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in your permit, always stop work and notify the agency archaeologist if archaeological materials are found or suspected.

§ 14A.06 Conclusion

ARPA and PRPA provide substantive protection for federal heritage resources. These statutes impose substantial civil penalties for violations, including in the context of natural resource development on federal lands. Responsible operators will understand their permits and put in place a compliance regime to prevent violations.

Chapter 14B
DIGGING IN: AN IN-DEPTH LOOK AT THE ARCHAEOLOGICAL RESOURCES PROTECTION ACT: THE ARCHAEOLOGICAL PERSPECTIVE

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Synopsis

§ 14B.01 Introduction*

This chapter provides an archaeological perspective on the Archaeological Resources Protection Act of 1979 (ARPA).[1] The legal perspective on ARPA is presented in Chapter 14A. In particular, this chapter focuses on archaeological issues that are relevant to the legal community in the defense of civil litigation.

This chapter does not discuss the new Paleontological Resources Protection Act (PRPA)[2] a subtitle within the Omnibus Public Lands Management Act of 2009,[2.1] since archaeology is scientifically distinct from paleontology in methods, approaches, theory, and ethics. However, given that ARPA was a model for PRPA, much of what is presented here regarding the practical lessons learned about ARPA may assist those defending clients under PRPA.

Typically, ARPA investigations and case work involve distinct, complementary professional contributions from archaeologists and investigators, and, in criminal cases, prosecutors. This team approach has evolved from prosecutions under the criminal provisions of ARPA, which have been historically more common. Under this approach, the archaeologist fulfills a scientific support role in the investigation and takes the lead in the valuation of damage. The investigator manages the archaeological incident scene and leads the investigation, while the prosecutor develops the legal case. Team members have their own areas of expertise and responsibility and their working together is necessary for successful case management.

While the civil provisions of ARPA are distinct from its criminal provisions, the approach developed for criminal investigations remains the standard model for civil cases. The archaeologist will produce a valuation of damage, using the same method in civil cases as is used in criminal cases. Investigators are still needed to support the non-archaeological aspects of a case. Damaged archaeological resources are best managed as crime scenes, as they would be in a criminal ARPA case. The role of attorneys tends to be even more central in civil cases than in criminal prosecutions because in criminal cases law enforcement agents and investigators are the "first responders," while in civil cases the attorney usually receives the first call from a client. For this reason legal professionals need solid familiarity with

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[1] 16 U.S.C. §§ 470aa–470mm (elec. 2010).

[2] 16 U.S.C. §§ 470aaa–470aaa-11 (elec. 2010). See chapter 14A for a discussion of PRPA.

[2.1] Pub. L. No. 111-11, 123 Stat. 991 (2009).

the ARPA process from an archaeological point of view. The attorney will have to decide both when to retain and how to use the archaeologist. This chapter provides information to guide the attorney in making these decisions.

§ 14B.02 Valuation

The value of damage to archaeological resources is defined by three measures: (1) archaeological value; (2) commercial value; and (3) the cost of restoration and repair. While these measures are mentioned in the ARPA statute,[3] they were not defined until regulations[4] were issued in 1984.

Archaeological value is the key measure but also the most problematic. It has been occasionally disregarded and discounted by judges in criminal cases.[5] The concept of archaeological value recognizes that heritage resources are different from other types of property that can be damaged, stolen, or impacted. Paint sprayed by vandals on the side of a cinder-block equipment shed in a national park is not as damaging as paint sprayed across an area of prehistoric rock art adjacent to the shed. In the latter case our national heritage, an irreplaceable resource, has been harmed, and this damage is recognized as having a higher value. The criminal activity may be the same, but the value of the damage is greater. Archaeological value captures this intangible loss of information about the past.

Archaeological value is defined as:

> the value of the information associated with the archaeological resource. This value shall be appraised in terms of the costs of the retrieval of the scientific information which would have been obtainable prior to the violation. These costs may include, but need not be limited to, the cost of preparing a research design, conducting field work, carrying out laboratory analysis, and preparing reports as would be necessary to realize the information potential.[6]

In other words, archaeological value equates to the cost of conducting an archaeological research investigation on the resource that was damaged. There can be a great difference between the extent of damage and the value of damage. Even small amounts of damage can be quite costly and, conversely, there are times when large amounts of damage may have low value. Value is dependent upon the research questions, methods, techniques, and amount of labor necessary to conduct a scientific investigation.

[3] 16 U.S.C. § 470ee(d) (elec. 2010).

[4] 43 C.F.R. part 7 (elec. 2010); *see also* 49 Fed. Reg. 1027 (Jan. 6, 1984).

[5] Sherry Hutt, "The Acceptance of Archaeological Value as Evidence in Court," *in Presenting Archaeology in Court: Legal Strategies for Protecting Cultural Resources* 143 (2006) (hereinafter *Presenting Archaeology in Court*).

[6] 43 C.F.R. § 7.14(a) (elec. 2010).

Commercial value is defined as "the fair market value . . . using the condition of the archaeological resource prior to the violation, to the extent that its prior condition can be ascertained."[7] Commercial value is used more frequently for criminal cases of trafficking and the illegal sale of antiquities than it is for civil violations.

The cost of restoration and repair is defined as:

> [t]he sum of the costs already incurred for the emergency restoration or repair work, plus those costs projected to be necessary to complete restoration and repair, which may include, but need not be limited to, the costs of the following:
>
> (1) Reconstruction of the archaeological resource;
>
> (2) Stabilization of the archaeological resource;
>
> (3) Ground contour reconstruction and surface stabilization;
>
> (4) Research necessary to carry out reconstruction or stabilization;
>
> (5) Physical barriers or other protective devices, necessitated by the disturbance of the archaeological resource, to protect it from further disturbance;
>
> (6) Examination and analysis of the archaeological resource including recording remaining archaeological information, where necessitated by disturbance, in order to salvage remaining values which cannot be otherwise conserved;
>
> (7) Reinterment of human remains in accordance with religious custom and State, local, or tribal law, where appropriate, as determined by the Federal land manager.
>
> (8) Preparation of reports relating to any of the above activities.[8]

Unlike archaeological value, the cost of restoration and repair is a relatively straightforward calculation of the costs of mitigating the physical damage to the archaeological resource from the violation. These costs can be substantial, particularly when human remains are disturbed and other laws, such as the Native American Grave Protection and Repatriation Act of 1991,[9] also apply. Additionally, the restoration and repair of a resource may necessitate incurring the costs of archaeological research and analysis, including reporting, and these costs also are likely to be high.

Section 7.4 of the ARPA regulations links fines for the conviction of a prohibited act to the archaeological value, commercial value, and cost of restoration and repair.[10] The valuation formula is the cost of restoration

[7] 43 C.F.R. § 7.14(b) (elec. 2010).

[8] 43 C.F.R. § 7.14(c) (elec. 2010).

[9] 25 U.S.C. §§ 3001-3013 (elec. 2010).

[10] 43 C.F.R. § 7.4(c) (elec. 2010).

and repair plus either the archaeological value *or* the commercial value. In civil cases where damage occurs from excavation, removal, damage, alteration, or defacement,[11] typically the sum of archaeological value and the cost of restoration and repair is used to value damage.

Civil penalties may not exceed the cost as determined using one of the two formulae.[12] If, however, the person being assessed a civil penalty has committed any previous violation under ARPA, the maximum amount of the penalty may be increased but cannot exceed twice the amount determined using one of the formulae.[13] Penalties may be less than these amounts and are at the discretion of the federal land manager, who may offer to mitigate or remit the penalty based upon specific provisions in the regulations.[14] ARPA authorizes the forfeiture of any person's vehicles and equipment that were used in connection with a civil or criminal violation.[15]

§ 14B.03 Determining Archaeological Value

Although the calculation of commercial value and the cost of restoration and repair are generally straightforward and non-controversial, archaeological value has been more difficult to calculate. When determining archaeological value, an archaeologist first defines the damaged archaeological resource, a moderately complicated task. Under ARPA "[u]nauthorized excavation, removal, damage, alteration, or defacement of archaeological resources"[16] is prohibited. The regulations define archaeological resource to be "any material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest."[17] While this is a precise legal definition, it does not precisely fit the terms used by archaeologists.

To archaeologists, "archaeological resource" is a vague, generic term. More precise terms used by archaeologists for the basic units of study are artifacts, ecofacts, and features, terms which can be found in almost any

[11] 43 C.F.R. § 7.4(a) (elec. 2010).

[12] 43 C.F.R. § 7.16(a)(1) (elec. 2010).

[13] 43 C.F.R. § 7.16(a)(2) (elec. 2010).

[14] 43 C.F.R. § 7.16(b) (elec. 2010).

[15] 16 U.S.C. § 470gg(b) (elec. 2010).

[16] 16 U.S.C. § 470ee(a) (elec. 2010).

[17] 43 C.F.R. § 7.3(a) (elec. 2010). See 43 C.F.R. § 7.3(a)(1) (elec. 2010) for the definition of "of archaeological interest."

introductory textbook on archaeology.[18] The National Register of Historic Places (National Register), established by the National Historic Preservation Act of 1966[19] and used by archaeologists, identifies buildings, objects, structures, sites, and districts as the types of historic properties that can be listed in the National Register. Of these terms, site is probably the most familiar archaeological unit to both archaeologists and non-archaeologists. Most non-archaeologists, however, are surprised to learn that while a site has strong, albeit passionately debated, conceptual meaning, the boundary of an archaeological site is very dynamic and varies by the criteria used to define it, the methods used to measure it, environmental conditions, and the reasons the site boundary is being recorded. Site boundaries are not hard lines even though they may be depicted as such on a map. Correlating terms for archaeological units that are typically and precisely used by archaeologists, such as artifact or feature, to the legal definition of archaeological resource may be problematic. Likewise, attorneys may not understand the fluidity of archaeological or behavioral units, such as the site, and may base legal arguments on the site as a "real" physical entity.

There also are other difficulties for archaeologists in determining the archaeological resource. For example, how scientifically meaningful spatial units that are based upon human behavior and used in archaeological analysis correlate with damage to archaeological resources. Additionally, there can be problems in applying the legal concept of proportionality—that punishment should be proportional to the extent of the crime[20]—because the physical extent of damage is not necessarily proportional to the monetary value of damage. Finally, the archaeologist has a fair amount of discretion in what is selected as the archaeological resource. While this is not necessarily problematic by itself, logical consequences follow in the valuation process based upon the particular defined resource. Legal professionals should be aware of these consequences as archaeologists are not always accustomed to viewing their own work within a legal framework. These difficulties and the solutions developed to overcome them will be discussed again later in this chapter, because they were among the reasons for the establishment of archaeological valuation standards in 2003.

Once the archaeological resource is established, the archaeologist's second job is to identify and record the damage to the resource, regardless of

[18] David Hurst Thomas & Robert L. Kelly, *Archaeology* 494-97 (4th ed. 2006), defines artifact as "[a]ny movable object that has been used, modified, or manufactured by humans"; ecofact as a "[p]lant or animal remains found in an archaeological site"; and feature as "[t]he nonportable evidence of technology."

[19] 16 U.S.C. §§ 470–470x-6 (elec. 2010).

[20] *See* Solem v. Helm, 463 U.S. 277, 290 (1983).

whether it appears to be a part of the alleged ARPA violation. The most important reason for full recordation is the fact that almost no archaeological resource is in pristine condition. During the legal process, there will likely be arguments regarding who caused what damage. Having a good description of all damage allows debate, based on evidence, to classify damage by episode or time period. The archaeologist will work with the investigator and attorney to determine which damage to the resource will be valued.

Third, the archaeologist will examine the damage to be valued in the context of the archaeological resource. As archaeological sites usually have depth, this is a three-dimensional exercise. Spatial units will be identified that have meaning for human behavior and the science of archaeology. For example, if the damaged archaeological resource contains architectural remains with defined rooms, a room may be identified as a meaningful unit. If archaeological deposits in the room were damaged by an operator extracting a geological core through the room, the unit used to calculate the value of damage would be the room, not the hole. The hole as a unit has no scientific or behavioral importance, but the room does. However, assessing damage in the context of archaeological science must not be done in isolation and also must take into account the legal concept of proportionality.

When the units of valuation have been determined, the archaeologist then defines the scientific activities that would be required for the "retrieval of the scientific information which would have been obtainable prior to the violation."[21] In this step, the archaeologist identifies the scientific questions of relevance, the data that are required to answer these questions, the methods that are needed to collect and analyze the data, and the appropriate methods of reporting research findings.

There are a few points of note here for legal professionals. First, a standard of "current and customary," based on the research of similar archaeological resources in the same region should be used to guide the archaeologist. It is very tempting for an archaeologist to include novel, experimental, or state-of-the-art methods and techniques in a research design. It also is tempting for an archaeologist to include far more, or more esoteric, research questions than are typically asked in scientific research designs. Second, in a typical excavation, archaeologists rarely excavate all of a resource, or process and analyze all data that are collected. Statistical sampling is normally used to make estimates of the whole resource or whole collection from a smaller sample. Archaeologists may want to include, for example, the excavation of all damaged units in their retrieval of scientific information, but this is rarely justified. The most frequent case when it is justifiable is

[21] 43 C.F.R. § 7.14(a) (elec. 2010).

when the required sample size for analysis necessitates consideration of all areas that were damaged. For example, a low-density scatter of artifacts on a desert pavement ground surface in southwest Arizona may require the recordation and study of all the artifacts because a sample from an area of the resource that was damaged would have too few total artifacts to be statistically valid. Finally, the purpose of assessing damage under ARPA is to determine value, not to plan an actual excavation. Archaeologists sometimes forget that the program of research they define for the damage evaluation will virtually never be undertaken.

The final step of valuing damage is to prepare a budget for the identified research activities by multiplying the forecasted labor hours required to undertake the activities by the dollar rates of that labor and including associated expenses. There is surprisingly little variation among archaeologists in determining the level of effort for various research activities. Attorneys should request consulting archaeologists to explicitly identify the assumptions they use in determining the number of hours. For example, excavating a cubic meter of sediment in sand takes much less time than excavating the same volume in hard, calcified sediments. There is more variation among archaeologists with the hourly rates used for labor. For example, archaeologists sometimes omit factoring in the cost of labor overhead and instead use the hourly wages that archaeologists are paid. They may also use the labor rates for their firm or agency, not knowing how representative these are. It is advisable for archaeologists to use an objective and defendable standard for labor costs.[22]

§ 14B.04 Archaeological Problems with the Archaeological Resources Protection Act (ARPA)

ARPA was enacted in 1979 to resolve issues involved with using the American Antiquities Preservation Act of 1906 [23] to prosecute cases involving the theft of cultural materials.[24] These deficiencies were prominently illustrated in a conviction overturned by the Ninth Circuit in 1974[25] because of problems with the lack of legal definitions for archaeological

[22] One good source is the salary survey published every few years by the American Cultural Resources Association. This identifies mean hourly salaries, fringe benefits, and overhead for the suite of different archaeological employees utilized on research projects. It also provides these data on a regional basis. *Available at* http://www.acra-crm.org (under "Business Toolkit").

[23] 16 U.S.C. §§ 431-433 (elec. 2010).

[24] Don D. Fowler & Barbara Malinky, "The Origins of ARPA: Crafting The Archaeological Resources Protection Act of 1979," *in Presenting Archaeology in Court, supra* note 5, at 1.

[25] United States v. Diaz, 499 F.2d 113 (9th Cir. 1974).

terms and concepts. Over the first 25 years, ARPA generally functioned well to protect archaeological resources.

By 2003, however, enough problems with ARPA had developed that resolution of some fundamental issues with the interface between archaeological science and the legal system was necessary. These problems included vague terminology, the lack of documentation on best practices, and significant variations in the valuation of damage that undermined the credibility of archaeological experts. Further, in 2002, the U.S. Sentencing Commission issued cultural heritage guidelines that used the ARPA concepts of archaeological value, cost of restoration and repair, and commercial value as criteria on which to base the severity of sentences.[26] This placed additional legal scrutiny on the value determinations calculated by archaeological experts. Finally, the legal community became concerned that the proportionality of damage was not sufficiently considered by archaeologists. While it is a fundamental legal concept that the level of punishment should be proportional to the extent and value of damage,[27] as previously stated, the degree and extent of damage are not necessarily correlated in archaeological terms. Because punishment was based upon value, but value was not directly related to the extent of damage, cases were having difficulty in court.

To resolve some of these problems, the Society for American Archaeology (SAA), with funding from the National Park Service, set out to establish standards for the determination of archaeological value.[28] A panel of damage assessment/valuation experts (this author included) from historical, prehistoric, and underwater archaeology; law; and law enforcement was assembled in March 2003 to draft the professional standards. These standards, entitled the Professional Standards for the Determination of Archaeological Value[29] (SAA Standards), were adopted by the SAA Board of Directors later that year. Professional standards were viewed as a solution to the problems noted above and as a tool to help meet various tests

[26] *U.S. Sentencing Guidelines Manual* § 2B1.5 (elec. 2010) (held unconstitutional on other grounds).

[27] Solem v. Helm, 463 U.S. 277, 290 (1983).

[28] Martin E. McAllister, "The Society for American Archaeology Professional Standards for the Determination of Archaeological Value: Solving the Archaeological Value Determination Problem in the ARPA Cases," *in Presenting Archaeology in Court* 67, *supra* note 5, at 67.

[29] For the full text and explanation of the SAA Standards, see http://www.saa.org (search "Standards").

and rules for the admissibility and weighting of expert testimony under the *Frye* test,[29.1] the Federal Rules of Evidence,[29.2] and the *Daubert* test.[30]

§ 14B.05 The Society for American Archaeology (SAA) Archaeological Standards

For legal professionals to truly understand the concept archaeological value, how archaeologists determine archaeological value, and potential avenues for arguing for or against the testimony of archaeological experts, they must comprehend the SAA Standards and the debates over their formulation and wording. The SAA Standards are not easy to understand for someone unfamiliar with ARPA, the ARPA regulations, and the process by which archaeologists reason their way to a value determination, although there have been several attempts in recent years to provide clarification and guidance.[31] Archaeologists who have little ARPA experience or who are unfamiliar with the SAA Standards are likely to misapply them, resulting in nonstandard valuations. The application of the SAA Standards is one of the primary areas that should be examined critically by legal professionals dealing with civil ARPA violations.

[1] Standard 1—Identification of the Archaeological Resource(s) Involved in the ARPA Violation

> The first step in determining archaeological value is to specifically identify the archaeological resource(s) involved in the ARPA violation (i.e., the archaeological resource(s) excavated, removed, damaged, or otherwise altered or defaced). Identification of the archaeological resource(s) involved in the violation must be based on:
>
> a. the physical attributes of the archaeological resource(s), including spatial extent, and the discernable or inferable archaeological context of the resource(s) (this archaeological context could be an entire site, groups of features or strata, a single feature or stratum, single artifacts, or other commonly defined components of the archaeological record);
>
> b. the physical evidence of the prohibited conduct (i.e., excavation, removal, damage, alteration, or defacement) and its spatial extent;
>
> c. knowledge about similar archaeological resources based on professional experience; and

[29.1] United States v. Frye, 293 F. 1013 (D.C. Cir. 1923) (superseded by statute).

[29.2] Testimony by Experts, Rule 702.

[30] Daubert v. Merrell Dow Pharmaceuticals, Inc., 509 U.S. 579 (1993). *See* Hutt, *supra* note 5; McAllister, *supra* note 28.

[31] McAllister, *supra* note 28, Martin E. McAllister, "Archaeological Resource Damage Assessment: Legal Basis and Methods," U.S. Department of the Interior, National Park Service, Technical Brief No. 20, 2007 (Technical Brief), *available at* http://www.nps.gov (search "Technical Brief 20").

> d. other archaeological, historical, and ethnographic sources, including information from descendant communities, to the extent that these sources contribute to scientific knowledge.[32]

As noted earlier, defining the archaeological resource that has been damaged is the first step an archaeologist takes in a valuation. The term "archaeological resource" is not precisely defined within the scientific discipline of archaeology, and a number of different types of resources may be included (e.g., site, feature, district, strata). Standard 1 provides guidance in identifying the archaeological resource.

First, Standard 1 provides that the physical attributes of the archaeological record must be used. These attributes primarily would include the archaeological units of artifact, ecofact, or feature discussed earlier. Physical attributes could also extend to conceptual groupings of the basic archaeological units such as the spatial distribution of artifacts and features forming a site, or even the grouping of sites forming a National Register archaeological district. Additionally, it extends to natural contextual attributes that characterize and define the archaeological resource. For example, the natural boundaries of a rock face could define a grouping of petroglyphs as an archaeological resource. A natural, but artifact-laden, sediment strata could define the boundaries of a buried archaeological resource.

Second, it is important to note that if conceptual and natural units are used to define the archaeological resource, damage that occurs within the boundaries of the resource but between artifacts, ecofacts, or features, is still damage to the resource. A good analogy is to think of a painting by a famous twentieth century artist that contains areas of white space. In the course of a theft of this painting, if a hole is punched through the canvas in a portion of the painting with no pigment, is the painting damaged? Most people would answer yes. Similarly, the individuals drafting the SAA Standards incorporated the scientific archaeological concept of context. Damage to the context of artifacts, ecofacts, or features is damage to the archaeological resource.

Third, Standard 1 also specifies that the spatial extent of the physical evidence of the violation be considered when determining the archaeological resource. Thus, if an archaeological site sustained damage in one portion of the site, the archaeologist would not define the entire site as the archaeological resource. The resource might instead be identified as the remains of an archaeological structure, a sector of the site where features are clustered, or an area of high surface artifact density.

[32] *See* SAA Standards, *supra* note 29, at Standard 1.

At damaged resources, it is sometimes difficult for archaeologists to distinguish the extent, nature, size, and complexity of the resource from the modern ground surface. This is the reason archaeologists excavate sites in the first place. The damage itself will sometimes provide a window into the subsurface deposits of the site and assist the archaeologist in characterizing the site. Standard 1 requires that archaeologists use their professional knowledge about similar archaeological resources to identify the archaeological resource that was damaged.

Finally, Standard 1 also specifies that archaeologists consult a broader base of archaeological, historical, and ethnographic sources, including information from descendant communities. Thus, even if an archaeologist has little first-hand professional knowledge about similar archaeological resources, the archaeologist would consult reports, site databases, other archaeologists, historical records, and those with cultural knowledge in descendant communities in determining the appropriate archaeological resource. The phrase "scientific knowledge" is found in the SAA Standards in reference to the use of additional sources because valuations under ARPA are definitionally limited to the cost of the retrieval of scientific information. Descendant communities, and particularly Native American nations with ARPA violations on tribal land, have criticized ARPA on the basis that cultural values attached to archaeological resources are not considered in the valuation process.

[2] Standard 2—Scale of Scientific Information Retrieval to Be Used in Determining Archaeological Value

> The ARPA Uniform Regulations specify that archaeological value "shall be appraised in terms of the costs of the retrieval of the scientific information which would have been obtainable prior to the violation." [43 C.F.R. § 7.14(a)]. Therefore, the appropriate scale of scientific information retrieval must be selected.
>
> When the context of the archaeological resource(s) involved in the prohibited conduct cannot be ascertained more specifically than a site or location (e.g. unauthorized excavations in a site with no visible surface features), the scale of scientific information retrieval used in determining archaeological value must be based on the standard archaeological unit(s) that would at least encompass the spatial extent of the prohibited conduct (e.g., the volume of excavation resulting from the prohibited conduct). A standard archaeological unit in this case means a metric unit (e.g., a 2 by 2 meter square).
>
> When the context of the archaeological resource(s) involved in the prohibited conduct can be ascertained more specifically than a site or location (e.g., an archaeological feature at a site), the scale of scientific information retrieval also must be based on the standard archaeological unit for that context. A standard archaeological unit in this case means a cultural unit, such as a pithouse, fire pit, burial feature, or petroglyph panel (for which metric units would be used as appropriate).
>
> In addition, the scale of scientific information retrieval must be proportional to the nature and extent of the prohibited conduct. For example, a small, shallow hole dug into a large pithouse would not warrant an archaeological value determination based on scientific information retrieval from the entire structure. If, on the other hand, a backhoe had been used to excavate most of the pithouse, scientific information retrieval for the entire structure may well be the appropriate scale. This proportionality concept relates the scale of scientific information retrieval to the magnitude of harm to the archaeological resource(s) resulting from the prohibited conduct.[33]

For terrestrial archaeological sites, the archaeological value of damage is highly correlated with the amount of earth that must be removed to recover the scientific information. Standard 2 provides instructions to the archaeologist on the appropriateness of scale. The development of Standard 2 was preceded by substantial debate regarding the question of how the scale of retrieval is determined.

One perspective in the debate held that archaeology is a science of past behavior and that the characteristics of damage to the archaeological record should not dictate the methods and approach that the archaeologist takes. Instead, scientifically valid units of cultural meaning should be used by archaeologists to guide their research. The archaeological record should be approached as it would normally be approached by archaeologists in its undamaged condition.

The other perspective argued that the normal archaeological approaches are not appropriate in ARPA investigations. These investigations are not research studies and the intent of the law is to value the specific damage that had occurred, albeit within the framework of scientific methods. Thus, the appropriate scale of recovery is the minimum scientifically valid archaeological data collection unit. If a shovel hole one foot wide and two feet deep had been dug into the site by an antiquities looter, then the archaeologist should use a one-by-one meter [34] excavation unit to a depth of one meter to base the costs of information retrieval.

It is largely because of these different approaches that the valuations of different expert archaeologists were widely divergent and the credibility of archaeological valuation as a whole was coming under fire by the legal community. Resolving this issue was one of the major reasons for developing the SAA Standards.

Standard 2 recognizes both approaches, but gives priority to culturally valid units when such units can be identified in the archaeological resource.

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[33] *See* SAA Standards, *supra* note 29, at Standard 2.

[34] Archaeologists working on prehistoric terrestrial sites typically use the metric system of measurement in their work. Other units of measurement are typically used on different types of sites from different time periods.

Thus, at a prehistoric pueblo site in Colorado that was damaged by a road bladed through an architectural feature, the archaeologist would likely use individual rooms or the building itself as the cultural units upon which to base the scale of information retrieval.

Some resources, however, do not have clearly defined cultural units because they lack such units or because the units are buried or otherwise not visible to the archaeologist. Many archaeological sites in the western United States consist of concentrations of artifacts on and just below the modern ground surface. At these resources, the archaeologist must proceed in defining the scale of information retrieval in the absence of cultural units. In these cases, Standard 2 dictates that the scale of information retrieval is determined by using the standard archaeological units that would encompass the spatial extent of the damage. So, if a road was bladed through an archaeological resource without cultural units, the spatial extent of the road cut would dictate the scale of information retrieval. The archaeologist, in this case, would likely superimpose a study grid over the area of damage to guide the investigation and allow the comparison of standard archaeological units. This study grid likely would not conform exactly to the spatial extent of the damage, and Standard 2 instructs the archaeologist to "at least encompass" the damage. Thus, the grid would be expected to be slightly larger than the extent of the damage.

Finally, Standard 2 instructs the archaeologist to incorporate proportionality into the determination of the scale of information retrieval. This, too, generated much debate among the archaeologists and attorneys drafting the SAA Standards. It is one of the few places in the SAA Standards where principles of archaeological science were compromised to accommodate legal principles and the consideration of the amount of harm to the archaeological resource. The example that is provided in Standard 2 illustrates this point. A pithouse[35] has been defined by the archaeologist to be an appropriate cultural unit on which to base the scale of information retrieval. Typically, in the region of this resource, pithouses are entirely excavated during scientific excavation. Complete excavation of a pithouse represents a sizable amount of required labor hours and consequently has a very high archaeological value. If a geophysical surveying company digs a single, shallow hole into this pithouse to place a seismic instrument, is the harm to the archaeological resource proportional to the high archaeological value, and by extension, the high level of penalty the company will receive? Standard 2 states that it is not. However, if the same pithouse is damaged by digging a backhoe trench through the cultural deposits in order to place a drainage culvert, Standard 2 acknowledges that the harm to the archaeological resource is greater and the higher archaeological value is justified. In Standard 2 the legal concept of proportionality mitigates a strictly scientific approach that adopts a "you break it, you buy it" philosophy and does not consider the amount of harm done to the archaeological resource.

[35] Typically, a semi-subterranean architectural structure dug into the ground, then roofed.

[3] Standard 3—Methods of Scientific Information Retrieval

> The methods of scientific information retrieval used as the basis for the archaeological value determination should be appropriate to the scale of the standard archaeological unit that has been selected. Depending on the conventions of archaeological practice in the area, examples of appropriate methods in a particular case involving unauthorized excavation would include a column sample, an excavation square, an excavation trench, a set of statistically based sample excavation units, or a block of contiguous excavation units. There also would be a comparable range of appropriate methods for cases involving other types of prohibited conduct.
>
> In addition, the scientific information retrieval methods should be proportional to the nature and extent of the prohibited conduct. For example, the methods employed for scientific information retrieval from an entire pithouse would not be proportional contextually or justifiable scientifically relative to excavation of a small, shallow hole in the pithouse.[36]

Standard 3 instructs the archaeologist to select the methods that are appropriate to the selected unit. The tool kit of methods available to the archaeologist for retrieving information is large and varied. As well, they are becoming increasingly high-tech and more expensive. Modern archaeologists now routinely use satellite imagery, genetic testing, isotope analyses, many types of radiometric dating, and 3-D laser scanning, among other methods, in their investigations of past events and behavior. A bright, ambitious archaeologist asked to go through a valuation exercise and the design of a program of hypothetical research can easily start amassing a list of research questions and methods beyond what would typically be done in the investigation of a particular unit in a particular archaeological resource. Thus, Standard 3 provides a check on the appropriateness of methods by using the conventions of archaeological practice in the area.

Additionally, Standard 3 incorporates the use of statistics and statistical sampling as archaeological methods. As with most other sciences, archaeology uses statistics to make inferences about populations from a sample of things within those populations. In valuing damage, archaeologists will sometimes err by including the costs of retrieving information from all areas damaged. In most research, though, archaeologists would use statistical sampling, which would preclude all areas from being investigated or

[36] *See* SAA Standards, *supra* note 29, at Standard 3.

all archaeological materials (e.g., artifacts) from being analyzed. Thus, the archaeological value would be less than if the entire population of things had to be considered. Legal professionals should question a valuation report that does not use statistical sampling. There are legitimate exceptions for not sampling, such as if the total number of artifacts or features is too low to meet the required sample sizes, but these exceptions should be explained in the valuation report.

[4] Standard 4—Scientific Information Retrieval Standards

> The methods of scientific information retrieval used as the basis for the archaeological value determination should meet current and customary professional standards appropriate to the archaeological resource, the archaeological context, and the standard archaeological unit in the region. The retrieval methods also should comply with applicable government agency standards (e.g., Secretary of the Interior's Standards and Guidelines).[36.1]

Standard 4 simply states that archaeologists must use current and customary standards in making a value determination. The Secretary of the Interior's standards,[37] which are specifically mentioned, define the methods, techniques, procedures, approaches, and professional qualifications for archaeology. The Secretary's standards provide very general guidance, but lack detailed specifics. Additionally, regarding professional qualification, the introduction to the SAA Standards recommends that archaeologists performing archaeological value determinations possess qualifications, experience, and training beyond general professional standards.

Standards and guidance on archaeological methods, practice, and experience are published by federal agencies at the state or district levels and in most states by the state historic preservation officer. These standards may define the units, approaches, and appropriate methods used within these jurisdictions. For example, in Wyoming, the Bureau of Land Management defines a prehistoric archaeological site as "15 or more spatially associated artifacts."[38] Other agencies in other regions may have very different definitions. Standard 4 states that the archaeologists should use these local standards when they are available.

[36.1] *See* SAA Standards, *supra* note 29, at Standard 4.

[37] 48 Fed. Reg. 44,716 (Sept. 29, 1983); *see also* 36 C.F.R. pt. 61, app. A. Although not republished since 1983, the Secretary's standards have been revised and the current version is *available at* http://www.nps.gov/history/local-law/arch_stnds_0.htm (search "Archaeological Documentation: Standards").

[38] Cultural Resource Use Permit, Standard Permit Conditions, Bureau of Land Management, Wyoming (last amended Nov. 20, 2008).

§ 14B.06 Archaeological Investigations in Civil Cases

The ARPA civil process for assessing penalties is outlined in the regulations[39] and in other guidance,[40] and is discussed in Chapter 14A. Because agencies have their own protocols for ARPA investigations, this section focuses on the protocols used by an archaeologist working for counsel defending a party charged with a violation. In many cases, this is very similar to what an agency archaeologist does in working with an agency investigator.

After an operator is charged with a violation, the first two considerations are when a consulting archaeologist should become involved and what the operator and its legal counsel should expect. If the archaeologist is contacted immediately after the operator is notified of a violation by the federal agency, or even during the agency's investigation, the first priority of the archaeologist will be to inspect the site and evaluate the alleged damage. The damage assessment should take place as soon as possible, before additional damage occurs. Normally agency archaeologists will have documented and valued the damage. While the site should have been secured to prevent further damage or disturbance, others, including the operator's employees or contractors, may have been on site since being notified of the violation. These activities may be visible as recent site disturbance but may be very difficult for the archaeologist to distinguish from the original damage.

When on site, the consulting archaeologist will record all visible damage to the archaeological resource. Later, the evidence will be examined to attribute specific damage to a particular time or activity episode. The sooner the archaeologist can examine and document the damage, the easier it may be to separate post-violation damage from the violation damage. Additionally, the agency may want or need to conduct restoration and repair activities to minimize additional damage to the resource. These activities may destroy much of the evidence and will require relying on the records of the land management agency.

The archaeologist's recording of the damage can be time consuming and may involve several archaeologists working at the scene. Damage must be meticulously recorded and mapped, since the amount and distribution of damage direcly affects the amount of archaeological value. Sometimes a

[39] 43 C.F.R. § 7.15 (elec. 2010).

[40] Sherry Hutt, "The Civil Prosecution Process of the Archaeological Resources Protection Act," U.S. Department of the Interior, National Park Service, Technical Brief No. 16 (1994), *available at* http://www.nps.gov (search "Technical Brief 16"); Robert Lester, "The Civil Side of Archaeological Resource Protection," *in Presenting Archaeology in Court*, *supra* note 5, at 153.

mapping error of even a few meters can change the archaeological value by thousands of dollars. The archaeologist working for the defense will want to be able to show more precise mapping and damage documentation than the agency has in its damage report. Thus, the archaeologist may want a surveying contractor to assist with precise and accurate field mapping. In some cases, the archaeological resource has not been documented recently, has not been documented to contemporary standards, or has never been documented. In these cases, the archaeologist may need to record the archaeological resource in its entirety in addition to documenting the damage.

The defense's archaeologist will be concerned with access to the archaeological resource and, particularly, with any permits required by the agency to conduct the damage investigation. The archaeologist wants to avoid being accused of an ARPA violation while conducting work to defend an operator accused of an ARPA violation! The relationship between the agency archaeologist and the defense's expert archaeologist may be strained since they are now on opposite sides of a legal dispute. So, the attorney may need to function as a facilitator between the two on archaeological matters usually handled by the defense's archaeologist. For example, access to agency archaeological records may be necessary as mandated by the SAA Standards, and the defense's archaeologist may need assistance in accessing these records and working out acceptable permission and protocols to access the resource and perform the assessment.

Following the recordation of damage, the archaeologist will conduct any background research necessary to provide the information and context needed to define the archaeological resource, archaeological units, and scales and methods of information retrieval as required in the SAA Standards. This may include visits to repositories, archives, libraries, agency offices, and tribal offices.

When the necessary data have been gathered, the archaeologist will commence writing a damage assessment and valuation report. The structure of this report is fairly standardized[41] and it will provide the defense attorney with an estimated value for the damage and the assumptions used to calculate this figure. This number is very useful for settlement negotiations. In the event of successful settlement negotiations, the process outlined here may be altered, changed, or aborted at any time. In some cases the defense attorney may simply want the archaeologist to conduct an assessment of the agency's notice of violation or archaeological damage assessment report and valuation, providing data for the information meetings provided

[41] Guy Prentice, "The Archaeological Damage Assessment Report," *in Presenting Archaeology in Court*, *supra* note 5, at 85; Technical Brief, *supra* note 31.

by the civil process. A response to the notice of violation is due within 45 days, so the archaeologist should be consulted as soon as possible because a substantial amount of archaeological work may be needed in a very short period of time.

Most archaeologists with formal training in ARPA damage assessment and valuation have received this training in a criminal context focused on supporting federal agencies in prosecution. When working on behalf of the defense in civil violations, these archaeologists will tend to approach the case from this criminal perspective. Because the process for determining the archaeological value of damage is identical in both civil and criminal cases, archaeologists' transition from the criminal context to the civil context is unlikely to be too problematic. Legal professionals may need to ensure that archaeologists in civil cases are aware of aspects unique to civil cases, such as the 45-day response period.

§ 14B.07 Minimizing Operator Risk

By this point, it should be clear that civil ARPA violations can be a material expense to operators on public lands. Additionally, damage to archaeological resources can create public relations issues with stakeholders and with descendant communities. Operators may find it advantageous to alter their work processes and procedures to minimize the risk of an ARPA violation, particularly since agencies appear to be increasing their use of ARPA as a permit enforcement tool. It is important for operators to remember that ARPA obligations are distinct from compliance obligations under the National Environmental Policy Act of 1969[42] or section 106 of the National Historic Preservation Act.[43] Most important to remember is that archaeological sites that are *not* eligible for listing in the National Register under section 106 may still be archaeological resources under ARPA.

A number of things operators can consider to reduce their risk of a costly violation are identified in chapter 14A. Some of these, such as training employees/contractors, identifying the locations of archaeological resources, and staking areas of permitted disturbance, involve the use of archaeologists. It is advisable for operators to involve archaeologists with ARPA experience so that training programs, for example, are specifically tailored to reduce ARPA violation risks.

Despite efforts to avoid damage to archaeological resources, even the most careful operators may eventually cause such damage. What should an operator do if notified of an ARPA violation? First, the operator should keep employees and contractors away from the area of violation to minimize

[42] 42 U.S.C. §§ 4321–47 (elec. 2010).

[43] 16 U.S.C. § 470f (elec. 2010).

any additional damage. Second, it can be useful to document the disturbance that is visible at the time of the violation, through photography, for example, if this is possible without causing any additional damage. Third, operators should seek legal and archaeological advice quickly. The 45-day response period will be running and significant amounts of work may be needed in order to present the operator's best case to the land manager.

§ 14B.08 Conclusion

It is important that legal professionals better understand the archaeological issues with ARPA, the way archaeologists developing the SAA Standards attempted to resolve these issues, and how archaeologists apply the SAA Standards. This understanding will aid attorneys in tasking archaeologists working for them, critiquing the arguments of archaeological experts, and developing successful defense strategies for their clients working on public lands.

Chapter 15
ALONG THE TRAMMELED ROAD TO WILDERNESS POLICY ON FEDERAL LANDS

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Synopsis