

FULL RESEARCH ARTICLE

Western Message Petroglyphs indicate historic beaver presence in a San Francisco Bay Area watershed

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Recent museum, archaeological, and observer record evidence suggests that North American beaver (*Castor canadensis*) were historically native to the watersheds of California's coast, including San Francisco Bay. A wide variety of animals are abundantly represented in Native American petroglyphs and pictographs with their representations fulfilling intentions ranging from the mundane to ceremonial and mythological purposes. However, beaver symbols are poorly represented in California rock art and absent from the San Francisco Bay Area. A novel record, in the form of Western Message Petroglyphs, suggests that a beaver lodge was present in the late nineteenth century in the Alameda Creek watershed, potentially the last evidence of beaver prior to their extirpation in the region by the fur trade.

Key words: Alameda Creek, beaver, California, *Castor canadensis*, historic range, rock art, San Francisco Bay, Western Message Petroglyphs

Until recently, the historic range of the beaver (*Castor canadensis*) in California was described as restricted to the watersheds of the Central Valley below 305 m (1,000 ft), the Klamath and Pit River watersheds of furthest northern California, and the Colorado River mainstem in the extreme southeast border of the state (Zeiner et al. 1990). This work cited the claims of early twentieth century zoologists (Grinnell et al. 1937; Tappe 1942) and may have reflected "shifting baselines syndrome" (Pauly 1995) whereby scientists accept as a baseline species occurrence and distribution extant at the beginning of their careers, despite near extirpation of beaver by fur trappers in much of California almost a century and a half earlier. Over the last decade, physical evidence of beaver's nativity to the high Sierra Nevada and the watersheds of coastal California, including the San Francisco Bay Area, led to recognition of a pre-fur trade distribution of beaver throughout the state (James and Lanman 2012; Lanman et al. 2012, 2013; CDFW 2017). Specific to Bay Area watersheds,

physical evidence of beaver nativity included a beaver skull collected on Saratoga Creek in 1855 in Santa Clara County and now in the Smithsonian National Museum of Natural History (USNM 580354), and a beaver tooth at the CA-ALA-555 archaeological site on Arroyo de la Laguna Creek, a tributary of Alameda Creek in Alameda County, dating to 2200–1650 BCE (Lanman et al. 2013). In addition, Ohlone and Coast Miwok indigenous peoples in the Bay Area had words for beaver (Powers 1877; Heizer 1974; Merriam and Heizer 1979) that antedate widespread beaver re-introductions around California from 1923 to 1950 (Hensley 1946; Lundquist and Dolman 2013).

In contrast to the above evidence, depictions of beavers in California's Native American rock art sites within the state of California are scarce, and absent from the San Francisco Bay Area. Among the numerous Indigenous peoples of California, animal depictions of various kinds (birds, reptiles, canids, ungulates, ursines, and caprids) abound in pictographs and petroglyphs across the state. In the publications cited below, only two rock art images of beaver were noted in California (neither in the Bay Area): a Chumash pictograph found on the Montgomery Potrero of the Cuyama River watershed in the Sierra Madre Mountains of eastern Santa Barbara County (Lee and Horne 1978), and a Yokuts pictograph along the Tule River on the Tule Indian Reservation in Tulare County (Mallery 1893; Grant 1979).

Here we analyze and translate a Western Message Petroglyph (WMP) site depicting a beaver lodge in the Alameda Creek watershed tributary to San Francisco Bay. WMPs appear to represent a “faux-Indian” picture-writing project dating to the last quarter of the nineteenth century and the opening years of the twentieth. Once dismissed as forgeries or a hoax, we now know that WMPs have been identified at 38 sites in eight western states (Marymor *in press*). WMPs were likely created by non-Native American author(s) with knowledge of a broad range of Native American symbols. The images appear to be appropriated from published indigenous picture-writing traditions and were first described as “modern petroglyphs” by the University of California Berkeley Anthropology Department (Elsasser and Contreras 1958). Located along historic wagon roads and rail corridors, WMPs are often associated with mining and quarry sites dating to the period of western expansion (Marymor and Marymor 2016; Marymor *in press*). A WMP panel of 19 images including a beaver lodge located on a boulder on the Vargas Plateau in the East Bay Hills was studied initially by Sister Mary Paula von Tessen, a Dominican sister and Sanskrit scholar resident at Mission San Jose, between 1930–1950, and included in Elsasser's publication of the original seven known WMP sites (Elsasser and Contreras 1958). The Vargas Plateau WMP is herein described and interpreted as potential evidence of beaver presence in the Alameda Creek watershed through the late nineteenth century.

METHODS

Study Area

The original petroglyph boulder site was situated on the Vargas Plateau at an elevation of approximately 269 m (880 ft), 4.0 km (2.5 mi) northeast of Fremont, CA, USA (geographic coordinates omitted for site protection). The Plateau is located midway between the Alameda Creek mainstem as it traverses Niles Canyon to the north, and Interstate 680 as it traverses Mission Pass to the south (Fig. 1). Both of these gaps bordering the Vargas Plateau hold historic significance as major travel corridors. Niles Canyon became the western terminus for the Transcontinental Railroad in 1869 when the Western Pacific Railroad made connection with the Central Pacific Railroad at Sacramento. Mission Pass has served as a



Figure 1. The Vargas Plateau, original site of the boulder with Western Message Petroglyphs in the Alameda Creek Watershed of the East Bay Hills, northeastern Fremont, CA, USA.

primary route between south San Francisco Bay and the inland valley at Sunol, CA, USA and was used by the Indigenous Tuibun and Causen Ohlone peoples dating from prehistoric times. In recorded history the route was used by Spanish missionaries and soldiers, returning troops from the Mormon Battalion, American 49ers during the gold rush, local ranchers, and today by commuters travelling the Interstate 680. A WMP engraved panel (CA-ALA-51) once sat on the northern wall overlooking Mission Pass until it was blasted away in the 1960s during construction of the interstate highway. The boulder with WMP petroglyphs in the current study was removed from *in situ* in the early 1990s and placed in urban Fremont, CA, USA, where it now resides under the curation of the Muwekma Ohlone Tribe.

Western Message Petroglyph Analysis and Interpretation

Approximately 150 images employed as a vocabulary by the WMP author were sourced from published ethnographic accounts dating to the nineteenth century. These diverse picture-writing symbols recorded as pictographs and petroglyphs on stone, and on more ephemeral materials such as birch bark, animal hides, pottery, and the like expressed the concerns of Native Americans from across the United States. Central among the published accounts

were a series of treatises authored by Brevet Lieutenant Garrick Mallery between the years 1877–1893 (Mallery 1877, 1880, 1881, 1886, 1893). Artistic styles of rendering animals vary according to region and culture and include everything from prints and tracks, stick figure and full-bodied representations in profile and frontal views, and splayed “pelt” views. By noting the historic contexts of the 38 site locations and comparing these to the publication dates of the images that the WMP author appropriated from published works, we can estimate an earliest probable date for the engravings. A study of the published interpretations of individual images allows us to propose an interpretation of the pictographic message.

RESULTS

The WMP panel of 17 textual and 2 ancillary images was engraved with metal-edge tools into a low-lying, weathered sandstone boulder and includes two depictions of beavers in pelt view. The textual images are laid out one-by-one on the face of the boulder in a sinuous line along its canted side. Two of the images are somewhat removed from the others and are out-of-view in this photo along the boulder’s spine (Fig. 2).

It is most probable that the Vargas Plateau petroglyph engravings do not antedate 1886 based on the ethnographic source of the beaver pelt images and on a curious depiction of an “earth lodge.” Mallery’s treatise, “A Calendar of the Dakota Nation” was the first published account of the Dakota Sioux “Winter Count,” - a picture writing tradition preserved on buffalo robes that memorialized a cumulative annual history of the Dakota



Figure 2. The Western Message Petroglyph found on the Vargas Plateau, consisting of 17 petroglyph symbols in view, and two out of view behind the boulder (note insert with two petroglyph symbols and red arrow indicating position behind the boulder).

Sioux Nation (Mallery 1877). By 1886 Mallery published several additional examples of Dakota Winter Counts produced by Dakota Sioux timekeepers (Mallery 1886), including a similar image of a beaver lodge in Figure 3 (lower right) drawn by Bo-í- de, also known as The Flame. It represented the Sans Arcs (literally “without bows,” aka Itázipčō) Lakota band’s first attempt at building an earth lodge and memorialized the year 1815–1816. The lodge is topped with a figure of a bow, or perhaps a feather. The beaver image (Fig. 3 upper right) from Lone Dog’s Winter Count represented “Little Beaver,” a French trader who was killed by a powder explosion in his trading house. The beaver image was used to memorialize the year 1809–1810.

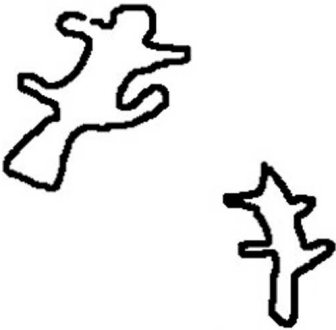



	
<p>Vargas Plateau WMP</p>	<p>Lone Dog’s Winter Count</p>
<p>Transliteration: Beaver Lodge</p>	
	
<p>Vargas Plateau WMP</p>	<p>Bo-í-de’s Winter Count</p>

Figure 3. Western Message Petroglyph images paired comparisons to Dakota Sioux picture writing.

Each of the 17 images of the front-facing WMP on the Vargas Plateau panel has been sourced and identified in this manner. They originate with Dakota Sioux, Ojibwa, and Maya cultural sources and each image has a known definition that accompanies it in the published ethnographies (Table 1). Indigenous depictions of animals in prehistoric, proto-

Table 1. Western Message Petroglyphs (WMP) Symbols: Transliteration based upon historical sources (lines read left to right following the sinuous line of images).

Image	Literary source	Transliteration (for reference see footnote)	Synonyms
Leaf w/crescent	Cree; Abenaki; Chippewa; Ojibwa; Northern Arapaho; Lakota; Sioux	Falling Leaf Moon ^{4,5,9,10}	October
Beaver	Lone Dog's Winter Count, Dakota Sioux	"Little Beaver" ^{6,10}	Beaver
Inverted comb-shape w/crescent on top	The Flame's Winter Count, Dakota Sioux	Earthen lodge ⁶	Lodge
Parallel serpentine line segments, horizontal	Ojibwa	River ^{2,4,7,9,10}	Water
Line segment w/dot above	Ojibwa/Sioux Picto- graphic Writing	Above ⁴	
Teepees	Ojibwa; Dakota Sioux, Red Shield's Winter Count	Teepees ^{2,7,10}	Village; encamp- ment
Circle; w/enclosed human bust	Ojibwa	Spirit surrounded by a line indicating a shore ^{3,7,10}	Hidden; mystery; obscure; don't understand
Vee shape; acute angle with two in-filled lines	Dakota Sioux, Bat- tiste Goode's Winter Count	Travois ^{6,7}	They moved; travail; travel
Circle; quartered	Pan-Indian	The four winds, with earth and man at the center ⁷	Everywhere
Line segment w/dot above	Ojibwa/Sioux Picto- graphic Writing	Above ⁴	
Three vertical dots	Ojibwa	Counting device ⁸	Three; three days; three years
Ellipse	Maya	Zero; naught (completion) ¹	Empty; nothing
Beaver	Lone Dog's Winter Count, Dakota Sioux	"Little Beaver" ^{6,10}	Beaver
Rectangle; open w/ inward facing tine, left facing	Ojibwa	Great, great much ^{2,7}	Many
Scroll "E"; backwards facing	Dakota Sioux, Bat- tiste Goode's Winter Count	Death, illness ^{6,7,10}	Disease; infirmity; pain

Table 1. References: ¹(Aveni 1980), ²(Copway 1850), ³(Hoffman 1891), ⁴(Hofsinde 1959), ⁵(Konstantin 2018), ⁶(Mallery 1886), ⁷(Mallery 1893), ⁸(Schoolcraft 1851), ⁹(Tehanetorens 1998), ¹⁰(Tomkins 1929)

historic, and historic art are common and when represented as a full-bodied depiction are most often shown in profile, and sometimes in “pelt-view.” Specifically, the beaver symbol utilized in the Vargas Plateau WMP appears in pelt-view with a prominent paddle-shaped tail, mimicking the style of beavers drawn by Lone Dog, The Swan, and The Flame as reproduced in the Dakota Sioux Winter Counts included in Garrick Mallery’s publication entitled “Pictographs of the North American Indians” (Mallery 1886). The treatment of the Sans Arcs earth lodge that appears in The Flame’s Winter Count is similar to his contemporaries (e.g. Lone Dog and The Swan) save for his unique treatment of the “bow” detail, which is exactly replicated by the WMP author. The WMP author’s reliance on Mallery’s detailed exposition on Dakota Sioux Winter Counts published in 1886 sets a floor for the earliest probable date for the WMP panel.

By applying the ethnographic definitions for each image to the WMP panel we are able to transliterate the “message” embedded in the text. The two images that appear on the spine of the boulder are of uncertain origin and may represent unique inventions of the author. As such, they are not included in the transliteration and translation. Below, is the transliteration of the Vargas Plateau WMP text followed by a translation. The reading begins at upper left and continues down and along the sinuous line of images from left to right (Fig. 4):

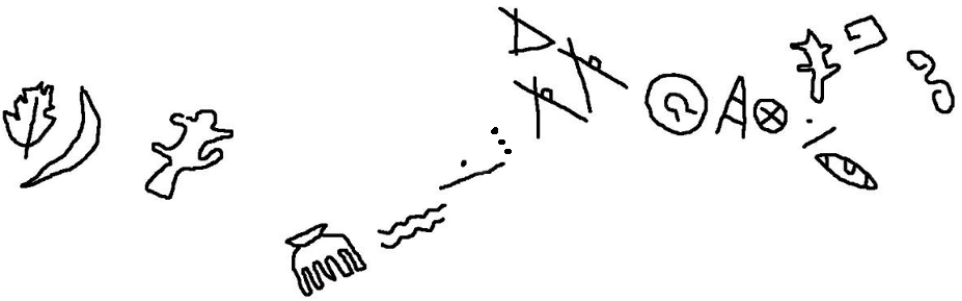


Figure 4. Transliteration and translation of the Vargas Plateau Western Message Petroglyphs.

Transliteration: Falling Leaf Moon

Beaver – earthen lodge – river – above – three – village/encampment – hidden/obscure – travois – four directions/everywhere – above – nothing – Beaver – great many – death/illness

Translation: Falling Leaf Moon (October)

Beaver lodge upriver from our third encampment
We don’t understand, searching all around upriver, nothing
A great number of beaver have died

DISCUSSION

The WMP author, an educated Euro-American with access to the ethnographic literature of his day, wrote in pictures by choice rather than by necessity, suggesting a desire to restrict access to the meaning of his text. Research has shown that all 38 WMP sites were authored by the same individual, or possibly a small group who were all “in the know,” based on the observation that unique individual icons and multi-image phrases often repeated

among sites. Regarding whether the beaver symbol in the Vargas Plateau WMP is, in fact, a beaver, we note that it contains the key differentiating feature of Native American beaver symbols, namely the large, paddle-shaped tail, accurately represented as one-third of the animal's body length. Beaver images in the other two known rock art images of beaver on the Tule and Cuyama River watersheds also include this key feature (Mallery 1894, Grant 1979, Lee and Horne 1978).

The earliest date that the WMP author would have found published accounts of the beaver and earthen lodge symbols used in the Vargas Plateau petroglyphs would have been Mallery's 1886 publication. The symbols Mallery illustrated in his five reports were re-published later by authors of several major ethnographic descriptions. For example, Tomkins credited much of his published work on Native American picture-writing to material sourced from Mallery's 10th Annual Report to the Bureau of Ethnology (Mallery 1893; Tomkins 1926). If our dating of the WMPs to 1886 or later is correct, then the message appears to be the last surviving record of beaver habitation prior to twentieth century re-introductions in the Alameda Creek watershed.

Definitions sourced from the ethnographic literature of the author's day enabled us to approach his message through an image-by-image transliteration, but to extract an accurate translation, we are constrained by the limited material available on Native American picture-writing conventions from the historic era. The author (or authors) of the WMP are unknown, and exact dating of their inscription is not possible. A family whose ranch neighbors the original location of the Vargas Plateau boulder has indicated that it was at least 100 years old, i.e., before 1921, based on family lore, but this is not a definitive source. Although our translation of the Western Message Petroglyphs relies on limited knowledge as well as subjective interpretation, it is consistent with historical records of beaver trapping on Alameda Creek. In the 1840s, Christopher "Kit" Carson was granted rights to trap beaver on Alameda Creek by the Mission San José padres, where they "abounded...from the mouth of its canyon to the broad delta on the bay" (MacGregor 1976; Gustaitis 1995).

In conclusion, the Vargas Plateau petroglyph message appears to extend, by 30 or more years, the last reliable historical record of beaver in a San Francisco Bay watershed. The latter record was a Smithsonian Museum specimen collected in 1855 on Quito Creek (now Saratoga Creek) on the opposite (west) side of San Francisco Bay (Lanman et al. 2013). The WMP record of a beaver lodge in the absence of the animals upstream or downstream appears to herald their complete extirpation by the nineteenth century fur trade. Ethnographic information sources, such as the Vargas Plateau WMP, may serve as a novel, and previously unexpected, evidence source for better understanding of California's historical fauna.

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