A Site Condition Assessment of the Painted Rock Petroglyph Site, Southwestern Arizona

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Archaeology Southwest

Technical Report No. 2017-02

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EXECUTIVE SUMMARY

Between January and March of 2017, and under Bureau of Land Management (BLM) Permit No. AZ-00057 and BLM Fieldwork Authorization No. PDO-17-001, Archaeology Southwest carried out an inventory and site condition assessment of the Painted Rock Petroglyph Site, AZ S:16:1(ASM), a cultural heritage site on BLM-administered land alongside the lower Gila River, in the Dendora Valley, Maricopa County, Arizona. Although listed on the National Register of Historic Places since 1977, the Painted Rocks—the first recorded rock art site in Arizona, a landmark along several nationally significant historic trails, and a former state park—had never been fully documented and a conservation management plan has not yet been developed. In light of ongoing urban development and population increases in southern Arizona, as well as forecasted growth in cultural heritage tourism at Painted Rocks, this project aimed to provide a full inventory of the site's cultural heritage assets, establish a baseline record of their condition to assist in monitoring and planning, and offer recommendations to improve management practices.

The Painted Rock Petroglyph Site includes an array of cultural heritage assets, including petroglyphs, grinding features, a ground stone quarry with associated production areas, a historic wagon road, and various artifact classes. The site's renown, however, derives from its rock art, the very asset for which it is listed on the National Register. Therefore, this report focuses on the petroglyphs at Painted Rocks. A full, site-wide inventory identified a minimum of 3,803 petroglyphs and 1,023 instances of historic inscriptions, graffiti, and vandalism on 644 boulders and rock outcrops. A consideration of the imagery, associated ceramic artifacts, settlement patterns, and historical records suggests the petroglyphs are attributable to the Patayan and Hohokam archaeological traditions and the historic O'odham, Piipaash (also Pee-Posh), and Yavapai.

All 644 boulders were evaluated with the Rock Art Stability Index (RASI), a composite indicator designed for assessing the stability of rock art features. The RASI results indicate more than half of the petroglyph-bearing boulders are in good or excellent condition, with the remainder ranging from problematic to being in severe danger. From a stability perspective, natural weathering processes related to case hardening and the development of weathering rinds have had the greatest adverse impact on the Painted Rocks. Secondary, human-related impacts, due primarily to unrestricted physical access, are also significant contributors to the instability of many boulders. Anthropogenic impacts include foot-traffic-induced weathering, boulder displacement, and ongoing graffiti and vandalism. The Heritage Asset Sensitivity Gauge (HASG) measures the Painted Rocks' cultural significance as outweighing its value as a tourist attraction, suggesting conservation efforts should be prioritized. The HASG also indicates the site remains highly vulnerable to visitor-related impacts in spite of current management practices and existing infrastructure.

Based on the site condition assessment and evaluation of past and current threats, a series of recommendations to improve upon the stability of Painted Rocks, especially in light of projected increases in visitation, is warranted. Large bushes of creosote have grown up and around a number of boulders, and they have effectively "erased" much of the rock art on those boulders. Removal of these bushes and ongoing monitoring of site vegetation are minor conservation interventions that may be easily integrated into the existing system of site maintenance. Additional conservation measures may be taken to curb vandalism and unintended impacts from visitor foot traffic to the site. The most substantive action would be to install a slightly elevated boardwalk with railing around the site. This boardwalk would keep visitor impacts to the ground surface and nearby petroglyphs to a minimum, serve as a physical guide to how visitors should interact with the site, enhance visitor viewing of the petroglyphs, and provide a foundation for interpretive signage. In lieu of a boardwalk, it is recommended that the current trail be moved farther from the petroglyphs, be lined with soft material instead of gravel, and be cordoned with a post-and-rope fence. Moreover, a remote monitoring system and associated signage are recommended as deterrents to vandalism and means to better enforce cultural resource laws.

ACKNOWLEDGMENTS

This study was sponsored by the Conservation Lands Foundation and supported by charitable contributions from private donors committed to the long-term preservation of the fragile cultural landscape along the lower Gila River in southwestern Arizona. As with most efforts, this inventory and condition assessment of the Painted Rock Petroglyph Site is the product of many individuals who contributed to the larger goal. I thank Niccole Cerveny for taking the time and effort to train me and a remarkable team of dedicated volunteers in the application of the Rock Art Stability Index (RASI). The RASI team, which consisted of Kirk Astroth, Jaye Smith, Fran Maiuri, Carl Evertsbusch, and Lance Trask, is commended for their commitment to seeing this project through to completion. Mr. Trask also served as the project's photographer, and supplemental field support was kindly provided by Bruce Hilpert and Elissa McDavid. Eric Feldman shared results of archival research, and Mr. Feldman and Doug Gann provided raster data used in several figures in this report. Mike Brack assisted with managing and processing the geospatial data.

In addition to fieldwork, a number of individuals graciously shared information and photographs that bear on this project. Indeed, this project builds upon a prior inventory by Roger and Gerry Hasse, an impressive team of avocational rock art recorders who established and currently administer the online relational database *Digital Rock Art*. The utility of the Hasses' prior work at Painted Rocks to this current effort cannot be understated, and I am especially grateful for their collaboration. Additional photos were provided by Wes Holden, Todd Bostwick, and Rick Martynec, and productive conversations about Painted Rocks were held with Doug Hocking, Gerry Ahnert, Doug Newton, Bob Dundas, and Bob Edburg.

This project also benefited from the cooperation of several institutions. I appreciate the encouragement of the staff with the Bureau of Land Management's Lower Sonoran Field Office in Phoenix, specifically Archaeologist Cheryl Blanchard and Field Manager Ed Kender. Mrs. Blanchard shared her wealth of knowledge of the site and kindly provided access to the records on-file with the field office. I thank Kim Beckwith, Registrar with the National Park Service's Western Archeological Conservation Center, for arranging and coordinating access to the artifacts Al Schroeder collected from the Painted Rocks in 1952. Likewise, Mary Graham, Head of Library and Archives at the Arizona State Museum, kindly facilitated access to the Gila Pueblo records on the Painted Rocks.

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INTRODUCTION

Rock art is renowned the world over for the multitude of values afforded it by local communities, cultural resource professionals, scholars, and the generally interested public. Indeed, rock art is actively studied and managed on six of the earth's seven continents (Bahn et al. 2016)—the exception being Antarctica, where evidence of an indigenous population at any point in the past has yet to surface (Zarankin and Salerno 2014:115). As of 2011, the United Nations Organization for Education, Science and Culture (UNESCO) had added 37 places, representing each of the six continents, to the World Heritage List based on the outstanding universal value of rock art, with another 42 rock art localities on the tentative list for inclusion (Sanz 2012). Understandably, rock art's ubiquity and appeal to diverse bodies of stakeholders in nearly every corner of the globe has given rise to organized international interest groups focused specifically on its study, interpretation, and conservation, notably the International Scientific Committee on Rock Art (a focus group of the International Council on Monuments and Sites) and the International Federation of Rock Art Organizations, as well as multiple social networks serving the global rock art community (e.g., Haubt 2015a, 2015b; Hoerman 2017).

Coincident with this expanding interest has been a growing awareness of rock art's vulnerability to a sundry array of decay processes and destructive agents (Agnew et al. 2015; Berltilsson 2008), many of which are unique to rock art due to its physical structure, visual allure, and highly exposed nature relative to most other types of cultural heritage properties. In fact, threats to rock art sites are rapidly expanding and changing in unexpected ways in concert with global population increases and concomitant development pressures (e.g., Brink 2014), a burgeoning cultural heritage tourism market (Deacon 2006), especially in rural and developing regions (e.g., Di Lernia 2005; Duval and Smith 2013, 2014; Kinahan 2003; Little and Borona 2014; NMCON 2003; Norder and Zawadzka 2016; Rossi and Webb 2007), the rise of air pollution and acid rain (Åberg et al. 1999; Black et al. 2017; Laver and Wainwright 1995; Varotsos et al. 2009), and climate change (e.g., Carmichael 2016; Giesen, Mazel, et al. 2014; Giesen, Ung, et al. 2014).

In light of these compounding stressors and the unfortunate scenarios to which they all too often lead, the conservation and management of rock art sites has emerged as a critical field of research and specialization within the larger domain of cultural resource management (Anati et al. 1984). The past several decades has witnessed the preparation of numerous synthetic works from across the globe covering approaches, methods, techniques, politics, and ethics concerning the diverse ways local communities approach the conservation, preservation, and management of rock art (e.g., Crotty 1989; Darvill and Fernandes 2014; Dean 1999; Kim 2014; Lee 1991; Malla 1999; Pearson 1978; Pearson and Swartz 1991; Sánchez et al. 2008; Thorn and Brunet 1995; Ward and Ward 1995). Nevertheless, since this emerging discipline continues to evolve in tandem with the realization of the myriad challenges it faces, and because the number of places in need of conservation action and greater management attention typically far exceeds locally available resources and capabilities, efforts are, more often than not, "reactionary" (Agnew et al. 2015:17; Marshall and Taçon 2014:214; Watchman 2005:14; Whitley 2006:18) rather than proactive.

From a conventional perspective, proactive custodianship and management of rock art necessitates a baseline knowledge of the amount, type, and diversity of rock art at a site, awareness of its cultural and natural contexts, communication with all stakeholders and consideration of the values they ascribe to the rock art, thorough assessment of the rock art's physical condition, and identification of past, current, and foreseeable threats to its integrity (Loubser 2001; Magar 2012). Whereas formal management planning for rock art involves different stages of design and implementation, the process should be iterative rather than linear (Figure 1). The ongoing review of current management efforts may accommodate new information and differing perspectives, thus providing the requisite flexibility and adaptability for unexpected and unknown situations. Nevertheless, because rock art is so fragile and imperiled—with today's known corpus representing a mere fraction of what was actually created in the past (Clottes 2006)—detailed assessment of its condition and identification of the agents of stone decay and other threats are essential early steps in management planning (Deacon and Agnew 2012:252; Loubser 2014:127; Magar 2012:540; Sundstrom and Hays-Gilpin 2011; Whitley 2011:183). Holistic condition assessments, which take into consideration the role of human *and* non-human agents in weathering and decay processes, diagnose the physical condition of rock art and pinpoint threats based on observation of existing and pending impacts. From an operational perspective, such evaluations serve to equip cultural resource managers with information that may aid in prioritizing management and conservation efforts, as warranted. Rock art condition assessments also yield baseline records to which future evaluations may be compared in order to monitor decay processes through time and across weathering agents.

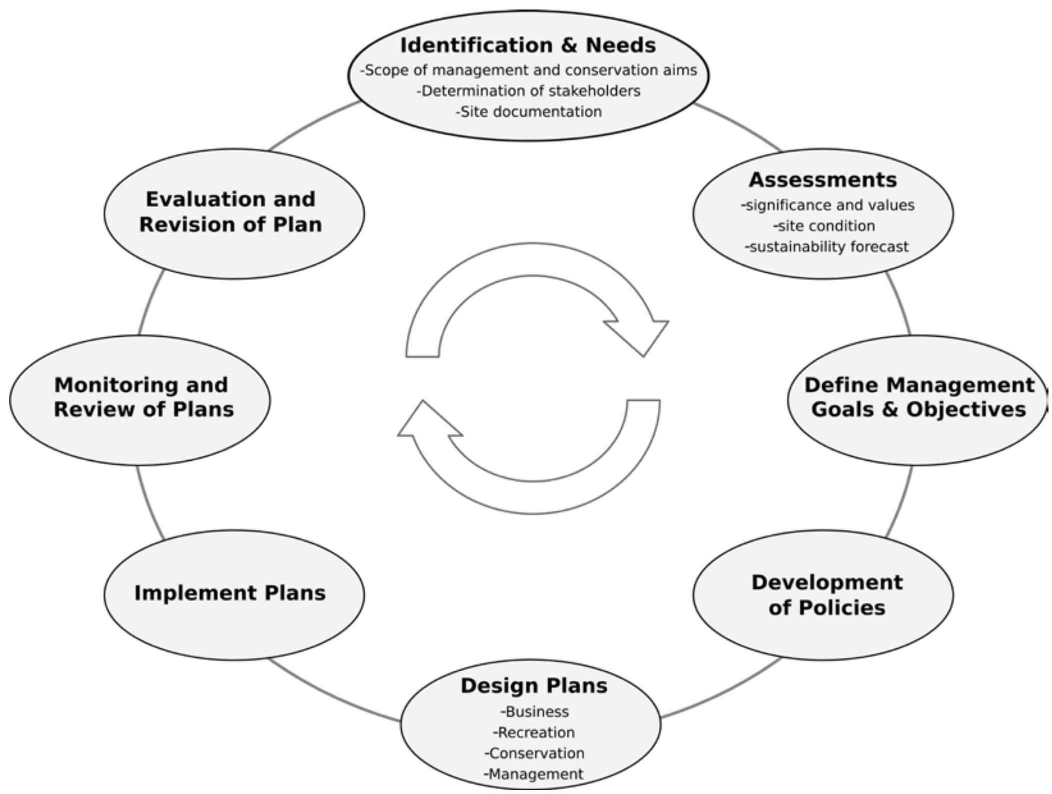

Figure 1. *The site management cycle. (Adapted from Magar 2012:Figure 30.1.)*

The remainder of this report presents a holistic rock art condition assessment of the Painted Rock Petroglyph Site, an actively promoted and frequently visited cultural heritage place in southwestern Arizona. Specifically, this study employs the Rock Art Stability Index (RASI) to analyze the stability of hundreds of petroglyph-bearing boulders in light of the geomorphological factors and anthropogenic forces conditioning the stone decay process and impacting the site's integrity more generally. The RASI analysis is augmented with an evaluation of graffiti and comparison of surface artifact sizes between 1952 and 2017, both of which inform on human impacts to the site that do not directly impact the rock art. From that baseline assessment, the sustainability of the site under current management practices and forecasted conservation demands is evaluated.

THE PETROGLYPHS AT PAINTED ROCKS

The Painted Rock Petroglyph Site is located in the Dendora Valley of southwestern Arizona, a rural setting approximately halfway between the urban centers of Phoenix and Yuma (Figure 2). Situated at just 180 meters above sea level and enveloped by the Sonoran Desertscrub biome (Turner and Brown 1982), the climate at Painted Rocks might be considered sultry and xeric, with average rainfall under 18 centimeters annually and mean July temperature hovering around 43°C. Three kilometers north of the site, the dry channel of the Gila River—once a perennial river, dammed for nearly a century, now extensively pumped by industrial-scale agribusinesses—snakes westward toward its confluence with the Colorado River. The petroglyphs are localized to a small boulder inselberg formed by the spheroidal weathering of a granodiorite pluton (Nicholson 2004). With an area of nearly 6,100 square meters, this small but conspicuous inselberg appears as two small spires of dark, heavily varnished boulders jutting approximately nine meters upward from the surrounding desert floor. Over eons, corestones have eroded from the exposed granodiorite basement; these corestones now stand as the subrounded, darkly varnished boulders on which the petroglyphs are emblazoned. Boulders near the top of the inselberg rest upon the bedrock mass, whereas those around the periphery float upon a thin lens of salt-and-pepper colored grus.

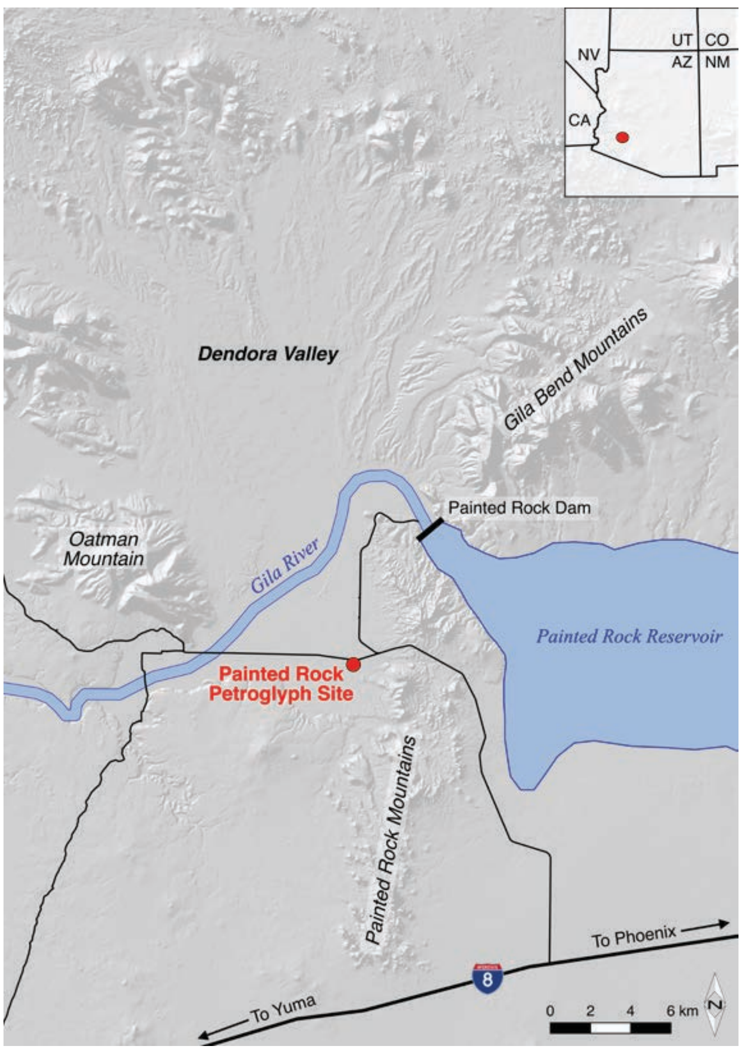

Figure 2. *Location of the Painted Rock Petroglyph Site.*

HISTORY OF MANAGEMENT

The Painted Rock Petroglyph Site (Figure 3) is on land administered by the U.S. Bureau of Land Management (BLM). In the 1930s, there was an unsuccessful grassroots effort to set aside Painted Rocks as a national monument in order to preserve this distinctive landmark (Miller 1938). In 1962, the Maricopa County Parks and Recreation Commission proposed to buy 10 acres around the Painted Rocks from the federal government, intending to transfer title to the State Parks Commission when funding was available (*The Arizona Republic* 1962). Later that year, the BLM erected a steel chain-link fence and turnstile around the site's eastern spire, where the majority of the site's petroglyphs are located (Figure 4). From the turnstile, a trail guided visitors along the southern base and then up and around the top of the spire. The portion of trail that passed up through the boulders was paved with asphalt, and some boulders were moved to the side to accommodate the trail.

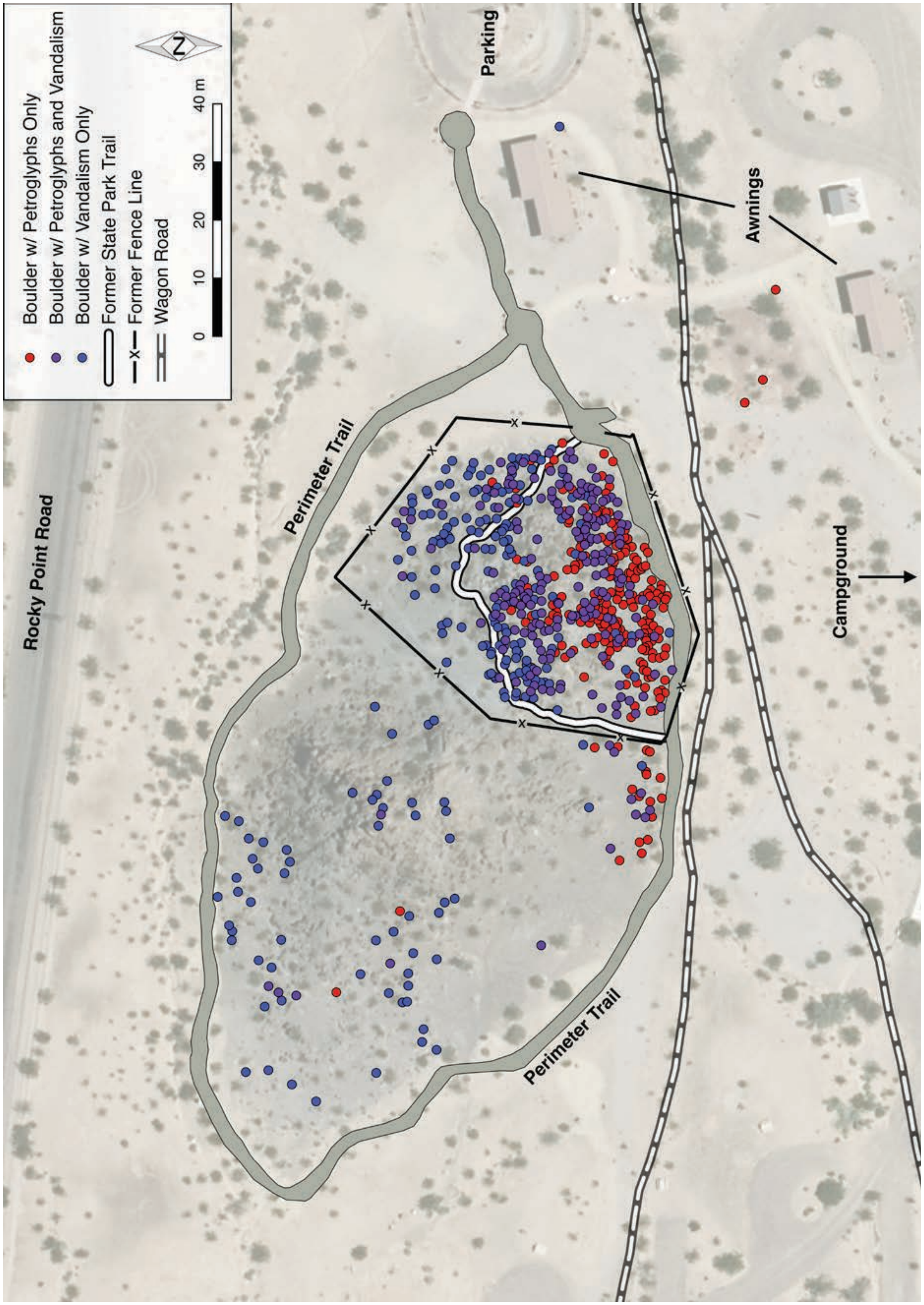

Figure 3. *Overview of the Painted Rock Petroglyph Site.*

In early 1964, with adequate funding from the state's coffers, the Arizona State Parks Board applied to purchase 20 acres around the Painted Rocks (The Stone Age Library 1964). Rather than sell the parcel outright, the BLM patented the requested 20 acres to the Arizona State Parks in March, 1965 (*The Arizona Daily Star* 1965). The State Parks Board established Painted Rocks State Park and installed a number of facilities, including access roads, parking, ramadas, picnic tables, restrooms, and primitive campsites. Nevertheless, even with fencing, active management, and fee-based access, vandalism at Painted Rocks persisted, and quite possibly worsened (Heltsley 1971). In 1972, the State Parks Board received another patent from the BLM for an additional 110.4 acres around the Painted Rocks State Park to accommodate camping and additional amenities for the burgeoning level of visitation (*Tucson Daily Citizen* 1972a, 1972b), undoubtedly tied to the postwar boom in recreational vehicle (RV) sales and emerging RV culture (Harmon 2001). With growing national acclaim, the Painted Rock Petroglyph Site was eventually added to the National Register of Historic Places in 1977. In 1980, the State Parks Board acquired a lease from the Army Corps of Engineers for the Borrow Pit Lake adjacent to the Painted Rock Dam, located 10 kilometers to the northeast (Figure 2). This became the Lake Unit of the Painted Rocks State Park, with the 130.4 acres around the petroglyphs managed as the Historic Unit (Eatherly 2006).

Figure 4. *Former fence and turnstile entrance to the Painted Rock State Park. (Photo from The Stone Age Library 1964.)*

By 1982, visitation to the Painted Rocks was estimated at between 8,000 and 10,000 people per year (*The Arizona Republic* 1982), yet in 1989 the nearby Lake Unit was closed due to pesticide contamination (Van Der Werf 1989). As a result, the state began retracting their interests in the Painted Rocks State Park, first by relinquishing their patent to the Historic Unit in September 1990, followed by their lease of the Lake Unit in January 1991 (Eatherly 2006). Title and management of the Painted Rocks were re-conveyed to the BLM in April 1991, and the agency immediately prepared a Recreation Project Plan to rehabilitate what had become a dilapidated, abandoned park (BLM 1991). Recognized as having urgent priority in management, the Painted Rock Petroglyph Site was added to the Arizona Site Steward Program in 1996 at the request of the BLM. This program is staffed by volunteers, all of whom are sponsored by public land managers and have been selected, trained, and certified by Arizona State Parks, the State Historic Preservation Office, and the Governor's Archaeology Advisory Commission. Site stewards are responsible for monitoring select cultural heritage sites and reporting damage to the respective land manager.

Under renewed management, visitation to Painted Rocks quickly soared to an estimate of 15,000 people annually, representing all 50 states and at least 25 countries (BLM 1998). Between 1995 and 2005, the BLM invested more than one-half million dollars to stabilize and upgrade facilities, redesign the trails, and interpret the site (BLM 2005). This included the removal of the chain-link fence and the implementation of a camp-host program during peak visitation season (October through April). The site was officially dedicated by a public ceremony at end of its renovation (BLM Dedicates Panels at Painted Rocks Site 2005). Coincident with Painted Rocks' revitalization have been revived efforts to incorporate it within a new national monument. The first grassroots effort sought designation of a 2,846.4-square-kilometer (703,363-acre) Painted Rocks National Monument (Tonopah Coalition 2000). More recently, a coalition of stakeholders has lobbied an ongoing campaign to establish a 341.1-square-kilometer (84,296-acre) Great Bend of the Gila National Monument that would be geographically centered on and include the Painted Rock Petroglyph Site (Knuffke 2017; Wright and Hopkins 2016; Wright et al. 2015). Despite mounting attention, the petroglyphs at Painted Rocks have not been formally documented to contemporary national standards until quite recently (see below), and any semblance of a conservation management plan has yet to be developed.

HISTORY OF RESEARCH

The Painted Rocks were first described by a Jesuit explorer and missionary in 1748 (Sedelmair 1856:19), making them the first noted case of rock art in Arizona. Although today the site consists entirely of petroglyphs, its "painted" moniker derives from eighteenth- and nineteenth-century accounts that some of the petroglyphs had, in fact, been painted over (Browne 1864:702; Disturnell 1881:110; Harris 1960:83[1849]; Sedelmair 1856:19). Due to their open-air nature, any macroscopic evidence of paint or pigment upon the Painted Rocks has since weathered away.

The Painted Rock Petroglyph Site is located alongside an ancient trail that connected large indigenous population centers in the Phoenix and Gila Bend Basins with one centered on the Gila–Colorado confluence at present-day Yuma (Wright et al. 2015). As the principal travel corridor through challenging terrain, this ancient trail would come to play a key role in the colonization of California and the westward expansion of the United States. Once known as the Gila Trail and memorialized today as the Juan Bautista de Anza National Historic Trail, this well-trod footpath eventually gave way to a formal, maintained wagon road. Built in 1846–1847 by the Mormon Battalion of the Army of the West, Cooke's Wagon Road guided tens of thousands of California-bound gold-seekers and migrants (Brigandi 2009:7) and later served as the southern route of the Butterfield Overland Mail and Stage Line (Ahnert 2011). It remained the principal travel corridor between southern California and southern Arizona until the arrival of the Southern Pacific Railroad in 1877.

The ruts of Cooke's Wagon Road lie a mere 10 meters south of the Painted Rocks petroglyphs (Figure 3). Being so accessible to such a long-used thoroughfare, the Painted Rocks have piqued the curiosity of countless passersby since the eighteenth century (Figure 5). Though the site was between official stops, Hinton (1878:175–176) remarked that it was customary for the stage lines to pause here to allow travelers to explore the boulders. From this curiosity sprung nearly instantaneous commodification of the petroglyphs (Dickinson 2012; Dowson 1999), starting with illustrations in government reports (Emory 1848:89–91) and popular travel memoirs (Bartlett 1854; Browne 1864), followed by stereographs (Conklin 1878:73–76; see also Rowe 2014), tours (Clifford 1870:542–543), and tourism promotion at local (Disternell 1881:110; Hodge 1877:178–179), national (Prehistoric Relics in Arizona 1876), and international (Pinart 1877:240) scales.

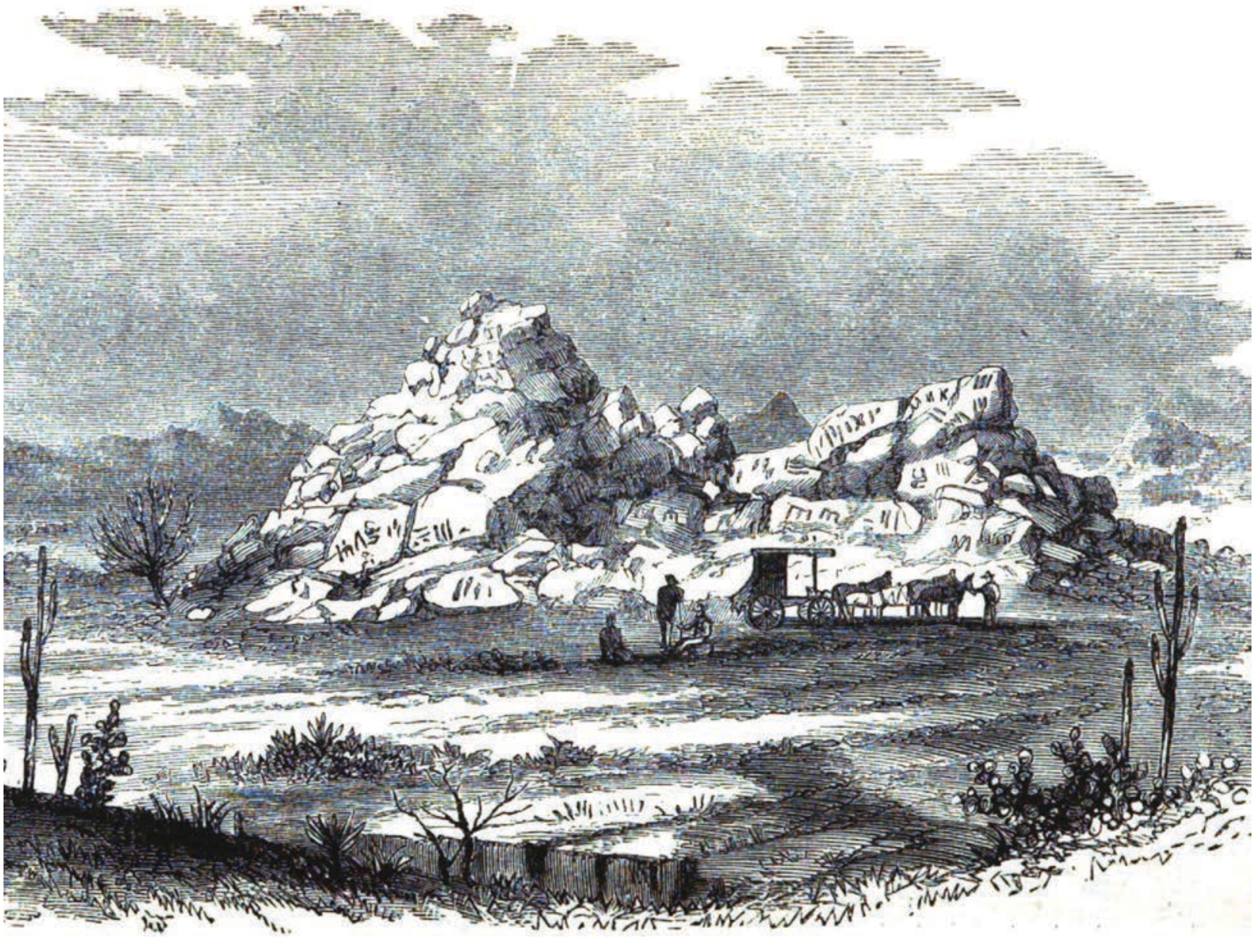

Figure 5. *J. Ross Browne's illustration of his idyllic stop at Painted Rocks during a stage tour in 1863. (From Browne 1864.) The view is from the current campground facing north. The tree at the left edge of the rocks still stands.*

Provided the breadth of popular appeal, it is somewhat surprising that the Painted Rocks avoided direct professional archaeological attention until 1929, the year Frank Midvale first recorded the site as E:1:16 for the Gila Pueblo (GP) (detail sheet and photographs for E:1:16, 3 February 1929, Gila Pueblo Archaeological Foundation Records, 1928–1950, Arizona State Museum, University of Arizona, Tucson). Based on the associated ceramics, E:16:1(GP) was classified as a Yuman site (Gladwin and Gladwin 1930:145), with Yuman more aptly known today as the Patayan cultural tradition (Colton 1938, 1939, 1945; Hargrave 1938). The Painted Rock Petroglyph Site was recorded once more as S:16:1 by the National Park Service under contract with the Bureau of Reclamation Unit in Boulder City (BC), Nevada (Schroeder 1952). Though given little descriptive attention in the report, 90 percent of the surface ceramics at S:16:1(BC) were identified as Lower Colorado Buffware (Schroeder 1952:Table 1), a corpus of distinctive pottery types identified with the Patayan tradition (Schroeder 1958; Waters 1982a, 1982b). Of these, more than 60 percent were specimens of Palomas Buffware, a type manufactured along the lower Gila River (Schroeder 1958:Ware 16, Types 22 and 23; see also Beck and Neff 2007) between AD 1000 and the mid-1800s (Waters 1982b:568).

The Painted Rock Petroglyph Site was formally recorded a third time in 1959 as part of the Arizona State Museum and National Park Service's Inter-Agency Archeological Salvage Program in advance of construction for the Painted Rock Dam and Reservoir (Wasley and Johnson 1965). Unlike previous investigations, however, the investigators were unable to definitively attribute the rock art to any particular time periods or cultural groups, due to what they considered a lack of villages in the immediate area (see also Martynec 1989:18) and the undiagnostic quality of the "few plainware sherds" around the boulders (Wasley and Johnson 1965:74). None-theless, they suggested that the rock art in the general vicinity of the Painted Rocks was probably of Hohokam origin because, as they asserted, Hohokam communities constituted the major precolonial occupation of this area, many of the rock art designs appear on Hohokam pottery, and that petroglyphs are often found in close proximity to Hohokam sites (Wasley and Johnson 1965:73). Later, with Painted Rocks effectively deemed a type site for the Gila Petroglyph Style (Schaafsma 1980:96–99), its attribution to the Hohokam tradition was essentially enshrined (Hedges 2000; Martynec 1989; Preston and Preston 1987:194; Serface 1995).

CULTURAL AND TEMPORAL ASSOCIATIONS

To their credit, Wasley and Johnson (1965:iii) acknowledged their research bias in favor of interpreting the archaeological landscape around Painted Rocks in terms of Hohokam culture history. Several of their claims, however, are not supported by evidence that had, in fact, been published and was therefore available to them at the time of their study (Gladwin and Gladwin 1930; Schroeder 1952). For one, as noted above, prior surface collections around the Painted Rocks boulders had clearly established a strong Patayan component to the site. Further, the observation that there was a lack of archaeological villages in the immediate area is untenable. Schroeder (1952) identified a concentrated area of Patayan habitation at the northern tip of the Painted Rock Mountains, just six kilometers north of the Painted Rocks—a mere hour's walk away. Later, Vivian (1965) documented a nearly continuous zone of habitation along the lower Gila's northern floodplain in the Dendora Valley, all within six kilometers of Painted Rocks. To him, the sites represented a mixture of Hohokam, Yuman (Patayan), and Yavapai material culture (Vivian 1965:Table 1).

In addition to these documented sites, there is strong evidence for archaeological and historic habitation of the floodplain between Painted Rocks and the Gila River channel, an area stretching one- to four kilometers north and west of the petroglyphs. This portion of the Dendora Valley has been under intensive cultivation since before the archaeological surveys, so any actual sites have long been plowed under. In 1849, however, after remarking on the Painted Rocks, a passerby traveling westward along Cooke's Wagon Road noted that "Throughout this plain [the stretch between Painted Rocks and the Gila River] ancient pieces of pottery lay strewn" (Hunter 1992:174[1849]). Indeed, this was the location of a Piipaash (also Pee-Posh) village well into the mid-eighteenth century, and possibly later. In the course of different trips in 1699 and 1700, famed Jesuit missionary and explorer Eusebio Kino visited this community of Yuman speakers (whom he referred to as Co-comaricopas), calling it San Mateo de Batki (Bolton 1919:246; Burrus 1971:239; Karns 1954:120). Forty-four years later, Jacob Sedelmayr—the first European chronicler of Painted Rocks—visited two Piipaash villages in this same general location, naming them Aquimuridcurch and Aycatc (Ortega and Balthasar 1754:353–354).

A study from the South Mountains, approximately 130 kilometers upriver of Painted Rocks, demonstrated that rock art sites may be reliably associated with villages at least three kilometers away based on the pottery found amid the petroglyph boulders (Wright 2014). If that is an apt comparison for the Painted Rocks scenario, then associating some, if not most, of the petroglyphs here with the residents of the nearby villages is straightfor-ward. In all likelihood, people originating from other, more distant villages who were passing through the area along the nearby trail also contributed to the petroglyph assemblage. This may very well include O'odham, who followed this route on pilgrimages to the salt flats near the Gulf of California, as well as Cocopah, Quechan, and Mohave on periodic trading and raiding excursions from the Colorado River (Wright and Hopkins 2016). In fact, Sedelmayr's O'odham and Piipaash guides implicated themselves and "crucíferos," generally believed to be a Spanish reference to Yavapai (Bratz 2003:250n.14), as creators of some of the petroglyphs (Sedelmair 1856:19).

The multicultural social landscape in which the Painted Rocks are centrally located implies the petroglyphs cannot be attributed to a single cultural group or tradition, as previous interpretations have forwarded. Rather, they represent the work of many hands, from different cultural traditions, and over many years, with horse-and-rider imagery indicating production into the 1700s, at the least. The site is recognized as having some petroglyph imagery more strongly associated with Patayan rock art sites further west, specifically designs referred to as "heraldic birds" and "broken diamonds" (Hedges and Hamann 1994:9; Wallace 1989:42). Additional similarities to Patayan iconography include depictions of "handprints" (Hedges and Hamann 1994:11, 1995:92) and the frequent portrayal of anthropomorphic figures with digitate hands and feet (Doolittle 2000:105; Hedges 1973:11, 2002:31, 2005:100; Hedges and Hamann 1993:138, 1995:92; Weaver et al. 2012:149). Combining the iconographic evidence with the ceramic and settlement pattern data, the Painted Rocks petroglyphs might best be attributed to Hohokam and Patayan traditions, as well as later O'odham, Piipaash, and Yavapai.

PETROGLYPH INVENTORIES

Despite formal recording efforts in 1929, 1952, and 1959, a detailed treatment of the petroglyphs and other archaeological features at Painted Rocks has never been published. Nonetheless, three inventories of varying degrees of completeness have been accomplished. Martynec (1989) provided the first inventory of 758 petroglyphs, reporting, in order of relative abundance, circular designs (22 percent), anthropomorphic figures (21.6 percent), reptiles (14.7 percent), and quadrupeds (7.5 percent), with lower, unreported frequencies of depictions of insects, horses, shells, and uncategorizeable designs. Unfortunately, a full inventory of element types and corresponding tallies was not provided. Moreover, Martynec's inventory represents just a fraction of the petroglyphs at Painted Rocks, and without information on the sampling strategy, it is unclear how well his inventory represents the larger site area.

A subsequent and much more thorough recording of the Painted Rocks petroglyphs was carried out between 2006 and 2009 (Hasse and Hasse 2009). This effort attempted to account for all the petroglyphs at the site, as well as the abundance of postcolonial, nonindigenous additions (i.e., names, dates, graffiti, and vandalism). In all, the Hasses documented 3,172 petroglyphs, 69 historic inscriptions (pre-1950 additions), and 561 instances of vandalism (post-1950 additions) across 578 boulders. They classified most of the precolonial petroglyphs into five element classes: geometric (34.5 percent), indeterminate (26 percent), zoomorphic (21.9 percent), abstract (9.1 percent), and anthropomorphic (7.9 percent). Arguably the most useful product of the Hasses' effort is a photographic record of all the boulders they documented. This provides a baseline visual dataset to which the boulders may now be compared as a way to monitor change through time (Webb et al. 2010).

The most recent recording of the Painted Rocks petroglyphs came about through the current study, and, unsurprisingly, previously undocumented petroglyphs and boulders were encountered (Appendix A). Although a detailed inventory and analysis remains forthcoming, preliminary data are available: 3,803 petroglyphs concentrated on 428 boulders (Figure 6). Along with the petroglyphs, 1,023 examples of historic inscriptions, graffiti, and vandalism were documented on 423 boulders (Figure 7). In addition, a large, previously unrecognized ground stone quarry along the northwest face of the Painted Rocks was identified, and analysis of more than 100 surface ceramics reinforces the strong Patayan component previously demonstrated in the studies cited above. This comprehensive site inventory is the foundation upon which a holistic condition assessment of its rock art may be carried out, as detailed below.

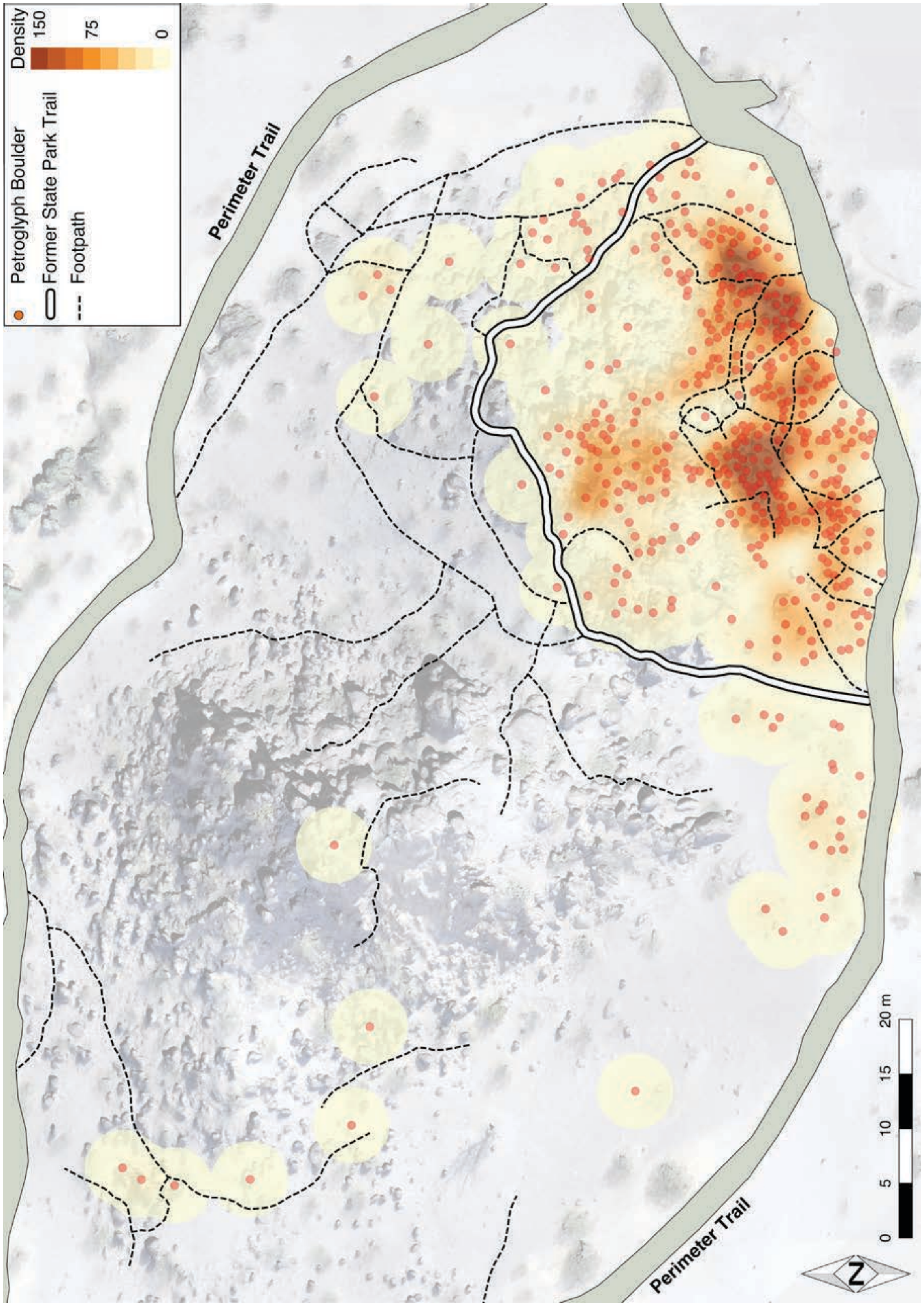

Figure 6. *Heat map of petroglyph density across the Painted Rocks. "Heat" has been calculated using a kernel-density estimating algorithm set at 3.5 m around each petroglyph-adorned boulder, and weighted by the number of petroglyphs on each boulder.*

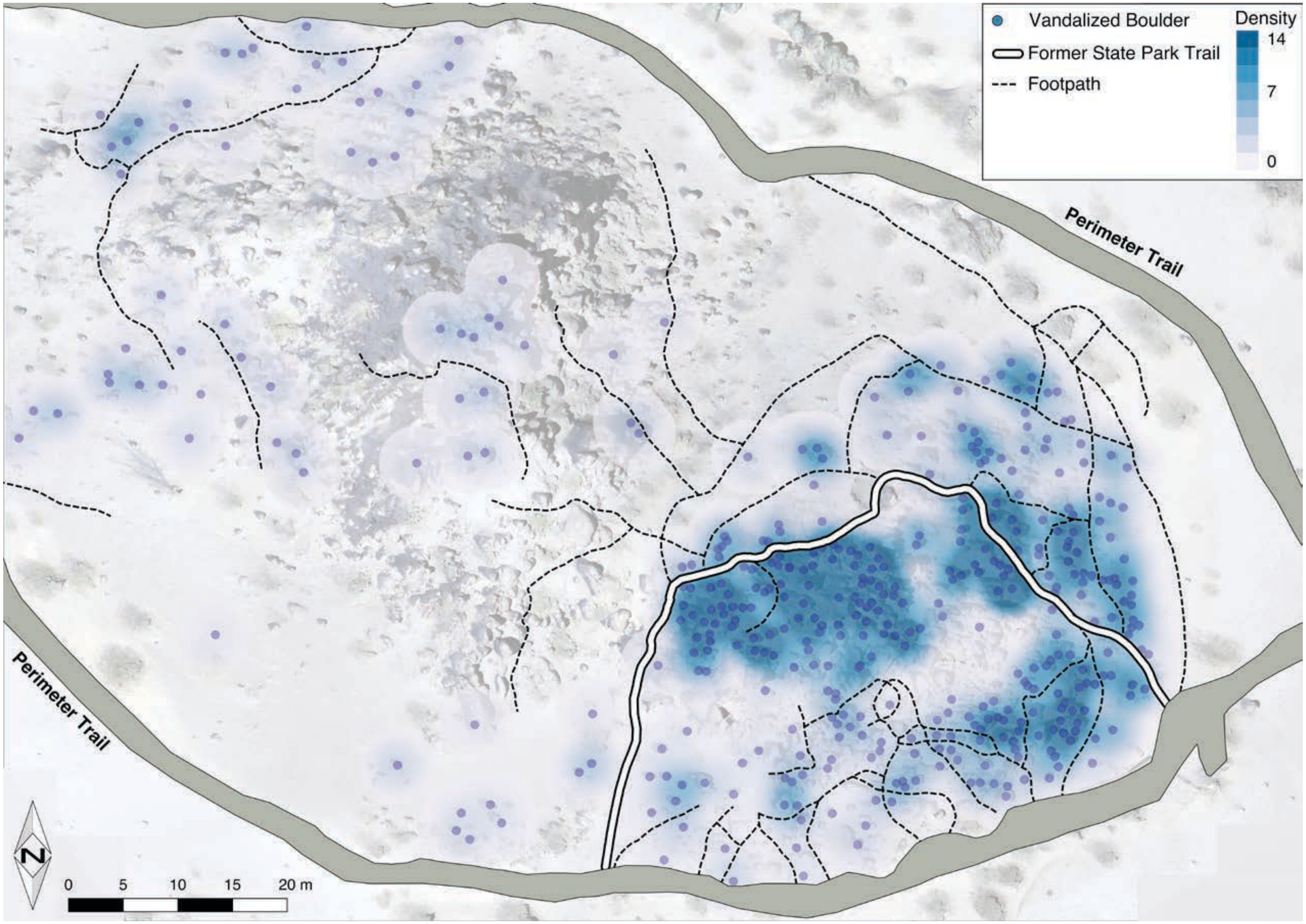

Figure 7. *Heat map of penetrative vandalism density across the Painted Rocks. "Heat" has been calculated using a kernel-density estimating algorithm set at 3.5 m around each vandalized boulder, and weighted by the number of instances of penetrative vandalism on each boulder.*

ROCK ART CONDITION ASSESSMENT INSTRUMENTS

Rock art condition assessments are often highly specialized endeavors requiring technical training and costly instrumentation (e.g., Bemend et al. 2014; Fitzner et al. 2004). Still, the dire forecast for many rock art manifestations, the breadth of assessment work needed, the limited number of professional rock art conservators, and oftentimes the constrained budgets of site owners and land managers demand the development and implementation of rapid, reliable, systematic, cost-efficient, nontechnical approaches. Several assessment instruments tailored toward these criteria have been presented, and these are reviewed below.

THE MOTIF/AREA METHOD

The Motif/Area (MA) Method (Giesen, Ung, et al. 2014) is adapted from the Unit-Area-Spread Staging System designed for assessing the decay of architectural stone (Warke et al. 2003), which itself is modeled after the internationally recognized Tumor-Node-Metastases Staging System used in the evaluation and treatment planning for cancer patients (Brierley et al. 2016). The MA method ranks observations ("stage estimates," scored from 0 to 3) on the amount of deterioration to the rock art motif and the surrounding stone matrix, or panel. As a means of ensuring reliability, each rock art panel is assessed by independent scorers, and their stage estimates are pooled and averaged. Based on the paired averages of M and A, the panel's condition is then given a "stage value" between 1 (good) and 4 (poor). Albeit expedient, cost-efficient, and designed explicitly for nonexperts and volunteers (Giesen, Ung, et al. 2014:50), the MA Method has several drawbacks, the most significant being its disregard for identifying what factors have contributed to the rock art's condition. For this reason, the MA Method was deemed inappropriate for the current study.

THE ROCK ART STABILITY INDEX

The Rock Art Stability Index (RASI) was formulated to provide cultural resource managers with a fast, efficient, low-cost tool for evaluating the stability of rock art panels (Allen et al. 2017; Cerveny 2005; Dorn et al. 2008). Designed for nonspecialists with a minimal amount of training, RASI offers replicable and systematic holistic rock art condition assessments using a field-based classification scheme (Appendix B). RASI examines and scores 37 indicators of stone decay grouped into five dimensions: site setting (geological factors); weaknesses of the rock art panel (impending loss); evidence of large erosion events on and below the panel (large losses); evidence of small erosion events on the panel (incremental loss); and rock coatings on the panel. Each indicator is ranked on a scale of 0 (not present), 1 (present), 2 (obvious), or 3 (dominant). A sixth dimension highlighting vandalism and other issues allows scorers to describe observations not accounted for in other areas of the index, or to elaborate on stone decay agents they perceive as major concerns.

With 37 indicators across six dimensions, RASI yields a unique stability profile for each rock art panel scored. As a composite indicator (JRCEC 2008), this index also permits the aggregation of the 37 indicator scores into a final stability "grade" for each rock art panel (Table 1). By grading stability in this relative way, managers may make informed decisions on the prioritization of conservation efforts across differentially graded rock art features. Accordingly, RASI has potential for wide appeal and has been employed in a number of previous case studies (e.g., Allen and Groom 2013; Allen et al. 2011; Groom 2017). The index is interoperable with condition-monitoring approaches such as repeat photography (e.g., Groom 2017), and it can accommodate more technical analyses that provide greater insight on particular stone decay agents (e.g., Cerveny et al. 2016). RASI data may also be integrated into a Geographic Information System (GIS) to visualize the stability of rock art across the landscape and analyze the spatial relationships among stability, stone decay agents, and other factors.

Table 1. *Rock Art Stability Index (RASI) Scale*

Final RASI Score	Grade	Corresponding Color Code
< 20	Excellent Condition	Blue
20–29	Good Status	Green
30–39	Problem(s)	Brown
40–49	Urgent Danger	Yellow
50–59	Great Danger	Orange
60+	Severe Danger	Red

THE URGENCY INTERVENTION SCALE

The Urgency Intervention Scale (UIS) was developed specifically for the Paleolithic petroglyphs in the Côa Valley of northeastern Portugal (Batarda Fernandes 2014), one of the premier rock art sites on UNESCO's World Heritage List. Many of the stone decay factors and other risks specific to the Côa Valley petroglyphs had been previously identified in a commissioned conservation report (Rodrigues 1999), which proved instrumental in the UIS's formulation (Batarda Fernandes 2014:76). The UIS was fashioned in response to RASI's presumed bias toward arid environments (Batarda Fernandes 2014:48), even though the latter has been successfully employed in wet tropical environments (Allen and Groom 2013).

The UIS draws explicitly from RASI theory, methodology, and structure (Batarda Fernandes 2014:117), and like RASI, it is a composite indicator that generates a score of overall risk to a rock art panel based on six dimensions: rock mass strength, tilting, physical weathering, slope, biodeterioration, and flooding. Unlike RASI, the UIS differentially weighs these six categories based on their perceived impact, and this has admittedly introduced an immeasurable degree of subjectivity into the instrument (Batarda Fernandes 2014:124). Equally problematic is that UIS's reliability—the extent to which it yields consistent and compatible results across scorers and trials (Carmines and Zeller 1979)—remains to be shown. As of now, only one case study involving one scorer has been completed.

Reliability issues aside, because the UIS was tailored to the unique rock art and specific environment of Portugal's Côa Valley, its applicability in other contexts remains in question. With regard to the Painted Rock Petroglyph Site, the scale's emphasis on flooding and irrelevant topographic factors (titling and slope) renders it inappropriate for this case study. The irony here is that several of the risk indicators and measured criteria in the UIS were reactions to what was considered RASI's "general 'all-catching' fashion" (Batarda Fernandes 2014:48), yet the resulting specificity renders this assessment instrument unsuitable for this project, and probably many others. Consequently, RASI is the most appropriate rock art condition assessment tool for the Painted Rock Petroglyph Site, especially given its purported bias toward arid settings.

A HOLISTIC CONDITION ASSESSMENT OF PAINTED ROCKS

The RASI was employed by the author and five volunteers to document and evaluate the stability of 644 boulders at the Painted Rock Petroglyph Site. This number includes boulders bearing petroglyphs, more recent additions (e.g., vandalism, graffiti, inscriptions, etc.), and a combination of these. Per RASI guidelines (Dorn et al. 2008:42; Cerveny et al. 2016:874) and tenets of learner-centered education (Allen and Lukinbeal 2010), the rock art stability assessment project at Painted Rocks initiated with a four-hour interactive seminar in which RASI's 37 indicators were illustrated and described, followed by a four-hour in-field training where volunteers worked on the same panels under the tutelage of the instructor. Full-day training sessions of small groups in the sequence of seminar, field introduction, and group scoring (as done in this study) has been shown to provide the most replicable and reliable scores across trainees (Cerveny 2005:123–127; Dorn et al. 2008:56–58; see also Allen 2008:92–100).

Fieldwork was carried out over three two-day sessions during January 2017, and by the end, volunteers had inspected every boulder and rock outcrop at Painted Rocks. Each boulder exhibiting a human-generated impression was subject to RASI analysis. While the current conservation emphasis is on the indigenous petroglyphs, names and dates (of Euro-American and Hispanic origin) as well as indecipherable graffiti that have been permanently impressed into rocks were included in the inventory. These permanent postcolonial additions, hereafter referred to as "penetrative vandalism" so as to distinguish them from potentially removable painted graffiti, were included for several reasons, one of which being that those older than 50 years are considered cultural resources under federal and state law. Second, scholars agree that "graffiti," writ large, is a critical dimension of human sociality and expression, blurs the division between art and social action, and is intrinsically part of the dialogue between self and place (e.g., Chenoweth 2017; Lovata and Olton 2015; Rogers 2007). As a result, it potentially has value as a cultural resource (Lipe 2009), although unless tied to an exceptionally important person or event, it would not be protected under contemporary cultural resource management laws until it reaches the arbitrary age of 50. Albeit not the focus of the current study, developing a baseline record of the condition of these soon-to-be historic properties will inform future management endeavors. Further, because most penetrative vandalism lacks dates, a baseline record of all existing cases permits identification of new instances and the monitoring of anthropogenic impacts over time.

The 578 petroglyph- and vandalism-bearing boulders documented by Hasse and Hasse (2009) were relocated, rephotographed, georeferenced, and assessed with RASI coding sheets. One boulder deemed to not bear any petroglyphs was therefore removed from the inventory. Moreover, 67 previously unrecorded boulders bearing petroglyphs or penetrative vandalism were identified and documented. Accordingly, the final inventory includes 644 boulders, with 428 supporting petroglyphs or a composite of petroglyphs and penetrative vandalism, and the remaining 216 boulders bearing only penetrative vandalism (Appendix C). For quality-control purposes, boulders with anomalous or suspicious RASI scores were revisited and reevaluated.

Because RASI tutorials (Cerveny 2006; Dorn 2006) and an illustrated atlas of weathering forms (Cerveny et al. 2007) are available online, the specificities of the index will not be repeated here. Implementation of RASI at Painted Rocks did require several deviations from the guidelines and prior case studies, however, and are therefore worth describing. For one, the typical unit of organization and analysis for RASI is the rock art panel, generally understood as a contiguous rock surface on which rock art occurs and which is oriented in a single direction (Loendorf 2001:61; Sanger and Meighan 1990:207). Most of the boulders at Painted Rocks are rounded rather than angular or blocky, and the petroglyphs often extend continuously across the boulders' convex surfaces. Rather than divide the boulders into arbitrary panels, RASI was carried out at the boulder-level.

Displacement of boulders at Painted Rocks, through both anthropogenic and natural forces, has long been a major conservation concern. Indeed, suspicion of boulder theft—where people could drive up to the site and cart off boulders—is what prompted the erection of a fence and turnstile in 1962 (*The Arizona Republic* 1962; The Stone Age Library 1964:42; Wasley and Johnson 1965:74). Whereas assessing the condition and stability of a boulder that no longer exists is seemingly paradoxical, some boulders at Painted Rocks have been dug up and moved around the site area. It is prudent to consider this factor during a site condition assessment. Likewise, because the Painted Rocks boulders rest upon an elevated bedrock basement, they are highly prone to falling and rolling downslope (Durgin 1977). Earthquakes have damaged and displaced petroglyph boulders in other areas of southern Arizona (Holmlund and Wallace 1994), and seismic activity may very well have caused some of the Painted Rocks boulders to shift or roll.

Although displacement is an obvious impact to a boulder's stability, this phenomenon is not explicitly accounted for in RASI. Rather than alter the index, boulder displacement at Painted Rocks was coded under two existing RASI indicators within the dimension of "evidence of large erosion events on and below the panel." If the boulder had been moved through human agency, it was coded under "anthropogenic activities," and if natural forces were suspected, then it was coded under "other natural causes of break-off." As with the other indicators, the rank scale includes 0 (not an issue), 1 (suspected displacement, but not certain), 2 (obvious displacement, but boulder remains close to its original location), and 3 (severely displaced, where original context is uncertain).

Figure 8. *Boulder No. 338 along the perimeter trail at Painted Rocks. The abundance of petroglyphs on this boulder has destabilized its surface and led to advanced rates of stone decay. (Photo by Lance Trask.)*

A third deviation from prior RASI applications considers the impact of petroglyphs on the stability of the host rock. As several of RASI's weathering indicators attest (e.g., scaling, flaking, disintegration, abrasion), removal of desert varnish, weathering rind, and host rock renders stone more susceptible to erosion and probably exacerbates and hastens decay.

The production of petroglyphs and other engravings has the same effect. From a weathering and stone decay perspective, a boulder covered by deeply pecked petroglyphs is less stable than one bearing a single, faintly scratched design. This is a significant factor at Painted Rocks, where repeated production of petroglyphs on several boulders has removed nearly the entirety of their protective rock coating (Figure 8). RASI does not take this into explicit consideration, though it can be accounted for by "anthropogenic cutting" in the "evidence of small erosion events on the panel" dimension, an indicator intended to capture the impact of penetrative vandalism. As for the situation at Painted Rocks, each boulder was rank scored based on a visual estimate of the combined area of petroglyphs and penetrative vandalism relative to the boulder's surface area: 1 (<25 percent), 2 (25–75 percent), and 3 (>75 percent). Because all boulders considered here exhibit either petroglyphs or penetrative vandalism, a score of "0" was never applicable.

RASI RESULTS AND ANALYSIS

Typically, RASI data are described and analyzed on a panel-by-panel basis (e.g., Allen et al. 2011; Allen and Groom 2013). The large number of cases at Painted Rocks precludes such a detailed treatment here. Following Groom's (2017:57–86) lead, this case study undertakes an aggregate analysis of RASI data from Painted Rocks. The goal is to assess the site, as a whole, in order to identify general trends and informative spatial patterns. Whereas each case has its own issues and undergoes a unique process of stone decay, aggregate analysis facilitates site management by identifying key factors affecting the larger site area. By focusing on these broader factors rather than panel- or boulder-level issues, management efforts have the potential to be more efficient, cost-effective, and impactful.

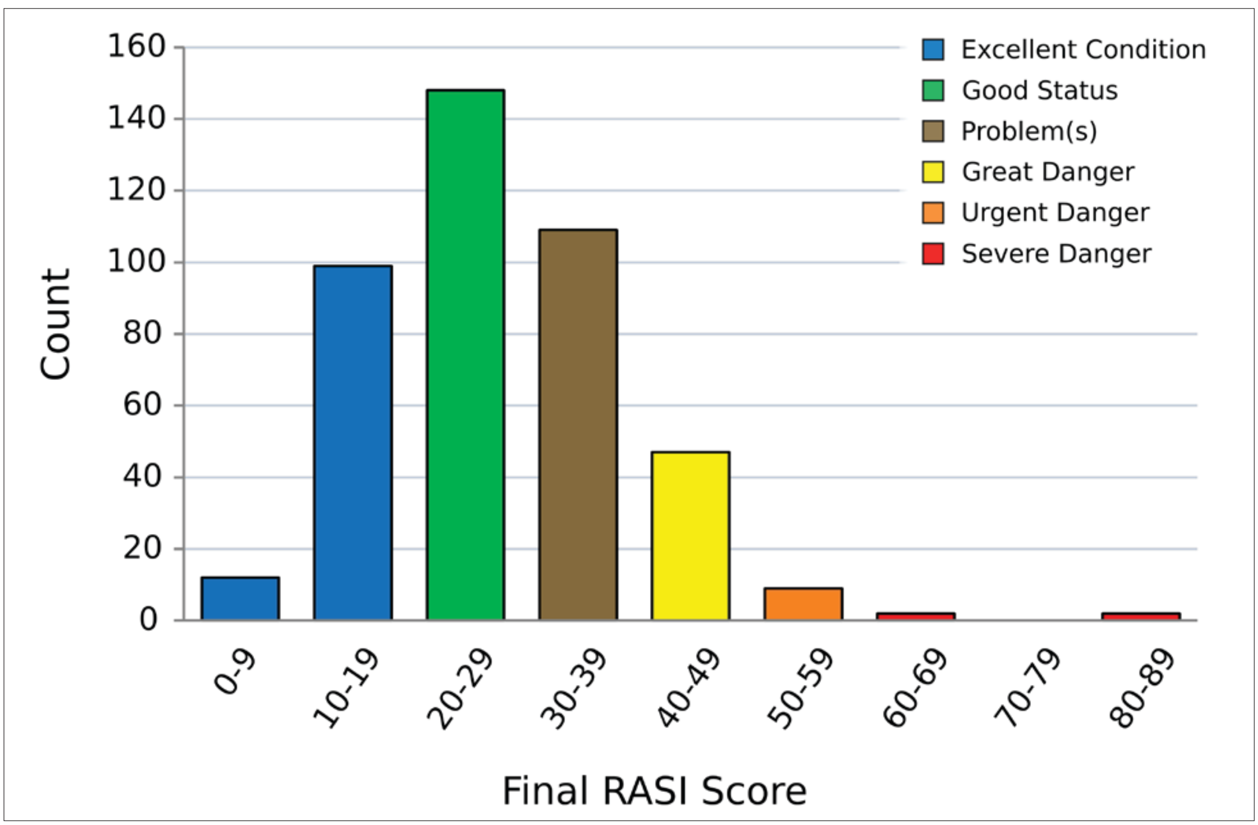

Figure 9. *Histogram of final Rock Art Stability Index scores for 428 boulders at Painted Rocks.*

Table 2. *Summary RASI Data and Descriptive Statistics*

Stone Decay Dimensions and Indicators	Boulders with Petroglyphs (n=428)						Boulders with Petroglyphs or Graffiti (n=644)					
	DESCRIPTIVE STATISTICS				NORMALITY TEST*		DESCRIPTIVE STATISTICS				NORMALITY TEST*	
	No. Scored	Median	μ	σ	*W*	*p*	No. Scored	Median	μ	σ	*W*	*p*
Site Setting (Geological Factors)												
Fissures independent of stone lithification	148	0	0.5	0.8	0.68	0.00	238	0	0.6	0.8	0.68	0.00
Fissures dependent on lithification	2	0	0.0	0.0	-	-	3	0	0.0	0.1	0.04	0.00
Changes in textural anomalies	14	0	0.0	0.3	0.14	0.00	21	0	0.0	0.3	0.18	0.00
Rock weakness	428	-2	-2.0	0.0	-	-	644	-2	-2.0	0.0	-	-
Weaknesses of the Rock Art Boulder												
Fissuresol	275	1	0.9	0.8	0.83	0.00	434	1	1.0	0.8	0.86	0.00
Roots	32	0	0.1	0.4	0.27	0.00	44	0	0.1	0.4	0.30	0.00
Plant growth near or on panel	195	0	0.6	0.8	0.73	0.00	310	0	0.6	0.8	0.74	0.00
Scaling and flaking	412	2	1.6	0.6	0.79	0.00	625	2	1.5	0.6	0.78	0.00
Splintering	136	0	0.4	0.7	0.67	0.00	237	0	0.5	0.7	0.67	0.00
Undercutting	221	1	0.9	1.1	0.78	0.00	348	1	0.9	1.1	0.80	0.00
Weathering-rind development	426	2	1.9	0.6	0.78	0.00	640	2	1.9	0.6	0.81	0.00
Other concerns	123	0	0.4	0.7	0.61	0.00	179	0	0.4	0.7	0.63	0.00
Evidence of Large Erosion Events on and below the Boulder												
Anthropogenic activities	103	0	0.3	0.6	0.48	0.00	148	0	0.3	0.6	0.62	0.00
Fissuresol/calcrete wedging	170	0	0.5	0.7	0.71	0.00	276	0	0.5	0.7	0.70	0.00
Fire	0	-	-	-	-	-	0	-	-	-	-	-
Undercutting	1	0	0.0	0.0	-	-	1	0	0.0	0.0	-	-
Other natural causes of break-off	25	0	0.1	0.4	0.26	0.00	36	0	0.1	0.4	0.27	0.00
Evidence of Small Erosion Events on the Boulder												
Abrasion	236	1	0.6	0.7	0.77	0.00	329	1	0.6	0.6	0.74	0.00
Anthropogenic cutting	428	2	1.8	0.7	0.78	0.00	644	2	1.6	0.7	0.74	0.00
Alveolization	190	0	0.6	0.7	0.72	0.00	312	0	0.6	0.7	0.73	0.00
Crumbly disintegration	74	0	0.2	0.5	0.47	0.00	141	0	0.2	0.5	0.63	0.00
Flaking	389	1	1.2	0.6	0.79	0.00	586	1	1.2	0.6	0.82	0.00
Flaking of the weathering rind	401	1	1.2	0.6	0.73	0.00	600	1	1.2	0.6	0.79	0.00
Granular disintegration	17	0	0.0	0.2	0.19	0.00	26	0	0.0	0.2	0.22	0.00
Lithobiont pitting	96	0	0.3	0.5	0.54	0.00	152	0	0.3	0.5	0.64	0.00
Lithobiont release	37	0	0.1	0.3	0.32	0.00	61	0	0.1	0.3	0.38	0.00
Loss parallel to stone structure	41	0	0.1	0.4	0.33	0.00	53	0	0.1	0.4	0.34	0.00
Rock coating detachment	376	1	1.2	0.7	0.82	0.00	549	1	1.2	0.7	0.85	0.00
Rounding of petroglyph edges	308	1	1.1	0.8	0.85	0.00	372	1	0.8	0.8	0.82	0.00
Scaling	396	1	1.4	0.7	0.82	0.00	590	1	1.4	0.7	0.83	0.00
Textural anomaly features erode differentially	34	0	0.1	0.3	0.30	0.00	48	0	0.1	0.4	0.32	0.00
Splintering	163	0	0.5	0.7	0.69	0.00	255	0	0.5	0.7	0.69	0.00
Other forms of incremental loss	23	0	0.1	0.3	0.23	0.00	32	0	0.1	0.3	0.24	0.00
Rock Coatings on the Boulder												
Anthropogenic (chalk, paint, etc.)	4	0	0.0	0.1	0.07	0.00	8	0	0.0	0.1	0.09	0.00
Rock coating present	426	-2	-2.1	0.7	0.82	0.00	640	-2	-2.0	0.7	0.85	0.00
Case hardening	409	-2	-1.7	0.7	0.83	0.00	616	-2	-1.7	0.7	0.84	0.00
Salt efflorescence or subflorescence	117	0	0.3	0.6	0.60	0.00	171	0	0.3	0.6	0.65	0.00
Final RASI Scores	**428**	**26**	**27.2**	**11.5**	**0.93**	**0.00**	**644**	**24**	**25.9**	**11.9**	**0.92**	**0.00**

* Shapiro-Wilk Test; assumption of normality is rejected when p values on the W statistic fall below 0.05. The test is not applicable when the sample size is fewer than three, or when all cases have the same score (i.e., rock weakness).

Summary RASI data and descriptive statistics for each weathering indicator are presented in Table 2. The data are parsed into two sections, one pertaining solely to the 428 boulders with petroglyphs and the other including the entire sample of 644 boulders. As the cultural heritage significance of the Painted Rocks centers squarely on the petroglyphs, boulders exhibiting only penetrative vandalism (n=216) are excluded from the following analyses. The final RASI scores for the 428 petroglyph boulders are plotted in Figure 9, color coded by their corresponding grade (Table 1). RASI scores for the Painted Rocks boulders cover the spectrum of grades, with several outliers in Severe Danger (red) of continued weathering positively skewing the distribution. A Shapiro-Wilk Test on this distribution, as well as on each of the weathering indicators, precludes assumptions of normality (Table 2). Consequently, the data are not amenable to parametric statistical tests, and although the means (μ) and standard deviations (σ) are reported, the medians offer a more robust measure of the data.

As displayed in Figure 10, RASI classifies the stability of more than 60 percent of the Painted Rocks boulders in either good or excellent condition. This insight is initially surprising, considering the intensity of visitation over the years and the abundance of penetrative vandalism across the site. These relatively good scores are attributable to the geology of the site, particularly the hardness of the granodiorite (6 on Mohs scale), to the presence of thick coats of desert varnish on many of the boulders, and to the resultant case hardening, each of which effectively lowers the boulders' final RASI scores (Table 2). Moreover, given the arid and hot climate, lichen-related issues are at a minimum. Further, salt efflorescence—in the form of caliche (calcium carbonate, or $CaCO_3$)—is quite rare at Painted Rocks. On the few undisturbed boulders that exhibit it, the $CaCO_3$ is restricted to a thin lens at the base of the boulder, just above the ground surface and below the petroglyphs. This zone of $CaCO_3$ exposure is likely due to erosion of boulders' footings in response to heavy foot traffic

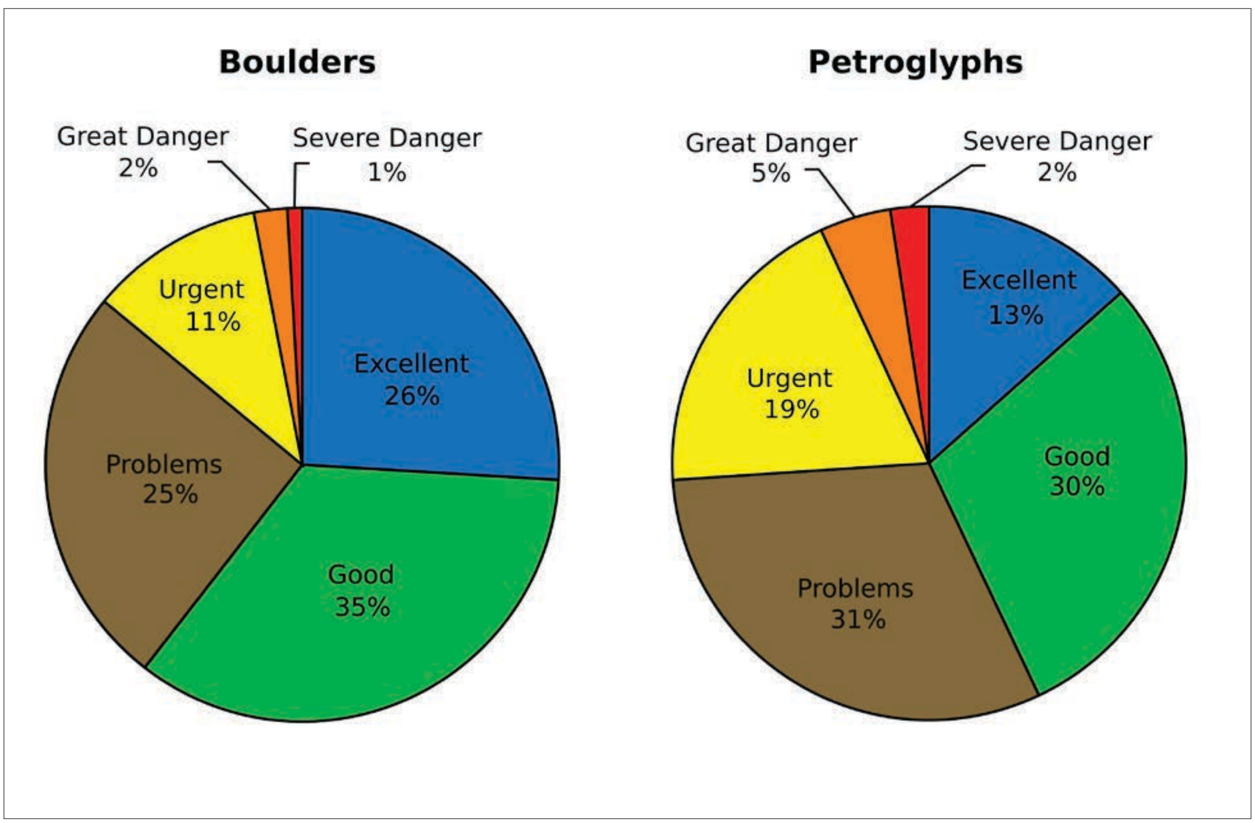

Figure 10. *Rock Art Stability Index grades for the Painted Rocks. Left: Grades for the 428 boulders; Right: The grades when scaled relative to the number of petroglyphs on the scored boulders.*

Figure 11. *Boulder No. 134 along the perimeter trail at Painted Rocks. The white crust is calcium carbonate (CaCO3), a salt efflorescence that accumulated below the ground surface. This crust marks the former soil line and indicates this boulder has been dug up from another place, though presumably from this site, and placed here. (Photo by Lance Trask.)*

across the site area. The $CaCO_3$ is more prevalent on the boulders that have been tipped over or dug up, with their formerly buried, unvarnished and caliche-covered surfaces now exposed (Figure 11). Salt efflorescence is obviously just one of several serious problems those boulders face.

Few of the boulders show evidence of large erosion events on or below them. This is because the majority rest on a relative level surface of grus or a bedrock basement, though undercutting remains a problem. Pronounced weathering forms include a number of weaknesses of the host rock and evidence of small erosion events to the boulders. Based on median scores reported in Table 2, scaling, flaking, abrasion, rock-coating detachment, rounding of petroglyph edges, undercutting, fissuresols, and the development of weathering rinds are persistent problems impacting more than half of the boulders. Indeed, six of these weathering forms affect more than 90 percent of the boulders. A more surprising insight is the apparent impact the production of rock art has had on the stability of the boulders. One of the unique qualities of the Painted Rocks is the incredible density of petroglyphs on the boulders, many of which exhibit a “newspaper rock” effect in that their surfaces are literally covered in rock art, sometimes to the extent that it renders the petroglyphs indiscernible. Nearly 70 percent of the boulders (n=297) exhibit petroglyphs covering more than a quarter of their surfaces, with a good number (n=59) having petroglyphs carved across more than 75 percent of rocks’ face.

An important distinction should be made regarding RASI scores for the boulders relative to the number of petroglyphs on those boulders. Figure 10 shows that the stability diagnosis for Painted Rocks, though still fairly good, lessens when the spatial representation of petroglyphs is considered. Only 43 percent of the petroglyphs occur on boulders deemed in good or excellent condition. Much of this offset is due to the fact that many of the petroglyphs are clustered on particular boulders, which, as explained previously, affects the stability of the boulder and effectively raises its RASI score. Still, on a positive note, just over 25 percent of the petroglyphs are found on boulders facing urgent, great, and severe dangers.

RASI’s focus is on the rock art panel, or in this case the boulder; therefor, it offers less specific information at the scale of individual petroglyphs. Because RASI was designed specifically to be a rapid field assessment tool, the trade-off for detail is understandable and justifiable. As a matter of fact, flexibility and compatibility with other rock art recording and condition monitoring methodologies (e.g. Groom 2017) and more intensive and technical analyses of stone decay processes (e.g., Cerveny et al. 2016) are part of RASI's appeal. To ascertain a closer perspective on the stone decay processes affecting the rock art at Painted Rocks, certain weathering forms—specifically the presence of lithobionts, spalling, and superimpositioning—were documented for each petroglyph independent of the boulders' RASI evaluations. With regard to lithobionts, only a paltry eight petroglyphs (less than 0.05 percent) currently have colonies of lichen growing directly on them. Scaling has impacted a far greater number of petroglyphs (n=199, or 5 percent), but this is quite negligible in light of the fact that nearly all of the boulders exhibit some degree of scaling or flaking (Table 2). In many instances, host rock exposed by scaling at Painted Rocks is more weathered and more fully varnished that the petroglyphs on the same boulders, indicating that although scaling is a significant concern, it has apparently not hastened with increased human activity at the site. In fact, several petroglyphs incorporate scaled areas into their designs, typically as the heads or torsos of anthropomorphic or reptilian motifs.

Rather than natural weathering processes, perhaps the largest impacts to the petroglyphs at Painted Rocks, and consequently the greatest threat they still face, owe to anthropogenic forces, past and present. Just over seven percent of the petroglyphs have been superimposed by other petroglyphs (n=129), penetrative vandalism (n=149), or a combination of the two (n=2). Even though the superimposing petroglyphs are part of the overall corpus of rock art at Painted Rocks and thus add to the site's significance, their production has intrinsically adversely impacted the preexisting imagery, and their invasiveness has ultimately escalated the rate of stone decay by removing more of the desert varnish and underlying host rock. Though culturally and temporally distinct, penetrative vandalism perpetuates this scenario. Nearly half the boulders with petroglyphs (n=207) also exhibit some form of penetrative vandalism, with four percent of the petroglyphs directly impacted by scratched, pecked, or abraded names, dates, indecipherable scribbles, or deliberate acts of defacement. Moreover, 44 petroglyphs are on boulders that have been deliberated moved, with 29 of these on boulders for which original provenance at the site is unknown.

PATTERNS IN WEATHERING FORMS ACROSS THE PAINTED ROCK PETROGLYPH SITE

Whereas the foregoing aggregate analysis of the RASI data provides a characterization of stability for the Painted Rock Petroglyph Site, a look at spatial disparities in RASI data provides keener insight into the nuances of weathering forms across the site area and their possible causes. Figure 12 is map of the Painted Rocks boulders color-coded by their corresponding RASI grade. Also shown on this map are formal and informal trails around the boulders. The formal trails include the current perimeter trail maintained by the BLM, as well as the former Arizona State Parks asphalt trail that passed through the boulder field atop the inselberg. The informal trails are numerous footpaths that weave through the boulder field and are the cumulative end-product of many years of unfettered foot traffic.

A key question about conservation of the Painted Rock Petroglyph Site is the impact of unrestricted foot traffic on the stability of the petroglyph boulders. Without adequate safeguards, high rates of tourism may lead to unanticipated damage to rock art sites as people trample the site area and stir up sediments (Loubser 2001:101; Whitley 2011:187). With the abundant grus around the boulders at Painted Rocks, it is reasonable to suspect that boulders close to trails and footpaths would have experienced a greater degree of anthropogenic impact than boulders farther afield. Impacts may be deliberate and malicious, as in vandalism, or they can be unintentional, such as when peoples' hands, feet, clothes, and other accoutrements abrade the boulders when passing by. Because RASI does not differentially weigh the 37 weathering forms, however, the extent of particular stone decay processes on boulders and across space is not readily discernible from the final RASI scores. This is true for the Painted Rocks boulders, as Figure 12 does not exhibit a strong association between boulders with poor

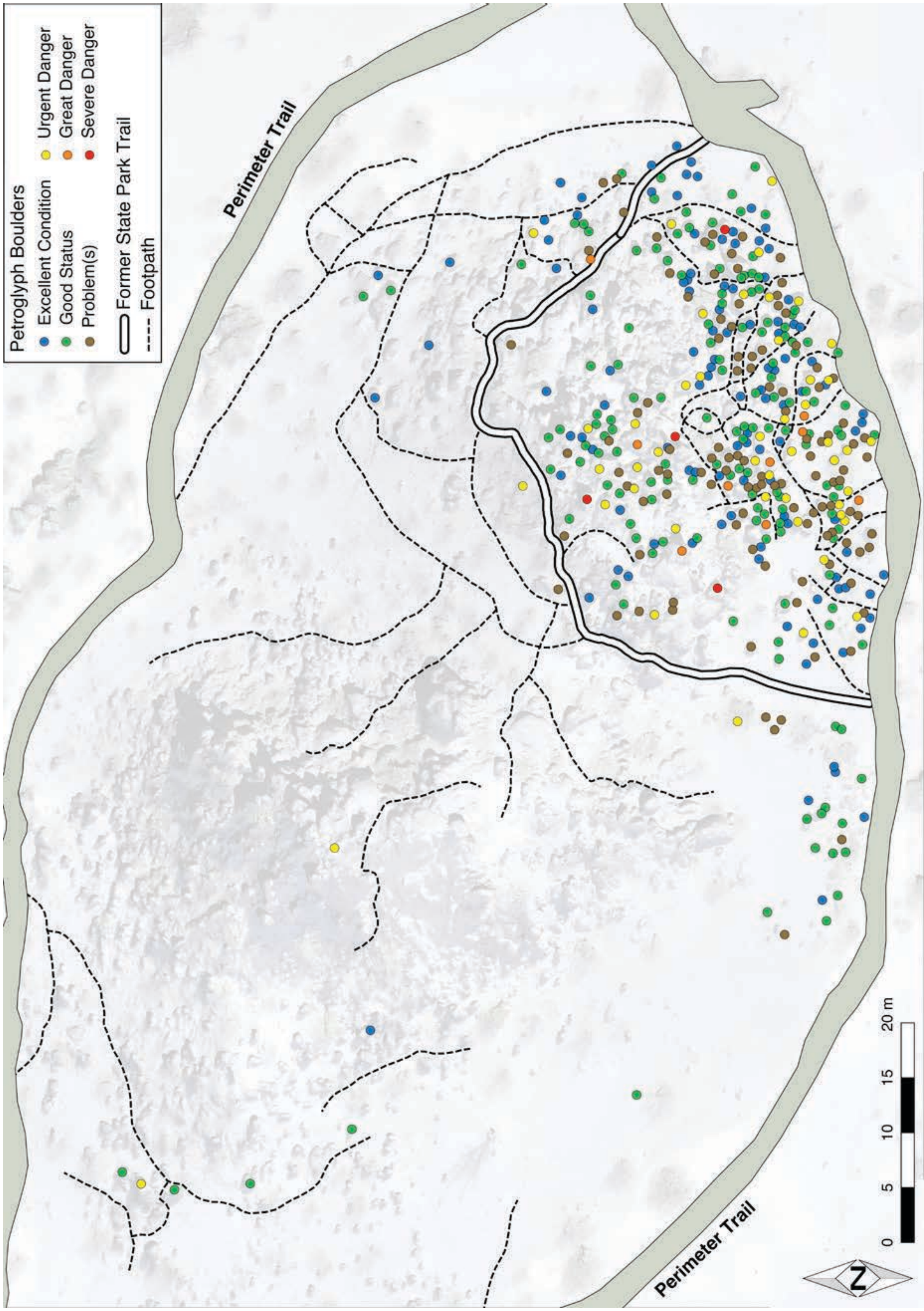

Figure 12. *Spatial distribution of Rock Art Stability Index grades at Painted Rocks.*

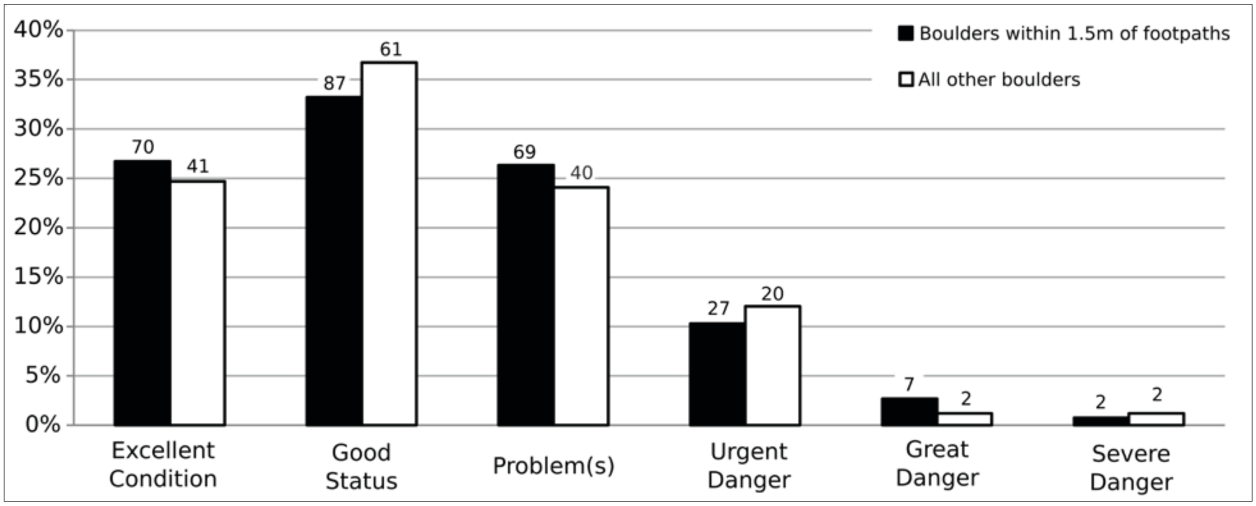

Figure 13. *Bar graph contrasting the Rock Art Stability Index grades between boulders within 1.5 m of trails and footpaths and those farther away.*

Figure 14. *Child crawling on the "Pinnacle Rock" at Painted Rocks. (Photo from The Stone Age Library 1964.)*

RASI grades relative to their proximity to trails and footpaths, as might be expected. Indeed, a Kolmogorov–Smirnov (K–S) test (D_{max}=0.0325, p=0.999) confirms RASI grades for boulders within 1.5 meters of a trail or footpath and those further away do not differ in any significant way (Figure 13).

Although proximity to foot traffic does not correlate with final RASI scores at Painted Rocks, a closer look at certain RASI indicators suggests boulders closest to trails have experienced a greater degree of weathering to their surfaces and the rock coatings protecting them. Table 3 enumerates eight RASI weathering forms pertaining to the stability of boulder surfaces and compares cases between boulders near trails (within 1.5 m) and those farther afield. The left half of the table presents the rank scores for boulders relative to their proximity to all trails and footpaths across the site. Two weathering indicators, abrasion and the rounding of petroglyph edges, stand out as having had more of an impact on boulders close to trails and footpaths. The fact that abrasion and edge rounding are more pronounced on these boulders implicates foot traffic as a significant contributing agent to the overall stone decay process. As visitors pass close to the boulders, their feet kick up sands and silts, which scrape against and settle upon the boulders. Based on observations during fieldwork, visitors often inadvertently step on smaller boulders, their clothing rubs against larger boulders, and they are more likely to touch and even sit or climb on boulders closest to trails and footpaths (e.g., Figure 14). Over time, these actions have abraded the boulder's surface and rounded the petroglyph edges, slowly but effectively "erasing" the rock art.

Table 3. *RASI Indicators Pertaining to the Stability of Boulder Surfaces.*

Stone Decay Dimensions and Indicators	All Trails and Footpaths							Perimeter Trail Only						
	Rank Scale				Total	K–S Test*		Rank Scale				Total	K–S Test*	
Weaknesses of the Rock Art Boulder	0	1	2	3		D_{max}	p	0	1	2	3		D_{max}	p
Scaling and Flaking														
Near	11	107	127	17	262	0.041	0.995	7	21	24	7	59	0.102	0.637
Away	2	77	83	4	166			6	163	186	14	369		
Evidence of Small Erosion Events on the Boulder	0	1	2	3		D_{max}	p	0	1	2	3		D_{max}	p
Abrasion														
Near	104	135	22	1	262	**0.139**	**0.035**	18	30	10	1	59	0.169	0.097
Away	89	61	15	1	166			175	166	27	1	369		
Flaking														
Near	29	154	71	8	262	0.050	0.953	13	31	13	2	59	0.150	0.186
Away	10	107	47	2	166			26	230	105	8	369		
Flaking of the weathering rind														
Near	19	178	63	2	262	0.053	0.930	11	35	11	2	59	0.143	0.230
Away	8	108	48	2	166			16	251	100	2	369		
Rock coating detachment														
Near	26	152	76	8	262	0.057	0.882	5	32	17	5	59	0.060	0.991
Away	26	85	49	6	166			47	205	108	9	369		
Rounding of petroglyph edges														
Near	61	122	63	16	262	0.123	0.087	11	26	14	8	59	0.109	0.558
Away	59	65	36	6	166			109	161	85	13	368		
Scaling														
Near	17	114	120	11	262	0.066	0.658	10	20	24	5	59	0.110	0.547
Away	15	79	65	7	166			22	173	161	13	369		
Rock Coatings on the Panel	-3	-2	-1	0		D_{max}	p	-3	-2	-1	0		D_{max}	p
Rock coating present														
Near	60	140	60	2	262	0.108	0.173	5	27	27	0	59	**0.282**	**0.000**
Away	56	80	30	0	166			111	193	63	2	369		

* Kolmogorov-Smirnov Test; D_{max} is the largest difference between the cumulative proportions for the two distributions (near vs. away). Results in bold are statistically significant at the 95 percent confidence interval ($p < 0.05$), whereas those in italic are highly suggestive but not statistically significant.

The scouring effects of foot traffic and associated visitor impacts are most apparent on the boulders adjacent to the perimeter trail put in and maintained by the BLM. This trail is composed of imported gravel, and it is elevated and leveled in order to accommodate wheelchairs. As with sands and silts, these gravel are prone to being kick up and over nearby boulders. Likewise, over time the elevated gravels have slumped to the point where some of the smaller boulders alongside it are now enveloped within the trail. The right half of Table 3 shows that these boulders have probably been more prone to visitor-related abrasion, so much so that they consistently exhibit lesser amounts of a protective rock coating (desert varnish) than other petroglyph-adorned boulders at Painted Rocks. Although most likely exacerbated by the elevated gravel trail, this advanced rate of stone decay precedes BLM management. The most sensitive area of this trail, the southwest arc that closely passes the petroglyph concentration, was part of the original trail established by Arizona State Parks decades before BLM management. That trail was also lined with gravels, whereas the section passing atop the inselberg, which is no longer maintained but still used by visitors, is paved in asphalt. The current perimeter trail merely perpetuates a long, ongoing process of human-caused weathering that heightens the overall decay of nearby boulders.

PENETRATIVE VANDALISM

As briefly touched upon previously, the amount of penetrative vandalism at Painted Rocks is abundant (1,023 observed cases and counting) and seemingly rampant. It was documented on 423 boulders, with 207 of those boulders also exhibiting petroglyphs. Figure 7 shows the density of penetrative vandalism across the Painted Rocks, with two clear hotspots discernible on the inselberg's right spire. One is centered on boulders at the eastern edge, and the other is localized to the top center. Each concentration is strongly associated with a particular era and is indicative of management practices at that time. In the few cases where dates were inscribed on the rocks, those in the eastern concentration mostly fall between 1879 and 1927. Interestingly, this era postdates the decline in the stage line that ran past the boulders and the coming of the railroad. There was no active management of Painted Rocks at that time, but it was a local attraction (Disturnell 1881) and, as many of the inscriptions imply, a side-trip for people traveling between San Diego and points further east.

The other concentration, at the top of the inselberg, follows the former trail established and paved by the Arizona State Parks. Much of the penetrative vandalism in this concentration dates from the 1960s through 1980s, when the trail not only enabled but encouraged people to move up, through, and alongside many of the petroglyph-adorned boulders. Along this segment of the former park trail (within 1.5 m), boulders exhibiting penetrative vandalism (n=73) are significantly overrepresented relative to the number of boulders with petroglyphs (n=28; Fisher's Exact, $p<0.0001$, $Q=0.50$). Likewise, this same area contains a disproportionately higher number of incidents of penetrative vandalism (n=228) relative to the number of petroglyphs (n=116; $\chi^2=450.65$, df=1, $p<0.0001$, $Q=0.80$), with individual boulders consistently exhibiting more instances of penetrative vandalism here than elsewhere (K–S Test: $D_{max}=0.3046$, $p<0.0001$). Clearly, and as the measures of Yule's Q affirm, the association between the asphalt trail and penetrative vandalism is quite strong.

When compared with the prior work of Hasse and Hasse (2009), rephotography of the Painted Rocks has identified at least 52 new incidents of penetrative vandalism over the past decade, attesting to the persistence of this management problem. Fortunately, very few of the actual petroglyphs (n=149) have been directly impacted by penetrative vandalism, so it has yet to adversely affect the stability of the boulders to the degree that many other weathering forms have, especially scaling and flaking. Nevertheless, as the cliché "graffiti begets graffiti" foretells, the continual creation of penetrative vandalism is a serious threat to the stability, integrity, and visitor experience at Painted Rocks.

DISCUSSION

With the aid of RASI, this case study offers a holistic condition assessment of the Painted Rock Petroglyph Site. In general, the majority of petroglyph boulders are remarkably stable (Figures 9 and 10), especially with regard to the incredible level of visitation this site has experienced relative to its small size. Although comprehensive data on visitation are unavailable, 500,000 people over the past half century is a conservative estimate, based on available information, and more than one million visitors is not an unreasonable approximation. This fortunate posture owes largely to the site's geology, with the hardness of granodiorite and the thick coatings of desert varnish on the boulders either preventing or retarding many weathering forms from adversely affecting the rock art to any great extent. Still, some of the boulders face considerable dangers to their stability, and ongoing monitoring will be critical for ensuring the longevity of these cultural heritage assets.

Accessibility and proximity to foot traffic is not an accurate predictor of a boulder's stability at Painted Rocks (Figures 12 and 13). Rather, a complex and intricate network of weathering agents acts upon the boulders in seemingly unanticipated ways, with each boulder presenting a unique set of conservation challenges. Nonetheless, broad patterns in the stone decay process may be recognized. The natural weathering forms that have most contributed to the overall process of stone decay at Painted Rocks, and which remain an impending threat, are scaling and flaking of the boulders' surfaces, both of which are exacerbated by the development of weathering rinds (Table 1). Interestingly, these weathering forms do not appear to be caused or aggravated by human agency (Table 3). Whereas more technical studies will be needed to determine what is contributing to these stone decay processes (e.g., Cerveny et al. 2016), it is quite possible that thermal stress fatigue due to the region's aridity and high temperatures is a contributing factor (e.g., Hoerlé 2006). If so, the rate of scaling and flaking may accelerate in concert with projected rises in global temperatures and changes in precipitation patterns (Giesen, Mazel, et al. 2014; Giesen, Ung, et al. 2014).

Whereas RASI has informed on the stability and condition of the petroglyph-adorned boulders at Painted Rocks, the status of other aspects of this cultural heritage property are worth considering. As related previously, artifacts found around the boulders are an important component of this site because they provide insight on cultural and temporal associations for the petroglyphs, and if vessel form is taken in to account, they have the potential to shed light on the activities that took place at the site other than and conjunction with the rock art (e.g., Wright 2014:83-102). Because only a thin lens of grus covers the site area, most artifacts lie exposed on the ground surface and are therefore prone to theft and weathering. It is impossible to know to what extent artifacts have been pocketed by visitors over the years, but presumably it has occurred, and probably with a bias toward easier-to-see larger sherds and those with painted designs (e.g., Dudgeon 2017; Robbins 2013). Similarly, persistent foot traffic across the site area is expected to have taken a toll on surface artifacts, breaking them and grinding their surfaces and edges (Nielsen 1991).

A comparison between the sherds collected by Schroeder (1952) before development of the former Painted Rock State Park and those recorded in the course of this case study permits examination of the toll visitor foot traffic has had on the surface artifacts at Painted Rocks over the past 65 years. Figure 15 shows the distribution in sherd sizes, measured as the maximum length of any dimension, between the two surveys. Though there is overlap, it is evident that the sherds collected by Schroeder were, on average, larger than the sherds found at Painted Rocks today (K–S Test: D_{max}=0.4468, p<0.0001). This suggests that the cumulative effect of visitors veering off the designated trails has negatively impacted the petroglyph boulders and the artifacts around them. If theft of the larger artifacts is one cause of this, however, there is no indication that decorated sherds have been preferentially taken. The difference between the ratio of decorated sherds to undecorated ones from Schroeder's survey (3:63) and the current one (4:107) is insignificant (Fisher's Exact, p<0.7129).

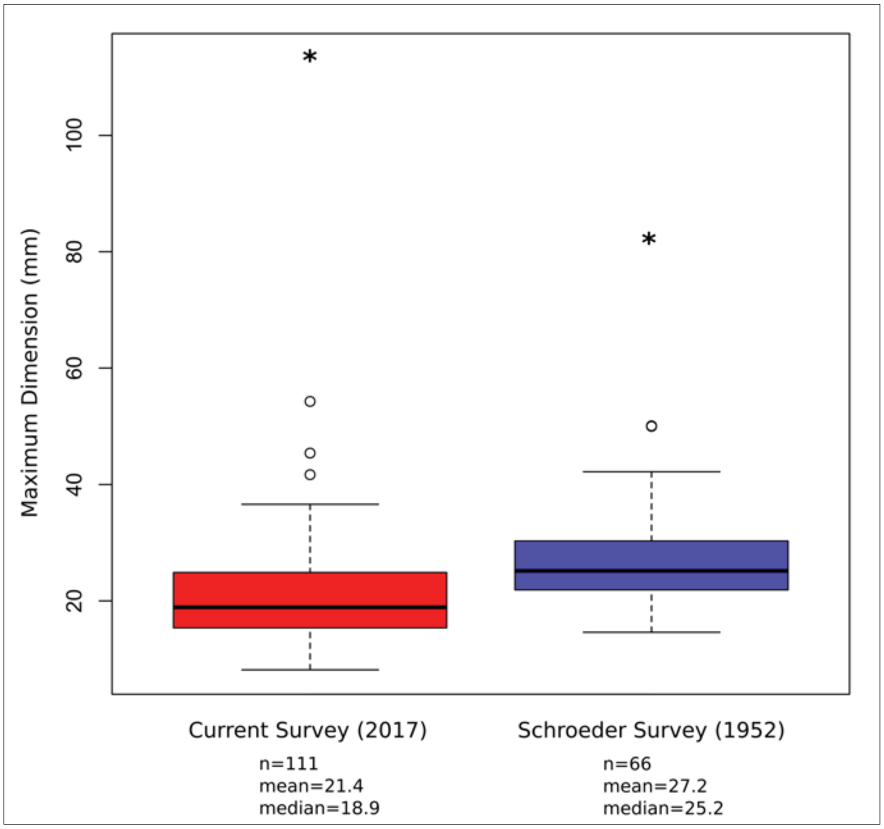

Figure 15. *Boxplots of the maximum dimensions of pottery sherds collected in 1952 and examined in the field in 2017.*

In addition to petroglyphs and artifacts, certain historical sources indicate that earth figures—a class of rock art created by the selective removal (intaglios) or deliberate alignment (geoglyphs) of rocks on the ground surface (Whitley 2011:34–35)—were once part of the Painted Rocks' rock art assemblage. Earth figures are strongly associated with the range of the Patayan tradition (Harner 1953; Johnson 1986; von Werlhof 1987), though they are found within the traditional territory of the historic O'odham as well (Russell 1908:254; Vanderpot and Altschul 2008). The first observation of earth figures at Painted Rocks was by Lieutenant Colonel William H. Emory, leader of the Army of the West and the first to illustrate some of the petroglyphs. On November 16, 1846, while visiting the site, he noted: "*On the ground* near by [sic] were also traces of some of the figures showing some of the hieroglyphics, at least, to have been the work of modern Indians" (Emory 1848:89, emphasis added). A similar remark, possibly of the same earth figures, was provided a few years later by forty-niner John Durivage (1937:222): "The ground [at Painted Rocks] was strewn with a coating of basalt pebbles, and near by [sic] was a mystic circle drawn in the ground."

Sadly, there is no indication of earth figures at Painted Rocks today. They are known from this general area, often in association with petroglyphs (Wright et al. 2015), so it is quite likely they did once adorn the ground surface at or near Painted Rocks. Site records from 1929, 1952, and 1959 are too scant to determine whether they persisted into the twentieth century. They may have been destroyed under the feet, hooves, wagons, and wheels of the untold number of people and their stock animals who visited this site before it ever became a park. If they did survive that stress, any traces of them were probably wiped out when the site was developed, possibly by the adjacent Rocky Point Road, the work crew who put in the chain-link fence, or when the areas east and south of the boulders were leveled for parking and camping (Figure 3). Regardless of how and when, the obliteration of the earth figures at Painted Rocks constitutes a serious and irreversible loss, one unrecognizable without the sparse references tucked away in travelers' journals.

SUSTAINABILITY OF THE PAINTED ROCKS

The physical stability of the petroglyphs at Painted Rocks comes as a surprise when considering the incredible demand that has been placed on this cultural heritage site. RASI, rephotography, artifact size analysis, and archival research nevertheless reveal that significant adverse impacts brought about under a range of destructive forces have accrued to the rock art and other cultural heritage assets at Painted Rocks. Many of these impacts are anthropogenic in origin—some overt, as with the penetrative vandalism, and others less obvious, such as the abrasiveness of foot traffic. Over the years, efforts have been lobbied to help offset the deleterious effects of visitation. Though well intentioned, some management decisions have actually accelerated them, such as the asphalt trail that led to the marring of many rocks and the gravel perimeter trail that has scoured boulders nearly clean of their desert varnish and even ground away some of the petroglyphs.

As a developed cultural heritage site that is actively promoted as a tourist destination, the dilemma with managing Painted Rocks has always been one of sustainability, in particular how to balance tourism and cultural resource management without sacrificing one set of values for another (McKercher and du Cros 2002; Omar 2013). As for Painted Rocks, the struggle for sustainability centers of the tension between the economic, recreational, and educational values of cultural heritage tourism vis-à-vis the preservation, research, aesthetic, and cultural heritage values of conservation management. Closure of Painted Rocks is not a viable option because the place is well known and easy to access (BLM 1991). The alternative, then, is to manage the site in a manner that reduces the weight of visitor impact as much as possible while maintaining accessibility and promoting conservation. Accordingly, current management practices on the part of the BLM are aimed at achieving and maintaining site sustainability, and efforts are in line with several of the best practices outlined by Loubser (2001:98–104) and Whitley (2011:187–188). These include a designated trail with interpretive signage, a clean setting with maintained facilities, an on-site caretaker and camp host during peak visitor season, a visitor registry book, and fee-based admission with proceeds funding site upkeep.

The effectiveness of current and future management practices at Painted Rocks can be evaluated with the Heritage Asset Sensitivity Gauge (HASG), an audit instrument designed for measuring the balance between an asset's cultural heritage significance, vulnerability, and appeal as a marketable tourist destination (Wurz and van der Merwe 2005). Drawing from contemporary theory and practice regarding sustainable cultural heritage tourism, HASG expands upon an earlier model for evaluating a place's market appeal relative to its robusticity (du Cros 2001; McKercher and du Cros 2002:185–188) and focuses it directly on archaeotourism. As with RASI, HASG is a composite index that ranks 10 indicators within each assessment domain (market appeal, cultural significance, and vulnerability) along a scale of 0 (none) to 3 (high), then sums the ranks to render a composite for each domain. With HASG, higher scores imply higher management obligations for sustainable archaeotourism. The application of HASG is varied. These scores may be compared across sites to assist in identifying which are most appropriate for tourism development, but they also provide a heuristic indication of how balanced the three domains are in particular areas or at certain sites. The HASG was tailored specifically for the cultural heritage tourism industry in South Africa, and while implementation has not yet extended beyond that geopolitical context (SANP 2006; Wurz and van der Merwe 2005), it might be aptly applied in other settings, including the situation at Painted Rocks.

Tables 4, 5, and 6 provide HASG evaluations for the Painted Rocks' market appeal, cultural significance, and vulnerability, respectively, and the results are conveyed graphically in Figure 16. As expected, the overall score of 55 reflects the high level of management attention needed at Painted Rocks. Not surprisingly, the site scores highest on cultural significance, which was recognized decades ago with its listing on the National Register of

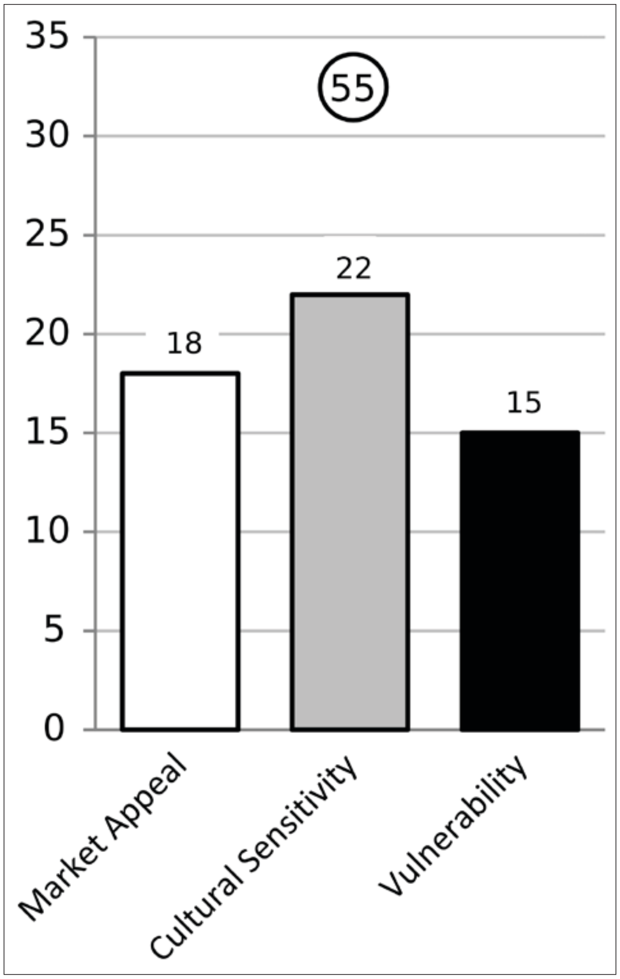

Figure 16. *Bar graph of Heritage Asset Sensitivity Gauge scores for Painted Rocks.*

Historic Places. The site scores medium or high on all 10 cultural significance indicators, reflecting the diversity of values attributed to this place. The site scores second highest on market appeal, due largely to its accessibility, renown, and the existing degree of development. Despite the improved management measures implemented to date, however, the Painted Rocks remain quite vulnerable. The overall fragility of the landscape, the large number of people who already visit the site, and the self-guided nature of site visitation are driving this evaluation. This vulnerability score is expected to drop once site documentation is updated to current standards and a conservation management plan is designed and implemented. This condition assessment is a step in that direction.

Though these results remains heuristic until HASG is implemented at other comparable sites in this general area or under the same management, the Painted Rocks' score is remarkably similar to that of rock art sites evaluated in South Africa (Wurz and van der Merwe 2005:15). Such compatibility speaks to the transnational value of rock art as a cultural heritage asset and the need for greater conservation efforts across the globe. Still, the Painted Rocks differ from the South African scenario in a compelling way. Painted Rocks scores highest on cultural significance followed by market appeal, suggesting the values tied to conservation currently outweigh those of its tourism potential. This is insightful when considering the potential return on investments directed at protection efforts versus those put toward development and visitor amenities. With the South African cases, market appeal outweighs the sites' measured cultural significance. Although site management in those cases will probably involve some conservation measures, there may be a structural incentive for economic interests to supersede preservation values. Based on recent research at one of the country's World Heritage Sites (Duval and Smith 2013, 2014), however, rock art's tourism potential in South Africa remains underappreciated in spite of its perceived market appeal.

SUSTAINABILITY FORECAST AND RECOMMENDATIONS

The total HASG score of 55 for Painted Rocks implies a relatively high level of management is required to balance conservation goals and pressure mounting from the current rate of tourism. Moreover, results of the RASI analysis and observation on the continued creation of penetrative vandalism demonstrate that the site's stability and integrity are persistently threatened, even though the Painted Rocks have so far bore the brunt of these impacts remarkably well. This foreboding conservation forecast is expected to intensify as population in the adjacent metropolitan centers of Phoenix and Yuma increases, associated development expands out-

Table 4. *Heritage Asset Sensitivity Gauge of Market Appeal*

Site Criterion (and Explanation)	None (0)	Low (1)	Medium (2)	High (3)	Painted Rocks
1. ***Scenic Ambience & Setting Appeal*** (Natural splendor & environmental integrity associated with asset)	Degraded environment lacking any relation to original setting	High degree of modification but not totally degraded	Some degradation detracting from ambience & setting	Outstanding quality retaining ambience of original setting	1
2. ***Prominence as National Icon or Symbol*** (Unique & representative of universal qualities [e.g., Chaco Canyon inspires poets, writers, and archaeologists])	No local or national uniqueness	Local prominence	Some national prominence	Universal uniqueness; true national symbol	2
3. ***Evocativeness of Place—Ability to Tell a Story*** (History can be brought to life & made relevant for visitors by evoking significant feelings & happenings)	None	Vague notions contributing to evocativeness	Associations with local folklore or traditions	Locally & nationally known folkloric & literary associations	1
4. ***Potential for Tying to Other Nearby Tourism Products*** (Accessibility & setting allow combination with other tourist experiences [e.g., hiking, hunting, festivals, pilgrimages] within 50 km, either combined with different products or bundled in themed packages)	None	Other fixed cultural or natural assets	Other activities or events (e.g., festivals)	Natural or cultural assets, activities, & events	1
5. ***Appeal for Special Spiritual Needs or Uses*** (Integrity & intactness accommodate tourists' needs for deeper existential connection to spiritual meaning of heritage [e.g., roots, nostalgic experience])	Integrity & intactness do not allow interpretation or connection	Integrity & intactness allow low degree of connection	Integrity & intactness allow medium degree of connection	Integrity & intactness allow high degree of connection	2
6. ***Tourism Profile of Region as National Magnet*** (Extent to which region is known for heritage & other tourist activities)	Unknown	Local reputation	Nationally celebrated	Internationally renowned	2
7. ***Potential to Generate New Income*** (Potential for development to generate new income & spin-offs for local community in terms of multiplier effects)	None	Uncertain	Limited	Significant new income & stimulation of related income-generating activities	1
8. ***Potential Public/Private Financial Support*** (Potential for development to attract public or private financial support)	None	Official commitment	Application for public funds lodged	Public/private funding approved	3
9. ***Cost of Access*** (Regional connectivity; road-to-site access & proximity to major tourism market)	Secondary/provincial gravel road; > 50 km to nearest town	Provincial gravel road; < 50 km to nearest town	Paved road; < 50 km to nearest town	Within 100 km of metropolitan hub	2
10. ***Number of Site Amenities*** (Presence of facilities [e.g., parking, paths, signs] on or near the site)	0	1	2	>2	3
COMPOSITE SCORE:					**18**

Table 5. *Heritage Asset Sensitivity Gauge of Cultural Significance*

Site Criterion (and Explanation)	None (0)	Low (1)	Medium (2)	High (3)	Painted Rocks
1. ***Aesthetic Significance of Asset*** (Beauty in terms of attributes such as form, scale, color, texture, design & technical integrity)	None	Some form & composition attributes	Noteworthy form & composition attributes	Distinctive form or composition attributes; design & technical integrity produce exceptional asset	2
2. ***Experiential Significance of Surrounding Landscape*** (Extent to which natural setting enhances visitor experience)	Environmental setting damages experience	Conflict between landscape & asset spoils experience	Proximity of degradation & degree of landscape change detracts from cultural heritage	Pristine environment provides optimum experience	2
3. ***Historical Significance*** (Extent to which asset demonstrates continuing association with past cultural practices & historic events, phases, periods, or activities regardless of asset intactness)	None	Vague, local historical connections	Strong national significance	Major international & national significance	2
4. ***Educational Value & Potential*** (Potential for interpretation & transformation into educational, easily understandable information, & setting is instrumental to learning experience)	None	Some information relevant to primary & secondary learners; setting does not facilitate learning experience	Information highly important to primary & secondary learners; setting facilitates learning experience	Information highly important to primary, secondary, & tertiary learners; setting facilitates learning experience	3
5. ***Social Significance*** (Strong/special socio-cultural association with particular community or cultural group [e.g., importance to community's sense of place or identity; focus of group's spiritual, political, or cultural sentiment; ongoing use for important events])	None	Few members of local community value sense of place or identify with asset	Local community values significance but place not associated with any events	Local community honors place as central to its identity; uses it for important events	2
6. ***Scientific Value*** (Importance as a reference site, providing evidence of past human cultures unavailable elsewhere with potential to yield substantial information contributing to understanding cultural history)	None or ruined	Some significance but site not intact	Moderate significance & intactness	Universal significance due to high intactness & meaning	2
7. ***Uniqueness*** (Evidence of artistic or technical achievement, defunct custom, way of life or process, unusually accurate or unique evidence of a significant human activity)	Common (everywhere)	Fair number of similar sites	Few similar sites; moderately uncommon	Unique	3
8. ***Indigenous Spiritual Significance*** (Links with local sacred indigenous awareness & customs)	None	Some but links severed	Spiritual links weakly or inconsistently maintained	Major significance widely maintained through recurrent spiritual practices	2
9. ***Significance as Potential National Unifying Socio-Cultural Symbol*** (Symbolic value that helps build common identities, reinforcing national myths & cultural symbols)	None	Some, but unexploited	Limited, some exploitation	Major, widely exploited	2
10. ***Representative Significance*** (Exemplifies particular style, technology, high creative/technical achievement, culmination of particular style, principal characteristics of particular class of cultural heritage)	None	Some	Noteworthy	Archetypal; distinctive representation	2
COMPOSITE SCORE:					**22**

Table 6. *Heritage Asset Sensitivity Gauge of Site Vulnerability*

Site Criterion (and Explanation)	None (0)	Low (1)	Medium (2)	High (3)	Painted Rocks
1. ***Number of Major Natural Risks*** (Vulnerability to physical damage by natural factors [e.g., wild animals, fire, water, atmosphere])	0	1–2	3–4	> 4	1
2. ***Risk of Human Damage*** (Capacity to withstand damage by humans)	Fabric cannot be damaged by human agents	Well protected	Poorly protected	Unprotected; easily damaged by any tourist activity & incidental visits	2
3. ***Current Level of Irreversible Damage*** (Amount of natural & human damage already sustained)	Irreparable damage	Some repairable, some irreparable damage	Limited, repairable damage	Original pristine condition	1
4. ***Potential Negative Impact of High Visitation on Fabric of Asset*** (Potential of high visitation to impact adversely on physical & social environment)	None	Low	Medium	High to extreme	3
5. ***Potential Negative Impact of High Visitation on Social Fabric of Local Communities*** (Potential of high visitation to introduce new value systems, causing large sections of communities to become dependent on tourism at expense of traditional values, possibly leading to loss of self-reliance & traditional activities)	None	Low	Medium	High	0
6. ***Level of Guidance Provision*** (Trained guide present to guarantee physical protection & experiential authenticity)	Local guide trained & employed	Tour operator or expert guides	Expressed intention to provide guidance	No intention to provide guidance	3
7. ***Level of Site Management Plan Initiation*** (Degree to which site management plan is initiated)	Impact assessment commissioned or completed	Site formally recorded to contemporary national standards	Limited or incomplete recordation	Site unrecorded; no action taken	2
8. ***Implementation Level of Conservation Management Plan*** (Degree to which conservation management plan is implemented)	Conservation management plan implemented	Conservation management plan in development	Informal conservation efforts implemented	No action taken	2
9. ***Number of Exposure Monitoring & Protection Measures in Place*** (Measures may include regular site inspection, site supervisor, fencing, signage, visitor number recording, etc.)	> 4	3–4	1–2	None	1
10. ***Number of Stakeholders Actually/Potentially Involved*** (Stakeholders include land owner/manager, local community, descendent communities, etc.)	> 6	5–6	3–4	1–2	0
COMPOSITE SCORE:					**15**

ward from these urban areas, and as the climate changes toward more challenging conditions (Rockman et al. 2016). In the event Painted Rocks becomes part of a national monument, tourism to the region is projected to more than double in the first five years (BBC Research 2014). Indeed, because Painted Rocks already has a developed campground and other amenities and is easily accessible, it will probably become a central hub for visitors drawn to the Painted Rocks and other notable cultural heritage sites in the area. Many winter tourists currently use the campground as a staging area for recreating in the surrounding landscape. Activities are myriad, and include hunting, off-road driving, birding, horseback riding, and visiting undeveloped and more-difficult-to-access cultural heritage sites, such as the Oatman Massacre Site, the Butterfield Trail, and numerous petroglyph sites.

Considering the relatively good status of the stability of the Painted Rocks—coupled with the amount of infrastructure already in place, ongoing monitoring and stewardship by volunteers, and the conservation interest of the land manager—a sustainable balance between conservation-related values and those of tourism under current and projected conditions is attainable. As noted, the BLM has implemented a number of best practices that have helped thwart overall degradation of the Painted Rocks. There is room for improvement nonetheless, and proactive measures are needed to counteract forecasted increases in stressors on the stability and integrity of the site, especially those that are anthropogenic in origin. As detailed previously, penetrative vandalism, proximity of the perimeter trail to the petroglyph boulders, and the ability to roam freely across the site area have adversely affected the Painted Rocks to a considerable extent, and although the damage is irreversible, each of these factors are anthropogenic in origin and may therefore be altered through more effective visitor control practices. Similarly, some simple actions should go a long way in countering some natural weathering processes, particularly the selective removal of plants that are having a deleterious effect on rock art.

DETERRING FOOT TRAFFIC

Arguably the best way to counter human impacts to the Painted Rocks, outside of training and employing guides to advise visitors on proper site etiquette, would be to install effective barriers (real and perceived) that deter visitors from moving in and around the boulders while maintaining or even enhancing their ability to appreciate the site's rock art. The current system of using signage to keep visitors to the perimeter trail is ineffective, and the perimeter trail itself is advancing the stone decay process on the boulders close to it. A boardwalk with railings and a series of viewing platforms is an ideal way of establishing an actual and psychological barrier (Loubser 2001:101–102), and though this may detract somewhat from the natural ambience of the site, such procedures have been shown to mitigate increased visitation quite well (Walsh 1984).

Boardwalks provide an obvious delineation of the proper distance visitors should maintain at a site, something that is not accomplished with the current perimeter trail that now grades into and impacts the boulders. Boardwalks and viewing platforms elevate visitors, which improves visibility and prevents foot traffic from impacting the site area, damaging artifacts, and further marring the rock art (Whitley 2011:187). Such infrastructure also provides the foundation for more interpretive signage directly tied to the rock art under observation. As it is now, visitors often hastily pass the site's interpretive signage in order to view the petroglyphs. The current signage, which shares information on site etiquette, is only seen after people have already viewed the rock art, and in many cases that viewing involved leaving the perimeter trail to inspect the boulders up close. By tying the signage directly to the boardwalk, and placing it at a viewing platform near the petroglyphs, visitors may experientially connect their actions (staying to the boardwalk) with site etiquette and appropriate conservation practices for the long-term stability of the rock art.

In lieu of an elevated boardwalk, modifications to the current perimeter trail may reduce visitor impact to the site. Because there is a clear correlation between abrasive weathering of the boulders relative to their proximity of the perimeter trail (as well as other footpaths), diverting the trail just a short distance farther from the petroglyphs should help mitigate these impacts. Moreover, replacing the gravel in the trail with a softer medium such as wood mulch will reduce the amount of dust and gravel kicked up under visitors' feet, which should slow the rate of erosion to the nearby boulders' surfaces and petroglyphs. Moving the trail farther from the boulders reduces the visibility of the petroglyphs, however, and visitors may be tempted to leave it and meander around the site area for a closer look.

Whether the perimeter trail is moved or not, an unimposing physical barrier between the trail and the site area would greatly aid in keeping foot traffic away from the petroglyphs. Something as minimal and unobtrusive as a waist-high post-and-rope fence could suffice, because it would not impede the visibility of the rock art nor impose on the site's viewshed. As with a boardwalk, the delineation of space afforded by such a minor contraption would create an obvious though unostentatious physical and psychological barrier to moving in and around the boulders without detracting significantly from the natural setting and visitor experience. The objective of such a barrier is to not entirely restrict people from leaving the perimeter trail, though a reduction in the frequency of such unorthodox behavior is a likely outcome. Rather, the intent is to use the layout of the site's infrastructure to inform on site etiquette, instead of relying solely on signage that is all too often unread or ignored Even though people easily could step over or crawl under a simple barrier such as a post-and-rope fence, they will be implicitly aware of the appropriate and recommended distance that should be maintained.

CURTAILING PENETRATIVE VANDALISM

With more than 1,023 documented incidents, 52 of which have taken place in the past several years, the creation of penetrative vandalism remains a serious threat to the Painted Rocks. In addition to a boardwalk or similar barrier that explicitly defines the appropriate distance that should be maintained at the site, several measures could be implemented to deter the creation of penetrative vandalism. Most of the penetrative vandalism takes place during the off-season, when the camp host is not present and visitors typically have the site to themselves. This is when clearly presented educational material is most important. Overt signage explaining why vandalism of all forms is unacceptable from a social and legal perspective is needed at Painted Rocks.

Several impact studies from Australia have suggested that visitor registry books may redirect graffiti and other forms of vandalism by enabling visitors to express themselves, their grievances, and even their praise to other visitors and the land managers in a contained and controlled format (Brown et al. 2003; Dragovich 1995; Franklin 2011; Godwin 1992; Sullivan 1984). The visitor registry book installed at Painted Rocks by the BLM in 1994 (BLM 2005) may have deterred vandalism and graffiti, though the effectiveness of such a tool remains unknown, as a baseline inventory of existing vandalism was never undertaken. Another potential way to redirect penetrative vandalism at Painted Rocks would be to provide a designated area where visitors are encouraged to "leave their mark" on imported boulders away from the petroglyphs. A de facto arrangement such as this already exists. A large basalt boulder near the main picnic area at the entrance to the Painted Rocks has been scratched repeatedly by visitors using the facility (Figure 17). As shown above, most of the penetrative vandalism at Painted Rocks does not directly impact the petroglyphs, implying that the intention here is rarely malicious. Perhaps visitors are curious as to how petroglyphs are made, so they attempt to make their own engravings on nearby boulders. Others seem merely interested in imposing their identity onto the site. A clearly designated area where people could scrawl their names and statements on imported (and removable) rocks

Figure 17. *Recent, faintly scratched designs on an imported basalt boulder near one of the visitor awnings. (Photo by Lance Trask.)*

would afford such individuals an opportunity to do so in a controlled and contained manner. It would also help convey that visitor expressions are welcome, but that marring petroglyph boulders is not only unlawful but also detrimental to the conservation of cultural heritage assets and the values ascribed to them by many different communities.

In addition to more-effective signage, the visitor registry book, and possibly the creation of a petroglyph-making area, the installation of a remote monitoring system should discourage vandalism by enabling the better enforcement of cultural resource laws in the absence of on-site managers. A remote monitoring system would aid in investigating and prosecuting the theft and intentional marring of heritage assets at Painted Rocks. Such a system could be as basic as a motion-sensor camera or a commercial video surveillance system. In the event that such a monitoring program were implemented, signage informing visitors that the site is under constant video surveillance is imperative. Presumably such signage would curtail the ongoing production of penetrative vandalism even if a monitoring system were not actually installed.

VEGETATION MANAGEMENT AND REMOVAL

Natural stone decay agents pose greater potential challenges to conservation planning and management than those of anthropogenic origin. At Painted Rocks, the weathering forms that might be most easily and effectively halted concern the vegetation growing around some of the petroglyph-adorned boulders. Plants are agents of mechanical and chemical weathering (Drever 1994; Kelly et al. 1998). Roots growing in fissuresols work to wedge rock apart, and they can dislodge boulders from their footings. As branches and leaves brush across rock surfaces, they abrade rock coatings, round petroglyph edges, and even wear away the host rock. Plants create organic acids that can chemically dissolve rock coatings and host rock, and they produce chelating ligands that can bond with the metals in rock coatings and make them mobile. Plants can alter the microclimate around rocks by shading and increasing the residence time of standing water, both of which promote the propagation of lithobiont colonies. Vegetation around boulders also provides fuel for fires, which magnify existing weaknesses in the rock and advance stone decay in their own right (Tratebas et al. 2004).

Results of the RASI analysis indicate neither roots nor plant proximity are major weathering forms acting upon the Painted Rocks as a whole (Table 2). The destructive potential of vegetation is especially noxious in certain isolated contexts, however, and particularly among the 19 boulders with a RASI score of 3 for plant growth near the panel. Several of these are egregious cases where bushes of creosote (*Larrea tridentata*) all but envelope petroglyph-bearing boulders, and the desert varnish on the surfaces of these boulders has completely weathered away. As a result, the petroglyphs are no longer visible, and in several instances the host rock under the bushes has eroded to the point where the glyphs are no longer present.

Though unassuming, creosote bushes pose serious, long-term conservation challenges to adjacent rock art panels. Single creosote bushes can live to be well over 100 years in age (Shreve and Hinckley 1937), after which their crowns split and begin to form clonal colonies (Chew and Chew 1965). These creosote colonies continue to propagate unabated, with some living examples known to date back to the Pleistocene (Vasek 1980). Some of the creosotes at Painted Rocks and their impacts to rock art are quite old, as attested by the presence of incipient clonal colonies and revealed through repeat photography (e.g., Figure 18). Unfortunately, the plant-based damage to the boulders at Painted Rocks is irreversible, and it is impossible to retrodict any information on the rock art once found on those boulders, but which is no longer discernible. Creosote bushes are exceptionally long-lived organisms that do not simply die once their main branches desiccate. In order to prevent continued plant-caused decay at Painted Rocks, removal of existing creosote bushes in close proximity to petroglyph-adorned boulders and ongoing monitoring of creosote growth around rock art is strongly recommended.

Figure 18. *Repeat photography of Boulder No. 344 at Painted Rocks in 1979 (left) and 2017 (right), revealing the long life span of the adjacent creosote bush (left of the boulder) and its cumulative weathering impact to the boulder's surface. (Photo at left by Rick Martynec; at right by Lance Trask.)*

CONCLUSIONS

Rock art is one of the most intellectually accessible, visually engaging, and all-around popular types of cultural heritage asset for the public. A report commissioned by the Society for American Archaeology indicated that 84 (+/-3) percent of adult U.S. citizens support action and legislation aimed at protecting rock art (Ramos and Duganne 2000:27), with the general popularity of rock art publications attesting to a similarly high level of public interest. Left unmanaged, this wide appeal might become a double-edged sword, as increased tourism to unprotected or inadequately managed rock art sites has the potential to exacerbate stone decay processes and aggravate conservation efforts. Effective and flexible conservation management practices are sorely needed in order to preserve what remains of the world's quickly disappearing rock art. Initial steps in conservation planning and action include inventorying a site's assets and evaluating their condition (Figure 1), which has now been accomplished for the Painted Rock Petroglyph Site.

This asset inventory and appraisal of the stability of the Painted Rock Petroglyph Site has demonstrated the applicability of the Rock Art Stability Index (RASI) to inform on particular weathering forces acting upon the site, the extent to which they have damaged the rock art, and their projected impacts in the future. The GIS-aided spatial analysis of the RASI data enabled evaluation of stone decay processes in relation to place-specific weathering agents, and repeat photography provided a gauge on the pace of penetrative vandalism at the site. Combined, these techniques have shown that the Painted Rocks face considerable conservation challenges from natural and human forces. Indeed, according to the Heritage Asset Sensitivity Gauge (HASG), the Painted Rock Petroglyph Site requires a relatively high degree of management in order to conserve the rock art, which implies this same management is needed to protect the various values ascribed to the petroglyphs, as well as any economic and educational benefit from their tourism potential.

Whereas each example of rock art faces a unique conservation challenge, case-specific treatments are incredibly inefficient when considering the thousands of petroglyphs spread across hundreds of boulders at the Painted Rock Petroglyph Site. Accordingly, mitigating impacts that affect a sizeable proportion of the site's rock art, or which affect the general site area, will have the greatest return on conservation investment. The most pronounced natural weathering processes acting upon the Painted Rocks concern surficial scaling and flaking due to case hardening and the development of weathering rinds on the boulders. Although interventions to mitigate these impacts are probably not feasible—and possibly undesirable—effort to mitigate other natural processes of similar severity but impacting fewer boulders is warranted. This would include removal of vegetation that is directly implicated in the erosion of boulder surfaces and the petroglyphs adorning them.

Anthropogenic forces are equally pervasive, if not more so, in the weathering of rock art at the Painted Rock Petroglyph Site. The spatial analysis of RASI data revealed that unrestricted foot traffic across the site area has led to deleterious impacts to the rock art along designated trails and along informal footpaths. In these areas, the boulders exhibit significantly more abrasion and less desert varnish, and usually the edges of petroglyphs are more rounded than in other settings. These erosive impacts are due to the dust and sand that are kicked up and over the boulders, as well as the friction of feet, hands, and other items that come into direct contact with the rock art. Unfettered foot traffic has also adversely affected the artifacts at the site, resulting in the breaking, grinding, and edge-rounding of pottery sherds. Similarly, the location of penetrative vandalism is strongly associated with proximity to designated trails. Additional information and infrastructure to guide visitors around the site and educate them in appropriate site etiquette is essential.

Although the Painted Rocks have weathered the agents of stone decay remarkably well, the impacts of natural and anthropogenic weathering forces have accrued to the point where they alter visitors' experiences at the site. The penetrative vandalism cannot go unnoticed, and several boulders along the perimeter trail have been eroded to the point where the petroglyphs are no longer discernible. Moreover, the ongoing weathering of rock art and other impacts to the site detract from the overall research potential of this unique cultural heritage property. With regard to the sustainability of the Painted Rock Petroglyph Site, anthropogenic weathering is expected to magnify as population levels increase, urban areas expand, and cultural heritage tourism intensifies, especially if the Painted Rocks gain even more prominence in the event of national monument designation. Likewise, natural weathering processes are expected to aggravate in concert with increasing temperatures and aridity. Rather than focus on managing the site under current visitation rates or reacting to threats after they have already impacted the site, an effective, proactive conservation plan must take these forecasted changes into account.

Holistic condition assessments, such as the one presented here, are an essential early step in conservation management planning, but they are not an end in and of themselves. This study of the Painted Rock Petroglyph Site should inform preparation of a formal conservation plan, and whether or not the recommendations are implemented, periodic condition assessments will be needed to monitor natural and human impacts and gauge rates of change in site stability and integrity.

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APPENDIX A

ROCK ART FEATURE INVENTORY

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
1	1	3	308675.0	3655715.5	-	-	-	-
2	0	6	308679.0	3655723.8	-	Yes	-	-
3	1	5	308675.6	3655716.8	-	-	-	-
4	0	1	308676.5	3655723.2	Possibly	-	-	-
5	0	2	308680.5	3655722.7	-	-	-	-
6	0	3	308679.0	3655719.5	-	-	-	-
7	0	2	308680.1	3655719.1	-	-	-	-
8	0	3	308677.9	3655717.8	-	-	-	-
9	0	3	308678.9	3655716.3	-	-	-	-
10	2	0	308676.8	3655715.8	-	-	-	-
11	2	6	308680.2	3655714.4	-	-	-	-
12	0	5	308675.9	3655715.0	-	-	-	-
13	0	2	308681.0	3655712.4	-	Yes	-	-
14	0	2	308679.5	3655712.0	-	Yes	-	-
15	1	3	308678.9	3655712.4	-	-	-	-
16	0	2	308680.9	3655711.1	-	-	-	-
17	2	2	308677.3	3655712.8	-	-	-	-
18	0	1	308678.3	3655712.4	-	-	-	-
19	3	1	308676.5	3655713.1	-	-	-	-
20	3	0	308680.6	3655709.2	-	-	-	-
21	1	1	308681.0	3655708.8	-	-	-	-
22	0	3	308681.6	3655708.3	-	-	-	-
23	0	1	308680.9	3655708.1	-	-	-	-
24	0	4	308679.1	3655709.0	-	-	-	-
25	0	2	308680.6	3655707.5	-	Yes	-	-
26	3	2	308676.4	3655712.2	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
27	5	3	308677.5	3655708.6	-	-	-	-
28	0	1	308675.7	3655713.0	-	-	-	-
29	0	1	308676.3	3655711.1	-	-	-	-
30	2	0	308675.8	3655711.8	-	-	-	-
31	0	4	308673.8	3655711.2	Possibly	-	-	-
32	4	1	308674.0	3655711.8	-	-	-	-
33	0	1	308673.6	3655709.7	Possibly	-	-	-
34	0	3	308675.1	3655714.1	-	-	-	-
35	2	0	308673.2	3655711.6	Possibly	-	-	-
36	0	2	308673.3	3655712.8	-	-	-	-
37	7	18	308669.9	3655711.6	-	-	-	-
38	4	1	308667.0	3655708.1	-	-	-	-
39	3	5	308668.7	3655711.4	-	-	-	-
40	0	1	308669.2	3655712.8	-	-	-	-
41	0	4	308669.6	3655713.4	-	-	-	-
42	0	2	308666.9	3655713.1	-	-	-	-
43	0	2	308668.8	3655713.8	Possibly	-	-	-
44	0	2	308668.3	3655714.2	Possibly	-	-	-
45	0	8	308667.5	3655715.3	Possibly	Yes	-	-
46	0	2	308670.5	3655715.1	-	-	-	-
47	2	2	308672.4	3655714.7	-	Yes	-	-
48	0	5	308665.2	3655716.0	-	-	-	-
49	0	1	308665.3	3655717.0	-	-	-	-
50	4	3	308665.4	3655718.9	-	-	-	-
51	0	1	308672.4	3655715.4	-	-	-	-
52	0	6	308665.4	3655719.9	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
53	0	16	308668.1	3655718.2	-	-	-	-
54	0	8	308670.4	3655716.9	-	-	-	-
55	0	3	308670.0	3655718.0	-	-	-	-
56	0	6	308668.5	3655719.5	-	-	-	-
57	1	3	308672.8	3655717.9	-	-	-	-
58	0	3	308670.6	3655720.3	-	-	-	-
59	0	2	308674.2	3655716.9	-	-	-	-
60	0	1	308674.3	3655722.3	-	-	-	-
61	0	3	308675.5	3655718.4	-	-	-	-
62	0	3	308675.1	3655719.0	-	-	-	-
63	0	2	308637.6	3655704.6	-	-	-	-
64	0	2	308594.7	3655725.4	-	-	-	-
101	80	1	308672.4	3655698.2	-	-	-	-
102	7	5	308674.0	3655707.4	-	-	-	-
103	0	2	308673.5	3655705.1	-	-	-	-
104	10	1	308674.2	3655705.6	-	-	-	-
105	4	3	308675.3	3655705.6	-	-	-	-
106	1	0	308675.6	3655703.7	-	-	-	-
107	0	2	308674.2	3655702.1	Possibly	-	-	-
108	8	0	308675.6	3655702.1	-	-	-	-
109	13	5	308676.4	3655704.2	-	-	-	-
110	7	1	308674.5	3655700.7	-	-	-	-
111	8	5	308676.1	3655702.6	-	Yes	Yes	-
112	1	4	308678.7	3655705.8	Possibly	Yes	-	-
113	8	2	308674.8	3655701.2	-	-	-	-
114	7	4	308675.5	3655700.5	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
115	0	1	308676.8	3655703.0	-	-	-	-
116	1	1	308681.8	3655706.1	-	-	-	-
117	1	0	308680.6	3655705.2	-	-	-	-
118	6	1	308677.5	3655702.9	Possibly	-	-	-
119	0	2	308678.3	3655703.7	-	-	-	-
120	0	1	308682.4	3655705.6	-	-	-	-
121	6	2	308679.0	3655703.7	-	-	-	-
122	7	7	308681.0	3655702.9	-	-	-	-
123	3	0	308683.5	3655703.8	Possibly	-	-	-
124	4	3	308680.8	3655701.9	-	-	-	-
125	12	2	308682.1	3655702.4	-	Yes	-	-
126	2	1	308676.6	3655700.5	Possibly	-	-	-
127	0	3	308674.4	3655699.6	Possibly	-	-	-
128	2	0	308675.0	3655699.6	-	-	-	-
129	24	3	308675.9	3655699.4	-	-	-	-
130	2	2	308675.7	3655698.6	-	-	-	-
131	11	7	308679.2	3655698.7	-	-	-	-
132	6	1	308677.6	3655697.9	-	-	-	-
133	4	3	308674.7	3655698.4	-	Yes	-	-
134	1	0	308681.7	3655696.6	Yes	-	-	-
135	4	0	308677.9	3655697.0	-	-	-	-
136	22	2	308675.3	3655697.8	-	-	-	-
137	2	0	308680.4	3655695.1	Yes	-	-	-
138	9	2	308677.3	3655695.7	-	-	-	-
139	34	3	308673.7	3655698.7	-	-	-	-
140	1	0	308676.1	3655695.7	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
141	2	0	308674.9	3655696.2	-	-	-	-
142	2	1	308674.2	3655695.4	-	-	-	-
143	17	5	308673.9	3655696.3	-	-	-	-
144	6	1	308673.5	3655696.8	-	-	-	-
145	24	1	308673.4	3655694.3	-	-	-	-
146	16	2	308671.1	3655694.2	-	-	-	-
147	13	0	308671.6	3655695.7	-	-	-	-
148	29	0	308671.9	3655696.9	-	-	-	-
149	2	0	308671.6	3655696.3	Yes	-	-	-
150	62	1	308669.4	3655692.6	-	-	Yes	-
151	22	0	308669.9	3655694.6	-	-	-	-
152	7	1	308669.5	3655693.6	Possibly	-	-	-
153	15	1	308670.5	3655696.2	Possibly	Yes	-	-
154	4	0	308665.6	3655689.6	-	-	-	-
155	1	0	308664.7	3655689.1	-	-	-	-
156	2	0	308671.7	3655697.6	-	-	-	-
157	15	0	308669.0	3655694.5	-	-	-	-
158	12	0	308668.2	3655693.2	-	-	-	-
159	22	0	308665.7	3655691.8	-	-	Yes	-
160	2	0	308667.0	3655692.5	-	-	-	-
161	29	1	308668.3	3655693.8	-	-	-	-
162	10	0	308667.3	3655693.1	Possibly	-	-	-
163	13	1	308670.2	3655696.9	-	-	-	-
164	30	4	308667.0	3655693.9	-	-	-	-
165	10	0	308665.7	3655693.2	-	-	-	-
166	7	0	308667.5	3655694.5	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
167	1	0	308665.4	3655692.9	-	-	-	-
168	8	0	308664.7	3655693.0	-	-	-	-
169	2	1	308666.2	3655693.9	-	-	-	-
170	9	0	308671.5	3655697.9	Possibly	-	-	-
171	21	0	308669.8	3655695.3	-	-	-	-
172	3	0	308666.5	3655694.5	Possibly	-	-	-
173	4	1	308670.0	3655697.7	-	-	-	-
174	11	0	308665.9	3655694.5	-	-	-	-
175	28	1	308667.5	3655695.5	-	-	-	-
176	1	0	308664.2	3655693.9	-	-	-	-
177	16	0	308666.6	3655696.0	-	-	-	-
178	17	2	308665.0	3655696.0	-	-	-	-
179	17	0	308667.3	3655697.1	-	-	-	-
180	1	1	308664.4	3655696.9	-	Yes	-	-
181	3	1	308663.3	3655697.0	-	-	-	-
182	11	1	308664.3	3655698.2	-	-	-	-
183	17	2	308663.1	3655698.2	-	-	-	-
184	6	3	308670.6	3655698.6	-	-	-	-
185	34	6	308669.2	3655698.1	-	-	-	-
186	3	1	308666.5	3655699.2	-	-	-	-
187	37	1	308663.1	3655699.6	-	-	-	-
188	2	1	308664.1	3655700.3	Possibly	-	-	-
189	12	1	308669.2	3655699.6	-	-	-	-
190	2	0	308663.4	3655700.6	-	-	-	-
191	3	0	308662.6	3655700.9	-	-	-	-
192	13	1	308666.0	3655699.9	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
193	24	2	308667.8	3655699.7	-	-	-	-
194	5	2	308668.7	3655699.9	-	-	-	-
195	1	0	308662.5	3655701.6	Yes	-	-	-
196	16	0	308661.8	3655701.7	-	-	-	-
197	2	0	308670.1	3655699.6	-	-	-	-
198	42	0	308661.7	3655702.9	-	-	-	-
199	1	2	308670.8	3655699.4	-	-	-	-
200	8	0	308666.7	3655700.5	-	-	-	-
201	1	1	308667.3	3655700.9	-	-	-	-
202	8	0	308665.6	3655700.7	-	-	-	-
203	0	1	308664.4	3655701.5	-	-	-	-
204	18	0	308664.8	3655702.2	-	-	-	-
205	10	1	308668.3	3655701.4	Possibly	-	-	-
206	2	0	308669.8	3655702.7	-	-	-	-
207	19	4	308671.9	3655700.3	Possibly	-	-	-
208	1	0	308670.3	3655702.6	-	-	-	-
209	3	0	308672.4	3655699.8	Possibly	-	-	-
210	7	3	308671.4	3655702.8	-	-	-	-
211	0	1	308670.5	3655703.9	-	-	-	-
212	4	1	308671.1	3655703.1	-	-	-	-
213	5	1	308671.9	3655702.5	-	-	-	-
214	1	0	308671.8	3655703.3	-	-	-	-
215	6	2	308672.0	3655704.4	-	-	-	-
216	6	4	308673.1	3655704.6	-	-	-	-
301	64	0	308655.7	3655693.3	-	-	Yes	-
302	4	0	308662.5	3655695.1	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
303	18	0	308660.7	3655694.9	-	-	-	-
304	2	0	308663.1	3655694.9	-	-	-	-
305	5	0	308663.8	3655695.0	-	-	-	-
306	2	2	308660.0	3655694.0	Possibly	-	-	-
307	17	0	308657.6	3655693.8	-	-	-	-
308	4	0	308658.7	3655693.9	-	-	-	-
309	11	2	308659.4	3655693.8	-	-	-	-
310	33	2	308661.2	3655694.1	-	-	-	-
311	16	1	308660.2	3655693.5	-	-	-	-
312	4	0	308661.2	3655692.3	-	-	-	-
313	3	0	308660.0	3655692.0	-	-	-	-
314	4	0	308661.2	3655692.0	-	-	-	-
315	2	0	308663.9	3655691.4	-	-	-	-
316	54	0	308662.2	3655691.6	-	-	-	-
317	29	0	308663.4	3655691.0	-	-	-	-
318	11	2	308658.9	3655692.1	-	-	-	-
319	12	0	308660.2	3655691.2	Possibly	-	-	-
320	20	0	308661.6	3655690.8	-	-	-	-
321	1	0	308661.8	3655690.2	-	-	-	-
322	1	0	308662.2	3655689.9	-	-	-	-
323	10	2	308657.5	3655692.3	-	-	-	-
324	1	0	308662.4	3655689.5	-	-	-	-
325	1	0	308656.9	3655691.9	-	-	-	-
326	4	0	308657.3	3655691.7	-	-	-	-
327	1	0	308659.9	3655688.4	-	-	-	-
328	1	0	308659.1	3655686.8	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
329	3	0	308657.2	3655689.9	Yes	-	-	-
330	10	0	308656.3	3655692.0	-	-	-	-
331	2	0	308658.3	3655688.6	-	-	-	-
332	2	0	308658.3	3655686.9	-	-	-	-
333	1	0	308657.7	3655689.1	-	-	-	-
334	6	1	308656.6	3655690.0	-	-	-	-
335	1	0	308657.6	3655687.5	-	-	-	-
336	8	0	308656.6	3655690.5	-	-	-	-
337	15	0	308657.2	3655688.7	-	-	-	-
338	15	0	308656.9	3655686.6	-	-	-	-
339	4	0	308657.2	3655685.7	-	-	-	-
340	9	0	308656.4	3655687.6	-	-	-	-
341	3	0	308656.6	3655686.0	Yes	-	-	-
342	3	0	308655.2	3655686.4	Yes	-	-	-
343	14	2	308655.8	3655688.2	-	-	-	-
344	17	0	308654.9	3655689.4	-	-	-	-
345	4	0	308655.3	3655691.6	-	-	-	-
346	2	0	308653.1	3655688.9	-	-	-	-
347	0	1	308650.9	3655685.4	-	-	-	-
348	1	0	308652.9	3655689.5	-	-	-	-
349	3	0	308652.6	3655689.0	-	-	-	-
350	6	0	308652.1	3655688.1	-	-	-	-
351	17	0	308651.3	3655687.2	-	-	-	-
352	4	0	308652.6	3655690.1	Possibly	-	-	-
353	3	0	308649.9	3655687.2	-	-	-	-
354	2	1	308650.2	3655687.9	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
355	17	1	308653.5	3655691.1	-	-	-	-
356	1	0	308651.6	3655689.5	-	-	-	-
357	1	0	308650.9	3655688.9	Yes	-	-	-
358	15	0	308648.2	3655686.0	-	-	-	-
359	5	0	308649.9	3655688.8	-	-	-	-
360	5	0	308650.8	3655689.7	-	-	-	-
361	22	0	308649.4	3655688.4	-	-	-	-
362	15	0	308650.0	3655689.6	-	-	-	-
363	1	0	308649.5	3655689.3	-	-	-	-
364	52	2	308650.7	3655690.5	-	-	-	-
365	3	0	308648.6	3655689.0	-	-	-	-
366	0	1	308650.3	3655691.8	Possibly	-	-	-
367	7	0	308648.4	3655689.6	-	-	-	-
368	9	0	308647.8	3655689.5	-	-	-	-
369	1	0	308648.0	3655690.0	Yes	-	-	-
370	19	5	308649.1	3655691.9	-	-	Yes	-
371	13	0	308649.3	3655692.7	-	-	-	-
372	14	0	308650.6	3655693.1	-	-	-	-
373	4	0	308651.5	3655693.8	-	-	-	-
374	8	2	308649.2	3655694.3	-	-	-	-
375	26	0	308649.1	3655693.6	-	-	-	-
376	1	0	308648.4	3655694.3	Possibly	-	-	-
377	15	2	308649.8	3655694.0	-	-	-	-
378	5	0	308650.5	3655694.1	-	-	-	-
379	5	0	308651.6	3655694.4	Possibly	-	-	-
380	15	0	308652.8	3655694.2	Yes	-	-	broken with pieces missing

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
381	31	0	308649.1	3655695.6	-	-	-	-
382	12	0	308650.0	3655695.8	-	-	-	-
383	14	0	308649.4	3655696.5	-	-	-	-
384	10	0	308652.6	3655694.8	-	-	-	-
385	14	0	308651.6	3655695.7	-	-	-	-
386	9	0	308652.7	3655696.0	-	-	-	-
387	8	0	308649.0	3655698.3	-	-	-	-
388	21	0	308651.8	3655696.9	-	-	-	-
389	18		308650.1	3655697.7	-	-	-	-
390	6	1	308653.1	3655695.2	Possibly	-	-	-
391	1	0	308649.1	3655699.7	-	-	-	-
392	4	1	308649.9	3655698.8	-	-	-	-
393	15	0	308652.5	3655697.2	-	-	-	-
394	46	1	308653.4	3655696.0	-	-	-	-
395	1	0	308647.8	3655701.9	-	-	-	-
396	3	2	308647.4	3655702.3	-	-	-	-
397	13	0	308653.1	3655697.7	-	-	-	-
398	2	0	308653.5	3655695.3	-	-	-	-
399	1	0	308652.7	3655700.6	-	-	-	-
400	14	0	308653.8	3655697.3	-	-	-	-
401	1	0	308652.6	3655699.1	-	-	-	-
402	64	0	308654.7	3655695.3	-	-	-	-
403	5	0	308653.6	3655698.9	-	-	-	-
404	9	1	308654.2	3655698.1	-	-	-	-
405	10	1	308654.0	3655699.3	Possibly	-	-	-
406	11	2	308653.1	3655702.3	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
407	3	1	308653.5	3655699.9	-	-	-	-
408	5	1	308653.8	3655701.5	-	-	-	-
409	34	0	308654.9	3655696.6	-	-	-	-
410	3	0	308654.9	3655697.6	-	-	-	-
411	10	1	308654.5	3655700.1	Possibly	-	-	-
412	9	2	308653.8	3655702.0	Yes	-	-	glyph on underside
413	2	0	308654.0	3655702.6	Yes	-	-	-
414	41	2	308655.1	3655699.0	-	-	-	-
415	17	0	308655.1	3655700.6	Possibly	-	-	-
416	11	0	308655.3	3655698.2	-	-	-	-
417	3	1	308656.1	3655700.0	-	-	-	-
418	10	1	308656.2	3655698.2	-	-	-	-
419	20	0	308655.9	3655696.2	-	-	-	-
420	1	0	308656.5	3655697.4	-	-	-	-
421	7	0	308656.8	3655697.7	Possibly	-	-	-
422	1	0	308657.4	3655697.3	-	-	-	-
423	8	0	308657.5	3655698.3	-	-	-	-
424	12	0	308660.6	3655705.2	-	-	-	-
425	49	1	308657.1	3655696.2	-	-	-	-
426	5	1	308658.0	3655697.6	-	-	-	-
427	1	1	308657.9	3655696.8	Possibly	-	-	-
428	3	2	308660.7	3655697.9	Possibly	-	-	-
429	6	0	308656.6	3655694.4	-	-	-	-
430	2	0	308657.8	3655695.4	-	-	-	-
431	9	2	308661.0	3655696.6	-	-	-	-
432	5	0	308660.6	3655695.7	Yes	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
433	3	0	308661.3	3655696.1	-	-	-	-
434	16	0	308661.6	3655695.3	-	-	-	-
435	1	1	308663.4	3655695.4	-	-	-	-
451	2	0	308657.1	3655703.9	-	-	-	-
452	7	2	308656.1	3655704.6	-	-	-	-
501	54	3	308641.9	3655693.9	-	-	Yes	-
502	0	1	308644.5	3655692.8	Possibly	-	Yes	-
503	4	0	308643.9	3655692.3	-	-	Yes	-
504	5	0	308645.9	3655690.3	-	-	-	-
505	34	0	308645.4	3655689.8	-	-	-	-
506	3	0	308647.4	3655688.3	Possibly	-	-	-
507	4	0	308646.6	3655688.3	-	-	-	-
508	20	0	308646.6	3655687.1	-	-	-	-
509	20	0	308644.5	3655689.8	-	-	Yes	-
510	10	0	308647.0	3655686.2	-	-	-	-
512	1	1	308643.7	3655687.9	-	-	-	-
513	6	0	308642.0	3655692.8	-	-	-	-
514	1	3	308644.5	3655684.9	-	-	-	-
515	17	0	308643.2	3655689.0	-	-	-	-
516	13	0	308643.3	3655688.4	-	-	-	-
517	2	0	308642.3	3655690.9	-	-	-	-
518	15	0	308641.4	3655689.5	-	-	-	-
519	2	0	308641.0	3655686.7	-	-	-	-
520	7	0	308640.6	3655686.1	-	-	-	-
521	13	0	308640.7	3655687.3	-	-	-	-
522	1	0	308639.6	3655687.0	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
523	14	1	308638.1	3655686.8	-	-	-	-
524	21	3	308639.9	3655689.8	-	-	-	-
525	2	0	308637.5	3655687.9	-	-	-	-
526	35	3	308639.2	3655692.2	-	-	-	-
527	5	0	308637.4	3655688.6	-	-	-	-
528	9	0	308638.3	3655691.3	-	-	-	-
529	15	1	308637.0	3655691.2	-	-	-	-
530	2	0	308636.4	3655691.9	-	-	-	-
531	6	4	308639.8	3655693.7	-	-	-	-
532	16	1	308636.8	3655694.4	-	-	-	-
533	20	1	308638.4	3655694.5	-	-	-	-
534	14	1	308637.9	3655697.0	-	-	-	-
535	8	1	308640.3	3655698.6	Possibly	-	-	-
536	2	0	308643.3	3655700.0	-	-	-	-
537	2	0	308646.6	3655703.3	-	-	-	-
538	3	0	308648.7	3655703.9	-	-	-	-
539	3	1	308646.8	3655696.8	-	-	-	colluvium starting to cover glyphs
540	7	0	308645.9	3655696.3	-	-	-	-
541	1	0	308647.0	3655696.1	-	-	-	-
542	20	1	308645.3	3655695.7	-	-	-	-
543	5	0	308647.7	3655695.6	-	-	-	-
601	10	0	308622.7	3655690.6	-	-	-	-
602	3	0	308627.0	3655689.4	Possibly	-	-	-
604	1	0	308630.7	3655689.3	-	-	-	-
605	1	0	308630.4	3655688.7	-	-	-	-
606	6	1	308623.3	3655690.2	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
607	2	0	308621.8	3655688.7	-	-	-	-
608	9	0	308619.2	3655688.4	-	-	-	-
609	3	1	308619.1	3655689.5	-	-	-	-
610	1	0	308615.3	3655689.1	-	-	-	-
611	5	0	308614.8	3655690.5	-	-	-	-
612	9	1	308619.6	3655691.1	Yes	-	-	-
613	9	3	308613.7	3655695.5	-	-	-	-
614	13	1	308622.2	3655691.9	-	-	-	-
615	0	1	308620.8	3655699.2	-	-	-	-
616	2	0	308623.9	3655691.8	Yes	-	-	-
617	8	4	308631.5	3655695.6	-	-	-	-
618	2	1	308630.4	3655694.8	-	-	-	-
619	3	0	308631.3	3655694.2	-	-	-	-
621	2	1	308597.1	3655707.4	-	-	-	-
631	1	0	308589.0	3655742.7	-	-	Yes	-
632	0	1	308592.3	3655730.3	Yes	-	-	-
633	0	4	308590.1	3655730.3	Yes	-	-	-
634	0	1	308588.9	3655733.6	-	-	-	-
635	0	2	308587.3	3655731.3	-	-	-	-
636	0	2	308587.4	3655730.5	-	-	-	-
637	0	4	308582.7	3655727.7	-	-	-	-
638	0	2	308579.1	3655725.4	Possibly	Yes	-	-
639	0	1	308580.5	3655727.9	-	-	-	-
640	0	1	308575.1	3655735.8	Possibly	-	-	-
641	0	2	308570.2	3655746.1	-	-	-	-
642	0	2	308573.2	3655750.3	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
643	0	1	308575.6	3655754.4	-	-	-	-
644	0	3	308587.6	3655752.1	-	-	-	-
645	2	2	308588.5	3655749.6	-	-	-	-
646	7	3	308589.0	3655752.6	-	-	-	-
647	1	5	308590.1	3655754.3	-	-	-	-
648	0	3	308594.5	3655756.0	-	-	Yes	-
649	1	0	308603.0	3655731.7	-	-	-	-
650	0	2	308602.1	3655730.1	-	Yes	-	-
651	0	2	308597.9	3655735.8	-	-	-	-
652	0	2	308599.4	3655732.8	-	-	-	-
653	0	1	308602.7	3655725.0	-	-	-	-
654	0	1	308605.1	3655722.3	-	-	-	-
655	0	2	308592.1	3655738.5	-	-	Yes	-
656	0	2	308604.5	3655724.0	-	-	-	-
657	0	1	308595.7	3655729.4	-	-	-	-
658	1	2	308594.0	3655733.4	-	-	-	-
661	0	1	308606.3	3655759.6	-	-	-	-
662	0	1	308599.5	3655760.6	Yes	-	-	-
663	0	3	308598.0	3655760.7	-	Yes	-	-
664	0	4	308605.4	3655763.1	Yes	Yes	-	-
665	0	3	308618.5	3655759.4	Yes	-	-	-
666	0	3	308608.7	3655759.8	Yes	-	-	has been moved in the last decade
667	0	2	308615.5	3655757.7	-	-	-	-
668	0	2	308614.9	3655755.2	Possibly	-	-	-
669	0	1	308612.0	3655757.1	Possibly	-	-	-
670	0	1	308611.5	3655750.7	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
701	15	5	308671.8	3655731.0	-	-	-	-
702	0	2	308674.8	3655726.9	-	Yes	-	-
703	0	1	308673.2	3655725.3	-	-	-	-
704	1	3	308672.9	3655724.5	-	-	-	-
705	0	2	308671.1	3655724.4	-	Yes	-	-
706	0	1	308671.3	3655726.5	-	-	-	-
707	0	2	308671.7	3655729.8	-	-	-	-
708	0	1	308669.9	3655722.4	Possibly	-	-	-
709	0	1	308669.0	3655723.6	-	-	-	-
710	0	5	308666.7	3655724.1	-	-	-	-
711	0	1	308666.9	3655725.1	-	-	-	-
712	0	4	308662.4	3655722.1	-	-	-	-
713	1	4	308670.4	3655729.8	-	-	-	-
714	0	1	308661.7	3655725.6	Possibly	-	-	-
715	1	3	308665.4	3655726.4	-	-	-	-
716	0	2	308666.5	3655726.0	-	-	-	-
717	0	3	308658.5	3655725.7	-	-	-	-
718	0	1	308667.5	3655730.7	-	-	-	-
719	0	3	308657.4	3655729.2	Possibly	-	-	-
720	0	3	308665.0	3655729.7	-	-	Yes	-
721	1	8	308660.6	3655731.3	-	-	-	-
722	0	2	308668.9	3655731.2	-	-	-	-
723	0	4	308663.4	3655732.1	-	-	-	-
724	3	4	308669.8	3655732.3	-	-	-	-
725	0	1	308674.1	3655729.7	-	-	-	-
726	0	2	308676.2	3655724.9	-	Yes	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
801	11	4	308657.7	3655714.4	-	-	-	-
802	0	5	308664.2	3655713.3	-	-	-	-
803	0	1	308664.5	3655712.5	-	-	-	-
804	0	6	308665.3	3655712.9	-	-	-	-
805	1	0	308663.5	3655711.6	-	-	-	-
806	0	2	308663.2	3655710.3	-	Yes	-	-
807	0	6	308658.2	3655713.7	-	-	-	-
808	4	3	308663.6	3655709.1	-	-	-	-
809	4	0	308663.1	3655709.9	-	-	-	-
810	0	2	308659.3	3655711.8	-	-	-	-
811	3	5	308659.9	3655710.3	-	-	-	attempted theft evident
812	0	2	308661.6	3655708.0	-	-	-	-
813	20	9	308660.2	3655706.4	Possibly	-	-	-
814	10	4	308660.6	3655707.7	-	-	-	-
815	1	2	308659.1	3655711.0	Possibly	-	-	-
816	2	1	308659.3	3655707.3	Possibly	-	-	-
817	0	2	308658.6	3655708.4	Possibly	-	-	-
818	12	5	308658.2	3655711.1	Yes	-	-	-
819	1	0	308658.6	3655709.8	Possibly	-	-	-
820	16	4	308657.8	3655711.9	Possibly	-	-	-
821	2	2	308657.7	3655709.6	Possibly	Yes	-	-
822	10	2	308657.1	3655710.3	Possibly	-	-	-
823	7	2	308658.2	3655707.6	Possibly	-	-	-
824	33	2	308656.3	3655707.4	-	-	-	-
826	0	2	308656.6	3655708.7	-	-	-	-
827	5	1	308656.7	3655709.9	Possibly	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
828	0	2	308656.0	3655710.4	Possibly	-	-	-
829	5	5	308655.7	3655709.2	Possibly	-	-	-
830	2	3	308657.0	3655712.4	Possibly	Yes	-	-
831	3	2	308656.3	3655712.1	-	-	-	-
832	14	4	308655.6	3655710.9	-	Yes	-	-
833	2	5	308657.1	3655713.5	-	Yes	-	-
834	0	3	308656.3	3655712.6	-	-	-	-
835	1	0	308655.9	3655711.4	-	-	-	-
836	54	8	308654.1	3655710.8	-	-	Yes	-
837	1	0	308654.8	3655712.6	-	-	-	-
838	3	8	308655.6	3655713.7	-	Yes	-	-
839	1	5	308653.5	3655714.3	-	-	-	-
840	0	1	308655.9	3655714.7	Possibly	-	-	-
841	0	1	308655.2	3655715.1	-	-	-	-
842	0	4	308652.6	3655715.4	-	Yes	-	-
843	0	2	308653.7	3655715.7	-	Yes	-	-
844	3	4	308657.0	3655715.5	Possibly	-	-	-
845	0	6	308661.5	3655716.5	-	-	-	-
846	1	3	308661.2	3655715.6	Possibly	-	-	-
851	1	7	308654.1	3655715.3	Possibly	-	-	-
852	3	3	308649.6	3655713.6	Possibly	-	-	-
853	0	1	308651.7	3655713.8	Possibly	-	-	-
854	0	3	308649.6	3655713.6	Yes	Yes	-	-
855	0	2	308648.6	3655713.8	Possibly	Yes	-	-
856	0	1	308650.9	3655713.4	Possibly	-	-	-
857	1	3	308648.0	3655714.0	Yes	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
858	0	6	308648.7	3655714.6	-	Yes	-	-
859	0	4	308651.8	3655714.9	-	Yes	-	-
860	0	1	308647.6	3655716.0	Possibly	-	-	-
861	0	1	308647.2	3655716.0	Possibly	-	-	partially buried by gravel
862	0	1	308648.7	3655716.9	-	-	-	-
863	0	3	308648.6	3655717.5	-	-	-	-
864	0	2	308645.8	3655723.7	-	-	-	-
865	1	1	308652.6	3655717.8	Yes	-	-	asphalt partly covering this boulder
866	0	3	308652.1	3655724.5	-	Yes	-	-
867	0	1	308651.8	3655721.1	-	-	-	-
868	0	6	308652.6	3655723.6	-	-	-	-
871	64	12	308651.4	3655711.9	-	Yes	-	-
872	2	0	308653.8	3655709.0	-	-	-	-
873	3	0	308654.6	3655704.8	Possibly	-	-	-
874	1	0	308652.7	3655710.1	Possibly	-	-	-
875	21	0	308652.9	3655706.1	-	-	-	-
876	7	2	308653.1	3655704.6	Possibly	-	-	-
877	28	3	308654.3	3655707.4	-	-	-	-
878	13	0	308655.7	3655705.4	Possibly	-	-	-
879	1	0	308654.0	3655705.4	Possibly	-	-	-
880	22	8	308655.9	3655704.4	Possibly	-	-	-
881	2	2	308651.9	3655709.0	Possibly	-	-	-
882	3	2	308652.6	3655708.3	Possibly	-	-	-
883	6	3	308652.3	3655707.6	Possibly	-	-	-
884	1	2	308651.2	3655706.8	Possibly	-	-	-
885	9	1	308651.3	3655706.0	Possibly	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
886	7	2	308651.8	3655704.7	Possibly	-	-	-
887	20	3	308650.9	3655710.3	-	-	-	-
888	2	7	308650.4	3655708.9	-	-	-	-
889	0	4	308650.0	3655704.5	Possibly	Yes	-	-
890	7	2	308649.1	3655708.0	-	-	-	-
891	0	3	308648.1	3655705.6	Possibly	-	-	-
892	1	0	308647.5	3655705.0	Possibly	-	-	-
893	14	3	308647.8	3655707.5	-	Yes	-	-
894	5	5	308647.3	3655705.8	-	Yes	-	-
895	11	3	308646.4	3655706.0	-	-	-	-
896	1	7	308646.3	3655707.1	-	-	-	-
897	0	3	308649.1	3655710.9	-	-	-	-
901	11	4	308643.6	3655709.3	-	-	-	-
902	0	2	308645.3	3655709.9	-	-	-	-
903	0	2	308644.6	3655708.8	Possibly	-	-	-
904	1	4	308644.3	3655708.2	Possibly	Yes	-	-
905	0	2	308644.8	3655706.5	-	-	-	-
906	0	1	308642.3	3655706.8	Yes	-	-	-
907	5	3	308642.0	3655704.1	Yes	Yes	-	-
908	1	2	308641.3	3655704.1	Possibly	Yes	-	-
909	0	2	308642.3	3655707.5	-	-	-	-
910	2	2	308641.2	3655707.2	Possibly	Yes	-	-
911	12	6	308640.8	3655705.8	Possibly	-	-	-
912	2	3	308641.8	3655708.6	Possibly	Yes	-	-
913	3	6	308640.8	3655709.2	Possibly	-	-	-
914	0	2	308639.6	3655708.8	Possibly	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
915	0	4	308639.9	3655710.1	Possibly	-	-	-
916	0	2	308639.9	3655711.8	Possibly	-	-	-
917	0	4	308642.4	3655709.7	Possibly	Yes	-	-
918	0	2	308640.6	3655713.8	Possibly	-	-	-
919	0	1	308640.5	3655711.7	Possibly	-	-	-
920	8	5	308642.4	3655711.8	-	-	-	-
921	0	5	308643.4	3655712.1	-	-	-	-
922	0	1	308643.1	3655715.3	Possibly	-	-	-
923	1	1	308643.2	3655714.6	Possibly	-	-	-
924	0	1	308643.4	3655715.5	Yes	-	-	-
925	0	2	308643.7	3655716.4	-	-	-	-
926	0	2	308643.4	3655710.0	Possibly	Yes	-	-
927	0	4	308643.9	3655716.0	Possibly	Yes	-	-
928	0	2	308645.4	3655713.6	Possibly	-	-	-
929	0	1	308644.0	3655711.1	Possibly	-	-	-
930	0	1	308644.4	3655710.0	-	-	-	-
931	0	2	308646.2	3655713.4	Possibly	-	-	-
932	0	2	308647.4	3655711.3	-	-	-	-
933	4	0	308644.9	3655709.1	-	-	-	-
934	0	3	308648.8	3655712.1	Possibly	-	-	-
951	0	1	308623.0	3655735.7	Possibly	-	-	-
952	0	3	308617.7	3655735.4	-	-	-	-
953	1	2	308619.6	3655735.0	-	Yes	-	-
954	0	3	308621.6	3655729.6	-	-	-	-
955	0	1	308619.4	3655729.0	-	-	-	-
956	0	2	308622.1	3655736.4	-	Yes	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
957	0	1	308633.5	3655733.1	Possibly	-	-	-
958	0	3	308635.1	3655726.8	-	-	-	-
959	0	1	308635.8	3655725.9	-	-	-	-
961	0	2	308621.7	3655724.1	-	-	-	-
962	0	1	308620.2	3655723.8	-	-	-	-
NB 01	0	3	308680.9	3655710.2	-	-	-	-
NB 02	0	1	308679.4	3655712.6	-	-	-	-
NB 03	14	2	308650.6	3655696.4	-	-	-	-
NB 04	7	0	308652.4	3655696.5	-	-	-	-
NB 05	2	0	308652.0	3655694.6	-	-	-	-
NB 06	1	1	308658.8	3655701.0	Yes	-	-	glyph on underside of boulder
NB 07	3	1	308680.2	3655710.5	-	-	-	-
NB 08	0	1	308613.5	3655751.2	Possibly	-	-	-
NB 09	0	1	308609.5	3655751.6	-	Yes	-	-
NB 10	0	2	308657.1	3655705.4	Possibly	-	-	-
NB 11	0	3	308650.8	3655724.4	-	-	-	-
NB 12	0	1	308620.7	3655734.6	-	-	-	-
NB 13	0	1	308615.5	3655723.1	-	-	-	-
NB 14	0	1	308625.4	3655733.9	-	-	-	-
NB 15	0	1	308675.2	3655716.0	-	-	-	-
NB 16	1	0	308664.1	3655699.8	Possibly	-	-	-
NB 17	4	2	308667.1	3655698.7	-	-	-	-
NB 18	0	1	308669.6	3655700.6	-	-	-	-
NB 19	8	3	308667.0	3655697.8	-	-	-	-
NB 20	2	0	308631.1	3655698.2	Possibly	-	-	-
NB 21	0	1	308677.9	3655720.0	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
NB 22	0	1	308666.6	3655713.9	-	-	-	-
NB 23	1	0	308679.3	3655706.0	-	-	-	-
NB 24	2	0	308668.6	3655693.0	-	-	-	-
NB 25	0	1	308638.2	3655736.0	-	-	-	-
NB 26	1	0	308650.1	3655691.3	-	-	-	-
NB 27	0	1	308650.8	3655694.6	Possibly	-	-	-
NB 28	1	0	308644.2	3655689.2	-	-	-	-
NB 29	1	0	308642.7	3655686.1	-	-	-	-
NB 30	1		308654.0	3655688.6	-	-	-	-
NB 31	0	1	308623.4	3655739.9	-	-	-	-
NB 32	0	1	308738.0	3655704.3	Yes	-	-	non-local basalt
NB 33	1	0	308709.9	3655667.1	Yes	-	-	-
NB 34	1	0	308690.5	3655672.4	Yes	-	-	-
NB 35	0	1	308774.3	3655596.8	Yes	-	-	non-local basalt
NB 36	1	0	308694.4	3655669.3	Yes	-	-	-
NB 37	0	1	308575.3	3655758.2	Yes	-	-	-
NB 38	0	1	308586.6	3655755.0	-	-	-	-
NB 39	0	1	308593.3	3655753.8	-	-	-	-
NB 40	0	1	308598.0	3655752.1	-	-	-	-
NB 41	0	1	308604.5	3655757.4	-	-	-	-
NB 42	0	1	308600.5	3655761.1	-	-	-	-
NB 43	0	1	308610.3	3655756.2	Possibly	-	-	-
NB 44	0	1	308619.4	3655761.8	-	-	-	-
NB 45	0	1	308675.4	3655727.1	-	-	-	-
NB 46	0	2	308673.2	3655729.6	-	-	-	-
NB 47	0	2	308671.2	3655727.7	-	-	-	-

Boulder ID	No. of Petroglyphs	No. of Penetrative Vandalism	UTMs (NAD83)		Has Boulder Moved?	Vandalized in Last Decade?	Also a Grinding Feature?	Comments
			Easting	Northing				
NB 48	0	1	308667.5	3655723.4	-	-	-	-
NB 49	0	1	308667.0	3655723.1	-	-	-	-
NB 50	0	1	308667.9	3655724.1	-	-	-	-
NB 51	0	1	308666.3	3655724.6	-	-	-	-
NB 52	0	2	308660.5	3655729.7	-	-	-	-
NB 53	0	4	308647.8	3655711.6	Possibly	-	-	-
NB 54	0	1	308642.1	3655706.0	Possibly	-	-	-
NB 55	0	1	308642.8	3655708.4	Possibly	-	-	-
NB 56	0	1	308639.8	3655713.6	-	-	-	-
NB 57	0	2	308646.1	3655709.9	Yes	-	-	-
NB 58	0	1	308646.5	3655711.7	Yes	-	-	-
NB 59	0	1	308654.0	3655708.4	Possibly	-	-	-
NB 60	1	0	308653.7	3655704.6	Possibly	-	-	-
NB 61	0	1	308631.6	3655700.2	Possibly	-	-	-
NB 62	1	0	308626.5	3655689.3	-	-	-	-
NB 63	1	0	308625.9	3655686.9	-	-	-	-
NB 64	1	0	308622.4	3655686.7	-	-	-	-
NB 65	4	1	308620.4	3655688.7	-	-	-	-
NB 66	1	0	308612.9	3655690.1	-	-	-	-
NB 67	1	0	308611.7	3655693.9	-	-	-	-

APPENDIX B

ROCK ART STABILITY INDEX (RASI) FIELD FORM

Your Name: ______________________________

Site: ______________________________

GPS Coordinates: ______________________________

Boulder/Panel Scored: ______________________________

Sketch of the Boulder/Panel:

PANEL SCORING: Please indicate your score by circling 0, 1, 2, or 3

Site Setting (Geologically)

	Not Present	Present	Obvious	Dominant
Fissures independent of stone lithification (pressure release, calcrete wedging)	0	1	2	3
Fissures dependent on lithification (bedding, foliations)	0	1	2	3
Changes in textural anomalies (banding, concretions)	0	1	2	3
Rock weakness (Moh's hardness)	0	-1	-2	-3

Weaknesses of the Rock Art Boulder/Panel (Impending Loss)

	Not Present	Present	Obvious	Dominant
Fissuresol (future location of break-off)	0	1	2	3
Roots	0	1	2	3
Plant growth near or on panel	0	1	2	3
Scaling & flaking (future location of flaking — millimeter-scale, or scaling — centimeter-scale)	0	1	2	3
Splintering (following stone structures and oblique to surface)	0	1	2	3
Undercutting	0	1	2	3
Weathering-rind development	0	1	2	3
Other concerns (e.g. water flow)	0	1	2	3

Evidence of Large Erosion Events on and Below the Boulder/Panel (Large Losses)

	Not Present	Present	Obvious	Dominant
Anthropogenic activities	0	1	2	3
Fissuresol/calcrete wedging (or dust in fissuresol, or both)	0	1	2	3
Fire	0	1	2	3
Undercutting	0	1	2	3
Other natural causes of break-off (wedgework of roots, earthquakes, intersection of fractures….)	0	1	2	3

Evidence of Small Erosion Events on the Boulder/Panel (Incremental Loss)

	Not Present	Present	Obvious	Dominant
Abrasion (from sediment transport by water)	0	1	2	3
Anthropogenic cutting (carving, chiseling, bullet impact, ...)	0	1	2	3
Alveolization (honeycombed appearance)	0	1	2	3
Crumbly disintegration (in groups of grains or powdery)	0	1	2	3
Flaking (single or multiple; millimeter-scale)	0	1	2	3
Flaking of the weathering rind	0	1	2	3
Granular disintegration (most frequently sandstone and granitic)	0	1	2	3
Lithobiont pitting	0	1	2	3
Lithobiont release (when the "dam" of weathered rind decayed rock erodes)	0	1	2	3
Loss parallel to stone structure (bedding or foliations)	0	1	2	3
Rock coating detachment (usually incomplete; includes paint material in pictographs)	0	1	2	3
Rounding of petroglyph edges (or blurring of pictograph images)	0	1	2	3
Scaling (centimeter-scale; thicker than flaking)	0	1	2	3
Textural anomaly features erode differentially (clay lenses, cementation differences, nodules)	0	1	2	3
Splintering (following stone structures and oblique to stone surface)	0	1	2	3
Other forms of incremental erosion (e.g. insects, birds)	0	1	2	3

Rock Coatings on the Boulder/Panel

	Not Present	Present	Obvious	Dominant
Anthropogenic (chalking, graffiti, other)	0	1	2	3
Rock coating present	0	-1	-2	-3
Case hardening (deposits in rock that harden outer shell)	0	-1	-2	-3
Salt Efflorescence or subflorescence	0	1	2	3
Notes:				

Highlighting Vandalism and Other Issues

Concerns:	**Please briefly describe the problem and why you believe that this concern endangers the panel. Put in "X" on the right to indicate whether this concern creates a "severe danger", "great danger", "urgent danger" or "problem" for the panel.**	Creates a Problem	Urgent Danger	Great Danger	Severe Danger
Graffiti					
Other Vandalism (describe)					
Trash					
Visitor Impact (e.g., dust, trail proximity)					
Land use issues (e.g., livestock, off-road vehicles)					
Natural processes that are a major concern to you					

Additional Notations on Rock Coatings (note: These do not alter the Rock Art Stability Index Score, but they are useful in analyzing a site's context.)

Less Difficult to Identify in the Field

Rock Coating	Edit to fit your answer	Notes:
Lithobionts (e.g., lichen)	Yes / No / Uncertain	
Rock Varnish	Yes / No / Uncertain	
Droppings	Yes / No / Uncertain	
Dust Coatings	Yes / No / Uncertain	
Iron Film	Yes / No / Uncertain	

APPENDIX C

RASI RESULTS

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
1	0	0	0	-2	1	0	1	1	0	0	2	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	1	0	1	0	0	1	0	-3	-2	0	12
2	0	0	1	-2	1	1	1	2	0	0	1	0	0	1	0	0	0	0	1	0	0	2	2	1	0	0	0	2	0	1	0	0	0	0	-2	-1	0	24
3	3	0	0	-2	3	0	1	2	0	1	3	1	0	3	0	0	0	1	1	0	2	2	2	1	0	0	0	2	1	2	0	0	0	0	-2	-3	0	48
4	0	0	0	-2	0	0	1	2	0	1	2	0	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	16
5	1	0	0	-2	1	0	1	1	1	0	1	1	0	1	0	0	0	1	1	0	0	1	0	0	0	0	1	1	0	1	0	1	0	0	-2	-2	1	20
6	0	0	0	-2	0	0	1	1	0	0	3	1	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	-3	-3	1	8
7	0	0	0	-2	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	1	1	1	0	0	0	0	1	0	1	0	1	0	0	-1	-1	0	12
8	1	0	0	-2	2	0	0	1	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	0	1	0	0	1	0	2	0	0	0	0	-3	-3	1	14
9	1	0	0	-2	1	0	1	2	1	1	1	1	0	1	0	0	0	0	1	0	1	2	1	0	0	0	0	2	0	1	0	1	0	0	-2	-2	0	26
10	0	0	0	-2	1	0	0	2	1	0	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-1	1	12
11	0	0	0	-2	1	0	1	2	0	0	2	0	0	1	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	16
12	3	0	2	-2	3	1	0	1	0	0	2	1	0	2	0	0	0	1	1	1	1	1	1	0	0	0	0	2	2	2	2	0	0	0	-2	-2	0	46
13	0	0	0	-2	1	0	0	1	0	0	2	0	0	0	0	0	0	1	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0	-3	-2	0	6
14	0	0	0	-2	1	0	0	2	0	0	2	1	0	1	0	0	0	1	1	0	1	2	1	0	0	0	0	0	1	2	0	0	0	0	-3	-2	0	18
15	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	6
16	2	0	0	-2	0	0	0	2	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-2	-1	0	14
17	0	0	0	-2	1	0	0	2	0	0	2	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	1	2	0	0	0	0	-3	-2	0	10
18	1	0	0	-2	1	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0	1	1	1	0	1	0	0	1	0	1	0	0	0	0	-1	-1	1	18
19	0	0	0	-2	0	1	1	1	0	0	3	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	0	1	1	0	1	0	-3	0	0	24
20	2	0	0	-2	2	0	1	2	0	0	3	1	0	2	0	0	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	32
21	0	0	0	-2	1	0	1	1	0	1	2	1	0	0	0	0	0	1	1	0	1	2	1	0	0	0	0	2	0	1	0	0	0	0	0	0	0	28
22	0	0	0	-2	1	1	1	2	0	0	2	0	0	1	0	0	0	2	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	-3	-2	0	16
23	2	0	0	-2	2	0	1	2	1	0	2	1	0	2	0	0	0	1	1	1	0	1	0	0	0	0	0	1	0	2	0	1	0	0	-2	-1	0	32
24	0	0	0	-2	1	0	0	2	0	2	1	1	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	2	0	0	0	0	-3	-3	0	14
25	0	0	0	-2	1	0	1	1	0	0	1	0	0	1	0	0	0	1	1	0	0	1	0	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	8
26	1	0	0	-2	0	1	1	1	0	0	3	0	0	0	0	0	1	1	1	1	0	1	1	0	1	0	0	1	0	1	0	0	0	0	-3	0	0	22

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
27	2	0	0	-2	1	0	0	2	1	0	3	0	0	1	0	0	0	0	1	0	0	2	2	0	0	0	0	2	0	2	0	0	0	0	-1	-1	1	32
28	0	0	0	-2	0	1	1	1	0	2	1	2	0	0	0	0	0	2	1	1	0	0	1	0	0	0	0	1	1	1	0	0	0	0	-3	-3	0	16
29	1	0	0	-2	1	1	2	1	0	0	3	0	0	1	0	0	1	0	1	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-1	-1	0	26
30	0	0	0	-2	0	2	3	1	1	3	2	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	28
31	0	0	0	-2	1	0	1	2	0	1	2	0	1	1	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	22
32	1	0	0	-2	1	1	2	1	0	2	3	2	0	1	0	0	0	1	1	0	0	2	1	1	0	0	0	1	0	2	0	0	0	0	-3	-3	0	30
33	0	0	0	-2	1	0	1	1	0	0	1	0	1	1	0	0	0	1	1	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	-1	-1	0	20
34	2	0	0	-2	0	0	0	1	0	0	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	1	0	0	0	0	-3	-3	0	2
35	2	0	0	-2	2	0	1	2	2	1	1	0	1	1	0	0	0	1	1	1	1	1	2	1	0	0	1	2	1	2	1	1	0	0	0	-1	1	54
36	1	0	0	-2	0	0	1	1	0	2	3	0	0	1	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	-3	-2	0	12
37	0	0	0	-2	1	0	0	1	0	1	1	0	0	1	0	0	0	1	2	1	0	1	1	0	1	0	0	1	1	1	0	0	0	0	-2	-2	1	20
38	0	0	0	-2	1	0	0	2	0	2	2	0	0	1	0	0	0	1	2	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-1	1	26
39	0	0	0	-2	1	0	0	1	0	1	2	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	1	0	1	1	0	0	0	0	-3	-3	0	8
40	1	0	0	-2	1	0	0	1	1	2	3	1	0	1	0	0	0	1	1	1	1	0	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	24
41	0	0	0	-2	0	0	0	2	0	1	3	3	0	0	0	0	2	1	1	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-3	-2	0	26
42	0	0	0	-2	2	0	0	1	2	1	2	1	0	0	0	0	0	1	1	0	1	1	1	0	0	0	1	1	0	2	0	2	0	0	-2	-2	0	28
43	1	0	0	-2	1	0	0	1	1	0	1	0	1	1	0	0	0	1	1	0	1	1	1	0	1	0	0	1	0	1	0	1	0	0	-1	-1	1	26
44	1	0	0	-2	1	0	0	1	0	0	1	1	1	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-1	-1	0	14
45	2	0	0	-2	2	0	0	3	1	3	2	2	1	2	0	0	0	1	1	0	0	2	1	0	0	0	0	2	2	2	0	0	0	0	-2	-2	0	46
46	1	0	0	-2	1	0	0	1	1	0	1	0	0	1	0	0	0	0	1	1	1	1	1	0	1	1	0	1	0	1	0	1	0	0	-1	-1	1	26
47	1	0	0	-2	1	0	0	2	0	0	1	1	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	14
48	1	0	0	-2	2	1	3	1	0	3	2	2	0	1	0	0	0	0	1	0	0	1	2	0	1	1	0	1	0	2	0	0	0	0	-2	-2	0	38
49	0	0	0	-2	0	1	2	2	0	3	2	3	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	2	1	2	0	0	1	0	-2	-2	0	36
50	0	0	0	-2	1	0	1	2	0	2	3	2	0	1	0	0	0	1	1	0	0	2	2	0	2	2	0	1	0	1	1	0	0	0	-3	-3	0	34
51	2	0	0	-2	1	0	1	2	0	0	2	0	0	1	0	0	0	1	1	0	0	2	1	0	0	0	0	1	0	1	0	0	0	0	-2	-1	0	22
52	0	0	0	-2	2	0	1	2	0	1	2	0	0	1	0	0	0	0	1	1	1	2	1	0	0	0	0	1	0	2	0	0	0	0	-3	-2	1	24

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
53	2	0	0	-2	1	0	0	1	0	2	1	1	0	1	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	24
54	2	0	0	-2	2	0	2	2	0	2	3	0	0	1	0	0	0	1	1	1	0	2	2	0	0	0	0	1	0	2	0	0	0	0	-3	-2	0	34
55	0	0	0	-2	0	0	1	1	1	1	2	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-2	-2	0	18
56	0	0	0	-2	0	0	0	3	0	1	2	1	0	0	0	0	0	2	1	1	1	2	2	0	0	0	0	2	1	2	0	0	0	0	-2	-2	0	30
57	0	0	0	-2	2	1	1	2	0	1	2	1	0	2	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-1	0	24
58	1	0	0	-2	1	0	0	1	0	1	2	1	0	1	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	1	1	1	1	0	-1	-2	0	30
59	1	0	0	-2	1	0	0	2	0	0	2	0	0	1	0	0	0	1	1	1	0	2	2	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	18
60	0	0	0	-2	0	0	1	2	0	0	2	1	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	2	0	0	0	0	-2	-2	0	16
61	0	0	0	-2	1	0	0	1	0	1	2	0	0	1	0	0	0	0	1	0	0	0	0	0	1	1	0	1	0	1	0	0	0	0	-3	-3	0	6
62	0	0	0	-2	0	0	1	1	0	0	3	1	0	0	0	0	0	1	2	2	0	1	1	1	0	0	0	1	0	0	1	0	0	0	-3	-3	0	16
63	0	0	0	-2	0	0	3	1	0	2	3	2	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	-3	-2	0	16
64	0	0	0	-2	1	0	1	1	1	0	2	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	1	0	1	0	1	0	1	-2	-1	0	18
101	1	0	0	-2	1	0	0	1	0	2	3	1	0	1	0	0	0	1	3	1	0	1	2	0	0	0	0	0	1	2	0	0	0	1	-3	-2	0	30
102	0	0	0	-2	1	1	1	2	0	2	3	1	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-3	0	22
103	0	0	0	-2	0	0	1	1	0	1	3	1	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-2	-3	0	12
104	1	0	0	-2	1	0	0	1	0	0	3	0	0	1	0	0	0	1	1	0	0	2	2	0	0	0	0	1	3	1	0	0	0	0	-3	-2	0	22
105	1	0	0	-2	1	0	0	2	0	0	2	2	0	0	0	0	0	1	1	0	2	1	2	0	0	0	0	3	1	2	0	0	1	0	-2	-2	0	32
106	0	0	0	-2	1	0	1	1	0	0	3	1	0	2	0	0	0	1	1	0	1	1	1	0	1	1	1	1	0	1	0	1	0	0	-3	-3	0	24
107	1	0	0	-2	2	0	0	1	0	0	2	0	1	1	0	0	0	0	1	0	1	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	14
108	0	0	0	-2	0	0	0	1	0	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	10
109	1	0	0	-2	1	1	2	1	1	1	2	1	0	2	0	0	1	1	2	1	0	1	1	0	0	0	1	2	1	1	0	1	0	0	-2	-1	1	44
110	0	0	0	-2	1	0	1	2	0	2	2	1	0	1	0	0	1	0	1	0	0	2	2	0	0	0	0	1	3	2	0	0	0	0	-3	-3	0	28
111	0	0	0	-2	0	0	0	2	1	0	3	0	0	0	0	0	0	1	2	1	0	2	2	0	0	0	0	1	1	1	0	1	0	0	-3	-3	0	20
112	1	0	0	-2	1	0	1	1	0	1	2	0	1	1	0	0	0	0	1	1	0	1	1	0	1	0	0	1	0	1	0	0	1	0	-3	-2	0	20
113	1	0	0	-2	1	0	0	2	0	3	2	0	0	1	0	0	0	0	2	0	0	2	2	0	2	1	0	1	3	2	0	0	0	0	-3	-2	0	36
114	1	0	0	-2	2	0	0	2	0	1	2	1	0	1	0	0	0	1	1	0	0	2	2	0	1	0	0	2	2	2	0	0	0	0	-3	-3	0	30

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
115	0	0	0	-2	0	0	0	1	1	0	2	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-2	-2	2	18
116	0	0	0	-2	0	0	0	1	0	0	2	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	2	1	0	1	0	0	-2	-2	1	16
117	2	0	0	-2	1	0	0	1	1	0	1	0	0	1	0	0	0	1	1	0	0	2	2	0	1	0	0	1	1	1	0	1	0	0	-2	-1	0	26
118	0	0	0	-2	2	0	0	2	0	0	2	0	1	0	0	0	0	0	1	1	1	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	0	22
119	1	0	0	-2	0	0	2	1	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	16
120	0	0	0	-2	0	0	0	2	1	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	0	0	1	0	2	0	1	0	0	-2	-1	0	12
121	1	0	0	-2	1	0	3	1	0	0	2	1	0	1	0	0	0	1	2	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	-2	-2	0	18
122	0	0	0	-2	1	0	0	1	0	0	2	0	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	1	2	1	1	0	1	0	-3	-3	0	16
123	0	0	0	-2	0	1	2	1	0	0	1	0	1	0	0	0	0	2	2	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	-2	-1	0	16
124	0	0	0	-2	0	0	1	2	0	0	1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	0	2	0	0	0	0	-3	-2	1	8
125	0	0	0	-2	0	0	0	2	0	0	2	0	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	16
126	1	0	0	-2	1	0	0	2	0	0	3	0	1	1	0	0	0	0	1	0	0	1	2	0	0	0	0	2	0	3	0	0	0	0	-3	-2	0	22
127	0	0	0	-2	0	0	2	0	0	1	3	0	1	1	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	-3	-3	0	6
128	0	0	0	-2	1	0	2	1	0	1	3	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-3	0	16
129	2	0	0	-2	2	0	2	2	2	1	2	1	0	2	0	0	1	1	3	1	0	2	2	1	0	0	2	2	1	2	0	2	0	0	-1	-1	1	66
130	0	0	0	-2	0	0	1	1	0	1	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	-2	-1	1	12
131	1	0	0	-2	1	0	1	2	1	0	1	0	0	1	0	0	0	1	2	0	1	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-1	0	26
132	0	0	0	-2	1	0	0	1	0	0	2	0	0	1	0	0	0	2	2	0	0	1	1	0	1	1	0	2	1	1	0	0	0	0	-2	-2	0	22
133	0	0	0	-2	0	0	0	2	0	2	2	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	1	1	2	0	0	0	0	-2	-2	0	18
134	0	0	0	-2	0	0	1	1	0	0	1	0	3	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-1	-1	2	24
135	0	0	0	-2	0	0	0	1	0	0	2	1	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	2	1	2	0	0	0	0	-2	-2	0	12
136	1	0	0	-2	2	0	1	2	0	0	2	0	0	1	0	0	0	0	2	0	0	3	1	0	2	2	0	1	2	2	0	0	0	0	-2	-2	0	36
137	0	0	0	-2	0	0	1	3	1	0	1	0	3	0	0	0	2	2	1	0	1	0	0	1	0	0	0	2	1	3	0	0	0	0	-1	-1	2	40
138	0	0	0	-2	0	1	1	2	1	0	2	0	0	0	0	0	0	1	2	0	1	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	0	24
139	3	0	0	-2	0	0	0	2	0	0	3	1	0	2	0	0	1	1	3	0	0	2	2	0	0	0	0	1	2	1	0	0	0	0	-3	-3	0	32
140	1	0	0	-2	1	0	0	1	1	0	1	0	0	1	0	0	0	1	2	0	0	1	1	0	0	0	1	0	0	0	0	1	0	0	-1	-1	0	18

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
141	0	0	0	-2	1	0	0	2	1	0	1	0	0	1	0	0	0	0	1	0	0	2	1	0	0	0	0	1	0	2	0	0	0	0	-2	-1	1	18
142	0	0	0	-2	1	0	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	-1	-1	2	14
143	2	0	0	-2	3	1	0	2	2	0	2	0	0	1	0	0	0	2	2	0	1	1	1	0	0	0	0	2	1	1	0	3	0	0	-2	-2	0	42
144	1	0	0	-2	1	0	1	1	0	0	1	0	0	1	0	0	1	0	2	0	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-2	-1	2	22
145	0	0	0	-2	1	0	2	2	0	1	1	0	0	0	0	0	0	2	3	0	1	0	0	0	0	0	0	3	3	3	0	0	0	0	-1	-2	0	34
146	2	0	0	-2	2	0	1	2	1	0	1	0	0	1	0	0	0	1	2	0	1	2	1	0	0	0	0	1	1	3	0	2	0	0	-2	-2	1	38
147	0	0	0	-2	0	0	1	2	0	0	1	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	16
148	0	0	0	-2	0	0	1	1	0	0	2	1	0	0	0	0	0	1	3	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	1	22
149	1	0	0	-2	1	0	0	1	0	0	1	1	2	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-1	-1	0	24
150	0	0	0	-2	1	1	1	3	0	0	1	0	0	0	0	0	0	2	3	1	0	2	2	0	0	0	0	2	3	2	0	0	0	0	-1	-1	0	40
151	1	0	0	-2	2	0	1	2	0	0	2	0	0	1	0	0	0	1	3	0	1	2	1	0	0	0	0	1	2	2	0	0	0	0	-2	-1	1	36
152	0	0	0	-2	2	0	0	0	0	2	2	0	1	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	18
153	0	0	0	-2	0	0	0	2	0	2	2	0	1	1	0	0	0	1	2	0	0	1	2	0	0	0	0	1	0	2	0	0	0	0	-2	-2	2	26
154	3	0	0	-2	2	0	1	0	1	1	1	1	0	2	0	0	3	0	1	0	0	3	2	0	0	0	0	2	2	0	0	1	1	0	-1	-1	0	46
155	2	0	0	-2	2	0	1	1	0	0	1	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	0	1	2	2	0	0	0	0	-1	-1	0	26
156	1	0	0	-2	1	0	1	1	1	0	2	0	0	1	0	0	0	0	1	0	1	1	1	0	0	0	0	1	1	1	0	1	0	0	-2	-1	0	22
157	1	0	0	-2	2	0	1	2	1	0	1	0	0	1	0	0	0	0	2	1	1	2	1	0	0	0	0	1	1	2	0	2	0	0	-2	-1	0	34
158	1	0	0	-2	1	0	1	1	0	0	3	0	0	2	0	0	0	1	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-3	0	22
159	0	0	0	-2	0	0	1	2	0	0	2	0	0	0	0	0	0	2	3	0	0	2	1	0	1	0	0	2	1	1	0	0	0	0	-2	-1	0	26
160	0	0	0	-2	2	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	1	1	0	0	0	0	2	1	1	0	0	0	0	-2	-1	0	16
161	0	0	0	-2	3	0	0	3	0	1	2	1	0	1	0	0	0	1	3	0	0	2	2	0	0	0	0	2	1	3	0	0	0	0	-2	-2	0	38
162	0	0	0	-2	0	0	1	1	0	1	2	0	1	0	0	0	0	0	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	-3	-2	1	10
163	2	0	0	-2	2	0	1	1	0	0	2	0	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	22
164	0	0	0	-2	1	0	0	1	0	1	1	1	0	1	0	0	1	1	2	1	0	1	1	0	1	0	1	0	1	0	0	0	0	0	-2	-1	0	22
165	1	0	0	-2	1	0	0	1	0	0	1	0	0	1	0	0	0	1	3	1	0	1	1	0	0	0	0	1	2	0	0	0	0	0	-1	-1	0	22
166	0	0	0	-2	1	0	1	1	1	0	2	0	0	1	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-2	1	12

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
167	0	0	0	-2	2	0	0	2	2	1	1	2	0	2	0	0	0	0	1	0	0	0	0	0	0	0	2	2	3	2	0	1	0	0	-1	-1	0	38
168	0	0	0	-2	0	0	1	2	1	1	2	0	0	0	0	0	0	1	3	1	1	0	1	0	0	0	0	1	2	2	0	1	0	0	-2	-2	0	28
169	0	0	0	-2	1	0	0	1	1	1	1	0	0	0	0	0	0	1	1	0	1	2	1	0	0	0	0	1	1	2	0	1	0	0	-1	-1	0	24
170	0	0	0	-2	0	0	0	2	1	1	2	0	1	0	0	0	0	1	2	0	0	2	2	0	1	0	0	2	1	1	0	1	0	0	-2	-2	0	28
171	2	0	0	-2	2	0	2	2	2	1	2	1	0	1	0	0	0	1	3	2	0	1	1	0	1	1	0	1	1	1	0	2	0	0	-2	-2	0	48
172	0	0	0	-2	0	0	1	1	0	0	2	0	1	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	14
173	0	0	0	-2	2	0	1	3	0	2	3	0	0	2	0	0	1	0	1	0	1	2	2	0	0	0	1	2	0	2	0	1	1	0	-3	-3	2	42
174	2	0	0	-2	1	0	0	2	0	0	1	1	0	1	0	0	0	1	2	1	0	2	2	0	0	0	1	1	1	2	0	2	0	0	-1	0	0	40
175	1	0	0	-2	1	0	1	2	0	1	3	1	0	0	0	0	0	1	2	0	0	1	2	0	0	0	0	0	0	2	0	0	0	0	-3	-3	0	20
176	1	0	0	-2	1	0	1	1	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	12
177	0	0	0	-2	1	1	1	2	0	1	1	0	0	0	0	0	0	0	2	0	0	2	1	0	1	0	0	1	2	2	0	0	0	0	-2	-1	0	26
178	0	0	0	-2	0	0	1	2	0	1	2	1	0	2	0	0	0	0	2	1	0	2	2	1	0	0	0	2	2	2	1	1	0	0	-3	-3	0	34
179	0	0	0	-2	1	0	1	1	0	2	2	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	16
180	3	0	0	-2	3	0	1	1	0	0	2	0	0	3	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	1	1	0	0	0	-2	-2	0	30
181	2	0	0	-2	2	1	0	1	1	1	1	1	0	2	0	1	0	1	1	1	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-1	-1	1	38
182	0	0	0	-2	2	0	0	2	0	2	1	0	0	1	0	0	0	1	2	1	0	2	1	0	0	0	0	1	2	2	0	0	0	0	-2	-1	0	30
183	2	0	0	-2	2	0	0	2	2	0	2	0	0	0	0	0	0	1	2	1	1	1	1	0	1	0	0	2	2	1	1	1	0	0	-2	-2	0	38
184	0	0	0	-2	0	0	0	1	0	2	2	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	18
185	1	0	0	-2	1	0	0	2	0	3	2	1	0	1	0	0	0	1	3	0	0	2	2	0	0	0	0	2	2	2	0	0	1	0	-3	-3	0	36
186	0	0	0	-2	0	0	0	2	1	1	2	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	1	1	0	1	0	0	-2	-2	0	16
187	0	0	0	-2	1	0	0	2	0	0	1	0	0	1	0	0	0	0	2	1	1	2	1	0	0	0	0	0	3	2	0	0	0	0	-3	-2	0	20
188	0	0	0	-2	0	0	0	1	1	1	2	1	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	0	0	1	0	0	-1	-1	0	18
189	0	0	0	-2	0	1	2	1	0	2	3	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-3	0	20
190	1	0	0	-2	1	0	0	1	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	-3	-3	0	6
191	0	0	0	-2	1	0	1	2	0	0	3	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	12
192	1	0	0	-2	1	0	0	1	2	1	2	0	0	1	0	0	0	1	2	0	0	1	1	0	0	0	1	1	1	1	0	1	0	0	-1	-1	0	30

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
193	0	0	0	-2	1	0	0	2	0	3	3	2	0	2	0	0	1	2	2	0	0	2	2	0	0	0	0	1	0	2	0	0	0	0	-3	-3	0	34
194	0	0	0	-2	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	4
195	2	0	0	-2	2	0	0	2	1	0	1	0	2	1	0	0	0	0	2	0	1	2	1	0	0	0	0	1	2	2	0	1	0	0	-2	-1	2	40
196	0	0	0	-2	1	0	1	2	0	1	2	0	0	1	0	0	0	0	2	0	0	2	1	0	0	0	0	0	1	2	0	0	0	0	-3	-2	0	18
197	1	0	0	-2	1	0	3	1	0	2	3	1	0	1	0	0	0	1	1	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	-3	-3	0	22
198	2	0	0	-2	0	0	0	2	0	3	2	1	0	0	0	0	0	1	3	1	0	2	2	0	1	1	0	1	1	2	0	1	0	0	-2	-2	0	40
199	1	0	0	-2	1	0	1	2	0	2	2	0	0	1	0	0	0	0	2	0	0	1	1	0	0	0	0	0	1	2	0	0	0	0	-3	-3	0	18
200	0	0	0	-2	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	0	1	0	1	0	0	0	0	-3	-2	0	10
201	0	0	0	-2	0	0	1	1	1	2	3	1	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	2	0	1	0	1	0	0	-3	-3	0	20
202	1	0	0	-2	1	0	0	1	0	0	1	0	0	0	0	0	0	1	2	0	0	2	1	0	0	0	0	2	2	2	0	0	0	0	-2	-1	1	24
203	1	0	0	-2	1	0	0	1	0	0	2	0	0	1	0	0	0	1	2	1	0	1	1	0	0	0	0	0	0	0	0	1	0	0	-1	-1	0	18
204	1	0	0	-2	1	0	0	1	0	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-1	1	18
205	2	0	0	-2	2	0	0	1	0	3	3	2	1	0	0	0	0	2	0	0	0	0	0	0	0	0	2	2	1	3	0	1	1	0	-3	-3	2	40
206	1	0	0	-2	2	0	2	2	0	0	2	0	0	1	0	0	0	1	2	0	0	2	2	0	1	1	0	1	1	2	0	0	0	0	-2	-1	1	38
207	0	0	0	-2	0	0	0	2	0	3	2	3	1	0	0	0	0	1	2	1	0	2	2	0	1	0	0	1	1	2	0	0	0	0	-2	-2	0	36
208	0	0	0	-2	1	0	1	1	0	0	2	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	-2	-2	0	10
209	0	0	0	-2	0	0	0	2	0	2	2	3	1	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	1	2	1	0	0	0	-2	-2	0	28
210	0	0	0	-2	1	0	0	1	0	0	3	0	0	1	0	0	0	0	2	0	0	0	1	0	0	0	0	1	0	1	0	0	1	0	-3	-3	0	8
211	0	0	0	-2	1	0	1	1	0	0	3	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-2	0	6
212	0	0	0	-2	1	0	0	1	0	0	1	0	0	0	0	0	2	1	1	1	0	1	1	0	1	0	0	1	1	1	0	0	0	0	-3	-2	1	16
213	1	0	0	-2	1	0	0	0	0	1	2	1	0	1	0	0	0	1	2	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	18
214	1	0	0	-2	1	0	0	2	0	0	3	0	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	2	0	2	0	0	0	0	-2	-3	1	20
215	0	0	0	-2	1	0	0	2	2	0	1	0	0	0	0	0	0	0	2	1	0	2	1	0	2	0	0	1	2	2	0	2	0	0	-3	-1	0	30
216	0	0	0	-2	0	0	0	1	0	3	2	3	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	2	2	1	0	0	0	0	-2	-2	0	26
301	0	0	0	-2	0	1	1	2	1	1	2	0	0	0	0	0	0	1	3	1	1	2	2	0	1	1	0	2	1	2	1	1	0	0	-2	-2	0	42
302	1	0	0	-2	1	0	3	2	0	2	3	0	0	0	0	0	0	0	2	1	0	0	2	0	0	0	0	1	0	2	0	0	0	0	-3	-3	0	24

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
303	1	0	0	-2	1	0	0	1	0	1	2	1	0	1	0	0	0	1	2	1	0	1	1	0	1	1	0	1	1	1	0	1	0	0	-2	-2	0	28
304	0	0	0	-2	0	0	2	1	0	0	2	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	0	0	0	0	0	-2	-2	0	10
305	0	0	0	-2	0	2	2	1	0	0	2	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	20
306	0	0	0	-2	0	0	0	1	1	1	2	1	1	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-2	-2	0	18
307	1	0	0	-2	2	0	1	2	1	0	2	1	0	1	0	0	0	0	2	0	0	1	1	0	0	0	1	1	1	2	0	1	0	0	-2	-3	0	28
308	0	0	0	-2	2	0	1	2	2	0	1	0	0	1	0	0	0	1	2	1	0	2	2	0	0	0	0	2	2	2	0	2	0	0	-2	-1	2	44
309	3	0	0	-2	2	0	0	2	0	0	2	0	0	3	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	30
310	2	0	0	-2	1	0	0	1	1	1	1	1	0	1	0	0	0	1	3	1	0	1	1	0	1	0	0	1	1	1	0	1	0	0	-1	-1	1	36
311	0	0	0	-2	0	0	1	2	0	1	2	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	22
312	0	0	0	-2	1	0	0	1	1	0	1	0	0	0	0	0	1	1	1	0	0	1	1	0	1	1	0	1	0	2	0	1	0	0	-3	-2	1	18
313	1	0	0	-2	2	0	0	3	2	1	1	0	0	1	0	0	0	2	2	0	1	3	1	0	0	0	0	3	1	3	0	2	0	0	-2	-1	0	48
314	1	0	0	-2	1	0	0	1	0	0	1	1	0	1	0	0	0	1	2	0	0	1	1	0	1	0	0	0	1	0	1	1	0	0	-1	-1	1	24
315	0	0	0	-2	0	0	0	2	0	0	1	0	0	0	0	0	0	0	2	0	0	1	2	0	0	0	0	1	1	2	0	0	0	0	-1	-2	1	16
316	0	0	0	-2	0	0	1	3	1	0	1	0	0	0	0	0	0	2	3	1	0	3	3	1	0	0	0	2	3	2	0	1	0	0	-2	-1	0	44
317	1	0	0	-2	2	0	0	2	1	0	3	1	0	1	0	0	0	0	3	0	0	1	1	0	0	0	1	1	2	2	0	1	0	0	-2	-3	1	34
318	3	0	0	-2	3	0	0	3	2	0	1	0	0	2	0	0	0	1	2	0	1	2	2	0	1	1	0	2	2	2	0	2	0	0	-2	-1	1	56
319	0	0	0	-2	0	0	0	2	0	1	2	0	1	0	0	0	0	1	3	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-1	2	26
320	1	0	0	-2	1	0	2	1	1	0	1	0	0	1	0	0	0	1	3	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-1	-1	1	30
321	0	0	0	-2	0	0	3	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	2	1	0	0	0	3	0	-1	-1	0	18
322	2	0	0	-2	2	0	3	0	2	0	1	2	0	2	0	0	0	2	3	0	0	0	1	2	0	0	0	1	2	1	1	0	0	0	-1	0	0	48
323	2	0	0	-2	2	0	1	3	2	0	2	0	0	1	0	0	0	1	2	0	0	3	2	0	0	0	0	2	2	2	0	2	0	0	-2	-1	1	50
324	0	0	0	-2	1	0	1	2	1	0	1	1	0	1	0	0	0	1	2	0	0	1	1	0	0	0	1	1	0	1	0	1	0	0	-1	0	1	30
325	1	0	0	-2	2	0	1	2	2	0	1	0	0	1	0	0	0	0	1	1	0	2	1	0	1	0	0	2	1	2	0	1	0	0	-2	-1	0	34
326	0	0	0	-2	0	0	1	2	1	0	2	1	0	0	0	0	0	1	2	1	0	0	1	0	0	0	0	2	1	2	0	1	0	0	-2	-2	1	26
327	1	0	0	-2	0	0	3	1	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	0	2	2	0	0	0	0	-1	-1	0	22
328	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	14

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
329	0	0	0	-2	1	0	1	1	0	1	1	0	2	0	0	0	0	3	3	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	0	2	32
330	0	0	0	-2	0	0	0	2	1	0	2	0	0	0	0	0	0	1	2	0	0	0	1	0	0	1	0	2	2	2	0	1	0	0	-2	-2	0	22
331	1	0	0	-2	1	0	1	2	1	0	1	0	0	1	0	0	0	0	1	0	0	2	1	0	1	1	0	1	1	2	0	1	0	0	-2	-1	1	30
332	0	0	0	-2	0	0	1	2	1	1	1	0	0	0	0	0	0	0	1	0	0	2	0	0	0	0	0	1	1	0	0	1	0	1	-1	-1	0	18
333	1	0	0	-2	1	0	0	1	1	0	1	0	0	1	0	0	0	1	2	0	0	1	0	0	0	0	1	0	1	1	0	1	0	0	-1	-1	1	22
334	2	0	0	-2	2	0	2	2	1	0	1	0	0	1	0	0	0	1	2	0	1	3	1	0	0	0	0	3	2	2	0	1	0	0	-2	-1	0	44
335	0	0	0	-2	0	0	0	2	0	0	2	3	0	0	0	0	0	1	2	1	1	0	0	0	0	0	0	1	0	2	0	0	0	0	-2	-2	0	18
336	0	0	0	-2	0	0	1	3	2	0	1	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	3	1	3	0	2	0	0	-1	-1	0	34
337	1	0	0	-2	2	0	1	2	0	0	2	2	0	1	0	0	0	1	3	0	0	0	0	0	0	0	0	2	2	1	0	0	0	0	-2	-2	0	28
338	0	0	0	-2	1	0	1	0	1	0	1	0	0	1	0	0	0	1	3	1	0	1	0	0	1	0	1	3	1	1	0	1	0	0	-1	-1	1	32
339	0	0	0	-2	0	1	2	2	0	0	1	0	0	0	0	0	0	1	2	0	0	0	2	0	0	0	0	2	3	2	0	0	0	0	-1	-1	0	28
340	1	0	0	-2	1	0	0	2	0	0	2	0	0	1	0	0	0	1	2	1	0	2	2	0	1	0	0	2	2	2	0	1	0	0	-2	-2	1	36
341	1	0	0	-2	0	0	1	1	1	1	1	0	3	1	0	0	0	1	3	0	0	1	1	0	0	0	1	2	1	0	0	2	0	0	-1	0	1	40
342	0	0	0	-2	1	0	0	2	1	0	1	0	3	0	0	0	0	1	2	0	0	1	0	0	0	0	0	2	0	1	0	1	0	0	-1	0	3	32
343	2	0	0	-2	0	2	3	2	0	1	1	0	0	2	0	0	0	0	3	1	0	0	1	0	0	0	2	3	3	1	0	0	0	0	-1	-1	0	46
344	3	0	0	-2	2	0	3	2	0	0	2	0	0	1	0	0	0	2	3	0	0	2	2	0	0	0	0	2	2	2	0	0	0	0	-2	-1	0	46
345	1	0	0	-2	2	0	0	2	0	0	1	0	0	1	0	0	0	1	1	1	1	2	2	0	0	0	0	2	0	3	0	1	0	0	-2	-2	0	30
346	3	0	0	-2	1	0	2	1	0	0	1	0	0	3	0	0	0	0	2	0	0	1	0	0	0	0	0	0	2	2	0	1	0	0	-1	-1	1	32
347	0	0	0	-2	0	0	0	1	0	0	3	0	0	0	0	0	1	0	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	-3	0	10
348	0	0	0	-2	1	0	0	1	1	0	1	1	0	1	0	0	0	1	1	0	0	1	1	1	0	0	1	1	3	1	0	1	0	0	-1	-1	1	30
349	0	0	0	-2	2	0	0	2	0	0	2	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	0	2	1	2	0	0	0	0	-2	-1	1	26
350	1	0	0	-2	2	0	0	3	2	0	1	0	0	0	0	0	0	1	2	0	0	3	1	0	2	1	0	3	1	2	0	2	0	0	-2	-1	1	46
351	2	0	0	-2	2	0	0	3	0	0	1	1	0	2	0	0	0	3	3	1	0	0	3	0	0	0	0	3	3	3	0	0	0	0	-1	-1	0	52
352	0	0	0	-2	1	0	0	2	0	1	2	0	1	0	0	0	0	0	2	0	0	2	1	0	0	0	0	0	2	2	0	1	0	0	-3	-2	0	20
353	2	0	0	-2	2	0	0	2	1	0	1	0	0	2	0	0	0	2	1	0	0	0	1	0	0	0	2	1	2	2	0	2	0	0	-1	-2	1	38
354	0	0	1	-2	1	0	0	1	1	0	1	1	0	1	0	0	1	1	2	1	0	1	1	0	0	0	1	2	2	1	0	1	0	0	-1	-1	1	36

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
355	0	0	0	-2	0	0	0	2	0	1	2	1	0	0	0	0	0	1	3	1	1	2	1	0	0	0	0	2	3	2	0	0	0	0	-2	-2	0	32
356	0	0	0	-2	0	0	0	2	0	0	2	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	2	2	0	1	0	0	-2	-2	1	20
357	1	0	0	-2	1	0	0	2	2	2	2	0	2	1	0	0	0	1	1	0	0	1	1	0	0	0	0	1	3	2	0	1	0	0	-1	-2	2	42
358	0	0	1	-2	1	1	2	1	0	0	2	0	0	0	0	0	0	0	3	2	0	1	1	0	0	0	0	1	1	1	1	0	2	0	-2	-1	0	32
359	2	0	0	-2	2	0	1	2	3	0	2	0	0	1	0	0	0	1	2	0	0	2	2	0	1	0	0	1	1	2	0	1	0	0	-2	-1	1	44
360	0	0	0	-2	0	0	1	2	2	0	2	0	0	0	0	0	0	0	2	1	1	1	1	0	1	0	0	1	2	2	0	1	0	0	-1	-2	1	32
361	1	0	0	-2	2	0	0	2	1	0	2	0	0	1	0	0	0	1	3	0	0	2	2	0	0	0	0	2	2	3	0	2	0	0	-2	-1	0	42
362	1	0	0	-2	2	0	1	2	0	0	2	0	0	1	0	0	0	0	2	0	0	0	2	0	0	0	0	2	1	2	0	1	0	0	-2	-2	1	28
363	1	0	0	-2	1	0	0	2	0	0	2	0	0	1	0	0	0	0	1	0	0	0	1	0	0	0	0	2	1	2	0	0	0	0	-2	-1	0	18
364	1	0	0	-2	1	0	1	1	1	0	2	0	0	0	0	0	0	1	3	0	0	2	2	0	0	0	0	0	2	1	0	1	0	0	-1	-1	0	30
365	1	0	0	-2	1	0	0	2	0	0	2	0	0	0	0	0	0	1	2	2	0	1	1	0	0	0	0	2	0	2	0	0	0	0	-1	-2	0	24
366	0	0	0	-2	0	0	1	1	0	0	1	0	1	0	0	0	0	1	2	0	0	1	1	0	0	0	0	2	2	1	0	0	0	0	-1	0	0	22
367	2	0	0	-2	2	0	1	2	1	0	2	0	0	0	0	0	0	1	2	0	1	1	1	1	0	0	0	1	1	2	0	1	0	0	-2	-2	0	32
368	1	0	0	-2	1	0	1	1	0	0	2	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	0	2	1	1	0	0	0	0	-2	-1	1	22
369	0	0	0	-2	1	0	1	1	1	1	2	0	2	1	0	0	0	1	2	0	0	2	1	0	0	0	0	2	1	1	0	1	0	0	-1	-1	0	34
370	0	0	0	-2	1	0	1	0	0	2	1	2	0	1	0	0	0	1	3	0	0	1	1	0	0	0	0	1	2	2	0	1	0	0	-1	-1	1	34
371	0	0	0	-2	1	1	3	2	1	1	2	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	1	2	2	0	0	2	0	-1	-1	0	40
372	0	0	0	-2	0	3	3	1	0	2	2	1	0	0	0	0	0	2	3	1	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	36
373	0	0	0	-2	2	0	1	2	2	1	2	0	0	0	0	0	0	0	2	3	1	2	2	0	2	0	0	2	2	2	0	2	0	0	-2	-2	0	48
374	0	0	0	-2	1	0	2	1	0	0	2	0	0	1	0	0	0	1	2	0	0	1	2	0	0	0	0	1	2	0	0	0	0	0	-2	-2	0	20
375	0	0	0	-2	0	1	3	1	0	0	2	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	-2	-2	0	14
376	1	0	0	-2	1	0	2	2	1	0	2	0	1	2	0	0	0	0	1	0	0	1	1	0	1	1	0	0	1	2	0	1	0	0	-3	-2	0	28
377	0	0	0	-2	2	0	1	2	0	1	1	1	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-3	1	18
378	0	0	0	-2	0	3	3	1	0	2	2	0	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-3	-2	0	28
379	0	0	0	-2	1	0	0	2	0	2	2	1	1	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	24
380	3	0	0	-2	0	0	0	0	0	0	1	0	3	1	0	0	0	1	3	2	0	1	0	0	0	0	1	1	1	1	0	0	0	0	-1	-1	1	32

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
381	1	0	0	-2	1	0	1	2	0	2	2	2	0	1	0	0	0	2	3	0	0	2	2	0	1	2	1	2	2	2	2	0	0	0	-2	-2	1	56
382	0	0	0	-2	1	0	0	2	1	1	1	0	0	0	0	0	0	1	2	0	0	2	1	0	0	0	0	2	2	2	0	1	0	0	-2	-1	0	28
383	0	0	0	-2	0	0	1	1	0	1	3	0	0	0	0	0	0	0	3	1	0	1	1	0	1	1	0	1	1	1	0	0	0	0	-3	-2	0	20
384	0	0	0	-2	1	0	0	3	1	1	2	1	0	0	0	0	0	1	3	1	0	2	2	0	1	0	1	2	1	2	0	0	0	0	-2	-2	0	38
385	1	0	0	-2	1	0	0	1	1	1	2	1	0	1	0	0	1	0	3	1	0	1	1	0	0	1	1	1	1	1	1	1	0	0	-1	-1	1	40
386	0	0	0	-2	2	0	2	2	2	0	2	0	0	0	0	0	0	1	2	0	1	2	2	0	0	0	0	2	2	1	0	1	0	0	-2	-1	0	38
387	0	0	0	-2	1	0	1	2	0	2	2	0	0	0	0	0	0	1	2	2	0	1	1	0	2	0	0	1	2	0	0	1	0	0	-2	-2	0	30
388	1	0	0	-2	1	0	1	2	0	0	2	0	0	0	0	0	0	0	2	0	0	1	2	0	0	0	0	1	3	2	0	0	0	0	-2	-3	1	24
389	1	0	0	-2	2	0	0	2	2	2	2	0	0	0	0	0	0	1	2	1	0	2	1	0	0	0	0	2	2	2	0	1	0	0	-3	-2	0	36
390	1	0	0	-2	1	0	0	1	0	1	3	0	1	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-3	0	12
391	0	0	0	-2	0	0	0	1	0	3	3	2	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-3	0	14
392	0	0	0	-2	0	0	1	1	0	1	3	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	12
393	0	0	0	-2	2	0	1	2	0	1	2	0	0	1	0	0	0	0	2	0	0	2	2	0	0	0	0	2	2	1	0	1	0	0	-2	-2	0	30
394	0	0	0	-2	0	2	2	2	0	2	2	1	0	0	0	0	0	1	3	1	0	2	2	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	36
395	0	0	0	-2	0	0	0	2	0	0	2	2	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	20
396	0	0	0	-2	0	0	0	1	0	3	2	2	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	14
397	0	0	0	-2	1	0	2	2	0	1	2	0	0	0	0	0	0	0	2	0	0	1	1	0	1	1	0	0	0	2	0	0	0	0	-3	-2	0	18
398	2	0	0	-2	2	1	2	2	1	0	1	0	0	0	0	0	0	1	2	0	1	2	1	0	1	0	0	2	1	2	0	1	0	0	-1	-1	1	44
399	1	0	0	-2	1	0	3	2	0	0	2	0	0	0	0	0	2	0	1	1	0	2	1	0	1	0	0	0	1	2	0	1	1	0	-3	-2	0	30
400	0	0	0	-2	2	0	0	2	0	1	2	0	0	0	0	0	0	1	2	0	0	2	2	0	0	0	0	2	1	2	0	0	0	0	-2	-2	0	26
401	3	0	2	-2	1	0	0	1	0	3	1	2	0	3	0	0	0	0	2	3	2	1	1	0	0	0	0	0	2	1	2	0	0	0	-1	-1	0	52
402	1	0	0	-2	1	0	3	3	1	0	2	2	0	1	0	0	0	2	3	0	0	3	2	0	0	0	0	2	3	3	1	0	0	0	-2	-2	0	54
403	0	0	0	-2	1	0	1	1	0	1	2	2	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	22
404	0	0	0	-2	1	0	0	2	0	2	3	0	0	1	0	0	0	0	2	1	0	1	1	0	0	0	1	1	0	1	0	0	0	0	-3	-3	2	22
405	0	0	0	-2	2	0	1	2	0	1	2	0	1	2	0	0	0	0	2	0	1	2	2	0	0	0	0	2	2	2	0	1	0	0	-2	-2	0	38
406	0	0	0	-2	0	0	1	2	0	2	2	2	0	1	0	0	0	0	2	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	20

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
407	0	0	0	-2	2	0	0	2	0	0	3	0	0	0	0	0	0	0	2	1	0	0	1	0	0	0	0	1	0	2	0	0	0	0	-3	-3	0	12
408	0	0	0	-2	0	0	0	2	0	3	2	3	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	2	1	2	0	0	0	0	-2	-2	0	30
409	2	0	0	-2	2	0	2	1	1	0	2	0	0	1	0	0	0	1	3	1	0	2	2	0	0	0	0	2	1	1	0	1	0	0	-1	-1	0	42
410	1	0	0	-2	1	0	0	2	0	3	2	0	0	0	0	0	0	2	2	0	1	1	2	1	0	0	0	2	2	1	0	0	0	0	-2	-2	0	34
411	0	0	0	-2	1	0	1	2	0	2	3	0	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1	2	0	0	0	0	-3	-2	0	20
412	0	0	0	-2	1	0	0	1	0	3	1	0	0	1	0	0	2	0	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-3	-3	0	18
413	0	0	0	-2	1	0	0	1	0	0	1	0	0	1	0	0	2	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	-2	0	0	12
414	0	0	1	-2	0	0	0	2	0	1	2	1	0	0	0	0	0	2	3	1	0	2	2	0	0	0	0	1	2	2	0	0	0	0	-3	-2	0	30
415	2	0	0	-2	1	0	0	2	0	3	2	0	1	0	0	0	0	1	2	0	1	1	1	0	1	0	0	1	1	2	0	0	0	0	-2	-2	0	32
416	0	0	0	-2	2	0	0	2	1	1	2	0	0	0	0	0	0	0	2	1	1	2	2	0	0	0	0	2	1	1	0	1	0	0	-2	-2	0	30
417	2	0	0	-2	2	0	1	2	1	1	1	0	0	1	0	0	0	1	2	1	0	1	1	0	0	0	0	2	1	2	0	1	0	0	-3	-2	1	34
418	0	0	0	-2	1	0	0	1	0	1	3	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-3	-2	0	16
419	0	0	0	-2	1	0	2	1	0	0	3	0	0	0	0	0	0	0	2	0	0	1	1	0	1	0	0	0	1	1	0	0	0	0	-3	-3	0	12
420	0	0	0	-2	1	0	0	1	0	0	1	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	6
421	0	0	0	-2	1	0	0	2	1	0	3	0	1	1	0	0	0	0	2	0	0	1	1	0	0	0	1	1	2	2	0	1	0	0	-3	-3	0	24
422	0	0	0	-2	1	0	1	1	1	1	3	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	1	0	0	-3	-2	1	16
423	0	0	0	-2	0	0	0	1	0	1	2	1	0	0	0	0	0	1	2	1	0	1	1	0	1	1	0	1	1	1	0	1	0	0	-2	-2	0	22
424	2	0	0	-2	1	0	1	1	1	0	1	0	0	1	0	0	0	0	2	2	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-1	0	0	28
425	0	0	0	-2	0	0	0	2	2	3	2	0	0	0	0	0	0	0	3	1	0	2	2	0	1	1	0	1	2	2	0	2	0	0	-2	-2	0	40
426	1	0	0	-2	1	0	0	1	2	0	1	0	0	1	0	0	0	1	2	0	0	1	1	0	0	0	2	1	0	1	0	2	0	0	-1	-1	0	28
427	1	0	0	-2	1	0	0	0	2	0	1	0	1	1	0	0	0	0	1	0	2	1	1	2	0	0	1	0	0	1	0	2	0	0	-1	-1	0	28
428	0	0	0	-2	0	0	0	1	0	3	2	1	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	14
429	1	0	0	-2	1	0	1	1	1	0	2	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-1	0	16
430	0	0	0	-2	0	0	0	2	0	0	1	0	0	0	0	0	0	1	2	0	0	2	1	0	0	0	0	2	2	2	1	0	0	0	-1	-1	0	24
431	0	0	0	-2	2	0	0	1	1	1	2	0	0	1	0	0	0	0	2	0	0	1	1	0	0	0	0	1	2	1	0	1	0	0	-2	-2	0	22
432	0	0	0	-2	0	0	1	1	0	1	2	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	-2	-2	0	12

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
433	0	0	0	-2	1	0	0	1	1	1	3	0	0	0	0	0	0	0	2	0	0	1	1	0	1	1	0	1	1	1	0	0	0	0	-3	-2	0	18
434	2	0	0	-2	2	0	0	2	0	1	1	0	0	1	0	0	0	0	2	0	0	1	2	0	0	0	0	2	0	2	1	1	0	0	-1	0	0	34
435	0	0	0	-2	1	0	1	1	0	1	2	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	14
451	3	0	3	-2	3	0	1	3	3	0	1	2	0	2	0	0	0	0	1	3	3	2	2	0	0	0	1	2	3	3	2	2	0	0	-1	-1	1	84
452	0	0	0	-2	0	0	0	1	0	3	3	3	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-3	0	16
501	0	0	0	-2	1	0	1	1	0	2	2	0	0	0	0	0	0	1	3	0	0	1	1	0	1	0	0	3	2	0	0	0	0	0	-2	-2	1	28
502	0	0	0	-2	0	0	0	1	0	1	1	1	1	0	0	0	0	3	3	1	0	0	3	0	0	0	0	3	3	0	0	0	0	0	-1	-1	0	34
503	2	0	0	-2	2	0	0	1	0	0	1	0	0	1	0	0	0	0	2	0	1	1	2	1	0	0	0	1	0	1	0	2	0	0	-1	0	0	30
504	1	0	0	-2	2	0	2	2	1	1	2	0	0	2	0	0	0	1	2	0	0	1	2	0	0	0	2	2	2	2	0	2	0	0	-2	-2	1	48
505	1	0	0	-2	1	0	2	1	1	0	2	1	0	1	0	0	1	1	3	0	0	1	1	0	0	0	1	1	1	1	0	1	0	0	-1	-1	1	38
506	0	0	0	-2	1	0	0	2	1	1	2	0	1	0	0	0	0	0	2	0	0	2	1	0	1	0	0	2	1	2	0	0	0	0	-2	-1	1	30
507	0	0	0	-2	0	0	0	2	1	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	0	1	1	2	0	1	0	0	-3	-2	0	18
508	1	0	0	-2	2	0	0	1	1	0	2	0	0	1	0	0	0	1	3	0	0	1	1	0	0	0	0	1	3	2	0	1	0	0	-3	-2	1	30
509	0	0	0	-2	0	0	1	2	0	1	2	1	0	0	0	0	0	1	3	1	0	0	1	0	1	0	0	1	2	1	0	0	0	0	-2	-2	0	24
510	0	0	0	-2	1	0	1	2	1	0	1	0	0	1	0	0	0	2	3	0	0	2	2	0	0	0	0	3	0	1	0	1	0	0	-1	-1	0	34
511	0	0	0	-2	0	0	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	0	0	0	0	0	-1	0	0	12
512	0	0	0	-2	2	1	2	3	0	0	2	0	0	1	0	0	0	1	1	0	0	2	2	0	1	0	0	2	0	2	0	1	0	0	-2	-1	1	38
513	2	0	0	-2	1	0	0	1	1	0	1	0	0	1	0	0	0	1	2	0	0	2	2	1	0	0	0	2	1	2	1	0	0	0	-2	-2	1	32
514	0	0	0	-2	0	0	0	1	0	0	2	0	0	0	0	0	0	2	2	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	-3	-3	0	2
515	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	10
516	0	0	0	-2	1	0	1	2	0	0	3	0	0	0	0	0	0	0	2	0	0	1	1	0	1	0	0	1	1	1	0	0	1	0	-3	-2	0	18
517	0	0	0	-2	0	0	0	2	0	0	2	0	0	0	0	0	0	1	2	0	0	2	1	0	0	0	0	1	0	0	0	0	0	0	-2	-1	0	12
518	2	0	0	-2	1	0	0	1	0	0	2	0	0	1	0	0	0	1	3	0	0	1	2	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	26
519	0	0	0	-2	2	0	0	2	1	0	2	0	0	1	0	0	0	1	2	0	0	2	2	0	0	0	0	2	2	2	0	1	0	0	-2	-1	1	36
520	0	0	0	-2	0	0	0	1	0	0	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	1	3	2	0	0	0	0	-2	-2	0	12
521	0	0	0	-2	2	0	0	2	1	0	2	0	0	1	0	0	0	1	2	0	1	2	2	0	1	1	0	2	2	2	0	1	0	0	-2	-2	1	40

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
522	0	0	0	-2	0	0	1	3	0	0	1	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	2	0	0	0	0	-1	-1	0	14
523	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	2	1	1	0	0	2	0	-1	-1	0	22
524	1	0	0	-2	1	0	0	1	0	0	2	0	0	1	0	0	0	0	2	1	0	1	1	0	1	0	0	1	1	1	0	0	0	0	-2	-1	0	20
525	0	0	0	-2	2	0	0	2	1	0	2	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	2	1	2	0	1	0	0	-2	-1	1	30
526	0	0	0	-2	2	0	0	3	1	1	2	0	0	0	0	0	0	1	3	0	0	2	2	0	0	0	1	1	2	2	1	1	0	0	-2	-2	1	40
527	0	0	0	-2	0	0	1	2	0	0	2	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	14
528	0	0	0	-2	1	0	0	2	1	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	0	0	0	2	0	0	0	0	-3	-2	0	14
529	0	0	0	-2	1	0	0	2	1	0	2	0	0	1	0	0	0	1	2	0	1	2	2	0	0	0	0	1	2	2	0	1	0	0	-2	-1	0	32
530	0	0	0	-2	0	0	1	2	0	0	2	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	16
531	0	0	0	-2	1	0	0	2	0	0	2	0	0	0	0	0	0	0	2	1	0	2	1	0	0	0	0	1	2	1	0	0	0	0	-3	-2	0	16
532	2	0	0	-2	1	0	0	1	1	0	2	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	0	1	1	1	0	0	0	0	-1	-1	1	26
533	1	0	0	-2	2	0	1	2	0	1	3	0	0	1	0	0	0	0	3	0	0	1	2	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	28
534	0	0	0	-2	1	0	0	2	0	3	1	0	0	0	0	0	0	0	3	0	0	3	2	0	0	0	0	2	3	2	0	0	0	0	-2	-2	0	32
535	0	0	0	-2	0	2	0	2	0	1	2	1	1	0	0	0	0	1	2	1	0	1	1	0	0	0	0	0	1	1	0	0	0	0	-2	-2	0	22
536	3	0	2	-2	3	0	0	3	3	3	1	0	0	3	0	0	0	0	1	3	3	1	3	0	0	0	2	3	2	3	2	2	0	0	-1	-1	0	84
537	3	0	0	-2	1	0	0	2	1	2	1	2	0	0	0	0	0	1	1	3	1	2	2	0	0	0	1	2	2	2	1	1	0	0	-1	-1	0	54
538	3	0	0	-2	2	0	0	2	2	1	2	0	0	2	0	0	0	0	1	2	2	2	1	0	0	0	0	2	1	3	0	2	0	0	-2	-2	0	48
539	2	0	0	-2	2	0	0	1	0	0	1	0	0	2	0	0	0	0	2	0	0	1	2	0	1	0	0	2	1	2	0	0	0	0	-1	-1	1	32
540	0	0	0	-2	1	0	1	1	0	0	3	0	0	0	0	0	0	0	2	2	0	1	1	0	0	0	0	2	0	0	0	0	0	0	-3	-2	1	16
541	0	0	0	-2	0	0	0	1	0	1	2	0	0	0	0	0	0	1	2	0	0	0	1	0	0	0	0	2	1	1	0	0	0	0	-1	-2	0	14
542	1	0	0	-2	1	0	2	1	0	3	3	0	0	0	0	0	0	1	2	0	0	2	3	0	0	0	0	2	2	2	1	0	0	0	-2	-3	0	38
543	0	0	0	-2	0	0	0	2	1	0	2	2	0	0	0	0	0	2	2	0	0	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	1	26
601	2	0	0	-2	2	0	0	1	0	0	2	0	0	0	0	0	0	2	2	2	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	24
602	1	0	0	-2	0	0	0	1	1	0	1	0	1	1	0	0	0	0	2	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0	-1	-1	1	18
603	0	0	0	-2	2	0	1	2	1	1	2	0	1	1	0	0	0	0	1	0	0	2	2	0	0	0	0	2	0	2	0	1	1	0	-2	-2	0	32
604	0	0	0	-2	0	0	1	1	0	0	3	0	0	0	0	0	0	1	1	2	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-2	-2	1	20

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
605	0	0	0	-2	1	0	1	2	1	1	1	0	0	1	0	0	0	1	2	0	1	2	1	0	0	0	0	2	0	1	0	1	0	0	-2	-2	1	28
606	0	0	0	-2	0	0	1	1	0	1	2	1	0	0	0	0	0	2	2	2	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	22
607	2	0	0	-2	1	0	0	0	0	2	1	1	0	0	0	0	0	0	2	2	0	0	0	0	2	1	0	0	0	0	0	0	0	0	-1	0	2	26
608	0	0	0	-2	0	0	3	1	0	0	3	0	0	0	0	0	0	0	2	2	0	1	1	0	1	0	0	1	1	1	0	0	1	0	-3	-2	0	22
609	0	0	0	-2	0	0	0	1	0	3	2	1	0	0	0	0	0	2	1	2	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	24
610	0	0	0	-2	1	0	2	1	0	0	2	0	0	0	0	0	0	1	2	0	0	1	1	0	1	1	0	1	1	1	0	0	0	0	-2	-1	1	24
611	1	0	0	-2	1	0	0	1	0	0	2	0	0	0	0	0	0	2	2	2	0	1	1	0	0	0	0	1	1	0	0	0	0	0	-2	-2	0	18
612	2	0	0	-2	2	0	1	2	0	1	2	0	2	1	0	0	0	0	2	1	0	0	1	0	0	0	0	0	0	1	0	0	0	0	-2	-1	1	28
613	1	0	0	-2	1	0	0	1	0	0	1	0	0	0	0	0	0	0	2	2	0	1	1	0	1	1	0	1	1	0	0	0	0	0	-1	0	1	24
614	1	0	0	-2	1	0	0	1	1	3	1	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	3	1	1	0	0	0	0	-3	-2	1	24
615	3	2	2	-2	3	0	1	3	3	0	1	0	0	1	0	0	0	0	1	3	3	2	2	0	0	0	2	2	2	3	3	3	1	2	-1	-1	1	90
616	0	0	0	-2	0	0	0	1	0	1	2	0	3	0	0	0	0	0	1	2	0	1	1	0	0	0	0	1	0	0	0	0	0	0	-3	-1	1	16
617	0	0	0	-2	2	0	1	2	0	0	2	0	0	0	0	0	0	1	2	0	0	2	2	0	1	1	0	2	2	1	0	0	0	0	-2	-2	0	30
618	1	0	0	-2	1	0	0	1	0	1	1	1	0	0	0	0	0	0	2	2	0	1	1	0	2	2	0	1	0	0	1	0	0	0	-1	-1	2	32
619	0	0	0	-2	2	0	1	2	1	1	2	0	0	1	0	0	0	1	2	0	0	2	0	1	0	0	0	2	1	2	0	1	0	0	-2	-1	0	34
621	0	0	0	-2	0	0	0	2	0	0	2	0	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	2	20
631	1	0	0	-2	1	0	0	1	0	2	2	0	0	0	0	0	0	1	2	0	0	2	2	0	0	0	0	3	0	0	0	0	0	0	-3	-2	0	20
632	1	0	0	-2	1	0	1	1	0	0	1	0	2	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	-1	-1	1	16
633	1	0	0	-2	1	0	1	1	0	0	1	0	2	1	0	0	0	0	2	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	-1	-1	1	22
634	2	0	0	-2	1	0	1	2	1	2	2	0	0	0	0	0	0	1	1	0	0	2	2	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	32
635	2	0	0	-2	2	0	1	1	0	0	1	0	0	1	0	0	0	0	2	1	1	1	1	0	0	0	2	2	0	2	0	0	0	0	-1	-1	1	34
636	2	0	1	-2	2	0	0	1	0	3	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	1	1	0	0	-2	-2	0	26
637	1	0	0	-2	2	0	0	2	1	0	1	0	0	1	0	0	0	1	1	0	1	2	2	0	0	0	0	2	0	2	0	1	1	0	-2	-1	1	34
638	0	0	0	-2	3	0	1	2	1	1	2	0	1	1	0	0	0	1	1	0	1	2	2	0	1	0	0	2	0	2	0	2	1	0	-2	-2	1	44
639	1	0	0	-2	2	0	0	2	1	0	2	0	0	2	0	0	0	0	1	0	0	1	1	0	0	0	0	2	0	3	0	2	0	0	-3	-2	0	26
640	0	0	0	-2	0	0	0	2	0	3	2	1	1	0	0	0	0	0	1	0	1	0	1	0	0	0	0	2	0	2	0	0	0	0	-2	-2	0	20

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
641	3	0	0	-2	2	0	0	2	1	0	2	0	0	1	0	0	0	1	1	0	1	2	2	0	1	0	0	2	0	2	0	2	0	0	-1	0	1	46
642	1	0	0	-2	2	0	1	2	2	0	1	0	0	2	0	0	0	0	1	0	0	1	1	0	0	0	0	2	0	2	0	2	0	0	-1	-1	0	32
643	1	0	0	-2	1	0	0	2	2	0	1	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0	1	0	2	0	2	0	0	0	-1	0	24
644	0	0	0	-2	3	0	0	2	2	1	0	0	0	1	0	0	2	1	1	1	1	2	2	0	0	0	0	0	0	1	0	1	0	0	-1	0	1	38
645	1	0	0	-2	1	0	1	2	1	0	1	1	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	2	1	2	0	1	0	0	-1	-1	0	28
646	2	0	0	-2	2	0	0	2	2	2	2	0	0	1	0	0	0	0	2	1	0	2	2	0	1	0	0	2	0	2	0	2	0	0	-2	-2	0	42
647	2	0	0	-2	2	0	0	1	1	2	3	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	0	1	2	0	0	0	0	-3	-2	0	24
648	2	0	0	-2	3	0	0	2	2	2	2	0	0	1	0	0	0	1	1	0	1	2	2	0	2	1	0	2	0	2	0	2	0	0	-3	-2	0	46
649	0	0	0	-2	0	0	0	1	0	2	3	1	0	0	0	0	0	0	1	3	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-3	0	12
650	0	0	0	-2	2	0	1	2	1	2	2	0	0	2	0	0	0	0	1	1	1	1	1	0	2	0	1	1	0	2	0	1	0	0	-2	-2	0	36
651	0	0	0	-2	2	0	1	2	1	1	2	0	0	2	0	0	0	0	1	1	0	1	1	0	2	0	0	1	1	2	0	1	0	0	-2	-2	1	34
652	0	0	0	-2	0	0	2	0	0	1	3	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	-2	-3	1	10
653	2	0	0	-2	1	0	2	1	0	0	3	0	0	0	0	0	0	0	1	3	0	0	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	24
654	1	0	0	-2	0	0	1	1	0	1	1	0	0	0	0	0	0	0	1	2	0	1	1	0	0	0	0	1	0	0	0	0	0	0	-1	0	1	18
655	0	0	0	-2	0	0	1	1	0	1	2	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	1	1	0	1	0	0	-2	-2	0	14
656	3	0	0	-2	2	0	0	2	2	1	2	0	0	2	0	0	0	0	1	1	1	3	2	0	2	1	0	2	0	2	0	1	0	0	-2	-2	1	50
657	0	0	0	-2	0	0	0	1	0	1	3	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-3	1	8
658	1	0	0	-2	2	0	0	2	2	0	2	0	0	1	0	0	0	0	1	0	1	2	1	0	0	0	0	2	0	2	0	2	0	0	-3	-2	0	28
661	2	0	0	-2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-1	0	0
662	0	0	0	-2	1	0	0	1	0	1	2	0	2	0	0	0	0	0	1	0	0	2	1	0	0	0	0	3	0	1	0	0	0	0	-3	-2	2	20
663	1	0	0	-2	1	0	0	1	1	1	3	0	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	1	1	1	0	1	0	0	-3	-3	0	18
664	0	0	0	-2	1	0	1	1	0	2	2	0	3	0	0	0	0	1	1	0	0	1	2	0	0	0	0	2	0	0	0	0	1	0	-2	-2	2	28
665	1	0	0	-2	1	0	1	1	0	1	3	0	2	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-2	2	20
666	1	0	0	-2	1	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	2	12
667	0	0	0	-2	3	0	1	1	1	0	2	1	0	0	0	0	0	0	1	1	1	1	1	0	1	1	0	1	1	1	0	1	0	0	-2	-2	0	28
668	0	0	0	-2	2	0	1	2	1	3	2	0	1	1	0	0	0	0	1	0	0	1	0	0	1	1	0	1	0	2	0	1	0	0	-3	-2	0	28

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
669	0	0	0	-2	0	0	0	1	0	3	2	0	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	14
670	1	0	0	-2	2	0	1	2	2	3	2	0	0	1	0	0	0	0	1	1	1	2	2	0	1	1	0	2	0	2	0	2	0	0	-3	-2	0	44
701	0	0	0	-2	0	0	1	1	1	0	2	0	0	0	0	0	0	1	2	1	1	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	18
702	2	0	0	-2	2	0	0	2	2	0	2	0	0	2	0	0	0	0	1	1	0	2	2	0	1	0	0	2	0	2	0	0	0	0	-2	-2	0	34
703	0	0	0	-2	2	0	1	1	1	0	2	0	0	1	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	2	0	1	0	0	-2	-2	1	22
704	1	0	0	-2	2	0	1	2	0	0	2	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	0	0	2	0	0	0	0	-3	-2	1	18
705	1	0	0	-2	1	0	2	2	0	0	2	0	0	0	0	0	0	1	1	0	1	2	2	0	1	0	0	1	0	1	0	1	1	0	-2	-2	1	30
706	0	0	0	-2	1	0	0	2	0	0	3	0	0	1	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	2	0	0	0	0	-3	-2	1	18
707	0	0	0	-2	1	0	1	1	1	0	1	0	0	1	0	0	0	1	1	1	0	1	1	0	1	0	0	1	1	1	0	1	0	0	-1	-2	1	24
708	0	0	0	-2	0	0	0	1	0	1	2	0	1	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-2	0	8
709	1	0	0	-2	0	0	1	1	0	3	2	3	0	0	0	0	0	1	2	1	0	1	1	0	1	0	0	1	0	1	0	0	0	0	-2	-2	0	28
710	1	0	0	-2	2	0	2	2	0	2	2	0	0	1	0	0	0	0	2	0	1	2	2	0	1	1	0	1	0	1	0	0	0	0	-2	-2	1	36
711	0	0	0	-2	1	0	1	1	0	0	2	0	0	1	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-1	-1	1	20
712	0	0	0	-2	1	0	1	1	0	1	2	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	1	0	1	0	0	-3	-2	0	10
713	0	0	0	-2	0	0	1	2	1	0	2	0	0	0	0	0	0	2	2	1	0	1	1	0	2	0	0	1	1	1	0	1	0	0	-2	-2	0	26
714	1	0	0	-2	1	0	1	1	0	3	3	0	1	1	0	0	0	1	1	1	0	2	2	0	0	0	0	2	0	1	0	0	0	0	-2	-2	0	32
715	0	0	0	-2	1	0	1	1	0	1	2	0	0	1	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-2	-1	1	16
716	0	0	0	-2	0	0	1	1	0	1	1	1	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	-1	-1	0	10
717	0	0	0	-2	1	0	1	2	1	1	2	1	0	0	0	0	0	2	1	1	0	1	1	0	1	1	0	0	1	1	2	1	0	0	-2	-2	0	32
718	0	0	0	-2	1	0	0	2	1	0	2	0	0	0	0	0	0	2	1	1	0	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	0	22
719	0	0	0	-2	1	0	1	2	1	3	2	0	1	1	0	0	0	0	1	1	0	2	2	0	2	1	0	1	0	1	0	0	0	0	-2	-2	0	34
720	0	0	0	-2	1	0	1	2	1	0	1	0	0	0	0	0	0	2	1	1	0	1	1	0	1	0	0	2	0	2	0	1	0	0	-1	-2	1	28
721	0	0	0	-2	1	0	0	1	0	1	1	1	0	1	0	0	0	0	1	1	0	1	1	0	1	0	0	1	0	1	0	0	0	0	-1	-2	1	18
722	0	0	0	-2	0	0	0	1	0	1	2	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	1	0	1	0	0	-3	-2	1	8
723	0	0	0	-2	2	0	0	2	0	0	3	0	0	0	0	0	0	1	1	0	0	1	2	0	0	0	0	2	0	1	0	0	0	0	-2	-2	0	18
724	0	0	0	-2	0	0	1	2	1	0	2	0	0	0	0	0	0	1	1	1	0	1	1	0	1	0	0	1	0	2	0	1	0	0	-2	-2	0	20

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
725	0	0	0	-2	1	0	2	2	0	0	3	0	0	1	0	0	0	0	1	1	0	1	2	0	0	0	0	0	0	2	0	0	0	0	-2	-2	1	22
726	0	0	0	-2	2	0	0	2	0	0	2	0	0	1	0	0	0	1	1	0	1	2	2	0	1	0	0	2	0	1	0	0	0	0	-2	-2	1	26
801	0	0	0	-2	2	0	0	2	1	3	2	0	0	0	0	0	0	0	2	1	0	1	2	0	0	0	0	2	1	1	0	0	0	0	-2	-2	0	28
802	0	0	0	-2	0	0	0	1	0	2	1	1	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	-1	-1	0	12
803	0	0	0	-2	0	0	2	2	0	1	1	1	0	0	0	0	0	1	1	1	1	2	2	0	0	0	0	2	1	2	0	1	0	0	-1	-1	0	34
804	0	0	0	-2	0	0	1	1	0	3	2	2	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	1	24
805	0	0	0	-2	0	1	3	1	0	1	2	1	0	0	0	0	0	2	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	22
806	0	0	0	-2	2	0	0	2	1	1	2	0	0	0	0	0	0	0	1	0	0	2	2	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	24
807	2	0	0	-2	1	0	0	1	2	2	1	0	0	2	0	0	0	0	2	1	1	2	2	1	1	0	0	1	0	2	0	0	2	0	-1	0	1	48
808	0	0	2	-2	0	0	0	2	0	3	2	3	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	0	2	0	0	0	0	-2	-2	0	28
809	0	0	0	-2	0	0	0	1	0	1	2	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-2	0	6
810	2	0	0	-2	2	0	0	2	2	0	2	0	0	2	0	0	0	0	1	0	1	2	3	2	0	0	0	2	0	3	0	2	0	0	-2	-2	1	46
811	0	0	0	-2	1	0	0	1	0	2	3	0	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-2	-2	0	12
812	0	0	0	-2	1	0	0	1	0	0	2	0	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	-1	-1	0	12
813	0	0	0	-2	0	0	0	2	0	3	2	3	1	0	0	0	0	1	2	2	1	1	1	0	0	0	0	1	2	1	1	0	0	0	-2	-2	0	36
814	0	0	0	-2	1	0	0	2	0	3	2	0	0	1	0	0	0	0	1	1	0	2	2	0	0	0	0	2	1	2	0	1	0	0	-3	-2	0	28
815	0	0	0	-2	1	0	0	1	0	2	1	0	1	1	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-1	0	0	24
816	2	0	0	-2	0	0	0	1	0	3	2	3	1	0	0	0	0	0	2	0	0	1	1	0	2	0	0	1	1	1	0	0	1	0	-2	-2	0	32
817	2	0	0	-2	2	0	0	2	1	2	2	0	1	1	0	0	0	0	1	0	1	2	2	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	36
818	0	0	0	-2	0	0	0	1	0	3	2	0	0	1	0	0	1	0	2	1	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-3	-2	0	20
819	0	0	0	-2	1	0	0	2	1	1	2	0	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	0	22
820	1	0	0	-2	1	0	0	2	0	3	1	3	1	1	0	0	0	0	2	0	1	1	1	1	1	1	0	1	1	1	1	0	0	0	-1	0	1	46
821	0	0	0	-2	0	1	1	2	0	3	2	1	1	0	0	0	0	0	1	0	1	1	1	0	0	0	0	1	2	2	0	0	0	0	-2	-2	0	28
822	0	0	0	-2	1	0	0	1	0	2	2	0	1	0	0	0	0	1	2	0	0	1	2	0	0	0	0	2	0	2	2	0	0	0	-2	-2	0	26
823	0	0	0	-2	2	0	1	3	2	3	2	0	1	1	0	0	0	0	1	0	1	2	2	0	0	0	0	2	0	2	0	2	0	0	-2	-2	0	42
824	2	0	0	-2	2	3	3	2	0	3	2	2	0	2	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	1	0	0	2	0	-2	-2	0	52

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
826	0	0	0	-2	0	0	0	1	1	3	3	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1	1	0	1	0	0	-3	-2	0	16
827	0	0	0	-2	2	0	0	2	0	3	2	0	1	0	0	0	0	0	2	0	1	2	2	0	0	0	0	2	2	2	0	0	0	0	-3	-2	0	32
828	0	0	0	-2	0	0	0	1	1	3	3	0	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	1	1	0	1	1	0	-3	-2	0	20
829	0	0	0	-2	1	0	0	1	0	3	2	0	1	1	0	0	0	0	2	0	0	1	2	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	20
830	0	0	0	-2	1	0	0	1	0	0	1	0	1	1	0	0	0	0	2	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	14
831	0	0	0	-2	0	0	1	2	1	0	1	1	0	0	0	0	0	2	1	0	0	1	1	0	0	0	0	1	2	2	0	1	0	0	-1	-1	0	26
832	0	0	0	-2	1	0	0	2	1	3	2	0	0	1	0	0	0	0	2	0	0	1	1	0	1	0	0	2	1	2	0	1	0	0	-3	-2	0	28
833	0	0	0	-2	1	0	0	1	0	3	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	10
834	0	0	0	-2	1	0	0	1	0	2	1	0	0	1	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	0	0	0	0	0	-1	-1	0	14
835	0	0	0	-2	0	0	0	1	0	0	2	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	10
836	0	0	0	-2	1	0	1	2	0	2	2	1	0	0	0	0	0	2	3	1	1	2	2	0	0	0	0	1	3	2	0	0	1	0	-2	-2	0	42
837	0	0	0	-2	2	0	1	2	1	3	2	0	0	0	0	0	0	0	1	0	0	2	2	0	0	0	0	2	0	2	0	0	0	0	-2	-2	0	28
838	0	0	0	-2	0	0	0	2	0	3	2	0	0	0	0	0	0	1	2	2	1	1	2	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	30
839	0	0	0	-2	0	0	0	1	0	0	1	0	0	1	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	10
840	0	0	0	-2	2	0	0	2	2	2	2	0	1	1	0	0	0	0	1	0	1	2	2	0	0	0	0	2	0	2	0	2	0	0	-3	-2	0	34
841	0	0	0	-2	0	0	0	1	1	0	2	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	2	2	1	0	1	0	0	-1	-1	0	18
842	1	0	0	-2	2	0	1	2	0	3	2	0	0	1	0	0	0	0	1	1	0	2	2	0	1	1	0	2	0	2	0	0	0	0	-3	-2	0	34
843	2	0	0	-2	1	0	0	1	0	2	1	0	0	1	0	0	1	0	1	1	0	1	1	0	1	1	0	1	0	1	0	0	0	0	-1	-1	0	26
844	1	0	0	-2	1	0	0	2	0	1	2	0	1	0	0	0	0	1	2	1	0	1	2	0	0	0	0	1	0	2	0	0	0	0	-2	-3	0	22
845	0	0	0	-2	0	0	0	1	0	1	3	2	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	0	1	1	0	0	0	-3	-3	0	14
846	0	0	0	-2	0	0	0	1	0	2	2	2	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	18
851	0	0	0	-2	1	0	0	2	0	2	2	0	1	0	0	0	0	0	2	1	0	1	2	0	0	0	0	1	1	1	0	0	0	0	-3	-2	0	20
852	0	0	0	-2	0	0	0	1	0	3	2	3	1	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	2	1	0	0	0	1	-2	-2	0	28
853	0	0	0	-2	1	0	0	1	1	1	1	0	1	1	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	18
854	0	0	0	-2	1	0	0	1	0	3	2	0	0	0	0	0	1	0	2	1	0	1	2	0	0	0	0	0	1	0	0	0	0	0	-2	-2	2	22
855	0	0	0	-2	0	0	0	1	0	3	2	0	1	0	0	0	0	0	1	1	0	1	1	1	0	0	0	0	2	1	0	1	0	0	-3	-2	0	18

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
856	1	0	0	-2	1	0	0	2	0	3	2	0	1	0	0	0	0	1	1	1	0	2	2	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	24
857	0	0	1	-2	1	0	0	2	0	1	1	0	0	0	0	0	1	1	1	2	0	1	2	0	0	0	0	2	1	2	1	0	0	0	-2	-1	0	30
858	2	0	0	-2	2	0	0	2	2	1	1	0	0	2	0	0	2	0	1	1	1	2	1	1	2	1	0	0	0	1	0	0	0	0	-2	-2	0	38
859	2	2	0	-2	2	0	0	1	1	1	2	0	0	1	0	0	0	1	1	1	1	1	2	0	2	2	0	2	0	1	0	1	0	0	-2	-1	0	44
860	0	0	0	-2	0	0	0	1	0	1	2	0	1	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	-3	-3	0	6
861	0	0	0	-2	1	0	0	1	1	0	2	0	1	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	1	1	0	1	0	0	-3	-2	0	12
862	0	0	0	-2	1	0	0	1	0	1	2	0	0	0	0	0	0	0	1	2	0	1	1	0	1	0	0	1	0	0	0	0	0	0	-3	-2	0	10
863	0	0	0	-2	1	0	0	1	1	0	3	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-3	-3	0	12
864	0	0	0	-2	1	0	0	1	0	2	2	0	0	1	0	0	0	0	2	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	-1	-1	1	22
865	0	0	0	-2	1	0	1	3	1	0	2	0	2	1	0	0	0	1	1	1	1	2	2	0	1	0	0	2	1	1	0	1	0	0	-2	-2	2	42
866	0	0	0	-2	2	0	1	2	1	1	2	1	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	2	1	2	0	1	0	0	-2	-2	1	32
867	1	0	0	-2	2	0	1	2	1	0	2	0	0	1	0	0	0	0	1	1	2	2	2	0	1	0	0	2	0	2	0	1	0	0	-3	-2	0	34
868	0	0	0	-2	1	0	1	1	1	1	3	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	1	0	2	0	1	0	0	-3	-2	0	22
871	3	0	2	-2	3	0	1	1	1	0	1	3	0	3	0	0	0	1	3	1	1	2	0	0	0	0	2	1	3	2	1	1	1	1	-2	-2	1	66
872	0	0	0	-2	2	0	1	2	1	2	1	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	3	2	1	2	0	1	0	0	-2	-2	1	38
873	1	0	0	-2	1	0	0	1	0	2	1	0	1	1	0	0	0	0	2	0	0	1	1	0	0	0	0	0	0	1	0	1	0	0	-1	-1	0	20
874	0	0	0	-2	1	0	1	1	0	2	2	0	1	0	0	0	0	0	2	0	0	2	2	0	0	0	0	2	1	1	0	0	0	0	-2	-2	0	24
875	0	0	0	-2	0	0	0	2	1	2	3	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	0	2	0	1	0	0	-3	-2	0	20
876	1	0	0	-2	1	0	0	0	0	2	1	0	1	1	0	0	0	0	2	1	0	1	1	0	1	1	0	0	0	1	0	0	0	0	-1	-1	0	22
877	0	0	0	-2	2	0	1	2	1	1	2	0	0	1	0	0	0	1	2	0	1	3	2	0	0	0	0	2	2	3	0	2	0	0	-3	-2	0	46
878	0	0	0	-2	2	0	0	2	0	3	2	0	1	1	0	0	0	0	3	1	1	2	2	0	0	1	0	2	2	2	0	0	0	0	-3	-2	0	40
879	0	0	0	-2	2	0	0	2	1	1	2	0	1	0	0	0	0	0	1	0	1	2	2	0	0	0	0	2	1	2	0	1	0	0	-2	-2	0	30
880	0	0	0	-2	1	0	0	2	0	3	3	1	1	0	0	0	0	2	2	1	0	1	2	0	0	0	0	2	0	2	0	0	1	0	-3	-3	0	32
881	0	0	0	-2	0	0	1	2	0	3	2	1	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	24
882	2	0	0	-2	2	0	0	2	0	2	2	0	1	2	0	0	0	0	2	0	0	1	2	0	0	0	2	1	1	1	0	0	0	0	-1	-1	0	38
883	0	0	0	-2	2	0	1	2	0	3	2	0	1	1	0	0	0	0	2	0	1	2	2	0	1	0	0	2	2	2	0	1	0	0	-3	-2	0	40

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
884	0	0	0	-2	2	0	1	1	2	1	2	2	1	0	0	0	0	1	1	0	1	1	1	0	2	1	0	1	0	1	0	2	0	0	-2	-2	0	36
885	0	0	0	-2	0	0	1	1	0	3	2	2	1	0	0	0	0	2	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	28
886	0	0	0	-2	2	0	0	2	1	3	2	0	1	0	0	0	0	0	2	1	1	2	2	0	0	0	0	2	1	2	0	1	0	0	-3	-2	0	36
887	2	0	0	-2	2	0	0	2	0	3	2	0	0	1	0	0	0	0	2	2	1	2	2	0	0	0	0	2	1	2	0	1	0	0	-3	-2	0	40
888	0	0	0	-2	1	0	1	1	0	1	2	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	-3	-2	0	10
889	0	0	0	-2	0	0	0	1	0	1	1	0	1	1	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-1	-1	0	14
890	0	0	0	-2	1	0	1	1	1	2	2	0	0	0	0	0	0	0	2	1	0	1	1	0	1	0	0	1	0	1	2	1	0	0	-3	-2	0	24
891	0	0	0	-2	1	0	0	1	0	2	2	0	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	12
892	0	0	0	-2	1	0	0	1	1	3	3	0	1	0	0	0	0	0	1	0	0	1	2	0	0	0	1	1	0	1	0	1	1	0	-3	-2	0	24
893	0	0	0	-2	1	0	0	1	0	2	1	0	0	1	0	0	0	0	2	1	0	2	1	0	2	1	1	1	1	0	0	0	0	0	-1	-1	0	28
894	0	0	0	-2	0	0	0	1	0	3	3	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	-3	-2	0	10
895	0	0	0	-2	0	0	0	1	1	3	2	0	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	20
896	0	0	0	-2	0	1	1	1	0	3	2	2	0	0	0	0	0	1	2	1	0	1	1	0	2	1	0	1	0	1	0	0	0	0	-2	-2	0	30
897	0	0	0	-2	2	0	0	2	1	2	2	0	0	1	0	0	0	1	1	1	1	2	2	0	0	0	0	2	0	1	0	2	0	0	-2	-2	0	34
901	0	0	0	-2	1	0	1	1	0	3	1	0	0	1	0	0	0	0	2	1	0	1	1	0	1	1	0	1	1	0	0	0	0	0	-1	-1	0	26
902	0	0	0	-2	1	0	3	1	0	2	2	0	0	0	0	0	0	2	1	1	1	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-2	0	22
903	0	0	0	-2	0	0	0	1	0	2	2	1	1	0	0	0	0	0	1	1	0	1	1	0	1	0	0	1	0	1	1	0	0	0	-2	-2	0	18
904	0	0	0	-2	0	0	0	1	0	1	2	1	1	0	0	0	0	0	2	0	0	1	1	0	1	0	0	1	1	1	0	0	0	0	-2	-2	0	16
905	0	0	0	-2	0	0	0	1	0	0	2	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	6
906	0	0	0	-2	2	0	0	1	3	2	1	0	2	0	0	0	0	0	1	0	1	1	1	0	0	0	1	1	0	1	2	3	0	0	-2	-2	0	34
907	0	0	0	-2	2	0	0	2	0	2	1	0	0	1	0	0	2	0	2	1	0	2	2	0	1	0	0	1	1	0	0	0	0	0	-1	0	0	34
908	0	0	0	-2	1	0	1	1	0	3	1	0	1	1	0	0	0	0	2	1	0	1	1	0	1	0	0	1	2	1	0	0	0	0	-1	0	0	32
909	0	0	0	-2	1	0	0	1	0	1	3	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-3	-2	0	6
910	0	0	0	-2	2	0	0	2	1	3	2	0	1	1	0	0	0	0	2	1	1	2	1	0	0	0	0	1	2	1	0	0	0	0	-3	-2	0	32
911	2	0	0	-2	2	0	0	2	0	3	2	0	1	1	0	0	0	0	2	2	0	2	2	0	1	0	0	2	2	2	0	1	0	0	-3	-3	0	42
912	0	0	0	-2	0	0	0	3	1	3	2	0	1	0	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	3	0	1	0	0	-2	-2	0	26

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
913	0	0	0	-2	1	0	0	1	0	2	2	2	1	0	0	0	2	1	1	2	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	1	30
914	0	0	1	-2	1	0	0	2	1	3	3	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	0	2	1	1	0	0	-3	-3	0	32
915	1	0	0	-2	1	0	0	1	0	2	1	0	1	1	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	-2	-1	1	20
916	1	0	0	-2	2	0	1	2	0	2	2	0	1	1	0	0	0	0	1	1	1	2	2	0	1	0	0	2	0	2	0	1	0	0	-3	-3	0	34
917	1	0	0	-2	0	0	0	1	0	3	3	0	1	0	0	0	0	2	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	-3	-3	0	14
918	0	0	0	-2	0	0	1	2	2	0	2	1	1	0	0	0	0	1	1	2	1	1	1	0	0	0	0	1	2	2	0	2	0	0	-2	-2	0	34
919	0	0	0	-2	1	0	0	1	0	1	2	0	1	0	0	0	0	1	1	1	0	1	2	0	0	0	0	1	0	0	0	0	0	0	-3	-3	0	10
920	0	0	0	-2	1	0	0	2	0	2	2	0	0	1	0	0	0	0	2	1	0	2	1	0	0	0	0	0	0	1	0	0	0	0	-2	-2	0	18
921	0	0	0	-2	1	0	0	2	1	1	2	0	0	1	0	0	0	1	1	1	1	2	1	0	1	0	0	2	0	1	0	1	0	0	-3	-3	0	24
922	0	0	0	-2	0	0	0	2	2	1	2	2	1	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	2	0	2	0	0	-2	-2	0	30
923	1	0	0	-2	2	0	0	2	2	1	2	0	1	1	0	0	0	1	2	1	1	2	2	0	0	0	0	2	0	2	0	2	0	0	-3	-3	0	38
924	0	0	0	-2	0	0	0	2	1	3	2	3	3	0	0	0	0	1	1	1	0	1	1	0	1	0	0	1	1	2	0	1	0	0	-2	-2	0	38
925	0	0	0	-2	2	0	0	2	1	1	2	0	0	1	0	0	0	1	1	1	1	2	2	0	0	0	0	2	0	3	0	1	0	0	-2	-2	0	34
926	0	0	0	-2	0	0	1	1	0	3	2	2	1	0	0	0	0	1	1	2	0	1	1	0	2	0	0	1	1	1	0	0	0	0	-2	-2	0	30
927	0	0	0	-2	0	0	0	2	1	2	2	0	1	0	0	0	0	1	2	1	0	1	1	0	0	0	0	2	0	2	0	1	0	0	-2	-2	0	26
928	0	0	0	-2	1	0	1	1	0	1	1	0	1	1	0	0	0	0	1	0	0	1	1	0	1	0	0	1	0	1	0	0	0	0	-1	0	1	22
929	0	0	0	-2	1	0	1	1	0	1	2	0	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-3	0	10
930	0	0	0	-2	0	0	1	1	0	1	3	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	1	1	0	1	0	0	-3	-3	0	10
931	0	0	0	-2	1	0	1	1	0	1	2	0	1	0	0	0	0	1	1	1	0	1	2	0	1	0	0	1	0	1	0	0	0	0	-3	-3	0	16
932	0	0	0	-2	0	0	2	1	1	0	2	0	0	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	16
933	0	0	0	-2	1	0	0	1	0	1	3	0	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	0	1	1	0	1	0	0	-3	-2	1	16
934	0	0	0	-2	1	0	0	2	0	1	2	0	1	0	0	0	0	1	2	0	0	2	2	0	1	0	0	1	0	1	0	0	0	0	-2	-2	0	22
951	2	0	2	-2	0	0	1	2	0	3	2	3	1	1	0	0	0	0	2	2	1	1	1	0	0	0	0	1	0	2	0	0	0	0	-2	-2	0	42
952	3	0	0	-2	2	0	0	2	1	0	2	0	0	1	0	0	0	0	1	3	0	2	2	0	0	0	0	1	0	2	0	1	0	0	-2	-2	0	34
953	2	0	0	-2	2	0	0	2	0	2	1	1	0	0	0	0	2	0	1	2	0	1	2	0	2	2	0	2	1	1	0	0	0	0	-2	-1	0	42
954	3	0	0	-2	1	0	0	2	1	0	1	0	0	3	0	0	0	0	1	2	1	1	1	0	0	0	0	2	1	2	0	1	0	0	-1	-1	0	38

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
955	3	0	0	-2	2	0	0	2	1	0	1	0	0	1	0	0	0	0	1	1	1	2	2	0	0	0	0	2	0	3	0	1	0	1	-2	-2	1	38
956	3	0	1	-2	3	0	0	3	1	0	3	0	0	1	0	0	0	0	1	3	1	2	3	2	0	0	0	2	0	3	1	0	0	1	-1	-1	0	60
957	2	0	0	-2	1	0	1	1	0	2	2	0	1	0	0	0	0	0	1	3	0	1	1	0	1	1	0	0	0	1	0	0	0	0	-2	-2	0	26
958	2	0	0	-2	3	0	0	2	1	0	2	0	0	2	0	0	0	1	2	1	1	1	1	1	2	2	1	1	0	3	0	2	0	0	-2	-2	0	50
959	1	0	0	-2	2	0	1	2	0	2	2	0	0	1	0	0	0	1	1	2	2	2	2	0	2	2	0	2	0	2	0	1	0	0	-2	-1	1	52
961	3	0	0	-2	3	1	1	3	1	0	1	0	0	1	0	0	0	1	1	3	2	2	2	0	0	0	1	2	1	2	0	2	0	0	-1	-1	0	58
962	3	0	1	-2	3	0	0	3	2	0	2	0	0	1	0	0	0	0	1	2	2	2	2	0	0	0	0	2	0	3	0	2	0	0	-2	-2	1	52
NB01	2	0	0	-2	1	0	0	1	0	0	2	0	0	1	0	0	0	1	2	0	1	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	18
NB02	0	0	0	-2	1	2	2	1	0	1	3	1	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-3	-3	0	20
NB03	0	0	0	-2	0	0	0	2	0	2	2	1	0	0	0	0	0	0	2	1	0	1	1	0	0	0	0	1	1	2	1	0	0	0	-2	-2	1	24
NB04	0	0	0	-2	2	0	2	2	0	0	2	0	0	0	0	0	0	1	2	0	0	1	2	0	0	0	0	2	2	2	0	0	0	0	-2	-2	1	30
NB05	1	0	0	-2	2	0	0	2	1	1	1	0	0	1	0	0	0	1	1	2	0	2	1	0	0	0	0	2	0	2	0	1	0	0	-3	-2	0	28
NB06	0	0	0	-2	0	0	0	1	0	3	2	2	0	0	0	0	2	1	2	0	0	0	1	0	0	0	0	1	0	1	0	1	0	0	-2	-2	0	22
NB07	2	0	0	-2	2	0	0	2	0	0	3	0	0	2	0	0	1	1	2	0	0	2	1	0	0	0	0	2	0	3	0	0	0	0	-3	-3	0	30
NB08	1	0	0	-2	1	0	0	0	0	2	1	1	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-1	0	1	12
NB09	0	0	0	-2	2	0	1	2	1	2	2	0	0	0	0	0	0	1	2	0	1	2	2	0	1	1	0	2	0	2	0	1	0	0	-1	-1	1	44
NB10	2	0	0	-2	2	0	1	1	0	3	2	3	1	0	0	0	0	1	1	0	1	1	1	0	1	0	0	0	0	1	0	0	0	0	-2	-2	0	32
NB11	1	0	0	-2	1	0	2	1	0	0	2	0	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	1	0	1	0	0	0	0	-3	-2	0	14
NB12	2	0	0	-2	2	0	1	2	2	2	1	2	0	1	0	0	0	0	1	2	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-1	-1	0	38
NB13	2	0	1	-2	2	0	0	2	2	0	2	0	0	1	0	0	0	0	1	2	1	2	2	0	0	0	0	2	0	2	0	2	0	0	-2	-2	0	40
NB14	2	0	0	-2	2	0	0	2	2	1	0	0	0	1	0	0	0	1	1	0	1	1	2	1	0	0	0	1	0	1	2	0	0	0	0	0	0	38
NB15	0	0	0	-2	1	0	1	1	0	0	2	0	0	0	0	0	2	0	1	0	0	1	1	0	0	0	0	0	0	2	0	0	0	0	-2	-2	0	12
NB16	0	0	0	-2	0	0	0	2	0	1	2	1	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	2	2	0	0	0	0	-2	-2	0	20
NB17	1	0	1	-2	1	0	0	2	2	1	2	0	0	1	0	0	0	0	2	1	0	1	1	0	1	0	0	1	2	2	0	2	0	0	-2	-2	0	36
NB18	0	0	0	-2	0	2	3	1	0	0	3	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-3	-3	0	16
NB19	0	0	0	-2	0	0	0	2	0	2	2	0	0	0	0	0	0	0	2	2	0	2	2	0	2	0	0	1	1	2	0	0	0	0	-2	-2	0	28

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
NB20	1	0	0	-2	1	0	1	2	3	1	2	0	1	0	0	0	2	1	1	1	0	1	1	0	0	0	0	2	1	2	0	2	0	0	-2	-2	1	42
NB21	0	0	0	-2	0	0	1	2	0	0	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	8
NB22	0	0	0	-2	1	0	1	1	0	1	2	0	0	1	0	0	0	0	1	0	0	1	1	0	0	0	0	0	0	1	0	0	0	0	-2	-1	1	14
NB23	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	-2	-1	0	6
NB24	0	0	0	-2	1	0	1	2	1	0	2	0	0	0	0	0	0	1	2	0	0	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	1	24
NB25	1	0	0	-2	1	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	-2	0	0	6
NB26	0	0	0	-2	0	0	1	2	1	2	2	0	0	0	0	0	0	0	2	1	2	1	1	0	0	0	0	1	2	2	0	1	0	0	-2	-2	0	30
NB27	0	0	0	-2	0	0	1	2	0	1	2	1	1	0	0	0	0	1	1	0	0	2	2	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	24
NB28	0	0	0	-2	0	0	0	1	0	0	2	1	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	1	2	1	0	0	0	0	-2	-2	0	12
NB29	0	0	0	-2	0	0	0	0	0	0	1	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	2	1	0	0	0	0	-1	-1	0	10
NB30	0	0	0	-2	0	0	2	2	2	0	1	1	0	0	0	0	0	0	2	0	0	1	1	0	0	0	0	2	2	2	0	2	0	0	-1	-1	0	32
NB31	1	0	0	-2	2	0	0	1	0	2	1	0	0	0	0	0	0	0	1	3	0	1	1	0	0	0	0	0	1	1	0	0	0	0	-1	-1	0	22
NB32	0	0	0	-2	0	0	1	1	0	0	2	0	3	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	-2	-2	2	14
NB33	0	0	0	-2	0	0	0	0	0	0	2	0	3	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-2	-2	2	8
NB34	0	0	0	-2	0	0	1	1	0	2	2	0	3	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	20
NB35	0	0	0	-2	0	0	1	1	0	0	3	0	3	0	0	0	0	1	2	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	-3	-3	0	14
NB36	0	0	0	-2	0	0	1	1	1	1	2	0	3	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	1	0	1	0	0	-2	-2	2	28
NB37	0	0	0	-2	1	0	1	2	2	2	2	0	2	0	0	0	0	0	1	0	0	1	1	0	0	0	0	2	1	2	0	2	0	0	-1	-2	1	36
NB38	2	0	1	-2	2	1	1	2	2	0	1	0	0	2	0	0	0	0	1	0	0	1	1	0	0	0	2	0	2	2	0	1	0	0	-2	-2	0	36
NB39	0	0	0	-2	1	0	1	2	0	0	2	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	2	2	0	0	0	0	-2	-2	0	16
NB40	1	0	0	-2	1	1	2	2	0	1	2	0	0	0	0	0	0	0	1	0	0	1	1	0	2	0	0	1	1	2	0	0	0	0	-2	-2	0	26
NB41	0	0	0	-2	2	0	1	3	1	0	1	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	2	1	3	0	1	0	0	-1	-1	0	28
NB42	0	0	0	-2	1	0	1	3	1	1	1	1	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	2	0	3	0	1	0	0	-1	-1	1	32
NB43	0	0	0	-2	3	0	1	2	1	0	1	0	1	0	0	0	0	0	1	0	1	1	1	0	0	0	0	2	1	2	0	1	0	0	-1	-1	0	30
NB44	0	0	0	-2	2	0	2	2	1	2	3	2	0	0	0	0	0	0	1	3	2	1	1	0	0	0	0	1	2	2	0	1	0	0	-3	-3	0	40

Boulder ID	Site Setting				Weaknesses of Rock Art Boulder								Large Erosion Events					Small Erosion Events																Rock Coatings				Final RASI
	FISS_IN	FISS_DEP	CNG_TXT	WEAKNESS	FISSURSOL	ROOTS	PLANTS_NEA	SCAL_FLAK	SPLINTER	UNDERCUT	W_RIND_DEV	OTHER_CONC	ANTHRO_ACT	FIS_CAL_WE	FIRE	UNDERCUT2	OTHER_NAT	ABRASION	ANTHRO_CUT	ALVEOL	CRUMB_DISS	FLAKING	RIND_FLAKI	GRAN_DISS	LITH_PIT	LITH_REL	LOSS_PAR	COAT_DETAC	EDGE_ROUND	SCALING	DIFF_EROS	SPLINTERING	OTH_INC_ER	ANTHRO	COATING_PR	CASE_HARD	SALT_EF_SU	
NB45	0	0	0	-2	0	0	1	2	0	1	1	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	2	1	2	0	1	0	0	-1	-1	1	24
NB46	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	12
NB47	0	0	0	-2	0	0	1	2	1	0	2	0	0	0	0	0	0	1	1	1	0	1	1	0	0	0	0	1	1	2	0	1	0	0	-2	-2	0	20
NB49	0	0	0	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	8
NB49	0	0	0	-2	0	0	1	1	0	1	2	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	10
NB50	0	0	0	-2	0	0	1	1	0	2	2	2	0	0	0	0	0	2	1	1	0	1	1	0	0	0	0	1	1	1	0	0	0	0	-2	-2	0	22
NB51	0	0	0	-2	0	0	1	3	1	1	1	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	3	0	0	3	0	1	0	0	-1	-1	0	28
NB52	0	0	0	-2	0	0	2	1	2	0	2	0	0	1	0	0	0	1	1	1	0	1	1	0	2	1	0	1	1	1	0	2	0	0	-3	-3	0	26
NB53	0	0	0	-2	0	0	0	1	0	3	2	2	1	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	1	18
NB54	0	0	0	-2	0	0	0	1	0	2	2	1	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	0	0	0	-2	-2	0	14
NB55	0	0	0	-2	1	0	0	1	1	1	2	1	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-2	-2	0	18
NB56	0	0	0	-2	1	1	2	1	0	0	2	0	0	1	0	0	0	1	1	1	1	1	1	0	0	0	1	1	1	1	1	0	0	0	-2	-2	0	26
NB57	0	0	0	-2	0	0	1	2	2	1	1	0	2	0	0	0	0	0	1	0	1	1	1	0	0	0	0	2	1	2	0	2	0	0	-1	-1	0	32
NB58	0	0	0	-2	0	0	1	2	0	0	2	0	2	0	0	0	0	1	1	0	0	1	1	0	0	0	2	1	0	2	0	0	0	0	-2	-2	0	20
NB59	0	0	0	-2	1	0	1	1	1	0	1	0	1	0	0	0	0	0	1	1	0	1	1	0	0	0	0	1	0	1	0	1	0	0	-1	-1	0	18
NB60	0	1	0	-2	1	0	1	2	1	2	1	0	1	0	0	0	0	1	1	0	1	1	1	0	0	0	0	2	0	2	0	1	0	0	-1	-1	0	32
NB61	0	0	0	-2	0	0	2	1	0	0	2	0	1	0	0	0	0	1	1	0	0	1	1	0	0	0	0	1	1	1	1	0	0	0	-2	-2	0	16
NB62	0	0	0	-2	0	0	1	1	0	0	3	0	0	0	0	0	0	0	1	3	0	1	1	0	0	0	0	1	0	0	0	0	0	0	-3	-3	0	8
NB63	0	0	0	-2	1	0	1	1	1	0	2	1	0	0	0	0	0	1	1	3	0	1	1	0	0	0	0	1	0	0	0	1	0	0	-2	-2	1	22
NB64	0	0	1	-2	0	0	1	1	0	0	2	0	0	0	0	0	0	1	1	3	0	1	1	0	0	0	0	1	1	1	1	0	0	0	-3	-3	1	18
NB65	1	0	0	-2	1	0	3	2	0	2	2	0	0	0	0	0	0	1	2	3	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	0	34
NB66	0	0	0	-2	0	0	1	2	0	1	2	1	0	0	0	0	0	1	1	3	0	1	1	0	0	0	0	1	1	2	0	0	0	0	-2	-2	1	26
NB67	0	0	0	-2	0	0	1	1	1	0	2	1	0	0	0	0	0	1	1	3	1	1	1	0	0	0	0	1	0	2	2	2	0	0	-2	-2	1	32