Archaeology Southwest Exploring and protecting the places of our past

September 27, 2018

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Via email to **blm_az_tfo_sprnca_rmp@blm.gov**

Re: San Pedro Riparian National Conservation Area Draft Resource Management Plan / Environmental Impact Statement

Dear Ms. Markstein:

Thank you for the opportunity to comment on the Draft Resource Management Plan and Environmental Impact Statement (DRMP/EIS) for the San Pedro Riparian National Conservation Area (SPRNCA). In essence, Archaeology Southwest advises the Bureau of Land Management (BLM) to select Alternative D, or a conservation-focused variant thereof, because it is the only management alternative consistent with the Arizona-Idaho Conservation Act that created the SPRNCA. The other three alternatives analyzed in the DRMP/EIS, including the No Action Alternative, fail to guide BLM management toward compliance with the U.S. Congress' stated intent in setting the SPRNCA aside, along with a "quantity of water sufficient" "to protect the riparian area and the aquatic, wildlife, archaeological, paleontological, scientific, cultural, educational, and recreational resources of the public lands surrounding the San Pedro River" (Public Law No. 100-696, § 101 (a), 102 Stat. 4571).

Archaeology Southwest is a Tucson-based membership organization dedicated to the preservation, enjoyment, and investigation of heritage places of the American Southwest. Archaeology Southwest's mission mandates collaborations with tribes, private partners, and federal, local, and state governments to explore and protect the places of the past. This mandate, together with our ethical obligations as cultural resource researchers and stewards, rivets our attention to two issues in public land and resource management: cultural resources and tribal consultation.

- ***Cultural resources*** refer to places, objects, and traditions created in the past and valued in the present. Fragile, generally irreplaceable and nonrenewable, and too often subject to damage and abuse, cultural resources are vital bonds among human generations and between humans and landscapes. Although "cultural resources" is not explicitly defined in U.S. federal statutes or regulations, innumerable laws, policies, and customary practices affirm the high significance of cultural resources as venerable and veritable sources of national identity and of senses of orientation, place, belonging, and distinctiveness for America's diverse and inspiring constituent communities.[1] The existence of cultural resources—as well as their settings, locations, materials, workmanship, feelings, and associations—have profound significance and day-to-day implications for individuals and communities

[1] Definitions for some types of cultural resources are available in the *Electronic Code of Federal Regulations*, notably *historic properties* (at **36 CFR 800**); *human remains*, *cultural items*, and *cultural patrimony* (at **43 CFR 10**), *archaeological resources* (**43 CFR 7**). *Sacred sites* is defined in **Executive Order 13007**. The regulations implementing the *National Environmental Policy Act* (**40 CFR 1500**) affirm cultural resources as elements of the human environment that require focal consideration in the adoption and execution of Federal Government decisions.

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who derive benefits from cultural resources' diverse values: aesthetic, economic, educational, energy, historical, inspirational, political, scientific, social, spiritual, etc. Government land management too often neglects legal and practical mandates to consider cultural resources on par and in conjunction with biophysical aspects of the environment. The two are indivisible and merit similar levels of consideration in planning and implementing government actions.[2] Close consultation with communities affected by government land management, especially interested tribes, complements scientific research as essential bases for management plans and actions.

- ***Tribal consultation*** refers to soliciting, discussing, and considering the views of federally recognized tribes as means to accommodate, where feasible, tribes' interests and preferences.[3] Early, stepwise tribal consultations during the planning and implementation of actions that may or will affect current or former Indian lands generally boosts the timeliness, efficiency, and effectiveness of those actions. Several generations of government and science leaders working in and around Indian Country appreciate why and how to solicit and consider the knowledge and wisdom of the people most familiar with lands and resources affected by proposed actions. Federal officials are obliged to lead government-to-government relations with tribes, to recognize federal fiduciary duty for the welfare of tribes and individual American Indians, and to create opportunities for cooperation and engagement.[4]

The DRMP represents an exceptional opportunity for the BLM to harness both consultative collaboration and best available science by engaging tribes and SPRNCA stakeholders in identifying and working toward a desired future for the SPRNCA that will serve current generations without depriving future generations of healthy, diverse, and productive lands, waters, air, and cultural and paleontological resources. As has been the case with Archaeology Southwest comments on SPRNCA management since the 1990s, these comments are grounded in the Federal Land Policy and Management Act (FLPMA), which affirms that BLM "shall manage the public lands under principles of multiple use and sustained yield ... ***except*** that where a tract of such public land has been dedicated to specific uses according to any other provisions of law it shall be managed in accordance with such law" (FLPMA, 43 U.S.C. § 1732 (a), ***italics*** added). This provision in FLPMA is directly relevant to the DRMP/EIS because Congress established the SPRNCA through the Arizona-Idaho Conservation Act (AICA) "to protect the riparian area and the aquatic, wildlife, archaeological, paleontological, scientific, cultural, educational, and recreational resources of the public lands surrounding the San Pedro River" (Public Law No. 100-696, § 101 (a), 102 Stat. 4571). AICA directs BLM to manage the SPRNCA "in a manner that conserves, protects, and enhances the riparian area and resources" (*Id.* § 102(a)). AICA does not prescribe uses or management methods but does require that all permitted uses "further the primary purposes for which the conservation area is established" (*Id.* § 102(b)). In other words, even as other land management

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[2] The BLM (2004, **Manual Section 8110 – Identifying and Evaluating Cultural Resources**) defines a cultural resource as "a definite location of human activity, occupation, or use identifiable through field inventory (survey), historical documentation, or oral evidence. The term includes archaeological, historic, or architectural sites, structures, or places with important public and scientific uses, and may include definite locations (sites or places) of traditional cultural or religious importance to specified social and/or cultural groups."

[3] This definition builds on the definition in regulations implementing Section 106 of the National Historic Preservation Act (36 CFR § 800.16(f)). For a more inclusive perspective see G. S. Galanda. 2011. The Federal Indian Consultation Right, **http://apps.americanbar.org/buslaw/committees/CL121000pub/newsletter/201101/galanda.pdf**

[4] See Advisory Council on Historic Preservation Policy Statement on Balancing Cultural and Natural Values on Federal Lands, December 20, 2002, **https://www.achp.gov/digital-library-section-106-landing/achp-policy-statement-balancing-cultural-and-natural-values.**

mandates—for example, National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), Endangered Species Act, Clean Water Act—and ever-accumulating scientific evidence and practical management experience oblige the BLM to take a careful *look* prior to the *leap* of selecting a SPRNCA management alternative, AICA affirmatively requires all BLM management plans and actions to prioritize a single objective: "protect the riparian area."

This reading of federal law, coupled with commitments to science-based management analyses and decision making, the Public Trust Doctrine, Federal Government trusteeship in relation to tribes, and the "precautionary principle," whereby proponents of actions must demonstrate that the proposed actions carry no significant harms or risks, permeate the Archaeology Southwest comments. Following a critical review of DRMP/EIS analyses of livestock grazing and vehicular access to areas containing cultural resources, the comments advise and encourage BLM to adopt Alternative D (or a more conservation-oriented version of Alternative D). Alternative D, or a variant thereof that is clearly focused on riparian area protection, is the only alternative consistent with (a) guidance from Congress to BLM in AICA (see above), (b) the preponderance of public input (see online comments and records from public meetings), (c) results from tribal consultations (see below), (d) scientific evidence indicating positive correlations between vehicle access and cultural resource damage and losses (see below), (e) scientific evidence that grazing often constitutes a significant adverse effect on cultural resources, especially including the types of cultural resources present in SPRNCA (see below), and (f) scientific evidence indicating that San Pedro River flows will be both reduced and more variable in coming decades (see below).

Tribal consultations indicate preferences for minimizing land alterations (Alternative D). The DRMP/EIS neglects and discounts abundant results from decades of tribal consultations conducted by the BLM, sister federal agencies, Archaeology Southwest, and other researchers: tribes are generally clear and consistent in requesting that land managers avoid further alterations and disturbances to their ancestral landscapes and cultural resources.[5]

Archaeology Southwest benefits from close and continuing associations with several tribes with long-standing and ongoing interests in the SPRNCA. We urge BLM to prioritize tribal perspectives and preferences on SPRNCA management and to give particular attention to the protection of ancestral O'odham (Sobaipuri) and Apache sites, cultural resources well known to be difficult to identify and easy to damage or degrade. Livestock grazing poses particularly poignant threats to Sobaipuri and Apache sites. Regardless of which alternative is ultimately selected, the final RMP should clearly specify that grazing may not be introduced or reintroduced to any part of the SPRNCA without intensive and comprehensive cultural resource inventories conducted in close collaboration with duly designated O'odham and Apache cultural representatives.

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[5] Colwell-Chanthaphonh, C., and Ferguson, T. J. 2006. "Memory pieces and footprints: multivocality and the meanings of ancient times and ancestral places among the Zuni and Hopi." *American Anthropologist* 108:148–162; Ferguson, T. J., and C. Colwell-Chanthaphonh. 2006. *History Is in the Land: Multivocal Tribal Traditions in Arizona's San Pedro Valley*. University of Arizona Press, Tucson; Welch, J.R., Ramon Riley, and Michael V. Nixon. 2009. "Discretionary Desecration: American Indian Sacred Sites, Dzil Nchaa Si An (Mount Graham, Arizona), and Federal Agency Decision Making." *American Indian Culture and Research Journal* 33(4):29–68; Welch, J.R., Mark K. Altaha, Karl A. Hoerig, and Ramon Riley. 2009. "Best Cultural Heritage Stewardship Practices by and for the White Mountain Apache Tribe." *Conservation and Management of Archaeological Sites* 11(2):148–160; Welch, J.R. 2017. Earth, Wind, and Fire: Pinal Apaches, Miners, and Genocide in Central Arizona, 1859–1874. *Sage Open* (October-December):1–19. doi: 10.1177/2158244017747016. **http://journals.sagepub.com/doi/full/10.1177/2158244017747016**.

More generally, by "lumping" Native American issues with cultural resources and paleontology, and by limiting the apparent scope of tribal consultations to cultural resource issues, the DRMP/EIS misses an important opportunity to incorporate landscape-scale guidance from tribal officials into SPRNCA management. Page E-7 in the DRMP/EIS reports that consultations have only begun, and Archaeology Southwest certainly advises and encourages BLM to invest significantly in further, in-depth tribal consultations, including broad discussions concerning land management philosophy, SPRNCA desired futures, and landscape-scale management goals and preferences. The "comprehensive ethnographic and/or ethnoecological studies in coordination with interested Native American tribes" noted on page 2-27 should, of course, have been completed as a basis for the DRMP/EIS. Instead, the mention of future studies at this late date suggests an attempt to mitigate the unmistakably inadequate attention to Native American issues in the DRMP/EIS. Inadequate attention to tribal consultations and to the site- and landscape-scale values tribes and their members associate with SPRNCA cultural resources is a major flaw of the DRMP/EIS. The final RMP/decision notice should build upon complete consideration of tribal consultations and the studies mentioned above.

Scientific evidence indicates a positive correlation between vehicle access and cultural resource losses. An independent, peer-reviewed study conducted circa 2010 on Tonto National Forest confirms what cultural resource managers have long-surmised: the likelihood of looting and vandalism to cultural resource increases with proximity to roads and vehicular travel routes.[6] With this directive for common-sense management, BLM is advised and encouraged to select Alternative D (or a variant focused on riparian area protection) and to carefully and consistently link all transportation planning within SPRNCA to cultural resource inventories and assessments. BLM is further advised and encouraged to build systematic monitoring of cultural resource conditions—and the completion of cultural resource damage assessments, as needed—into transportation planning and assessment. The final RMP should explicitly (1) require intensive and comprehensive cultural resource field inventories and associated tribal consultations for any and all areas exposed to greater visitation or use as a result of any change in management, including transportation management, and (2) set specific criteria for road and travel route closures as immediate responses to the discovery of any cultural resource impact resulting from the use of a road or travel routes, most especially the use of any road or travel route in the commission of any cultural resource crime.

Grazing constitutes a significant adverse effect on cultural resources, including cultural resources present in SPRNCA. The DRMP/EIS discounts common sense, federal laws, and scientific evidence by neglecting to consider the effects of grazing on cultural resources. Scientific research on the effects of livestock on cultural resources is limited, but all available evidence indicates that livestock can and do cause damage to most types of cultural resource sites. Livestock grazing also alters vegetation, soils, and drainage conditions, usually for the worse and always to the detriment of cultural landscapes.[7] Some cultural landscapes within and adjacent to SPRNCA are probably eligible for inclusion in the National Register of Historic Places, a truth almost certain to emerge from the envisioned ethnographic and ethnohistoric studies. BLM reports also confirm that livestock and livestock permit programs have signif-

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[6] Hedquist, S.L., L.A. Ellison, and A. Laurenzi. 2014. "Public Lands and Archaeological Resource Protection: A Case Study of Human Impacts to Archaeological Sites on the Tonto National Forest, Arizona." *Advances in Archaeological Practice* 2(4): 298–310.

[7] Horne, S., and McFarland, J. 1993. "Issue Paper: Impacts of Livestock Grazing on Cultural Resources." On file, Los Padres National Forest, 6755 Hollister Avenue Suite 150 Goleta, CA 93117; Todd, L.C., Burnett, P.C., Burger, O., and Rapson, D.J. 2003. Assessing Grazing Impacts on the Upper Greybull: A Conceptual and Methodological Framework. Laboratory of Human Paleoecology, Colorado State University, Ft. Collins, Colorado.

icant adverse effects on cultural resources. For example, the Final EIS prepared for the Bodie-Coleville planning units concluded:

> Livestock use impacts on cultural resources include: displacement (vertical and horizontal) and breakage of artifacts, and the mixing of depositional associations through trampling; destruction or enhanced deterioration of structures and features through rubbing; and an acceleration of natural erosional processes. Plants valued by Native American traditionalists could be trampled or consumed by livestock, adversely affecting plant availability at some locations. For purposes of analysis it is assumed that the impacts of livestock use are distributed in proportion to the actual distribution of livestock, with the most intensive impacts occurring at livestock use concentration areas. Cultural Resources located on lands having erosional or other types of watershed deterioration problems attributed to livestock use impacts are assumed to receive high impacts. Cultural resources are non-renewable, and impacts of livestock use on cultural resources are cumulative (Bodie-Coleville EIS 1982:4–92).[8]

Additional adverse effects from grazing include soil compaction, toppling of architectural features, creation of movement corridors, and degradation of springs and streams, all or most of which are themselves cultural resources from the perspective of tribal cultural representatives and others.

Anderson's recent research on links between grazing and cultural resources includes data and conclusions relevant to SPRNCA management planning.[9] Anderson assessed cattle grazing effects on 47 cultural resource sites located on diverse grazing allotments on two national forest ranger districts. Fieldwork at each cultural resource site included documentation of artifacts and features and assessment of six interrelated variables: (1) the density of cattle excrement; (2) the depth and length of cattle trails; (3) the depth and extent of cattle wallows at sites with surface water; (4) the condition of all riparian areas or springs associated with the sites; (5) the condition of fences established to exclude livestock from sites; (6) the types and levels of livestock effects on artifacts and features. Less than nine percent of the sites assessed (4 of 47) showed low or no signs of adverse effects from grazing. Sites associated with riparian areas and surface water had the greatest and most diverse adverse effects.

No studies available to Archaeology Southwest argue that livestock grazing of any kind conserves, protects or enhances cultural resources or riparian areas. Additional research, including high-resolution baseline studies followed by monitoring of artifacts and features in sites subjected to grazing at various levels of intensity, could contribute more science. Such studies must be required by the RMP if any further consideration is given to allowing livestock grazing in SPRNCA. If BLM continues to plan for livestock grazing then it must also assess the costs and landscape, site, and hydrologic consequences of the management treatments necessary to protect SPRNCA riparian areas, cultural resources, and other AICA-protected values from the damaging and often enduring effects of livestock grazing.

Because there is no rational or scientific basis for supposing that grazing does anything except damage and degrade riparian areas and almost all types of cultural resources BLM is advised and encouraged to exclude all grazing from all parts of the SPRNCA unless and until a combination of cultural resource inventories and baseline studies, vegetation studies, and tribal consultations result in the identification of pastures where grazing will actually assist in achieving the resource protection goals identified in AICA. If BLM is able to provide credible scientific evidence that grazing protects SPRNCA resources then

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[8] For additional BLM recognitions of significant adverse on cultural resources due to grazing, see Haas, D. 2006. "Summary of Livestock Grazing Impacts on Archaeological Sites Located on BLM-Administered Lands in Colorado, A Study of Cultural Resource Assessments for Grazing Permits from Fiscal Years 1998 to 2003." Bureau of Land Management, Colorado State Office, Denver.

[9] Anderson, S.R. 2007. Assessing Cattle Grazing Impacts on Archaeological Sites in the Humboldt-Toiyabe National Forest. Paper Submitted in Partial Fulfillment of Requirements for the MA in Anthropology, Northern Arizona University.

the final RMP should specify in detail how BLM might work with grazing permit holders to manage timing, duration, intensity, and distribution of livestock grazing through collaborative, short- and long-term monitoring of desired conditions for key resources and range conditions, including threatened and endangered plant and animal populations and habitat, surface waters and adjacent soil surfaces, rangeland health, forage use, fuel loads, and of course cultural resources.

Scientific evidence and predictive models indicate that San Pedro River flows will be reduced and more variable in the future, creating serious challenges to riparian area protection. Congress passed AICA, and President Regan endorsed it, "to protect the riparian area and the aquatic, wildlife, archeological, paleontological, scientific, cultural, educational, and recreational resources of the public lands surrounding the San Pedro River." To sustain SPRNCA, AICA "reserves … a quantity of water sufficient to fulfill the purposes" and requires a "comprehensive plan for the long-range management and protection of the conservation area. The plan shall … assure protection of the riparian area and the aquatic, wildlife, archeological, paleontological, scientific, cultural, educational, and recreation resources and values of the conservation area."

In light of accumulating scientific evidence for diminishing ground- and surface-water supplies, experiential observations of drought-related degradation of cultural and biophysical resource conditions within the SPRNCA, and science-based predictions of increasing uncertainty in water supplies, AICA's protective provisions appear downright prescient. Water supplies for human and nonhuman ecosystems in Arizona and adjacent regions are decreasing during droughts due in part to human-caused climate change.[10] Intensifying droughts, increasingly heavy downpours, and diminished snowpack are combining with increasing water demands from growing human populations, aging infrastructures, and groundwater depletions to reduce existing and prospective water supplies.[11] The integrity of Arizona's riparian ecosystems and their capacities to provide habitat, clean water, and other services are declining in response to self-amplifying cycles of droughts, floods, wildfires, erosion, and human-caused climate change.[12] Even as carbon emission reductions, fuels management, and other actions may at some future point reduce SPRNCA vulnerabilities to these pernicious factors, the single best defense is precisely what AICA unequivocally requires for the RMP: "protection of the riparian area and the aquatic, wild-

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[10] Elias, E. H., A. Rango, R. Smith, C. Maxwell, C. M. Steele, and K. Havstad. 2016. "Climate change, agriculture and water resources of the Southwestern United States." *Journal of Contemporary Water Research & Education*, 158: 46–61; Garfin, G. (and other editors). 2013. *Assessment of Climate Change in the Southwest United States*. Island Press; Meixner, T., A.H. Manning, D.A. Stonestrom, D.M. Allen, H. Ajami, K.W. Blasch, A.E. Brookfield, C.L. Castro, J.F. Clark, D.J. Gochis, A.L. Flint, K.L. Neff, R. Niraula, M. Rodell, B.R. Scanlon, K. Singha, and M.A. Walvoord. 2016. "Implications of projected climate change for groundwater recharge in the western United States." *Journal of Hydrology* 534: 124–138.

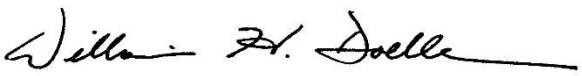
[11] Barnett, T.P., D.W. Pierce, H.G. Hidalgo, C. Bonfils, B.D. Santer, T. Das, G. Bala, A.W. Wood, T. Nozawa, A.A. Mirin, D.R. Cayan, and M.D. Dettinger. 2008. "Human-induced changes in the hydrology of the western United States." *Science* 319: 1080–1083; Jones, S.M., and D. S. Gutzler. 2016. "Spatial and seasonal variations in aridification across Southwest North America." *Journal of Climate* 29: 4637–4649.

[12] Abatzoglou, J.T. and A.P. Williams. 2016. "Impact of anthropogenic climate change on wildfire across western US forests." Proceedings of the National Academy of Sciences of the USA 113:11 770–11 775; Albano, C.M., M.D. Dettinger, and C.E. Soulard. 2017. "Influence of atmospheric rivers on vegetation productivity and fire patterns in the southwestern U.S." Journal of Geophysical Research Biogeosciences 122: 308–323; Marlon, J.R., P.J. Bartlein, D.G. Gavin, C.J. Long, R.S. Anderson, C.E. Briles, K.J. Brown, D. Colombaroli, D.J. Hallett, M.J. Power, E.A. Scharf, and M.K. Walsh. 2012. "Long-term perspective on wildfires in the western USA." *Proceedings of the National Academy of Sciences of the USA* 109: E535-E543; Serrat-Capdevila, A., J.B. Valdes, F. Dominguez, and S. Rajagopal. 2013. "Characterizing the water extremes of the new century in the US South-west: a comprehensive assessment from state-of-the-art climate model projections." *International Journal of Water Resources Development*, 29:2, 152–171, DOI: 10.1080/07900627.2012.721717. Stromberg, J.C., and others. 2012. "Dryland Riparian Ecosystems in the American Southwest: Sensitivity and Resilience to Climatic Extremes." *Ecosystems* 16: 411–415, DOI: 10.1007/s10021-012-9606-3

life, archeological, paleontological, scientific, cultural, educational, and recreation resources and values of the conservation area."[13]

Concluding comment. BLM is faced with a rare and enviable convergence of common sense, scientific evidence, predominant public opinion, and congressional direction on SPRNCA management. All these voices are clear and consistent in guiding the RMP to do all it can—in collaboration with consulting tribes and stakeholders—to protect and sustain the SPRNCA into the indefinite and highly uncertain future. The responsibility to conserve, protect and enhance the SPRNCA in general, and its cultural resources in particular, requires a proactive vision for cultural resource management deeply integrated with both tribal consultations and biophysical resource and transportation management. Alternative D (or a conservation-oriented variant thereof) is uniquely qualified to develop and deliver that vision and provide the platform for implementing the necessary protections.

Archaeology Southwest appreciates the opportunity to provide these comments. We look forward to continued collaboration with BLM, tribes, and stakeholders to refresh and sustain Congress' vision for the SPRNCA.



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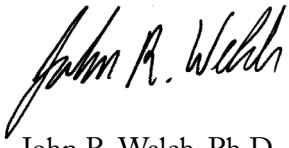

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[13] Ault, T.R., J.S. Mankin, B.I. Cook, and J.E. Smerdon. 2016. "Relative impacts of mitigation, temperature, and precipitation on 21st-century megadrought risk in the American Southwest." *Science Advances* 2: e1600873.doi:10.1126/sciadv.1600873; Bauer, W.J. 2016. *California through Native Eyes: Reclaiming History*. University of Washington Press, Seattle, WA; Nolan, C. (and many others). 2018. "Past and future global transformation of terrestrial ecosystems under climate change." *Science* 31 Aug 2018: Vol. 361, Issue 6405, pp. 920-923 DOI: 10.1126/science.aan5360; Woodruff, S.C. and M. Stults. 2016. "Numerous strategies but limited implementation guidance in US local adaptation plans." *Nature Climate Change* 6: 796-802.