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Law, Cultural Heritage, and Climate Change in the United States

Casey J. Snyder

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ARTICLE

Law, Cultural Heritage, and Climate Change in the United States

CASEY J. SNYDER*

Climate change is a reality. What happens climatically over the upcoming centuries is partially dependent on the comprehensiveness of a global response to curb emissions of greenhouse gases. However, within a century, forecasts predict a one-meter sea level rise that could have grave implications to our society: the loss of an incalculable extent of cultural heritage. This Article examines the threat climate change poses to physical cultural heritage, like archaeological sites and historic structures, and the current framework of law, regulation, and policy in the United States meant to protect these resources. This Article blends research and data from climate scientists and archaeologists analyzing the problem and posing solutions, with a legal analysis of the role United States law could play in an answer. Recognizing how the effects of climate change could vary and how there is no single solution, this article's overall goal is to stimulate the legal community's participation in managing our cultural heritage, as it is just one of the many stakeholders in identifying a successful solution.

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I. INTRODUCTION

We live in historic times. People young and old experienced the milestone of a change in millennia nearly two decades ago. Yet, the awe of the twenty-first century also brought to the forefront perhaps the most significant threat to the global welfare of humankind: climate change.

While these are indeed historic times, we must be cognizant of how historic our legacy truly is. Advanced sedentary settlements and civilizations in the historic record, precursors to the megacities we cultivate today, began showing up around 10,000 BP.¹ Before that, Native Americans and First Nations people began to settle in what is presently the United States and Canada, respectively, at least around 13,000 BP, but could have been there

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1. See Pei Anping, *Clustering Patterns of Prehistoric Settlements*, 8 CHINESE ARCHAEOLOGY 155 (2008). Before present. This date refers to 1950, or when carbon dating could reliably produce dates for organic materials. Mikkel W. Pederson et al., *Postglacial Viability and Colonization in North America’s Ice-Free Corridor*, 537 NATURE 45, 50 (2016).

as early as 14,700 BP.² Even before this, inchoate evidence of the evolution of humankind can arguably be found in the use of 3.3 million year-old stone tools by hominins at West Turkana, Kenya.³ The rich and diverse trajectory of human evolution is represented in resources ranging from the archaeological record to historic structures, which are common goods, unifying forces, and commodities that cannot be replaced. Due to the precarious existence of these resources, every actor, private and governmental, has an ethical duty to protect and preserve them.

The science and understanding of climate change or climate destabilization⁴ has progressed rapidly in the last few decades. The Intergovernmental Panel on Climate Change (“IPCC”) found in its Fifth Assessment Report that there is a 95 percent chance that anthropogenic influence is the “dominant” cause of climate change since 1950.⁵ This figure is up from about the 90 percent-chance finding in IPCC’s Fourth Report in 2007.⁶ The IPCC does not conduct climate science itself; rather, it surveys peer-reviewed journals and consolidates those findings to appraise the current scientific consensus.⁷ Thus, about 95 percent of peer-reviewed journal articles on climate change identified anthropogenic influence as the predominate factor of climate change since 1950. Arguably, the widespread acceptance of a need for an international response to anthropogenic-driven environmental change was first evidenced by the 1987 Montreal Protocol, which addressed harm to the ozone layer resulting from world-wide use of ozone-depleting

2. See Pederson, *supra* note 1, at 45.

3. See generally Sonia Harmand et al., *3.3-Million-Year-Old Stone Tools from Lomekwi 3, West Turkana, Kenya*, 521 NATURE 310 (2015).

4. See Justin Gillis, *Climate Change Is Complex. We’ve Got Answers to Your Questions*, N.Y. TIMES (Sept. 19, 2017), <https://perma.cc/M57X-S3ZH>. There is still some debate as to whether the environmental symptoms we are experiencing should be labeled as climate *change* or as climate *destabilization*. Climate change is used for consistency throughout this article, and note that differing terminology was used over the decades of climate research.

5. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2014: SYNTHESIS REPORT SUMMARY FOR POLICYMAKERS, at v, 4–5 (2015), <https://perma.cc/W63H-KHXX> [hereinafter IPCC REPORT 2014]; Dana Nuccitelli, *Global Warming: Why is IPCC Report So Certain About the Influence of Humans?*, THE GUARDIAN (Sep. 27, 2013), <https://perma.cc/KLA6-LZTZ>.

6. IPCC, CLIMATE CHANGE 2007: SYNTHESIS REPORT, at 40–41 (2008), <https://perma.cc/D9SV-LUQZ>.

7. *Organization*, IPCC, <https://perma.cc/YE98-ARAZ>.

substances.⁸ After the success of the Montreal Protocol, international efforts rallied to address growing concerns of rising global temperature averages. The United Nations streamlined these efforts with the United Nations Framework Convention on Climate Change (“UNFCCC”) in 1992, which resulted in important steps toward a global solution like the Kyoto Protocol (2005) and the Paris Agreement (2015).⁹

The science and understanding of how climate change affects cultural heritage is less clear, however, and remains an area in need of critical academic and governmental attention.¹⁰ In a February 2014 policy memorandum, then-National Park Service (“NPS”) director Jonathan Jarvis circulated a framework for NPS policy decision-making regarding cultural resources during climate change.¹¹ Jarvis recognized that “the paths climate change will take remain uncertain,” and will require “new and useful ideas” and collaboration from “international partners.”¹² Positive steps have been taken in both the federal government and the international arenas that reflect this sentiment, which will be discussed in depth. Briefly, in 2016, the NPS, the agency tasked with managing natural and cultural resources of federal lands,¹³ issued the Cultural Resources Climate Change Strategy, a detailed handbook that addresses managing cultural resources on federal

8. *The Montreal Protocol on Substances That Deplete the Ozone Layer*, U.S. DEPT OF STATE, <https://perma.cc/DR3L-GNTG>.

9. *About the Secretariat*, UNFCCC, <https://perma.cc/CSE2-3H8Z>.

10. See Hans Peter Blankholm, *Long-Term Research and Cultural Resource Management Strategies in Light of Climate Change and Human Impact*, 46 ARCTIC ANTHROPOLOGY 17, 17 (2009); David G. Anderson et al., *Sea-Level Rise and Archaeological Site Destruction: An Example from the Southeastern United States Using DINAA (Digital Index of North American Archaeology)*, 12 PLOS ONE 1, 2 (2017).

11. Policy Memorandum from Jonathan Jarvis, Dir., National Park Service, to All Employees (Feb. 10, 2014) (on file with National Park Service), <https://perma.cc/Y74F-FM98>.

12. *Id.*

13. Act to Establish a National Park (Organic Act), 16 U.S.C. chap. 1–4, 39 Stat. 535 (1916) (repealed Dec. 19, 2014); Eric Biber & Elisabeth Long Esposito, *The National Park Service Organic Act and Climate Change*, 56 NAT. RESOURCES J. 193, 193–94 (2016); THOMAS F. KING, CULTURAL RESOURCES LAWS & PRACTICE 17 (4th ed. 2012).

lands during climate change.¹⁴ Additionally, the UNFCCC mandated technical studies on non-economic loss, such as damage to cultural heritage, associated with climate change.¹⁵ The United Nations International Strategy for Disaster Reduction (“UNISDR”) adopted a framework to be used by nations to preserve cultural heritage during natural disasters which are symptoms of climate change.¹⁶

While this positive action should surely be applauded, the United States, under the current Trump administration, has signaled its discontent with such international efforts. President Trump has already promised to withdraw from the Paris Agreement.¹⁷ Also critical, the former NPS administration’s progress toward accounting for these effects may be nullified by Trump’s appointed executive agency officials, who have actively scaled back programs and policies meant to ameliorate harmful effects of climate change.¹⁸ Considering these signals, the preservation and conservation of United States territorial cultural heritage and its efforts to preserve international cultural heritage are far from assured.

Because of the sheer vastness and unknown qualities of the impending effects on cultural heritage, addressing preservation and conservation of the nation’s cultural heritage is not a problem for one single entity or discipline.¹⁹ This Article aims to be one of the first, if not the first, to direct the attention of the nation’s legal

14. NAT’L PARK SERV., CULTURAL RESOURCES CLIMATE CHANGE STRATEGY 1 (2016), <https://perma.cc/8BKP-NXEB> [hereinafter NPS CULTURAL RESOURCES CLIMATE CHANGE STRATEGY].

15. U.N. Framework Convention on Climate Change, *Non-Economic Losses in the Context of the Work Programme on Loss and Damage*, at 8, U.N. Doc. FCCC/TP/2013/2 (Oct. 9, 2013) [hereinafter UNFCCC Technical Paper on Non-Economic Losses].

16. Sendai Framework for Disaster Risk Reduction 2015-2030, Third UN World Conference on Disaster Risk Reduction ¶ 24(d) (Mar. 18, 2015).

17. Valerie Volcovici, *U.S. Submits Formal Notice of Withdrawal from Paris Climate Pact*, REUTERS WORLD NEWS (Aug. 4, 2017), <https://perma.cc/9XK7-BQU9>. Although, it should be noted that the United States cannot officially withdraw until November 4, 2020, a day after the next presidential election. *Id.*

18. *New Report Documents Two Years of Attacks on Science at Department of Interior*, UNION OF CONCERNED SCIENTISTS (Dec. 4, 2018), <https://perma.cc/LAR9-5HJJ>.

19. George Hambrecht & Marcy Rockman, *International Approaches to Climate Change and Cultural Heritage*, 82 AM. ANTIQUITY 627, 627 (2017).

profession to these issues.²⁰ First, it will consolidate and outline the current scientific understanding of climate change and its effect on cultural heritage. Second, this Article will appraise current federal regulation²¹ of cultural heritage. Third, it will predict potential trends in application of the federal regulation. Fourth, it will discuss and suggest options that the United States should consider in formulating a response to these problems. The final intended result is that this Article contributes to the discussion of a new approach or framework of federal management of cultural resources—one that ensures the largest amount of our cultural heritage is efficiently preserved for future generations, and that our cultural heritage will not be held hostage by political forces operating within executive agencies.

II. CLIMATE CHANGE AND ITS EFFECTS ON CULTURAL HERITAGE

Most scientists agree that, not only is climate change occurring, but also that climate change is driven predominately by anthropogenic emissions of “greenhouse gases” (“GHGs”) into the atmosphere.²² While these changes are predominately gradual, unabated effects growing overtime are alarmingly potent.²³ Scientists have been quite successful in identifying the symptoms and effects of climate change, which include but are not limited to: species extinction, deforestation, soil erosion, endocrine disruption,

20. It is vital to understand that all facets of the legal field will likely be involved in preserving cultural heritage: governments, private citizens, regulators, plaintiffs and defendants, corporate entities, tax officials, museums, tribal organizations, and more. *See id.* at 628. Their involvement will be drawn out at various later points in this article. *See infra* Section II.

21. *See infra* Section III. Regulation in general refers to both federal statutes and administrative regulations. However, the regulations addressing cultural heritage are not analyzed in depth, as such regulations are quite lengthy and may be best explored in a separate article.

22. *See* IPCC REPORT 2014, *supra* note 5, at 2 (detailing recent scientific consensus that anthropogenic emissions are driving climate change and numerous statistics detailing climate changes); *see also A Blanket Around the Earth*, NASA, <https://perma.cc/CUA8-9JRU> (stating that most scientists agree GHG expansion by humans is the cause of recent climate change).

23. Robert L. Olsen & David Rejeski, *Slow Threats and Environmental Policy*, 48 ENVTL. L. REP. 10116, 10116 (2018) (citing to U.N. studies that show annual warming average of only 0.13 degrees Celsius and that indicate if unabated, warming could reach 4.8 degrees Celsius, or nearly 9 degrees Fahrenheit).

melting of polar ice caps, rising levels of oceans and freshwater bodies of water like lakes and rivers, decreasing permafrost, wind erosion, population migration, tourism and travel disruption, loss of sovereign territory, natural disasters, and many others.²⁴

While this impressive body of climate change science has been collected over decades, scientists are just now beginning to understand how these forces interact with cultural resources. To begin, it is essential to understand what qualifies as cultural heritage or a cultural resource.²⁵ Definitions may vary in different jurisdictions, laws, or nations, but in the United States, the definition is rightfully quite broad. Culture is generally seen as the set of beliefs, values, traditions, and ways of life that people pass on between generations.²⁶ Resources are generally “things” that possess some type of value or that can be used.²⁷ Therefore, cultural resources or cultural heritage are aspects of the environment, both physical and intangible, natural and human-made, that possess some kind of value to a group of people.²⁸ Some broad categorical examples of cultural resources include religious beliefs, practices, and items, indigenous spiritual places, gravesites, archaeological sites, historic places and architecture, cultural traditions, historic documents, and culturally important landscapes, organisms, and environmental patterns.²⁹ This Article focuses primarily on the physical components of cultural heritage, namely the archaeological record and historic structures.

Undoubtedly, climate change stands to affect all facets of what is considered cultural heritage in some way. Understanding these effects requires an understanding of their origin, which can arguably be broken down into two categories: effects from natural *symptoms* of climate and effects from anthropogenic *responses* to

24. See *id.* at 10116–17. See generally Blankholm, *supra* note 10.

25. KING, *supra* note 13, at 8. These terms are often used interchangeably and mean the same thing. *Id.* I tend to agree with the philosophical argument that “heritage” is more meaningful than “resource,” which could be considered overly materialistic. Moreover, “heritage” seems to include more intangible and historic components of culture, whereas logically something that has been destroyed or lost can no longer be a “resource.” So, to the extent that I use both terms, they should be understood to have the same definition.

26. *Id.* at 3.

27. *Id.*

28. *Id.*

29. *Id.* at 4–5.

symptoms of climate change. Known effects in each category will be presented along with the resultant effect on cultural heritage.

A. Symptoms

1. Melting Polar Ice and Rising Sea Levels

It is estimated that climate change caused Earth's Arctic ice caps to melt at ranges between 3.5 and 4.1 percent per decade between the years 1979 and 2012.³⁰ From 1901 to 2010, global sea levels rose about 0.19 meters.³¹ Moreover, "[t]he rate of sea level rise since the mid-nineteenth century has been larger than the mean rate during the previous two millennia."³² The implication of this symptom on cultural heritage is clear; thousands of known and unknown archaeological sites and other cultural resources along the coasts are in peril of becoming inundated and submerged.³³

For example, inundation is already occurring along the coast of Greenland, presenting clear detrimental effects on the island's cultural heritage.³⁴ First, rising sea levels are eroding the coasts on Clavering Island, where archaeological sites of old winterhouses constructed of stone and turf once stood; now, foundations are being deconstructed and washed away.³⁵ Second, recent research conducted in the Arctic reveals increased reactivity and degradation of organic material when such material is inundated by water at increasingly warmer temperatures.³⁶ Empirical evidence indicates that where historically dry organic material was not limited by a lack of water or oxygen, in combination with warmer temperatures, degradation increased.³⁷ Third, inundation will expose cultural heritage not only to salt water, but potentially

30. IPCC REPORT 2014, *supra* note 5, at 4.

31. *Id.*

32. *Id.*

33. *See* Blankholm, *supra* note 10, at 18; Anderson, *supra* note 10, at 2.

34. Blankholm, *supra* note 10, at 18.

35. *Id.*

36. Jørgen Hollensen, et al., *Climate Change and the Loss of Organic Archaeological Deposits in the Arctic*, 6 SCI. REP. 1, 4 (2016), <https://perma.cc/7C24-8W4Y>.

37. *Id.* at 5–6. The research specifically found increased microbial heat production when dry organic material is exposed to water, causing a 110% increase in reactivity of the material. *Id.*

to ocean acidification, changing temperatures, and other chemicals from commercial activity, like oil.³⁸

Turning specifically to the United States, there are two clear examples of the threats inundation poses to our cultural heritage. First, quite sobering data shows just what is at risk: a one meter rise in sea level will result in the inundation of over 13,000 recorded archaeological sites and over 1,000 or more locations and structures currently eligible for protection under the National Register of Historic Places (“NRHP”) as historically significant architecture and/or property.³⁹ This is not a distant concern, either. New scientific data suggests that a one meter rise could occur as early as 2100, when some of us will certainly still be alive.⁴⁰ To calculate these results, the researchers utilized a relatively new database of United States archaeological sites called DINAA, or, the Digital Index of North American Archaeology.⁴¹ Since 2012, governmental, academic, and tribal stakeholders of fifteen states have collaborated with DINAA to amass a centralized database of archaeological and historic sites related to human settlement.⁴² While many states and entities have different procedures for research and data collection, DINAA data entries are integrated and standardized to promote a “truly continental database,” while still permitting states to use their own method.⁴³ The result enables researchers to view datasets and site locations from various entities and states and create statistics and

38. See Anderson, *supra* note 10, at 8. Introduction of oil to archaeological sites, especially organic features such as shell middens, poses a threat to its data. See Brendan Borrell, *Oil Spill Threatens History*, 63 *ARCHAEOLOGY MAG.* (2010), <https://perma.cc/QJP3-DVN5>. Damage also results from attempts to clean up the feature. *Id.*

39. Anderson, *supra* note 10, at 1.

40. KATIE McDOWELL PEEK, ET AL., NAT’L PARK SERV., ADAPTING TO CLIMATE CHANGE IN COASTAL PARKS: ESTIMATING THE EXPOSURE OF PARK ASSETS TO 1 M OF SEA-LEVEL RISE ix (2015); IPCC REPORT 2014, *supra* note 5, at 10–13 (discussing sea level rise projects and how final total will vary between oceans); see also Brady Dennis & Chris Mooney, *Scientists Nearly Double Sea Level Rise Projections for 2100, Because of Antarctica*, WASH. POST, (Mar. 30, 2016), <https://perma.cc/BX3C-2JQ2> (discussing an empirical article published in Nature that estimates sea level rise by “close to two meters in total (more than six feet)” by the end of century).

41. *Digital Index of North American Archaeology (DINAA)*, OPEN CONTEXT: HERITAGE BYTES, <https://perma.cc/VP5J-LUP4>.

42. Anderson, *supra* note 10, at 3.

43. *Id.* at 4.

geographic images using this single platform, along with other uses.⁴⁴

The project used DINAA to survey nine states in the southwest United States, encompassing much of the low-lying Gulf Coast.⁴⁵ By accessing datasets of location, topography, and typology of cultural heritage sites from DINAA, all contributed by participating states and entities, the researchers were able to generate statistical data on what would be submerged due to a one meter sea-level rise.⁴⁶ Many of these sites could face similar patterns of erosion, increased reactivity of organic material, and harm from toxins found in ocean water.⁴⁷

Second, NRHP sites along our coasts are extremely vulnerable to inundation and have been for decades. For example, one of the most popular tourist destinations along the east coast of the United States is the Outer Banks of North Carolina. This area has a rich cultural history associated with it, which includes a famous tourist attraction: the Cape Hatteras Lighthouse. Built in 1870, the Lighthouse was originally a safe distance of 1,500 feet from the shoreline.⁴⁸ But by 1970, the Lighthouse was a mere 120 feet from the water.⁴⁹ Three decades of planning and research culminated in the movement of the Lighthouse and the keeper's house 880 feet inland from its original location in 1999.⁵⁰ Still, the Lighthouse will only be safe for an estimated 100 years, and another decision will have to be made in the latter half of the 21st century.⁵¹

2. Rising River and Lake Levels

Similarly to the impending inundation along coastliness, certain regions will experience flooding of inland bodies of water,

44. *Id.*

45. *Id.* at 1.

46. *Id.* at 6–7 tbl.1. It should also be noted that while the southeast U.S. is the most complete region of DINAA, not all entities or states are required to upload anything to DINAA; it is likely that even more known and unknown sites will be affected than found in the study. *See id.* at 4, 6.

47. *See supra* notes 35–38 and accompanying text.

48. *Moving the Cape Hatteras Lighthouse*, NAT'L PARK SERV., <https://perma.cc/282Y-BBMH>.

49. *Id.*

50. *Id.*

51. *Id.*

like lakes and rivers.⁵² This is due to “regionally differentiated but increased precipitation” globally.⁵³ The Environmental Protection Agency (“EPA”) has monitored the precipitation in the United States and found overall trends of increased precipitation and increased single-day, heavy weather events during the last century.⁵⁴ This increase in severity will undoubtedly result in changing levels of bodies of water.⁵⁵ Archaeological sites and cultural heritage are found at increased densities near water.⁵⁶ Much like rising sea levels, rising levels of inland water will also inundate vast amounts of cultural heritage.⁵⁷ As discussed above, inundation presents a host of preservation and conservation concerns like erosion, thermal and pH imbalances, increased decay, and more.⁵⁸

3. Melting of Permafrost

Much of Alaska is covered in permafrost.⁵⁹ However, as temperatures rise, the frozen soil is beginning to thaw.⁶⁰ The thawing process exposes well-preserved remains and deposits to warmer temperatures and increased decay.⁶¹ Effects on organic material are of special concern, as thawing permits the natural

52. Blankholm, *supra* note 10, at 18.

53. *Id.*; see also IPCC REPORT 2014, *supra* note 5, at 8 (finding it likely that more geographic areas will experience increased precipitation events).

54. *Climate Change Indicators: U.S. and Global Precipitation*, U.S. ENVTL. PROT. AGENCY (2016), <https://perma.cc/VU7R-J3AB>; *Climate Change Indicators: Heavy Precipitation*, U.S. ENVTL. PRO. AGENCY (2017), <https://perma.cc/H25C-SAPN>. It should be noted, however, that not all areas of the United States will receive, or have received, increased precipitation. The statistics show an increasing trend on average. See *Climate Change Indicators: U.S. and Global Precipitation*, *supra*.

55. Blankholm, *supra* note 10, at 18.

56. *Id.*; see also Anderson, *supra* note 10, at 11 (noting, for example, in Mississippi, archaeological remains are mostly found at or below one meter above sea level and with preference for the coast; modern populations have migrated away from the coasts due to having transportation and infrastructure for carrying potable water).

57. See Blankholm, *supra* note 10, at 18–19.

58. *Id.*; see also *supra* notes 35–51 and accompanying text.

59. See Henry Fountain, *Alaska's Permafrost is Thawing*, N.Y. TIMES (Aug. 23, 2017), <https://perma.cc/YY9J-U7VB>.

60. *Id.*

61. Blankholm, *supra* note 10, at 19.

decomposition process once the soil loses its freezer-like quality.⁶² Similarly, thawing exposes materials normally encased in ice to weather and animal activity, also potentially resulting in damage.⁶³

4. Wind Erosion

As a result of changing weather patterns and a likely increase in severe weather events, cultural heritage in loose soils and gravels may become exposed as winds erode the site.⁶⁴ High winds or repetitive cycles of wind can displace soils and cause collapse of structures, cause abrasions to works of art (damaging pigments in an exposed fresco, for example), erode surfaces and shapes (whittling away of rock etchings), and more.⁶⁵

5. Looting

The looting of archaeological sites has plagued our cultural heritage and inhibited the scientific potential of archaeology globally.⁶⁶ Ironically, the heritage currently at risk was also subject to looting historically. For example, ancient Egyptian court records discuss trials of grave-robbers⁶⁷ and works of art stolen by Carthage were repatriated after the city's fall in 146 B.C.E.⁶⁸ When heritage is looted from an archaeological site there are immediate repercussions: first, the object is likely to be damaged

62. *See id.*; Hollesen, *supra* note 36, at 1.

63. Blankholm, *supra* note 10, at 19; *see also* Richard M. Engeman, et al, *Feral Swine Disturbance at Important Archaeological Sites*, USDA NAT'L WILDLIFE RESEARCH CENTER 1130 (2012).

64. Blankholm, *supra* note 10, at 19.

65. *Id.*; Caithleen Daly, *Climate Change and the Conservation of Archaeological Sites: A Review of Impacts Theory*, 13 CONSERVATION & MGMT. OF ARCHAEOLOGICAL SITES 1, 11 (2011), <https://perma.cc/4HC8-4KCT>.

66. For example, the United Nations Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property exemplified the increasing recognition that looting was a global problem. *See* Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, Nov. 17, 1970, 1970 U.S.T. 621.

67. Daniel Polz, *The Location of the Tomb of Amenhotep I: A Reconsideration*, in *VALLEY OF THE SUN KINGS: NEW EXPLORATIONS IN THE TOMBS OF THE PHARAOHS* 8, 16 (Richard H. Wilkinson, ed., 1995).

68. *History of Protection of Cultural Heritage Timeline*, U.S. COMMITTEE OF THE BLUE SHIELD, <https://perma.cc/4UY2-EU7R>.

through improper excavation and handling; second, the object's context is destroyed, meaning the value of its relationship with the site compared to finding it in situ is lost; third, the archaeological record suffers a loss of data; and fourth, the black-market industry remains lucrative and worthwhile encouraging other instances of looting.⁶⁹

New cases of looting are already tied to climate change. In Mongolia, archaeologists discovered hundreds of newly looted sites in 2017.⁷⁰ The officials working on the project attributed the potential upward tick to nomadic herders who have suffered economically from changing climate and less lucrative grazing pastures.⁷¹ While these looters sought out and excavated sites, destroying them in the process, some looters simply pick up what they find on the ground.⁷² From 1991 to 2014, a prominent California anesthesiologist collected thousands of relics like arrowheads, pottery, and even a fossilized bow.⁷³ The bow was half-exposed inside the ice of a melting glacier in the Alps.⁷⁴ As these resources continue to be exposed from climate change, the culture of looting present in both the United States and globally will pose a continued and increased threat to our heritage.⁷⁵

6. Other Symptoms of Climate Change and Their

69. See, e.g., Ann M. Early, *Profiteers and Public Archaeology: Antiquities Trafficking in Arkansas*, in *THE ETHICS OF COLLECTING CULTURAL PROPERTY* 39, 39–41 (Phyllis Mauch Messenger ed., 2nd ed. 1999).

70. Julia Kate Clark, *Climate Change and Looters Threaten the Archaeology of Mongolia*, *THE CONVERSATION* (Mar. 11, 2018), <https://perma.cc/4A4R-97G6>.

71. *Id.*

72. Jason M. LaBelle, *Coffee Cans and Folsom Points: Why We Cannot Continue to Ignore the Artifact Collectors* in *ETHICAL ISSUES IN ARCHAEOLOGY* 115, 115 (Larry J. Zimmerman et al, eds. 2003) (“Artifact hunters, artifact collectors, pothunters, and looters—whatever name you would like to call them- have a profound impact on the archaeological record in terms of the sheer quantity of items picked off the surface of sites over countless decades.”).

73. See generally Kathleen Sharp, *How A California Anesthesiologist Became One of America's Largest Antiquities Looters*, *MENSJOURNAL.COM*, <https://perma.cc/X6ZR-7YLF>.

74. *Id.*

75. See, e.g., Early, *supra* note 69, at 39 (discussing the centuries old practice of destroying archaeological sites in Arkansas from looting activity).

Effects

It is impossible to list all of the symptoms climate change will cause because the planet has never experienced anything exactly like it. Moreover, the regional geographic changes will be unique to certain areas. There are, however, a few other likely symptoms worth noting as the science behind climate change and cultural heritage develops.

Drought conditions have been linked to cracking of stone structures.⁷⁶ Oxford University dedicated an entire lab to the study of stone's reactions to changes in moisture and temperature.⁷⁷ This is a promising research path because stone is a prevalent component of exceptionally visible and well-known international cultural heritage sites.⁷⁸ Fire, often a companion to drought, is another threat on a palpable upward trend.⁷⁹ Fire not only has the potential to destroy unprotected or unknown heritage sites, but fire is also a threat to structures designed to collect and house cultural heritage like museums and storage facilities.⁸⁰

As discussed previously, climate change has spurred the United States government to assess the potential scope of climate-change symptoms and their effects on cultural heritage.⁸¹ The NPS' Cultural Resources Climate Change Strategy summarizes the research conducted thus far.⁸²

B. Responses

As climate-change symptoms increasingly present themselves in the form of severe weather patterns and rising tides, the United States, other nations, and their respective populations must respond accordingly. Any response to climate change will

76. UNFCCC Technical Paper on Non-Economic Losses, *supra* note 15, at 24.

77. Hambrecht & Rockman, *supra* note 19, at 7.

78. *Id.*

79. *Id.*

80. See e.g., Sarah Cascone, *As Wildfires Ravage Northern California, Local Art Institutions Shutter and Wait*, ARTNET (Oct. 11, 2017), <https://perma.cc/7MDP-HH96> (discussing how closely 2017 California wildfires encroached on numerous facilities carrying cultural art collections). While the Getty Museum has state of the art fire protection, other local venues may be more at risk.

81. See *supra* note 9–15 and accompanying text.

82. See NPS CULTURAL RESOURCES CLIMATE CHANGE STRATEGY, *supra* note 14, at 19–24 tbl.2.

potentially affect cultural heritage. The consequences of such responses should be the second component of an overall appraisal of climate change's effect on cultural heritage. Scientific study and innovation has outlined numerous proposed and currently implemented responses, but the understanding of their effects on heritage is still developing.

1. Seawalls

A seawall is a human-made structure used to protect certain areas of coastal land from water erosion.⁸³ Seawalls prevent erosion of the land behind the structure and permanently fix a piece of coastline.⁸⁴ Seawall installation has been suggested as one of the major mitigation strategies for protecting coastal communities, including a current seven-mile proposal for New York City.⁸⁵ The State of New York is even contributing funds to the installation, the importance of which will be discussed in detail later in this Article.⁸⁶

Seawalls pose their own problems, however. First, the construction of a seawall disturbs the area of coastline on which it is constructed. Due to the high proximity of archaeological sites along coastlines and bodies of water, seawalls could disturb numerous sites.⁸⁷ This is especially true for large coastal cities like New York, where populations have lived in limited space for centuries. Second, while seawalls protect the coastline immediately behind it, increased erosion of coastline can occur along the wall's flanks.⁸⁸ Accidentally exposing archaeological resources or contributing to erosion near cultural heritage sites could result in unfortunate outcomes, and responses to these outcomes may delay or suspend construction.

83. Nicholas C. Kraus, *The Effects of Seawalls on the Beach: An Extended Literature Review*, J. OF COASTAL RES. (SPECIAL ISSUE NO. 4) 1, 4 (1988).

84. *Id.*

85. Tanay Warekar, *Proposed Staten Island seawall moves forward with state backing*, CURBED (May 31, 2017, 10:30 AM), <https://perma.cc/FAD8-T439>.

86. *Id.* See *infra* note 114 and accompanying text; see *infra* Section III(iii).

87. See *supra* p. 7 and text accompanying note 56.

88. See Kraus, *supra* note 83, at 5 fig.2; see also R. Balaji et al., *Understanding the Effects of Seawall Construction Using a Combination of Analytical Modelling and Remote Sensing Techniques: Case Study of Fansa, Gujarat, India*, 8 INT'L J. OF OCEAN & CLIMATE SYS. 153, 159 (2017) (modeling a twenty meter erosion of coastline up to one year after seawall construction).

2. Relocation and Migration

Natural migrations and government relocations of populations serve as additional responses to sea-level rise that could effect cultural heritage. A major migration is likely to happen from the eastern and Gulf coasts of the United States.⁸⁹ Over three million people live at or below one meter above sea level in these regions.⁹⁰ Such a large migration will likely cause waves of new construction as previously undeveloped land will be made suitable for housing. Moreover, a need for construction of temporary housing may arise in the event of an emergency. Precipitous planning could lead to destruction of cultural heritage and loss of irrecoverable data.

**III. CURRENT FEDERAL REGULATION OF
CULTURAL HERITAGE AND ANTICIPATED
INVOLVEMENT DURING CLIMATE CHANGE**

The United States does not have a federal comprehensive cultural heritage law. Rather, a patchwork of laws braided with regulation is the functioning body of federal cultural heritage law today.⁹¹ Often, the division of authority that federalism creates ensures states, tribal entities, and other local entities play a large role in protecting cultural heritage.⁹² Moreover, with the United States government's traditional hands-off approach to private property, landowners have extreme leeway to interact with and affect cultural heritage located on their property.⁹³ Still, federal law is a component of cultural heritage law, and it is never too early to begin a discourse on how it will be implicated as the dramatic and transformative effects of climate change are realized.

89. Anderson, *supra* note 10, at 9.

90. *Id.* at 10 tbl.3.

91. KING, *supra* note 13, at 4.

92. U.S. DEP'T OF JUST., EXEC. OFFICE FOR U.S. ATT'YS, U.S. ATT'YS BULL. NO. 64-02, CULTURAL PROPERTY LAW 1 (2016).

93. See Patty Gerstenblith, Commentary, *The Law as Mediator Between Archaeology and Collecting*, INTERNET ARCHAEOLOGY (2013), <https://perma.cc/X95F-XGJS>.

A. Current Framework

1. Antiquities Act

Passed in 1906, the Antiquities Act became the United States' first law protecting archaeological sites.⁹⁴ The Act delegates authority to the President to "declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated on land owned or controlled by the Federal Government to be national monuments."⁹⁵ While largely dormant since the passage of the Archaeological Resources Protection Act of 1979 ("ARPA"), the Antiquities Act is still relevant in some situations today. In fact, it touts a monumental legacy: 122 national monuments have been created in twenty-eight states, a territory, and the District of Columbia between 1906 and 2001.⁹⁶ More recently, the Trump Administration reduced a designation by the Obama Administration protecting 1.35 million acres of cultural significance to multiple Native American tribes.⁹⁷ The tribes immediately commenced litigation to prevent this reduction, which is currently under review.⁹⁸ The authority under the Antiquities Act, among other legal issues, is critical: while the President may reserve land for landmarks, the Act is silent as to whether the President may reduce such landmarks once so designated.⁹⁹

2. The Archaeological Resources Protection Act ("ARPA")

The Archaeological Resources Protection Act ("ARPA") was passed in 1979 after archaeological sites on federal land suffered from decades of looting.¹⁰⁰ Congress passed the law to remedy the

94. See Mark Squillace, *The Monumental Legacy of the Antiquities Act of 1906*, 37 GA. L. REV. 473, 487 (2003).

95. 54 U.S.C. § 320301(a-b) (2014).

96. Squillace, *supra* note 94, at 488.

97. Modifying the Bears Ears National Monument, Proclamation No. 9681, 82 Fed. Reg. 58,081 (Dec. 8, 2017).

98. Hopi Tribe et al. v. Trump, No. 1:17-cv-02590 (D.D.C. 2018).

99. Kat Moynihan, *Cropping Bears Ears*, CENTER FOR ART LAW (Apr. 24, 2018), <https://perma.cc/5DSA-2GYR>.

100. Roberto Iraola, *The Archaeological Resources Protection Act—Twenty Five Years Later*, 42 DUQ. L. REV. 221, 222 (2004).

diaphanous state of cultural heritage protection at the time.¹⁰¹ ARPA's protection extends to archaeological resources and sites found on tribal and public lands, and other provisions foster cooperation between inter-agency, private, and community entities.¹⁰² ARPA defines "archaeological resources" as any "material remains of human life or activities which are at least 100 years of age, and which are of archaeological interest."¹⁰³ Regulations promulgated under ARPA define a "material remain" as a physical object related to human habitation, use, or activity, including shelters, arrow heads, carvings and artwork, trails, and the site where the remains are found, among other things.¹⁰⁴ An object of archaeological interest is defined broadly as an object capable of informing scientific or humanistic understanding of human culture or behavior through controlled, scientific study.¹⁰⁵ The teeth of ARPA proscribes the removal and sale of archaeological resources from federal or Native American tribal land without a federal permit.¹⁰⁶ Violations can result in both civil and criminal penalties, but criminal penalties only attach if the defendant acted with the requisite *mens rea*: a "knowing" violation of ARPA.¹⁰⁷

3. The National Environmental Policy Act ("NEPA")

Passed in 1970, the National Environmental Policy Act ("NEPA") is one of the broadest federal environmental laws. NEPA requires that federal agencies analyze and potentially manage their impacts on the human environment before undertaking a major federal action.¹⁰⁸ Thus, NEPA can be a natural resource

101. *Id.*

102. *Id.* at 222–23.

103. KING, *supra* note 13, at 275.

104. 36 C.F.R. § 296.3(a)(2) (2018).

105. 36 C.F.R. § 296.3(a)(1).

106. KING, *supra* note 13, at 276.

107. Iraola, *supra* note 100, at 226–27. See *United States v. Lynch*, 233 F.3d 1139, 1145–46 (9th Cir. 2000) (holding defendant did not knowingly violate ARPA, as he did not know the skull was over 100 years old to qualify as an archaeological resource, and therefore did not knowingly remove an archaeological resource from federal land).

108. 42 U.S.C. § 4332(2)(C) (2018); *Dep't of Transp. v. Public Citizen*, 541 U.S. 752, 756–57 (2004); see KING, *supra* note 13, at 55–57. The human

management law, a pollution prevention law, a clean air law, and a cultural resource management law, depending on the effects of the federal action.¹⁰⁹ Should an agency fail its NEPA analysis, permits may be suspended, courts may issue injunctions sought by plaintiffs, and agency actions may suffer potentially fatal delays.¹¹⁰

There are no substantive requirements under NEPA.¹¹¹ Rather, the character of NEPA is procedural.¹¹² First, an agency must make a determination of whether the action is a “major federal action significantly affecting the quality of the human environment.”¹¹³ Second, if the action is a major federal action,¹¹⁴ and there is a finding of significant impact, the agency must include an environmental impact statement (“EIS”) in its proposal.¹¹⁵ The EIS must include the environmental impact of the proposed action, potential alternatives, the effects of each alternative, environments affected by each alternative, effects which cannot be avoided, irreversible commitments of resources, and the relationship between local use and long term use of the affected environment.¹¹⁶

Thus, any effects on cultural heritage must be considered. Examples of potential effects on cultural heritage include: the proximity of historic or cultural resources, the cumulative effects on cultural resources, and the degree to which protected sites on the National Register of Historic Places or any other scientific, cultural, or historical resource may be adversely affected in both

environment means both the natural and physical environment, as well as the relationship of people with that environment. 40 C.F.R. § 1508.14 (2018).

109. KING, *supra* note 13, at 55.

110. See, e.g., *Te-Moak Tribe of Western Shoshone of Nev. v. U.S. Dep’t of Interior*, 608 F.3d 592, 605–607 (9th Cir. 2010) (granting injunction for a mineral exploration project where the Bureau of Land Management failed to take the requisite hard look under NEPA and consider certain pertinent environmental impacts).

111. *Public Citizen*, 541 U.S. at 756.

112. *Id.*

113. 42 U.S.C. § 4332(2)(C); KING, *supra* note 13, at 57.

114. Major federal action includes activity like adoption of official policy, rules, regulations, treaties or international conventions; adoption of formal plans for uses of federal resources; adoption of programs; approvals of projects (permits) and federally assisted activities (grants). See 40 C.F.R. § 1508.18(b)(1)–(4); KING, *supra* note 13, at 58.

115. See KING, *supra* note 13, at 68.

116. *Id.* at 57.

the short and long-term.¹¹⁷ These broad categories may also include oral history, religious practices, and completely natural paleontological sites or shell middens.¹¹⁸

4. The National Historic Preservation Act (“NHPA”)

While NEPA is broad, the National Historic Preservation Act (“NHPA”) is much more circumscribed to particular sets of cultural heritage. For example, the NHPA protects “historic property.”¹¹⁹ Historic property includes both historic and prehistoric sites, the property and artifacts associated with them, as well as both sites on the National Register and sites eligible for inclusion on the Register.¹²⁰ While this is a broad definition, the National Register includes criteria for inclusion, which precludes many sites from registration.¹²¹ The four criteria include: (a) an association with events that have made significant contribution to broad patterns of our history; (b) an association with lives of persons significant in our past; (c) an association with distinctive characteristics of a type, period, or method of construction, or represent high artistic value; or (d) yielding or a likelihood to yield information important in prehistory or history.¹²²

Section 106 of the NHPA requires more procedural steps for agencies when taking federal action. Generally, an agency must “[t]ake into account” the effects of their undertaking¹²³ on sites included on or eligible for the National Register.¹²⁴ However, this analysis requires multiple steps like requiring consultation with parties affected by the undertaking, identifying an area of potential effects and historic properties within that area, evaluating any effects, and consulting with the Advisory Council

117. *Id.* at 63–65.

118. *Id.* at 65.

119. 54 U.S.C. § 300308 (2018). “. . . any prehistoric or historic district, site, building, structure, or object included on, or eligible for inclusion on, the National Register, including artifacts, records, and material remains relating to the district, site, building, structure, or object.” *Id.*

120. *Id.*; KING, *supra* note 13, at 83.

121. See KING, *supra* note 13, at 86.

122. 36 C.F.R. § 60.4(a)–(d).

123. An undertaking includes anything the agency has done for itself, anything with federal assistance, permitting someone else to do it, or delegating federal authority to do it. KING, *supra* note 13, at 115; see also 54 U.S.C. § 300320.

124. 54 U.S.C. § 306108.

on Historic Preservation (“ACHP”).¹²⁵ Again, much like NEPA, there are no real substantive requirements in the NHPA, only the completion of procedural steps. For example, the agency must identify historic properties subject to any effects in a “reasonable and good-faith effort.”¹²⁶ The exception is any preservation requirements imposed by the ACHP must be followed. An agency who has properly consulted on a project with anticipated adverse effects will likely be required to sign a Memorandum of Agreement (“MOA”) issued by the ACHP.¹²⁷ MOA provisions may include substantive preservation requirements.¹²⁸ But, not all projects will result in anticipated adverse effects to trigger a MOA.

5. The Native American Graves and Repatriation Act (“NAGPRA”)

The Native American Graves and Repatriation Act (“NAGPRA”) was born out of centuries-long injustice which befell Native Americans at the hands of the United States government, collectors, museums, and academic institutions.¹²⁹ The NAGPRA’s high-level impetus requires museums and collecting institutions receiving federal funds and federal agencies managing Native American remains or cultural items to consult with tribes, establish an inventory, and potentially repatriate those items.¹³⁰ The NAGPRA applies not only to Native American remains, but also to “cultural items” such as funerary objects, sacred objects,

125. KING, *supra* note 13, at 113 fig. 4.1.

126. 36 C.F.R. § 800.4(b)(1).

127. KING, *supra* note 13, at 178.

128. *See id.* at 182 (discussing substantive requirements of MOA when consulting on a project with potential adverse environmental impacts on a Native American burial site).

129. *See* KING, *supra* note 13, at 265–66; *see also* REPATRIATION READER: WHO OWNS AMERICAN INDIAN REMAINS? 1–11 (Devon A. Mihesuah ed., 2000) [hereinafter REPATRIATION READER] (detailing the history of the exploitation of Native American cultural property).

130. 25 U.S.C. § 3005(a)(1), (4) (2018); *see also* Jack F. Trope and Walter R. Echo-Hawk, *The Native American Graves Protection and Repatriation Act Background and Legislative History*, REPATRIATION READER, *supra* note 129, at 146; Ashley Bartman Watson, *Mediating NAGPRA: Bringing Cultural Consideration Back to the Table*, 32 OHIO ST. J. ON DISP. RESOL. 171, 175–76 (2017).

and objects of cultural patrimony.¹³¹ Additionally, under the NAGPRA, intentional excavations and inadvertent discoveries on federal or tribal land have more consultation and procedural requirements than other types of federal actions.¹³² Specifically, the inadvertent discovery regulation requires that the activity exposing the previously undiscovered remains ceases.¹³³ The agency must then provide notice and consult with potential descendants and ensure the remains or cultural items are protected and secured.¹³⁴ If the items or remains must be removed, the procedure follows the intentional excavation regulations, which require compliance with laws like ARPA and section 106 of the NHPA, as well as tribal notice and consultation, among other steps.¹³⁵

6. The Visual Artists Rights Act (“VARA”)

Cultural resources do not only include historic properties and archaeological artifacts, but also include works of art. Passed in 1990, the Visual Artists Rights Act (“VARA”) is unique within American jurisprudence.¹³⁶ This uniqueness is due to the VARA’s recognition and protection of artists’ moral rights in works of art.¹³⁷ Moral rights are different than traditional ownership rights in that they are non-economic in nature, and they remain vested with the artist even after relinquishing ownership of a work to a collector, museum, or other entity.¹³⁸ The VARA permits claims by

131. 25 U.S.C. § 3001(3)(A)–(D) (2018). Objects of cultural patrimony are not necessarily associated with a grave, but are of critical importance to tradition and of the tribe’s cultural identity. *Id.* at § 3001(3)(D).

132. KING, *supra* note 13, at 269. See 43 C.F.R. § 10.3 (2018) (NAGPRA regulations on “intentional excavation”); *Id.* § 10.4 (NAGPRA regulations on “inadvertent discoveries”).

133. 43 C.F.R. § 10.4(c).

134. *Id.* § 10.4(d).

135. *Id.* § 10.3(b)–(c).

136. See Nathan M. Davis, *As Good As New: Conserving Artwork and the Destruction of Moral Rights*, 29 CARDOZO ARTS & ENT. L. J. 215, 220 (2011).

137. *Id.*; Brandon J. Pakkebier, *Form Over Function: Remediating VARA’s Exclusion of Visual Art With Functional Qualities*, 103 IOWA L. REV. 1329, 1335 (2018).

138. Davis, *supra* note 136, at 219–20 (noting moral rights are independent of ownership); Pakkebier, *supra* note 137, at 1331 (describing moral rights as immutable and non-economic).

artists to protect a work's integrity and attribution to the artist.¹³⁹ These rights apply to a "work of visual art"¹⁴⁰ created after the statute's effective date, June 1, 1991.¹⁴¹

The right of integrity is most relevant to this discussion and can be actionable under two circumstances: (1) to "prevent any intentional distortion, mutilation, or other modification" of a work that harms the artist's reputation;¹⁴² and, (2) to prevent "intentional or grossly negligent" destruction of "a work of recognized stature."¹⁴³ Importantly, the first circumstance is limited by removing modifications resulting from the passage of time or inherent nature of the materials used as actionable.¹⁴⁴ However, grossly negligent destruction of works of a recognized stature under the second circumstance seems to support a theory of liability from mere inaction.¹⁴⁵ Finally, modifications or destruction from conservation efforts are not actionable under either circumstance unless they result from gross negligence.¹⁴⁶

7. The Convention on Cultural Property Implementation Act

International law and customs enforcement also play a role in federal cultural heritage regulation. In 1970, the United Nations held a groundbreaking convention on movable cultural heritage and the international black market on antiquities trade. The 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property (hereinafter, the "Convention") is comprised of twenty-six articles which establish an international framework meant to curb the illicit antiquities trade.¹⁴⁷ However, like many international

139. 17 U.S.C. §106A(a)(1)(A) (2018); Davis, *supra* note 136, at 220.

140. A work of visual art is defined broadly under VARA. *See* 17 U.S.C. § 101 (2018). It includes paintings, drawings, pictures, prints, still photographs, and sculptures. *Id.* VARA also includes many exceptions to its definition of a work of art, including commercial or advertising works, works made for hire, and works like posters, maps, globes, and other specific items. *Id.*

141. Davis, *supra* note 136, at 225.

142. 17 U.S.C. § 106A(a)(3)(A).

143. *Id.* § 106A(a)(3)(B).

144. *Id.* § 106A(c)(1).

145. *Id.* § 106A(a)(3)(B).

146. *Id.* § 106A(c)(2).

147. *See generally id.*

accords, states must enact implementing legislation when the accord is considered not self-executing.¹⁴⁸ While the United States ratified the treaty in 1972, implementing legislation was not enacted until 1983 when the Convention on Cultural Property Implementation Act (“CPIA”) was signed into law by President Reagan.¹⁴⁹ The CPIA implements only two articles from the Convention’s framework: Article 7(b),¹⁵⁰ which regulates the repatriation of cultural property identified as stolen by a museum, secular public monument, religious institution, or similar entity of another state party to the Convention; and, Article 9,¹⁵¹ which provides a mechanism for party-states to respond to threats to cultural heritage within their borders through memorandums of understanding (“MOUs”).

Repatriation under section 2607 of the CPIA is not effectuated through a civil action brought by the foreign state.¹⁵² Instead, the CPIA gives the Department of Homeland Security the authority to seize and forfeit stolen property at the border, or even after it has successfully entered the United States.¹⁵³ MOUs under section 2602 of the CPIA are bilateral agreements for the imposition of import restrictions on certain archaeological or ethnographical objects.¹⁵⁴ The statutory elements for executing an MOU under the CPIA are found under section 2602(a)(1).¹⁵⁵ Generally, MOUs are actionable when the cultural property of a state-party is in jeopardy from looting, the state-party has taken measures consistent with the Convention, import restrictions would aid in preventing the looting, and the import restrictions are consistent

148. Patty Gerstenblith, *Implementation of the 1970 UNESCO Convention by the United States and Other Market Nations*, in *THE ROUTLEDGE COMPANION TO CULTURAL PROPERTY* 71 (Jane Anderson & Haidy Giesmar eds. 2017).

149. *Id.*

150. Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, *supra* note 66 art. 7(b)(i); 19 U.S.C. §§ 2607–2609 (1983)(implementing Article 7(b)(i) from Convention in these sections of the CPIA).

151. Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property, *supra* note 66 art. 9. 19 U.S.C. § 2602 (implementing Article 9 from the Convention in these sections of the CPIA).

152. Gerstenblith, *supra* note 148, at 73.

153. *Id.*

154. *Id.*

155. *See* 19 U.S.C. § 2602(a)(1).

with the general interest of the international cultural property interchange.¹⁵⁶ The United States has sixteen bilateral agreements, which last up to five years, but can be renewed an unlimited number of times.¹⁵⁷ The CPIA also permits emergency import restrictions under section 2603 for limited circumstances and duration.¹⁵⁸

8. United States Customs Law & the National Stolen Property Act

The United States has various customs laws which may be used in coordination with statutes like ARPA to prevent harm to cultural heritage from crimes such as antiquities trafficking.¹⁵⁹ First, the National Stolen Property Act (“NSPA”) prohibits the knowing sale, possession, transport, and concealment of stolen items worth more than \$5,000 after they have crossed into the United States or another state’s border.¹⁶⁰ In *United States v. McClain*, the defendants were convicted under the NSPA for conspiring to deal in pre-Columbian artifacts stolen from Mexico.¹⁶¹ Similarly, in *United States v. Schultz*, a prominent art dealer was convicted of conspiracy to deal Egyptian artifacts illegally removed under Egyptian ownership law.¹⁶² In addition to criminal penalties, civil forfeiture of objects under 18 U.S.C. § 981(a)(1)(C) is a potential recourse if possession or control of the object is derived from “specified unlawful activity.”¹⁶³ A NSPA violation constitutes such unlawful activity.¹⁶⁴ In addition, United

156. *Id.*

157. Gerstenblith, *supra* note 148, at 75.

158. 19 U.S.C. § 2603.

159. Patty Gerstenblith, *Controlling the International Market in Antiquities: Reducing the Harm, Preserving the Past*, 8 CHI. J. INT’L L. 169, 175–76 (2007).

160. 18 U.S.C. §§ 2314–15 (2013); *see also* Gerstenblith, *supra* note 159, at 175–76. It is essential that the item is procured illegal, through theft or looting in violation of foreign national ownership laws. *Id.*

161. *United States v. McClain*, 593 F.2d 658, 659, 671–72 (5th Cir. 1979).

162. *United States v. Schultz*, 333 F.3d 393, 395, 416 (2d Cir. 2003).

163. 18 U.S.C. § 981(a)(1)(C) (2016).

164. In *United States v. One Tyrannosaurus Bataar Skeleton*, the court of the Southern District of New York denied defendant’s motion to dismiss in a civil forfeiture action against a Mongolian Tyrannosaurus bataar fossil, finding the complaint was sufficient to support a reasonable belief that the government will meet its burden. No. 12 Civ. 4760(PKC) 2012 WL 5834899, at *1, *10 (S.D.N.Y. Nov. 14, 2012). Among other customs violations, the government alleged

States customs laws could be used in actions against the smuggling of cultural heritage. Customs laws require one entering the United States to truthfully declare the value and provenance of imported objects.¹⁶⁵

B. Anticipated Application of the Current Framework As a Result of Climate Change

While it is impossible to accurately predict all potential effects, as stated previously, the current framework can be applied to presently observable science, current information and policy, and logical trends. This framework can help paint a somewhat accurate picture of how climate change is currently interacting, and will react, with United States cultural heritage law.

First, I posit that the majority of the federal framework will be implicated through the exposure of previously unknown cultural heritage from both natural symptoms and anthropogenic responses to climate change. Presently, coastlines, which are rich with archaeological deposits,¹⁶⁶ are threatened by erosion from rising sea levels.¹⁶⁷ Different responses will be necessary, which will likely include the construction of seawalls and other erosion prevention technology and necessary resettlement of populations within the United States.¹⁶⁸ Federal agencies conducting any activity on federal lands or entities receiving federal funds will likely experience more NAGPRA issues related to inadvertently discovered remains or cultural items from natural erosion or construction activity along the changing coasts.¹⁶⁹ Moreover, federal agency action requires the NHPA section 106 survey

violations of the NSPA § 2314, in that defendant misrepresented the country of origin, value, and contents to import the fossils after excavating them in Mongolia. *Id.* at *8. The case ended in judgment for the government and sale of the fossil was prevented. *Id.* at *10. *See also* United States v. A 10th Century Cambodian Sandstone Sculpture, No. 12 Civ. 2600(GBD) 2013 WL 1290515, *1 (S.D.N.Y. Mar. 28, 2013) (denying motion to dismiss civil forfeiture action against stolen sculpture for traceable violation of NSPA § 2314 and § 2315, among other customs violations).

165. Gerstenblith, *supra* note 159, at 176.

166. *See supra* notes 39–47 and accompanying text.

167. *See supra* notes 31–33 and accompanying text.

168. *See supra* notes 83–88 and accompanying text. *See supra* notes 89–90 (notes on resettlement).

169. *See supra* notes 129–135 and accompanying text.

compliance through NEPA surveys.¹⁷⁰ These surveys will likely increase focus on potential exposure of new sites and inimical effects to known cultural heritage¹⁷¹ along coastlines. These surveys will also likely study the potential negative effects of positive mitigation, which may be more pronounced or unclear from an increasingly mercurial climate.¹⁷² But, as noted previously, the framework is procedural and mostly revolves around consultation and study.¹⁷³

The framework will also be increasingly utilized to curb looting within the United States and prevent the import of looted international cultural heritage. The exposure of new archaeological sites and erosion at known sites will undoubtedly lead to increased patterns of looting.¹⁷⁴ This could range from commercial black-market operations¹⁷⁵ to curious passersby picking up exposed artifacts.¹⁷⁶ ARPA and NAGPRA will continue to protect the removal of cultural heritage on federal land through civil and criminal penalties.¹⁷⁷ The CIA and United States customs laws will also continue to be utilized in preventing the import of looted international cultural heritage for sale or collection.¹⁷⁸ This is essential as looting activity faces a potential increase from changes in traditional forms of income in some countries.¹⁷⁹

C. Where Current Framework Would Be Lacking

While the federal framework provides for the management of a variety of cultural heritage, the United States is often criticized for how lax or ineffective those laws are.¹⁸⁰ This Section addresses

170. *See supra* notes 113–115, 124.

171. Again, section 106's scope applies historic property, which ranges from archaeological sites to historic structures. *See supra* note 1200 and accompanying text.

172. *See, e.g., supra* note 88 and accompanying text.

173. *See supra* note 124 and accompanying text.

174. *See supra* note 69–75 and accompanying text.

175. *See supra* note 75 and accompanying text.

176. *See supra* notes 73–74 and accompanying text.

177. *See supra* notes 106–107, 135 and accompanying text.

178. *See supra* notes 153, 159–165 and accompanying text.

179. *See supra* note 178 and accompanying text.

180. Christopher A. Bergman & John F. Doershuk, *Cultural Resource Management and the Business of Archaeology*, in *ETHICAL ISSUES IN ARCHAEOLOGY*

the holes resulting from the United States' "hodge-podge" of cultural heritage laws.¹⁸¹

1. The Takings Clause, Private Land, and Limited Regulation

One of the largest pitfalls of United States cultural heritage law is that the predominant corpus of the law only applies to federal lands or federally funded or permitted activity. Ironically, the historic concerns of the Founding Fathers embodied in the 5th Amendment interfere with adequate protection of the United States' history.¹⁸² The 5th Amendment prohibits "takings" of private property by the government without just compensation.¹⁸³ Thus, much of the federal system was designed to apply only to federal and public land. Requiring certain surveys, procedural steps, or the protection on private land related to cultural heritage could be considered a taking. The one exception is section 470ee(c) of ARPA, which prohibits looting and trafficking of archaeological resources in violation of state and local law, and can be implicated where private property has been trespassed for looting.¹⁸⁴ Compared to other legislation in the United States, the hands-off approach to regulation of cultural heritage on private land creates

85, 88–89 (Larry J. Zimmerman et al, eds. 2003) (discussing ethical concerns between academic archaeology, focused on science and research, contrasted with cultural resource management, or CRM, which is business archaeology focused narrowly on compliance for development projects); *See generally* Robert J. Mallouf, *An Unraveling Rope: The Looting of America's Past*, in REPATRIATION READER 60–73 (discussing underlying socio-economic issues as to why the United States has been unable to curb its looting problems, including lack of education in rural communities with rich deposits, slap-on-the-wrist penalties, cost-prohibitive media advocacy campaigns, the small professional community of archaeology compared to vast networks of hobbyist collectors, and more); Craig M. Bargher, *The Export of Cultural Property and United States Property*, 4 DEPAUL J. ART, TECH. & INTELL. PROP. L. 189, 199–200 (1994) (discussing historic themes of American ethnocentrism and early commoditization of Native American cultural property with the belief that Native Americans were not human).

181. KING, *supra* note 13, at 4.

182. Geoffrey R. Scott et al., *Cultural Property, Art and Law in the United States and Turkey*, 4 L. & JUST. REV. 1, 3 (2013).

183. U.S. CONST. amend. V.

184. Charles R. Walsh, Jr., *Sovereign Ownership of Private Property in the Name of Preservation: A Contradiction in Terms and of the Constitution*, 46 N.Y.L. SCH. L. REV. 899, 923–24 (2003).

an unsettling juxtaposition: the nation's law prevents anyone from picking up bald eagle feathers, even on private land, but picking up artifacts or Native American remains on one's own land is not necessarily a crime.¹⁸⁵ Responses to climate change will undoubtedly have to wrangle with how to manage effects on heritage on private property.

2. Ownership and Export of United States Cultural Property

Two primary goals of cultural heritage policy are retention by the country of ownership and preservation.¹⁸⁶ A changing climate poses a threat to meeting these policy goals globally. However, the United States legal framework contains two issues which potentially exacerbate the problem.

First, the United States has no absolute sovereign ownership law.¹⁸⁷ Sovereign ownership laws vest ownership of cultural property to the state, regardless of whether the artifacts were found on private land.¹⁸⁸ The benefit of sovereign ownership laws de-economizes antiquities by rendering them illicit property if collected without state permission.¹⁸⁹ Some examples of countries with sovereign ownership laws are Mexico,¹⁹⁰ Egypt,¹⁹¹ and Italy,¹⁹² among others. Without sovereign ownership laws, looting

185. See 16 U.S.C. § 668(a).

186. Bargher, *supra* note 180, at 195.

187. See Ellen Herscher, *International Control Efforts: Are There Any Good Solutions?*, in THE ETHICS OF COLLECTING CULTURAL PROPERTY, *supra* note 69, at 117, 118; Patty Gerstenblith, *Schultz and Bakarat: Universal Recognition of Sovereign Ownership in Antiquities*, 14 ART ANTIQUITY & L. 21, 24 (2009). The Antiquities Act does qualify as a limited sovereign ownership law, but again, only applies to federal lands. Moreover, its penalties section has been declared unconstitutionally vague. *Id.* at 24 n. 11.

188. Gerstenblith, *supra* note 187, at 21.

189. *Id.*

190. Herscher, *supra* note 187, at 118 (noting the law declares national ownership over certain artifacts, including those yet to be discovered).

191. See *Schultz*, 333 F.3d at 402 (finding Egypt's law 117 of 1983 is a valid law which transfers rights of ownership in antiquities to the state).

192. Italy's cultural heritage law began with the Law of June 1, 1939 XVI, No. 1089. The law vests ownership of objects discovered after 1902 in the state, including those discovered by chance. See Sue J. Park, *The Cultural Property Regime in Italy: An Industrialized Source Nation's Difficulties in Retaining and Recovering Its Antiquities*, 23 U. PA. J. INT'L ECON. L. 931, 939–40 (2002).

is not discouraged on private lands, which otherwise promotes retention of heritage and the preservation of sites. In the United States alone, an estimated 80 to 90 percent of known archaeological sites have been intentionally disturbed, and total market values of the antiquities trade can reach four to five billion dollars.¹⁹³

Second, the United States is nearly unique internationally in that it has no *export* restrictions on its cultural heritage.¹⁹⁴ A lack of export laws permits United States cultural heritage, be it Native American cultural objects or Civil-War era relics, to be sold freely to international collectors.¹⁹⁵ While legitimate sales of art and artifacts can be vital to economies, a lack of export control can potentially drain a country of its cultural identity,¹⁹⁶ create tension in communities identifying with the exported antiquities,¹⁹⁷ and promote looting markets.¹⁹⁸ Japan, Germany, France, Switzerland, the Scandinavian countries, as well as the United States, are popular artifact markets.¹⁹⁹ For this reason, a sculpture made by quintessential American figure Benjamin Franklin in the United States was permitted to be sold to an English buyer.²⁰⁰ Thus, retention of United States cultural heritage is threatened with unrestricted export.

D. Predicting New Trends and Identifying Ongoing

193. Julie Hollowell-Zimmer, *Digging in the Dirt—Ethics and “Low-end Looting”*, in ETHICAL ISSUES IN ARCHAEOLOGY 45, 47–48 (Larry J. Zimmerman et al, ed. 2003).

194. Antonia M. De Meo, *More Effective Regulation for Native American Cultural Property Through Regulation of Export*, 19 AM. INDIAN L. REV. 1, 26 (1994); Bargher, *supra* note 180, at 189.

195. The sale still is subject to United States looting and trafficking law and regulation.

196. Bargher, *supra* note 180, at 202.

197. *The Theft, Illegal Possession, Sale, Transfer and Export of Tribal Cultural Items: Hearing Before S. Comm. on Indian Affairs*, 114th Cong. 5–10 (2016) (statement of Cheryl Andrews-Maltais, Senior Advisor, Assistant Secretary Bureau of Indian Affairs, United States Department of the Interior) (noting several instances of Native American cultural heritage and sacred items on sale in foreign auction houses, including large art markets like Paris); Peggy McGlone, *Native Americans protest planned auction in France of sacred objects and human remains*, WASH. POST (May 24, 2016), <https://perma.cc/TT3X-YRA7>.

198. Herscher, *supra* note 187, at 125.

199. Bargher, *supra* note 180, at 193.

200. *Id.* at 202.

Developments

The following issues are currently developing or have a potential for development based on current law and policy. It is not clear to the extent any will be relevant, but awareness of these potential developments will help plan for the future.

1. Increased Frequency in the Application of Current Federal Law

With climate change likely causing increased adverse effects on known historic properties and archaeological sites, as well as the exposure of new sites, one logical development is increased utilization of the current federal scheme. First, ARPA's provisions could be utilized more frequently to prosecute crimes related to trafficking of cultural objects and looting of sites on federal land,²⁰¹ as well as looting on private land from violations of state and local law.²⁰² Second, newly exposed sites and sites necessitating increased attention may require federal agencies and entities managing collections to comply with consultation and listing requirements under NAGPRA.²⁰³ This is especially true for NAGPRA's regulations concerning inadvertent discoveries.²⁰⁴ Third, the Antiquities Act may be used to designate additional public land as monuments of archaeological and scientific interest that have been exposed due to effects of climate change.²⁰⁵ The NPS has already begun assessing historic properties it owns within the projected one meter level of sea rise.²⁰⁶ There is potential that some of these sites may receive an Antiquities Act designation in order to raise awareness of their significance and protect them.

The CPIA is another facet of the federal regime which may see an upward trend in activity. This is because the two primary components of the CPIA, sections 2602 and 2607, could play essential roles in the United States' efforts to protect cultural heritage during climate change. Under section 2607, the United States can seize and repatriate stolen objects from foreign

201. See KING, *supra* note 13, at 276.

202. See U.S. CONST. amend. V.

203. 25 U.S.C. §§ 3005(a)(1), (4).

204. 43 C.F.R. § 10.4 (2018).

205. 54 U.S.C. §§ 320301(a), (b).

206. See generally PEEK, *supra* note 40.

countries.²⁰⁷ This is essential as many countries with rich cultural heritage have impoverished populations that may resort to subsistence mining to supplement incomes disrupted by changing climate.²⁰⁸ Turning to section 2602, the United States could enter into increased MOUs with foreign countries that are experiencing issues with looting.²⁰⁹ Additionally, the United States may, for the first time, decide to execute an MOU with a large market country like France or Japan to prohibit the export of its own cultural heritage.

2. Dugongs and International NHPA Considerations for the United States

The NHPA may be applied to United States federal undertakings extraterritorially.²¹⁰ A current case filed by Japanese citizens in the Ninth Circuit is blazing new precedent as it slowly makes its way through hearings on motions. The case involves the relocation of a military base operated by the Department of Defense (“DOD”) on the island of Okinawa.²¹¹ Dugongs are manatee-like creatures, protected under Japanese cultural heritage law, whose shallow breeding grounds could be affected by disturbance from the construction of a large naval facility.²¹² As plans developed for the military base, DOD failed to consider potential effects on the dugong.²¹³ Without standing in Japanese courts, Japanese citizens filed suit in the United States

207. 19 U.S.C. § 2607; see Gerstenblith, *supra* note 148, at 72.

208. See Clark, *supra* note 70; see Hollowell-Zimmer, *supra* note 193, at 46 (discussing subsistence looting as someone looting and selling antiquities to pay for something like a doctor’s bill).

209. 19 U.S.C. § 2602; see Gerstenblith, *supra* note 148, at 72.

210. See Mark P. Nevitt, *The National Historic Preservation Act: Preserving History, Impacting Foreign Relations?*, 32 BERKELEY J. INT’L L. 388, 409–12 (2014) (discussing the extraterritorial application of the NHPA to the Japanese dugong); see also Miyume Tanji, *U.S. Court Rules in the “Okinawa Dugong” Case: Implications for U.S. Military Bases Overseas*, 40 CRITICAL ASIAN STUD. 475, 480 (2008), <https://perma.cc/KJY2-RJPG>.

211. See *Dugong v. Rumsfeld*, No. C 03-4350 MHP, 2005 WL 522106 (N.D. Cal. Mar. 2, 2005) (*Dugong I*); *Okinawa Dugong v. Gates*, 543 F. Supp. 2d 1082 (N.D. Cal. 2008) (*Dugong II*).

212. Nevitt, *supra* note 210, at 410–11.

213. Tanji, *supra* note 210, at 480–81.

District Court alleging violations of the NHPA, among other claims (“*Dugong I*”).²¹⁴

DOD raised numerous arguments to rebut the suit without answering the merits of the complaint, all of which were unpersuasive to the court. First, DOD argued that it was not required to consult the Japanese law because it was not equivalent to the NHPA.²¹⁵ The Court disagreed and held that Japan’s cultural heritage law was the equivalent and apt law to be applied, even though the law was broader than the NHPA, in that it also protected animals, like the dugong, as monuments.²¹⁶ Further, the Court determined that requiring the NHPA to match exactly with foreign cultural property law defeated the logical international policy of the section.²¹⁷ The Court then held that the NHPA’s application to “property” could constitute animals.²¹⁸ Finally, the Court concluded that the state action doctrine did not preclude a ruling by the judiciary.²¹⁹ The state action doctrine protects actions by sovereign entities in their own territory from being invalidated by United States judgements.²²⁰ Here, however, the Court construed its ruling as simply requiring DOD to comply with the NHPA, even though the location was chosen by the Japanese government.²²¹

The fallout from *Dugong I* requires United States agencies to more thoroughly consider cultural heritage effects outside of their traditional understanding of the NHPA. This was the first time the NHPA was construed to protect a wild animal.²²² Moreover, a foreign nation’s cultural heritage law does not need to be strictly

214. Nevitt, *supra* note 210, at 411–12.

215. *Dugong I*, 2005 WL 522106, at *6. After the 1980 World Heritage Convention, the United States adopted amendments codified here, which state: “Prior to the approval of any undertaking outside the United States that may directly and adversely affect a property that is on the World Heritage List or on the applicable country’s equivalent of the National Register, the head of a Federal agency having direct or indirect jurisdiction over the undertaking shall take into account the effect of the undertaking on the property for purposes of avoiding or mitigating any adverse effect.” 54 U.S.C. § 307101(e) (2014).

216. *Dugong I*, 2005 WL 522106, at *6–8.

217. *Id.*

218. *Id.* at *8–12.

219. *Id.* at *19–20.

220. Nevitt, *supra* note 210, at 414–15.

221. *Id.* at 415.

222. *Id.* at 417.

equivalent, but only loosely equivalent in scope and purpose.²²³ Additionally, what property must be evaluated is not limited by the NHPA; it is the entire scope of the foreign law.²²⁴ Still, the lawsuit is grappling with standing issues and the political question doctrine, which may affect the ultimate outcome of the litigation.²²⁵

Climate change will likely only increase the number of undertakings and related actions internationally, which, as it stands now, must comply with a broader NHPA requirement. A 2016 DOD report found that more than half of United States military bases worldwide will likely suffer increased climate-related effects, such as storm surges, rising sea-levels, and extreme temperatures.²²⁶ Undoubtedly, in this limited field, federal undertakings of varying degrees will likely occur. These undertakings will all be subject to the original cultural property laws of the countries, if they meet the equivalence requirements as defined by *Dugong I* and affirmed by *Dugong II*. How other agencies respond with their international property, funding, or other mitigation or adaptation strategies will also implicate these NHPA considerations, so long as the action qualifies as an undertaking.²²⁷

3. The Skeleton of the Abandoned Shipwreck Act (“ASA”)

Historically, United States courts consulted common law to adjudicate claims to title of abandoned shipwrecks within jurisdictional waters of a state or the federal government.²²⁸

223. *Dugong I*, 2005 WL 522106, at *6–8.

224. *Id.* at *8–12.

225. See Helen Christophi, *Court Signals Bend of U.S. Marine Base for Okinawa Dugong*, COURTHOUSE NEWS SERV. (Mar. 16, 2017), <https://perma.cc/7X9S-ZQM5>.

226. See DEP’T OF DEF., CLIMATE-RELATED RISK TO DOD INFRASTRUCTURE INITIAL VULNERABILITY ASSESSMENT SURVEY (SLVAS) REPORT 2 (2016), <https://perma.cc/JB6E-2MT2>.

227. See *supra* note 123 and accompanying text.

228. Jeffrey Cohn, *A Legal Perspective on the Protection of Underwater Cultural Heritage Resources in the United States: Is the Abandoned Shipwreck Act Lost at Sea, or is it Worthy of Salvage?*, 27 DEPAUL J. ART, TECH. & INTELL. PROP. L. 1, 5–23 (2016) (discussing traditional applications of the law of finds and law of salvage to disputes over ownership of shipwrecks).

Congress enacted the Abandoned Shipwreck Act of 1987 (“ASA”)²²⁹ to remedy incongruity between different jurisdictions’ application of the doctrines.²³⁰ The ASA eschews common law rights to shipwrecks in jurisdictional waters and vests title in the United States, which is then automatically transferred to the appropriate state.²³¹ Instead of economic concern, ASA’s policy is one of preservation.²³²

ASA, however, is a problematic law which often invites legal challenges.²³³ Ironically, ASA suffers from unclear definitions and limited guidance for interpretation by the courts; this causes unpredictability, the very problem ASA was meant to ameliorate.²³⁴ For example, courts differ on the evidentiary standard requisite to prove abandonment.²³⁵ The United States Supreme Court avoided clarifying the proper standard of abandonment by limiting its remand in *California v. Deep Sea Research* to a different issue related to bringing a claim of ownership.²³⁶ Moreover, ASA guidelines are not controlling,²³⁷ but are to merely assist in local preservation efforts, which vary from state to state.²³⁸

ASA’s lack of clarity, continuous litigation, and circuit split on evidentiary standards makes ASA a candidate for repeal and replacement or overhaul by Congress. This could lead to a new legal scheme for managing cultural heritage in jurisdictional waters of the United States. Suggested reforms include keeping

229. 43 U.S.C. §§ 2101–06.

230. *Id.* at 23.

231. *Id.* at 24. Note, this is another law which seemingly creates limited sovereign ownership of cultural heritage. However, the ASA, much like the Antiquities Act, has been rendered somewhat ineffective from legal challenges. *See infra* note 235.

232. Cohn, *supra* note 228, at 23.

233. *Id.* at 29.

234. *Id.* at 25–27.

235. *Compare* Sea Hunt, Inc. v. Unidentified Shipwrecked Vessel et al., 221 F.3d 634, 638 (4th Cir. 2000) (finding of abandonment by Spain required “express acts”), *with* Northeast Research L.L.C. v. One Shipwrecked Vessel, 729 F.3d 197, 209–12 (2d Cir. 2013) (finding of abandonment may be “inferred” by clear and convincing circumstantial evidence); Cohn, *supra* note 228, at 25–28.

236. *California v. Deep Sea Research, Inc.*, 523 U.S. 491, 508 (1998); Trevor Hass, *Try Not to Give Up The Ship! The Abandoned Shipwreck Act of 1987 and Its Effect on Great Lakes Shipwrecks*, 93 U. DET. MERCY L. REV. 293, 300 (2016).

237. Abandoned Shipwreck Act Guidelines, 55 Fed. Reg. 50,116 (1990).

238. Cohn, *supra* note 228, at 28–29.

title to wreckage with the federal government, providing a clear definition of abandonment, authorizing and incentivizing archaeologically-sensitive recovery by private actors, and tying the ASA with statutes like ARPA, NEPA, and the Antiquities Act.²³⁹ Moreover, climate change's known effect of sea-level rise may cause shipwrecks embedded on coastlines to become submerged, subjecting them to ASA's murky regulatory waters.²⁴⁰

4. Anti-Terrorism Act ("ATA") and the Antiquities Trade

The Anti-Terrorism Act ("ATA") provides a means for United States nationals injured by acts of terrorism to recover damages through a civil action against entities who funded terrorism or terror groups, like charitable organizations or financial institutions operating in the United States.²⁴¹ The statute requires a heightened *mens rea* standard that has been interpreted differently by jurisdictions.²⁴² One construction permits liability against a defendant with "deliberate indifference" to whether the organization they are supporting engages in terrorism.²⁴³

The Islamic State is a recent and well-known terrorist organization to expropriate the cultural heritage within its control to fund its activities.²⁴⁴ Prominent art dealers have not refrained from dealing in antiquities with questionable provenance.²⁴⁵ Art

239. *Id.* at 36–39.

240. See Anderson, *supra* note 10, at 2. For example, an unidentified Revolutionary War-era wreck on Maine's coast has been repeatedly exposed and submerged due to changing coastline. Ewan Palmer, *Remains of Revolutionary War-Era Ship Found on Maine Beach After Nor'Easter*, NEWSWEEK (Mar. 5, 2018, 11:26 AM), <https://perma.cc/2E74-6ACR>.

241. 18 U.S.C. §§ 2331–2339D (2012); Jimmy Gurulé, *Holding Banks Liable Under The Anti-Terrorism Act For Providing Financial Services To Terrorists: An Ineffective Legal Remedy In Need Of Reform*, 41 J. LEGIS. 184, 184 (2015).

242. Gurulé, *supra* note 241, at 195–202.

243. *In re Terrorist Attacks on Sept. 11, 2001*, 740 F. Supp. 2d 494, 517 (S.D.N.Y. 2010).

244. Benoit Faucon & Georgi Kantchev, *Prominent Art Family Entangled in ISIS Antiquities-Looting Investigations*, THE WALL ST. J. (May 31, 2017), <https://perma.cc/5HSH-D69F> (noting the major source of income antiquities are for ISIS, next to oil, and citing a Department of Justice civil forfeiture suit against artifacts claimed to be sold for funding ISIS' activities).

245. *Id.* (describing a search of a driver for a well-known art-dealing family revealed an ancient oil lamp which had no provenance papers showing legal

dealers who are buying these artifacts, or even private individuals buying straight from the source, are paying money in exchange for the object. Thus, it is likely that the money is “material support”²⁴⁶ for a terrorist organization. And, if the art dealers or other purchasers are deliberately indifferent to whether the seller is connected to a terror organization, it could be argued that liability applies under section 2339C of the ATA.²⁴⁷ At the date of this article’s writing, the author has found no civil suits under the ATA related to the funding of terrorism through the antiquities trade.

5. Stopping Unrestrained Export with the STOP Act

In the first session of the 115th Congress, New Mexico Senator Martin Heinrich (D) introduced the Safeguard Tribal Objects Patrimony Act (“STOP” Act), with the endorsements by major tribal entities.²⁴⁸ The STOP Act would be the first explicit export control of Native American cultural heritage.²⁴⁹ The STOP Act would prevent the export of protected Native American cultural heritage.²⁵⁰ While ARPA and NAGPRA have similar prohibitions, they relate more to possession and trafficking, whereas the STOP act specifically targets export of such objects.²⁵¹ Importantly, French authorities noted that the United States had no export laws which were violated to use as a basis for returning the Native American objects at auction.²⁵²

The STOP Act would act simply as another arrow in the quiver for protecting United States cultural heritage from looting and unrestrained export. With the United States is likely to experience

ownership. The search is part of a larger investigation of the family business’ connection to Syrian and Iraqi artifacts looted by ISIS.).

246. Antiterrorism and Effective Death Penalty Act, 18 U.S.C. § 2339A(b)(1) (2012) (defining “material support” to “include[e] currency or monetary instruments”).

247. *Id.* § 2339C; see Gurulé, *supra* note 241, at 196–98 (discussing knowledge requirements for ATA liability being satisfied by deliberate indifference).

248. Safeguard Tribal Objects of Patrimony Act of 2017, S. 1400, 115th Cong. (2017); Aaron Haines, *Will The STOP Act Stop Anything? The Safeguard Tribal Objects of Patrimony Act and Recovering Native American Artifacts From Abroad*, 39 CARDOZO L. REV. 1091, 1093–94 (2018).

249. Haines, *supra* note 248, at 1105.

250. *Id.*

251. *Id.* at 1106.

252. *Id.* at 1108.

increased looting from newly exposed sites due to climate change,²⁵³ the STOP Act would provide a basis for foreign courts to return cultural property in violation of United States export law.²⁵⁴ For example, even if no MOU existed under the CPIA between the United States and a market nation when objects were exported, the STOP Act could be utilized to return the exported heritage.²⁵⁵ However, some foreign courts do not apply foreign law domestically based on the doctrine of territoriality, which recognizes no obligation to enforce foreign law in a state's domestic jurisdiction.²⁵⁶

6. VARA Claims in a New Medium

VARA has most frequently been applied to preserve works of art that are under threat of destruction by redevelopment or construction.²⁵⁷ It must be remembered that artwork, both historic and contemporary, is cultural heritage and a valuable resource to society. With rising sea levels and changing weather patterns in the forecast, it is likely that works of art will need additional or increased conservation to preserve them. This will likely force owners to make difficult decisions of what can be saved and how to save it. However, even though the artists no longer own the works, they may bring claims under VARA to preserve their original intent and opinion in how the work should be managed.²⁵⁸ Specifically, conservation efforts which result in gross negligence are expressly actionable under the statute.²⁵⁹ Also, courts have found gross negligence for liability under 17 U.S.C. § 106A(a)(3)(B) where owners have failed to take "affirmative steps" to repair a

253. See *supra* notes 73–75 and accompanying text.

254. Haines, *supra* note 248, at 1113.

255. See 19 U.S.C. § 2602(a)(1) (2012); see also Gerstenblith, *supra* note 148, at 5.

256. Haines, *supra* note 248, at 1106–08.

257. See generally, David E. Shipley, *The Empty Promise of VARA: The Restrictive Application of a Narrow Statute*, 83 MISS. L. J. 985, 1023–29 (2014) (discussing suits brought under VARA to prevent removal or destruction of artwork such as *Flack v. Friends of Queen Catherine*, 139 F. Supp. 2d 526, 532–34 (S.D.N.Y. 2001), *Carter v. Helmsley-Spear, Inc.*, 71 F.3d 77, 88 (2d Cir. 1995), and *Martin v. City of Indianapolis*, 192 F.3d 608, 612 (7th Cir. 1999), among others).

258. See 17 U.S.C. §§ 106A(a)(3), (c) (2012).

259. *Id.* § 106A(c)(2).

work, causing damage to intensify.²⁶⁰ Thus, owners, be it private or governmental entities, should be cognizant of a potential increase in VARA claims by artists seeking to protect their work from untreated damage caused by symptoms of climate change.

IV. SUGGESTED RESPONSE AND LEGAL FRAMEWORK FOR MAXIMIZING PRESERVATION

The previous Sections discussed the current framework, deficiencies, and potential new developments of managing cultural heritage during climate change. To conclude this Article, this Section suggests potential steps for the United States to take to update its cultural heritage laws and regulations to mitigate the threats to heritage accompanying climate change.

A. Pass a Comprehensive Cultural Heritage Law

The United States should overhaul the current patchy framework and pass a comprehensive cultural heritage law, which many other nations have done. There is a multi-disciplinary recognition that the current framework is quite complex,²⁶¹ ranging from academics and educators²⁶² studying and teaching the law to the courts²⁶³ who are tasked with applying it. Not only does the complexity of the laws breed error by the acting agency or entity, rightful stakeholders like Native American tribes are often left out of the processes by failing to understand and assert their rights.²⁶⁴ This is especially concerning as much of the cultural heritage in the path of climate-related sea-level rise is Native

260. *Id.* § 106A(a)(3)(B); *Hunter v. Squirrel Hill Assocs.*, 413 F. Supp. 2d 517, 520 (E.D. Pa. 2005).

261. Herscher, *supra* note 187, at 117.

262. *See* KING, *supra* note 13, at xi, 4.

263. *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, 205 F. Supp. 3d 4, 8–11 (D.D.C. 2016) (noting numerous times the “complex[ity]” of the “multi-step” consultation requirements of the NHPA); *Battle Mountain Band v. U.S. Bureau of Land Mgmt.*, No. 3:16-CV-0268-LRH-WGC, 2016 WL 4497756, at *11 (D. Nev. Aug. 26, 2016) (noting how large, complex, and expensive the consultation framework for tribal interests is).

264. S. Rheagan Alexander, *Tribal Consultation for Large-Scale Projects: The National Historic Preservation Act and Regulatory Review*, 32 PACE L. REV. 895, 920–21 (2012) (noting how difficult it is for tribes to become involved in consultations).

American.²⁶⁵ However, the feasibility of completing such an overhaul during the time-sensitive window presented by climate change is questionable. Other options are likely provide more protection in the short-term.

B. Develop an Integrated National Database of Cultural Heritage

Arguably, the loss of coastal and low lying archaeological sites is the most well-documented threat from climate change at this juncture. While not all of this heritage can be saved, efforts should be made to preserve the current data in the United States and to expand the data set as it responds with mitigation and adaptation projects. This can be done effectively through legislation or regulation establishing an integrated national database (“IND”) of all known cultural heritage sites.²⁶⁶ For example, a law or regulation could require federal agencies, states, and other entities like academic institutions to report known sites of cultural heritage to DINAA.²⁶⁷ Thus, DINAA would be a national repository for known data of, theoretically, all cultural heritage in the United States.

An IND provides numerous benefits to managing cultural heritage. First, an IND of sites provides an additional layer of data documentation. Where records of heritage in local, state, or institutional files are lost, destroyed, or in formats inimical to accessibility, an online IND would retain that information if the files were properly uploaded.²⁶⁸ This is also essential as the NHPA survey requirements and ACHP regulations do not *require* any

265. See Anderson, *supra* note 10, at 13 tbl.5 (for example, in South Carolina, there are thousands of Native American archaeological sites at or within one meter above sea-level).

266. *E.g., id.* at 1 (“[DINAA] is a multi-institutional collaboration that allows researchers online access to linked heritage data from multiple sources and data sets.”).

267. See *id.* at 2–3. As it is being developed now, DINAA receives information from entities only on a voluntary, collaborative basis. *Id.*

268. See, *e.g.*, Charles Thompson, *Historic Midstate Building, (or Building Where History Was Made), Faces Demolition Threat*, PENNLIVE (Jan. 14, 2016), <https://perma.cc/ZU8H-8FCJ> (Township supervisor noting that while the historic building qualified for NRHP protection, documents from a 1992 meeting were never followed up on and the significance forgotten by the 2016 development project.).

cultural heritage surveys be conducted to meet a good faith identification of potential historic properties requirement.²⁶⁹ An agency not conducting any new surveys will still have to consult information on known properties, and an IND will likely have more information than just a local or state preservation entity.

Second, an IND effectuates integration and interoperability.²⁷⁰ This means that local or state-specific data collection procedures are integrated into a single, searchable dataset.²⁷¹ A single dataset resolves the problem of varying procedures, descriptions, and recordkeeping done at the state and local levels.²⁷² Moreover, DINAA integrates all of this data into a centralized system without requiring local or state agencies to change their procedures.²⁷³

One major criticism of INDs is that the information could be used for looting.²⁷⁴ Any legislation establishing mandatory reporting to an IND should not publish exact coordinates of sites to the public. This concern is what makes DINAA such a viable candidate for an IND: the program redacts sensitive attributes of sites and exact locations, requiring permission from the agency who submitted the information.²⁷⁵ Should a federal agency be tasked with granting disclosures, a consultation requirement with the submitter is likely necessary to protect all interests.

C. Pass Legislation on Export Control of Cultural Heritage

The United States should either pass the STOP Act or a similar form of cultural property export control. While acts like ARPA do provide for some civil and criminal penalties for trafficking of looted artifacts,²⁷⁶ the provisions do not apply to explicitly proscribe the export of illegally obtained artifacts.²⁷⁷

269. *Standing Rock Sioux Tribe*, 205 F. Supp. 3d at 33.

270. Anderson, *supra* note 10, at 3.

271. *Id.*

272. *Id.*

273. *Id.*

274. Hambrecht & Rockman, *supra* note 19, at 15.

275. Anderson, *supra* note 10, at 3.

276. 16 U.S.C. §§ 470ee, 470ff (2012).

277. See *The Safeguard Tribal Objects of Patrimony Act of 2017: Hearing on S. 465 and S. 1400 Before the S. Comm. on Indian Affairs*, 115th Cong. 67–70

Export controls can take various forms. The export control could be selective, which identifies and restricts only the most sensitive objects of patrimony, permitting otherwise unrestricted export of less sensitive objects.²⁷⁸ The opposite spectrum contains export laws which are blanket restrictions over the export of any cultural property.²⁷⁹ However, such a focused response will likely be ineffective alone, as both types of export laws have their flaws. For example, how will the United States determine what cultural patrimony is more sensitive than others? This gives rise to serious ethical concerns. As for a complete ban, this could compromise the United States's position as a leading marketplace for the *legal* art trade.²⁸⁰ Plus, this type of control is only effective where countries have strict government control of trade and movement.²⁸¹

Thus, the enactment of an export control should be seen as only a piece to the larger puzzle of how to best manage cultural property during climate change. The effectiveness of an export control law will never be complete, but that should not be grounds for inaction.²⁸² Rather, the export law should be coupled with educational initiatives, political and governmental action, and funding for scientific research and public outreach.²⁸³

D. International Efforts

One component of any solution should be the consideration of international approaches to managing cultural heritage during climate change. While cultural heritage management often varies due to the uniqueness of a state's political character and composition of its cultural heritage,²⁸⁴ considering international efforts will help formulate a successful domestic framework. Moreover, because the international antiquities trade exists as a

(2017) (statement of the Society for American Archaeology); Haines, *supra* note 248, at 1108.

278. See Herscher, *supra* note 187, at 118.

279. *Id.*

280. See Bargher, *supra* note 180, at 202.

281. See Herscher, *supra* note 187, at 122 (citing to China and the former Soviet Union as examples).

282. *Id.*

283. *Id.* at 123–24.

284. Gerstenblith, *supra* note 93, at 4 (noting that the type of system depends on the “circumstances of the nation, the degree of public support for a regulatory system, and the types of artefacts at issue”).

facet of cultural heritage management, domestic frameworks must necessarily consider these international issues.

First, there is a growing trend in the development of risk assessment and modeling programs.²⁸⁵ The European Union funded program, Climate for Culture, created software tools for modeling simulations of climate effects on site across Europe.²⁸⁶ France, Denmark, and Greenland have funded similar programs which generate vulnerability assessments as well as tools which could be effective in protecting the threatened site.²⁸⁷ Another important program is the Institute of Disaster Mitigation for Urban Cultural Heritage in Kyoto, Japan.²⁸⁸ Initially funded by UNESCO, the program creates three-dimensional maps of Kyoto that identify urban cultural heritage vulnerable to disasters like floods and earthquakes.²⁸⁹

Second, international efforts include increasing the public's involvement in cultural heritage management.²⁹⁰ Volunteer community involvement can be a helpful resource to monitoring efforts due to the difficulty of monitoring all cultural heritage, especially newly exposed and previously unknown heritage along the shoreline.²⁹¹ A Scottish program developed an app which allows the public to act as surveyors during everyday walks along the beach or roadsides.²⁹² The user can upload photos and write a brief description, which is curated by the app, and sent off to the National Monuments Record of Scotland.²⁹³ The app also incorporates community input by inviting communities to nominate sites for professional archaeological survey, documentation, and preservation.²⁹⁴

285. See Hambrecht & Rockman, *supra* note 19, at 631–33 (discussing scientific projects which analyze, predict, and assess effects on known archaeological sites).

286. *Id.* at 632.

287. *Id.*

288. *Id.*

289. *Id.*

290. See *id.* at 635–37.

291. *Id.* at 635 (noting how coastal cultural heritage is at the frontlines of climate-related threats).

292. *Id.*

293. *Id.*

294. *Id.* at 636. Similar programs exist in the United Kingdom and Ireland. *Id.*

Third, many of these programs also exemplify the trend towards centralizing data. In order to generate vulnerability assessments, a central bank of data is needed to ensure all site typologies are considered, from archaeological remains to historic structures. The Scottish program reports all of its findings to a national entity.²⁹⁵ These strategies fall within the same theme of establishing an IND.²⁹⁶ They recognize that a centralized repository of data is essential to extinguish the “burning libraries of the past.”²⁹⁷

V. CONCLUSION

The most unsettling aspect of climate change is how unpredictable its effect on the world today will be. This also frustrates those looking for solutions preemptively: what exactly must be done? Managing cultural heritage in the United States during climate change is no exception. The best course of action must ultimately be a unified involvement of governmental, political, academic, and public forces.²⁹⁸ This approach recognizes that the law alone is insufficient in this arena. However, the United States should bolster its framework by establishing an IND and, for the first time, proscribing the export of illicit and sensitive cultural property.

One of the most recent developments in cultural heritage management is the use of three-dimensional technology to recreate sites and objects for virtual tours.²⁹⁹ This technology is crucial for the preservation of resources that are unfortunately unable to be preserved or are destroyed. For example, the destruction of Palmyra by ISIS, widespread looting and pillaging of museums during conflict in the Middle East, and natural disasters affecting high-profile heritage sites, creative ideas

295. *Id.* at 9.

296. *See supra* notes 266–60 and accompanying text.

297. Hambrecht & Rockman, *supra* note 19, at 637 (quoting Thomas H. McGovern, Paper Presentation at the 2014 Geological Society of America Meeting: Endangered Environmental Archives in the North Atlantic, Crisis and Response (Oct. 19, 2014)).

298. *See generally* Hambrecht & Rockman, *supra* note 19; *see* Herscher, *supra* note 187, at 123–24.

299. *Virtual Museums, Underwater Cultural Heritage*, UNESCO, <https://perma.cc/PBU2-4NWD>.

utilizing three-dimensional scanning technology proved useful in both reconstructing sites and surveying sites for structural weaknesses and damage.³⁰⁰ But our heritage should not be left to only conversion into digital pixels. A response is needed to ensure the majority of our cultural heritage is preserved in its original elementary composition: a tangible piece of our collective story as humans.

300. Laura Sydell, *3D Scans Help Preserve History, But Who Should Own Them?*, NPR ILLINOIS (May 22, 2018), <https://perma.cc/T55C-U97W>.