spot-checking may be necessary during construction activities.

**Class 5 – Very High.** Highly fossiliferous geologic units that consistently and predictably produce vertebrate fossils or scientifically significant invertebrate or plant fossils, and that are at risk of human caused adverse impacts or natural degradation.

*Class 5a* – Unit is exposed with little or no soil or vegetative cover. Outcrop areas are extensive with exposed bedrock areas often larger than two contiguous acres. Paleontological resources are highly susceptible to adverse impacts from surface disturbing actions. Unit is frequently the focus of illegal collecting activities.

*Class 5b* – These are areas underlain by geologic units with very high potential but have lowered risks of human-caused adverse impacts and/or lowered risk of natural degradation due to moderating circumstances. The bedrock unit has very high potential, but a protective layer of soil, thin alluvial material, or other conditions may lessen or prevent potential impacts to the bedrock resulting from the activity.

- Extensive soil or vegetative cover; bedrock exposures are limited or not expected to be impacted.

- Areas of exposed outcrop are smaller than two contiguous acres.
- Outcrops form cliffs of sufficient height and slope so that impacts are minimized by topographic conditions.
- Other characteristics are present that lower the vulnerability of both known and unidentified paleontological resources.

(1) Management concern for paleontological resources in Class 5 areas is high to very high.

(2) A field survey by a qualified paleontologist is usually necessary prior to surface disturbing activities or land tenure adjustments. Mitigation will often be necessary before and/or during these actions.

(3) Official designation of areas of avoidance, special interest, and concern may be appropriate. The probability for impacting significant fossils is high. Vertebrate fossils or scientifically significant invertebrate fossils are known or can reasonably be expected to occur in the impacted area. On-the ground surveys prior to authorizing any surface disturbing activities will usually be necessary. On-site monitoring may be necessary during construction activities.