

# Chronological Reordering of the Yuman Complex in Baja California

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## Abstract

According to Malcolm J. Rogers, the Late Prehistoric period for southern California and northern Baja California began around AD 800–900. It is characterized by the development of an archaeological complex called Yuman, belonging to seminomadic groups whose linguistic roots are Hokan, with an economy based mainly on hunting-gathering and fishing. More than 70 years ago, Rogers assigned three phases to this archaeological complex, in which he proposed how it began, developed, and declined, based mainly on his discoveries in California and to a lesser extent in Baja California.

With the increase in archaeological investigations for more than 10 years in the peninsula's Yuman territory, important empirical information about this period has been obtained. It relates to the primary elements that make up the complex, as well as new ones that had not previously been considered, associated with radiocarbon dating and other diagnostic elements that allow us to position them chronologically. They are presented here as a reference framework for generating new hypotheses and interpretative proposals, with the objective of knowing the age of the traits that we archaeologically identify as the Yuman complex in Baja California.

## The Yuman Tribes of Baja California

Yuman territory of Baja California is located at the northern end of the peninsula, from the 30th parallel north, bordering the states of California, Arizona, and Sonora. It includes the Sierra de Juarez, the Sierra de San Pedro Mártir, and such minor ranges as the Sierras de las Pintas, Las Tinajas, etc., as well as the Colorado River delta, the Pacific coast, and the upper Gulf of California. All these are combined in a landscape of beaches, cliffs, oases, deserts, intermontane valleys, canyons, and lagoons, with a varied vegetation of foothill and coastal scrub, cactus,

palm, chaparral, and forest, in which coexist a great variety of marine and terrestrial birds, mammals, and reptiles.

The present-day Native people of northern Baja California speak languages belonging to the Yuman family, including Kiliwa, Paipai, Kumeyaay, Cocopa, and Quechan. Using the controversial technique of glottochronology, it has been estimated that the initial separation of the Yuman family into different languages probably occurred around 2,500 years ago (Laylander 2010). Traditionally, it has been suggested that the territory of the original Yumans was in the lower basin of the Colorado River, to the northeast of Baja California. The Cocopa and Kumeyaay, together with the Ipai of Alta California, are closely related to one another but separated perhaps by close to 1,000 years of independent development. From a linguistic point of view, the closest link of the Paipai is with the Yumans of western Arizona, the Yavapai, Hualapai, and Havasupai. Kiliwa is the most divergent language of the Yuman family (Figure 1).

## The Yuman Complex in Baja California: Background and Issues

According to Agustín Ortega Esquinca (2004:96):

In the Yuman area of Baja California, the reconstruction of cultural history is based on assumptions derived from the approaches that Malcolm Rogers began publishing in

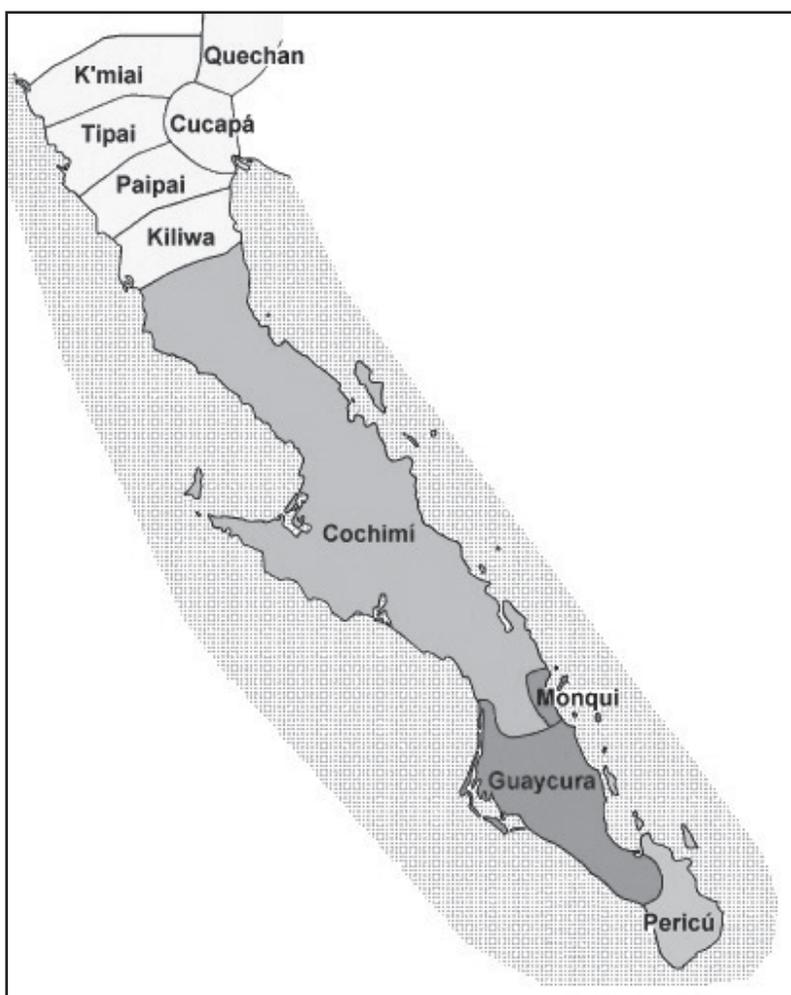


Figure 1. Native languages of Baja California and adjacent areas.

the 1930s (Rogers 1939). The result was the definition of three archaeological cultures [San Dieguito, La Jollan, and Yuman], which considered evidence from three successive chronological periods. In the original approach, each of these cultures was represented by a complex of lithic materials [or ceramics].

These cultures or complexes were later revised and summarized by Julia Bendímez Patterson (1985, 1987:13–14) and Don Laylander (1987:118–120), developing a tentative chronology for Baja California that has continued in use in this region.

1. Paleoindian period (8000 to 6000 BC)
2. Archaic period (6000 BC to AD 500)
3. Late Prehistoric period (AD 500 to the arrival of Westerners)

The three archaeological complexes that correspond to them were those proposed by Malcolm Rogers (1939:70, Pl. 21, 1945:170–176) and termed San Dieguito, La Jollan, and Yuman.<sup>1</sup> This last period and complex—Late Prehistoric and Yuman, the subjects of this article—represented the most radical changes from what had preceded them during prehistory (Bendímez 1985:85; Laylander 1987:121; Ortega 2004:106), summarized below in terms of its material aspects:

1. Use of the bow and arrow
2. Use of ceramic vessels
3. Introduction of agricultural methods
4. Use of mortars

The Yuman complex, in turn, was divided into three chronological subdivisions, which are described below as Rogers (1945) defined them.

#### ***Yuman I (AD 800/900<sup>2</sup> to 1050)***

According to Rogers, 2,000 years ago, the territory from southern California to northern Baja California was the southernmost extension of Yuman speakers. At that time, this entire region, with the exception of the portion of its desert area located on the lower Colorado River and in its delta, seems to have housed a hunter-gatherer economy that was complemented by the collection of coastal fauna from the Pacific coast (Rogers 1945:168–169). Apparently, the ancestral home of the Yumans was located in a marginal area throughout many centuries, away from the entry points for influences or technological innovations from other groups (Rogers 1945).

Around AD 800 or 900, Yuman groups began a gradual movement to the east that introduced them to the Colorado Desert, a movement that culminated in the occupation of the Colorado River valley. This movement brought about the Yumans' first contact with the cultures of the Southwest and perhaps, on the northern periphery, incorporated an influence from those who inhabited the Great Basin. The groups that settled near the confluence of the Colorado and Gila Rivers almost immediately became farmers and potters, either by acculturation or through fusion with a group already located in the Gila-Sonora zone (Rogers 1945).

For Malcolm Rogers, what started the Yuman period was undoubtedly the beginning of the presence and use of ceramics among the groups on the lower

Colorado River or the lower delta of the Colorado River, today the valleys of Mexicali in Baja California and Imperial in California. The adoption of ceramics brought as a consequence a series of gradual diachronic and synchronic transformations that would eventually distinguish the Yumans culturally and materially from their immediate neighbors. According to Rogers, it is difficult to know if this area had previously been inhabited, because if so, it is almost certain that all the artifacts and features were made with perishable materials that make it difficult to recognize them in an area that was constantly flooded because it is a delta (Rogers 1945).

#### ***Yuman II (AD 1050 to 1500)***

Rogers proposed that this period was characterized by the rapid expansion of the Yumans to the north and west of the Colorado River's lower delta into what are now Mexicali and Imperial Valleys. They were greatly attracted by the potential of Lake Cahuilla, located in those two valleys, which was favored with an abundance of riparian resources of all kinds and were used by them when the lake was at its highest levels. This expansion is mainly evidenced by the spread of ceramics (Rogers 1945:190).

#### ***Yuman III (AD 1500 to the arrival of Westerners)***

According to Rogers, the advent of this period is attributable to the fact that Lake Cahuilla began to dry up, which consequently brought about the migration of the Yuman groups living around it toward Arizona to the east and the Pacific coast to the west. All this, of course, was reinforced by the dispersion of Yuman ceramics into this wider region. He makes no mention of when this period may have ended, which suggests some kind of continuity with the historic Yumans (Rogers 1945).

With his extensive fieldwork and analysis of the materials that he recovered from the entire Yuman area during

the first half of the twentieth century, Rogers was able to propose the most representative archaeological elements of the Yuman complex in addition to ceramics, which he summarized in his 1945 work (Table 1).

After this 1945 work by Rogers,<sup>3</sup> due to the lack of archaeological projects that generated relevant

information at least until 2004 in the Yuman area of Baja California (see Ortega 2004:103–106), it can be said that the main problem of these cultural and chronological sequences is that for decades they lacked empirical data that would serve as a starting point to develop new proposals about the true peninsular culture's age and material components (Ortega 2004).

Table 1. Yuman Archaeological Elements in the Colorado River Core Area.

	<i>Periods</i>		
	<i>Yuman I</i>	<i>Yuman II</i>	<i>Yuman III</i>
1- House types	?  Caves (camping)	Circular, domed brush walls  Caves (camping)	Dirt-covered pole walls (winter); circular, domed, brush walls (summer) Ramada (summer) Caves (camping)
2- Hearth	?	Circular (clay wall)	Circular (clay wall) Clay cone rests
3- Metate	Flat, unshaped (from camps only)	Flat, rectangular, shaped	Flat, rectangular, shaped
4- Mano	Flat, unshaped Single handed (from camps only)	Flat, rectangular, shaped. Single and two handed	Flat, rectangular, shaped. Two handed
5- Mortar	?	?	Wood
6- Bedrock mortar	?	+	+
7- Jewelry	Pendants, bracelets, tinklers, beads. Gulf of California shell	Beads and pendants. Gulf and Pacific shell, and Pyrophyllite	Beads and pendants. Gulf and Pacific shell. Bone and wood nose pins
8- Pottery	Basket molded Modeled (small pieces) Paddle and anvil	Modeled (small pieces) Paddle and anvil	Modeled (small pieces) Paddle and anvil
9- Sherd disk	+ Plain	+ Perforated	+ Perforated
10- Pipe	Conical clay	—	—
11- Basketry	Coiled	?	Some coiled
12- Arrowpoint	? (no stone)	? (no stone)	Hardwood—some stone up-river
13- Cobble chopper	+	+	+
14- Flake scraper	+	+	+
15- Gravel pictographs	+	+	+
16- Trail shrine	+ (food offering)	+	+
17- Petroglyphs	+	+	+
18- Disposal of dead	?	Cremation (ungathered ashes)	Cremation (ungathered ashes)

Notes: The left column of numbers has been added for the present study. From Rogers (1945:187).

**Projects of the Mexicali Archaeological Section of Centro INAH Baja California**

The important empirical data presented here are the product of several projects that the author has carried out for Centro INAH Baja California in the Colorado River delta and adjacent areas (Figure 2). However, other data are also used, including empirical results obtained from outside of Baja California’s Yuman territory, from the south of the peninsula, that materially speaking are linked chronologically and culturally in one way or another (Figure 3).

First, data will be identified and briefly described within the phases originally developed by Rogers in his 1945 work, beginning with the categories in Table 1 but adding other material or cultural traits that he did

not consider but that we now know are also archaeologically representative of Baja California’s prehistoric and historic Yumans. Subsequently, using as a reference framework the results obtained, they will be discussed in order to strengthen a new interpretative proposal that the present author has been developing since 2015. Only ceramics were originally used, but the proposal is now enriched, refined, and reinforced with the archaeological traits presented here.

**Yuman Archaeological Traits in Baja California and Their Chronology**

Table 2 summarizes the archaeological elements, positioned by means of radiocarbon dating, for Baja California, with special emphasis on the Colorado River area and the Sierra de Juárez. These will allow the creation

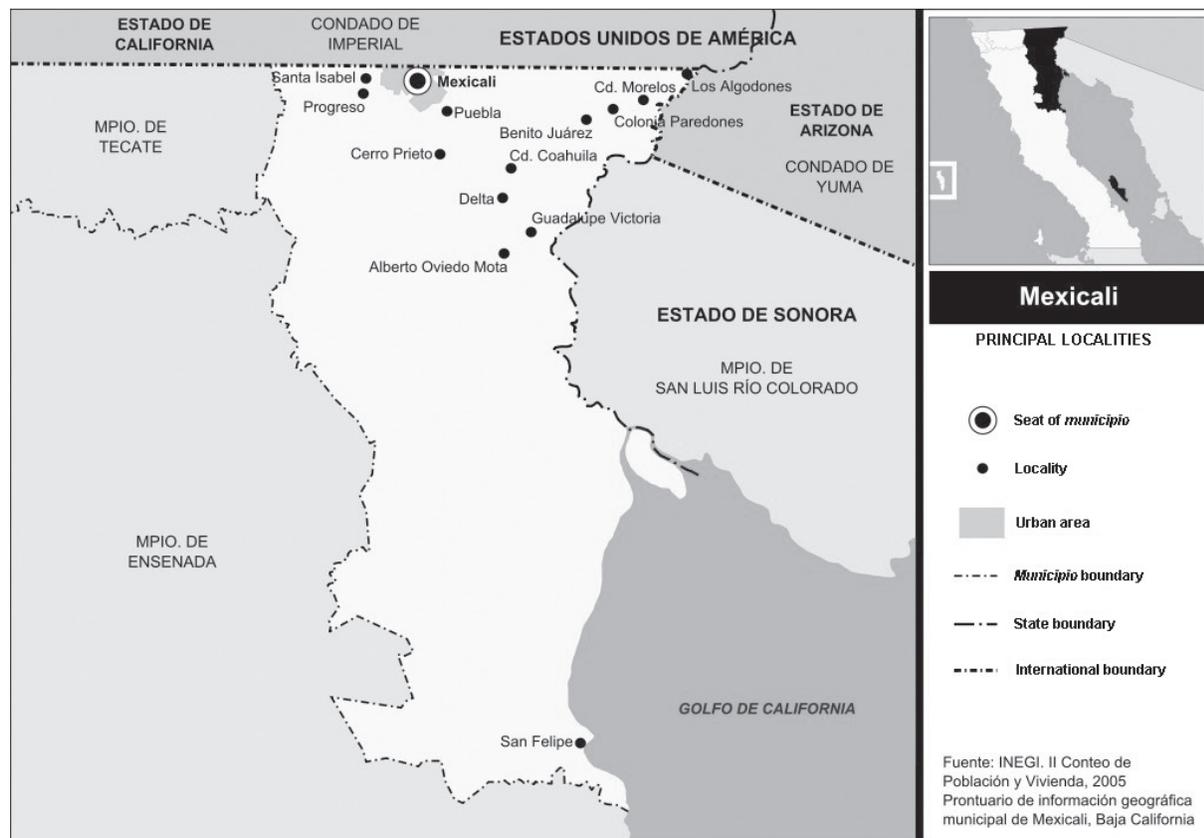


Figure 2. *Municipio* of Mexicali and adjacent *municipios*.



Figure 3. Archaeological sites mentioned in the text: 1. Algodones, 2. El Mayor Cucapá, 3. El Gran Abrigo, 4. ASU-LSS-DCC, 5. La Biznaga, 6. Kilómetro 57, 7. El Vallecito (La Explanada, El Corral), 8. Sierra de Juárez, 9. Rancho Jacuín, 10. La Huerta, 11. Misión de San Fernando Velicatá, 12. Espinazo del Indio, 13. San Felipe, 14. Zaragoza. (Map from Wikipedia.)

of a material and chronological reference framework. The periods are described below using the information on some of the most relevant traits for the Yuman area of Baja California studied here (see Tables 2 and 3).

### ***Yuman I (AD 700<sup>4</sup>–1050)***

It is interesting to note that there are only two representative sites for this period, one with radiocarbon

dating and the other that is estimated to belong within this chronological range because of its peculiar characteristics. Both are located in the desert area of the *municipio* of Mexicali, south of Laguna Salada.

As shown in Table 3, there are only six Yuman archaeological elements, which together speak precisely of an austere way of life for groups who were hunters, gatherers, fishers, and, very importantly, also potters,

Table 2. Late Prehistoric archaeological elements in Northern Baja California, Identified up to 2018.

Element	Sites	Dates and Periods	Observations
<b>1. House type:</b>			
Rock enclosure	Sierra del Mayor Cucapá: El Mayor 2 (Porcayo and Rojas 2012: Appendix 2)	AD 1670–1780, 1760–1760, 1800–1940; Yuman III 2 Sigma Calibration/Beta/AMS	Radiocarbon dating of circular structure with perimeter made with a course of rocks, at site El Mayor 2 in the Sierra de Mayor Cucapá; charcoal comes from hearth in interior of same
Rock shelter	Sierra de las Pintas: El Gran Abrigo (Porcayo and Rojas 2015:158–163)	AD 895–925, 940–1020; Yuman I 2 Sigma Calibration/Beta/AMS	Dates in all cases associated with Yuman ceramic materials
Rock shelter	Eastern foothills of Sierra de Juárez: La Biznaga (Porcayo and Rojas 2015:158–163)	AD 1415–1455, 1405–1445; Yuman II 2 Sigma Calibration/Beta/AMS	
Rock shelter	La Rumorosa – El Vallecito: La Explanada (Porcayo and Rojas 2013:40–41, 199)	AD 1474–1665, 1785–1793; Yuman II, III 2 Sigma Calibration/INAH/Conventional	
Rock shelter	La Rumorosa – El Vallecito: El Corral (Porcayo and Rojas 2013:40–41, 199)	AD 1649–1681, 1738–1754, 1762–1803 Yuman III 2 Sigma Calibration/INAH/Conventional	
<b>2. Hearth:</b>			
	Sierra del Mayor Cucapá: Mayor 2 (Porcayo and Rojas 2012: Appendix 2)	AD 1670–1780, 1760–1760, 1800–1940; Yuman III 2 Sigma Calibration/Beta/AMS	Charcoal from a hearth inside a rock enclosure
	La Rumorosa – El Vallecito: El Corral (Porcayo and Rojas 2013:16–18, 23–25)	AD 1649–1681, 1738–1754, 1762–1803 Yuman III 2 Sigma Calibration/INAH/Conventional	Charcoal from hearth bounded by rocks in interior of rock shelter with La Rumorosa-style painting
<b>3. Metate (portable):</b>			
	La Rumorosa – El Vallecito: La Explanada (Porcayo and Rojas 2013:16–18, 23–25)	AD 1474–1665, 1785–1793; Yuman II, III 2 Sigma Calibration/INAH/Conventional	Excavated context
	Sierra del Mayor Cucapá: Mayor 2 (Porcayo and Rojas 2012: Appendix 2)	AD 1670–1780, 1760–1760, 1800–1940; Yuman III 2 Sigma Calibration/Beta/AMS	Associated with circular granite “corral” structure
<b>4. Mano:</b>			
	Sierra de las Pintas: El Gran Abrigo (Porcayo and Rojas 2015:158–163)	AD 895–925. 940–1020; Yuman I 2 Sigma Calibration/Beta/AMS	Excavated material associated with charcoal
	La Rumorosa – El Vallecito: La Explanada (Porcayo and Rojas 2013:16–18, 23–25)	AD 1474–1665, 1785–1793; Yuman II, III 2 Sigma Calibration/INAH/Conventional	
	Sierra del Mayor Cucapá: Mayor 2 (Porcayo and Rojas 2012: Appendix 2)	AD 1670–1780, 1760–1760, 1800–1940; Yuman III 2 Sigma Calibration/Beta/AMS	
<b>5. Mortar (portable):</b>			
	Southern Laguna Salada: Dunas Comunidad Cucapá (ASU-LSS-DCC; Porcayo and Rojas 2018)	AD 900–1050; Yuman I Dates from non-radiocarbon sources.	Single example recovered in archaeological project (Porcayo and Rojas 2018) from a still-undated site but by all its characteristics could be Yuman I.

Table 2. Continued.

Element	Sites	Dates and Periods	Observations
<b>6. Mortar (bedrock):</b>			
	Eastern foothills of Sierra de Juárez: La Biznaga (Porcayo and Rojas 2015:158–163)	AD 1415–1455, 1405–1445; Yuman II 2 Sigma Calibration/Beta/AMS	
	La Rumorosa: Kilómetro 57 (Porcayo 2006:108, 2008a:Appendix 3)	AD 1660–1683, 1735–1805; Yuman III 2 Sigma Calibration/INAH/Conventional	Sites with mortars associated with La Rumorosas-style rock art; diverse dating methods (obsidian, pottery) for the El Vallecito area seem to indicate Yuman III (AD 1500–1850) period, including those found in “El Numeral” (Porcayo and Rojas 2012:35–39)
<b>7. Ornament:</b>			
	Sierra de las Pintas: Gran Abrigo (Porcayo and Rojas 2015:158–163)	AD 895–925, 940–1020; Yuman I 2 Sigma Calibration/Beta/AMS	Abalone beads from excavation in Sierra de las Pintas
	La Rumorosa – El Vallecito: El Corral (Porcayo and Rojas 2013:291, 296)	AD 1649–1681, 1738–1754, 1762–1803; Yuman III 2 Sigma Calibration/INAH/Conventional	<i>Olivella</i> sp. beads
	Dunas de Algodones: Algodones (Porcayo and Rojas 2011:332, Appendix 6)	AD 1870–1920 (68.6%); Yuman IV 2 Sigma Calibration/INAH/Conventional	<i>Olivella dama</i> beads from necklace associated with Yuman infant cremation
<b>8. Pottery:</b>			
	Sierra de las Pintas: El Gran Abrigo (Porcayo and Rojas 2015:158–163)	AD 895–925, 940–1020; Yuman I 2 Sigma Calibration/Beta/AMS	Ceramics from excavation context associated with charcoal
	Estribaciones Orientales Sierra de Juárez: La Biznaga (Porcayo and Rojas 2015:158–163)	AD 1415–1455, 1405–1445; Yuman II 2 Sigma Calibration/Beta/AMS	
	La Rumorosa – El Vallecito: La Explanada (Porcayo and Rojas 2011:332, Appendix 5)	AD 1474–1665, 1785–1793; Yuman II, III 2 Sigma Calibration/INAH/Conventional	
	La Rumorosa – El Vallecito: El Corral (Porcayo and Rojas 2011:332, Appendix 5)	AD 1649–1681, 1738–1754, 1762–1803; Yuman III 2 Sigma Calibration/INAH/Conventional	
	Sierra del Mayor Cucapá: Mayor 2 (Porcayo and Rojas 2012: Appendix 2)	AD 1670–1780, 1760–1760, 1800–1940; Yuman III 2 Sigma Calibration/Beta/AMS	
	La Rumorosa: Kilómetro 57 (Porcayo and Rojas 2011:332, Appendix 5)	AD 1660–1683, 1735–1805; Yuman III 2 Sigma Calibration/INAH/Conventional	
	Dunas de Algodones: Granero de Algodones (Porcayo 2008a:Appendix 3)	AD 1881, 1900; Yuman IV 2 Sigma Calibration/INAH/Conventional	
<b>9. Sherd disk:</b> No information available at present			

Table 2. Continued.

Element	Sites	Dates and Periods	Observations
<b>10. Pipe:</b>			
Ceramic	Desierto Central: San Fernando Velicatá (Bendímez et al. 2016:129)	AD 1769–1821; Yuman III Dates from non-radiocarbon sources.	Whole Yuman ceramic pipe found at Mission San Fernando in a mission burial; not directly dated, but mission is known to have been used from 1769 to 1818 (Rojas and Porcayo 2015:132–133).
Ceramic	Desierto Central: El Espinazo del Indio (Bendímez et al. 2016:128)	AD 1769–1821; Yuman III Dates from non-radiocarbon sources.	Another Yuman ceramic pipe fragment found near the mission, also in Central Desert, at site with rock art and ceramics from Mission San Fernando Velicatá
Stone	Sierra de Juárez (Hood 2017)	AD 1895–1940; Yuman IV	Four stone pipes found by Santa Catarina native in Sierra de Juárez cave; it was possible to radiocarbon date contents of one; Archaic but reused by Yumans
<b>11. Basketry:</b>			
	Dunas de Algodones: Granero de Algodones (Porcayo 2008a:10–16, Appendix 3)	AD 1881–1900; Yuman IV 2 Sigma Calibration/INAH/Con- ventional	Extremely scarce archaeological information; in Algodones area in excavated granary, associated with ceramics and seeds; carbonized remains of willow basket frames for storing various seeds; baskets of this type documented in early 20th century photos
	Dunas de Algodones: Granero Algodones (Porcayo and Rojas 2010:53,54, 56–58, Appendix 4)	AD 1870, 1920, 1890, 1920; Yuman IV 2 Sigma Calibration/INAH/Con- ventional	
<b>12. Arrowpoint:</b>			
	Sierra de las Pintas: El Gran Abrigo (Porcayo and Rojas 2015:158–163)	AD 895–925, 940–1020; Yuman I 2 Sigma Calibration/Beta/AMS	Fragments of obsidian points
	Estribaciones Orientales Sierra de Juárez: La Biznaga (Porcayo and Rojas 2015:158–163)	AD 1415–1455, 1405–1445; Yuman II 2 Sigma Calibration/Beta/AMS	Desert Site-notched arrowpoint from excavation
	La Rumorosa – El Vallecito: La Explanada (Porcayo and Rojas 2013:24, 230–241)	AD 1474–1665, 1785–1793; Yuman II, III 2 Sigma Calibration/INAH/Con- ventional	Serrated Desert Side-notched point from La Rumorosa-El Vallecito excavation
	La Rumorosa – El Vallecito: El Corral (Porcayo and Rojas 2013:24, 230–241)	AD 1649–1681, 1738–1754, 1762–1803 Yuman III 2 Sigma Calibration/INAH/Con- ventional	Types: Dos Cabezas Serrated, Vallecito, Desert Side-notched, Desert Side-notched diamond, Desert Side-notched serrated, Cottonwood, Cottonwood deeply notched
<b>13. Cobble chopper:</b> No information available at present			
<b>14. Flake scraper:</b> No information available at present			
<b>15. Gravel pictograph:</b> No information available at present			
<b>16. Trail shrine:</b> No information available at present			
<b>17. Petroglyph:</b>			
	Eastern foothills of Sierra de Juárez: La Biznaga (Porcayo and Rojas 2015:158–163)	AD 1415–1455, 1405–1445; Yuman II 2 Sigma Calibration/Beta/AMS	Charcoal excavated from sites with pictographs and petroglyphs, associated with Yuman ceramics
	La Rumorosa: Kilómetro 57 (Porcayo 2006, 2007)	AD 1660–1683, 1735–1805; Yuman III 2 Sigma Calibration/INAH/Con- ventional	

Table 2. Continued.

Element	Sites	Dates and Periods	Observations
<b>18. Disposal of the dead:</b>			
	Dunas de Algodones: Algodones (Porcayo and Rojas 2011:332, Appendices 6)	AD 1870–1920 (68.6%); Yuman IV 2 Sigma Calibration/INAH/Conventional	Infant cremation from the Los Algodones area
<b>Newly considered material elements</b>			
<b>19. Bow:</b>			
	Sierra de Juárez: La Huerta (Rojas 2016:Beta-426914)	20th century; Yuman IV	Bow fragment recovered by individual who said it was found in a cave in the Kumeyaay location known as La Huerta
<b>20. La Rumorosa-style rock art:</b>			
Rock shelter with painting	La Rumorosa – El Vallecito: El Corral (Rojas 2016:Beta-426914)	AD 1649–1681, 1738–1754, 1762–1803 Yuman III 2 Sigma Calibration/INAH/Conventional	Excavated charcoal associated with La Rumorosa-style paintings
Rock shelter with painting	La Rumorosa: Kilómetro 57 (Rojas 2016:Beta-426914)	AD 1660–1683, 1735–1805; Yuman III 2 Sigma Calibration/INAH/Conventional	
Rock shelter with painting	Sierra de Juárez: El Murillo (Bendímez 2012)	AD 1670–1780, 1800–1890; Yuman III 2 Sigma Calibration/Beta/AMS	
Rock shelter with painting	Sierra de Juárez: Rancho Jacuín (Porcayo and Rojas 2012:9–23, 211; Ponce 2017:310)	AD 1851–1870; Yuman IV Dates from non-radiocarbon sources.	Button from U.S. Army uniform
	La Rumorosa – El Vallecito	AD 1869; Yuman IV Dates from non-radiocarbon sources.	Silver dollar associated with Yuman materials and El Vallecito archaeological zone
<b>21. Obsidian from Obsidian Butte:</b>			
	Imperial Valley, California: Obsidian Butte volcanic dome	AD 1700; Yuman III Dates from non-radiocarbon sources.	Volcanic dome located north of Mexicali Valley, in California's Imperial Valley; excellent Yuman chronological marker, known to have been accessible only after AD 1700, when Lake Cahuilla, which covered the two above-mentioned valleys dried and allowed its intensive use; marker putting all associated archaeological evidence in Yuman III or IV period
<b>22. Shaft straighteners:</b>			
	Sierra del Mayor Cucapá: Mayor 2 (Porcayo and Rojas 2012: Appendix 2)	AD 1670–1780, 1760–1760, 1800–1940; Yuman III 2 Sigma Calibration/Beta/AMS	Hidden among rocks of an excavated enclosure or rock circle, associated with charcoal
	La Rumorosa – El Vallecito: El Numeral (Porcayo and Rojas 2012:149)	AD 1700; Obsidian Butte; Yuman III/IV Dates from non-radiocarbon sources.	Associated with Obsidian Butte obsidian and La Rumorosa-style paintings
<b>23. Agriculture:</b>			
	Dunas de Algodones: Gra- neros de Algodones (Porcayo 2007, 2008a, 2008b; Porcayo and Rojas 2010:53,54, 56–58, Appendix 4)	AD 1881, 1900, 1870, 1920, 1890, 1920; Yuman IV 2 Sigma Calibration/INAH/Conventional	Granary with carbonized seeds of beans, pumpkins, maize, and mesquite, all associated with Yuman ceramics, remains of willow baskets, textile fragments, metal

Table 3. Yuman Archaeological Elements: Baja California.

	Periods			
	Yuman I AD 700–1050	Yuman II AD 1050–1500	Yuman III AD 1500–1850	Yuman IV AD 1850–present
1. House type	✓	✓	✓	
2. Hearth			✓	
3. Metate (portable)		✓	✓	
4. Mano	✓	✓	✓	
5. Mortar (portable)	✓			
6. Mortar (bedrock)		✓	✓	
7. Ornaments	✓		✓	✓
8. Pottery	✓	✓	✓	✓
9. Sherd disk				
10. Pipe			✓ ceramic	✓ stone
11. Basketry				✓
12. Arrowpoint	✓	✓	✓	
13. Cobble chopper				
14. Flake scraper				
15. Gravel pictograph				
16. Trail shrine				
17. Petroglyph		✓	✓	
18. Disposal of the dead				✓
19. Bow				✓
20. La Rumorosa style rock art			✓	✓
21. Obsidian from Obsidian Butte			✓	✓
22. Shaft straightener			✓	✓
23. Agriculture				✓
<b>Total Elements</b>	6	7	13	10

Note: From Porcayo (2018a).

whose ceramics show that they used the paddle and anvil to shape strips of clay into archetypal vessel forms. Up to now, no evidence has been found for the use of baskets as molds for ceramics, which has been seen in some examples from the following periods, so the use of basketry is not yet considered as diagnostic (Porcayo 2016, 2018a).

Based on the ceramic dates presented here from the Sierra de las Pintas (Table 2), the oldest so far dated

indirectly by radiocarbon for Baja California, the presence of this element is effectively confirmed within the range proposed by Rogers. It is important to mention in this regard that no foreign ceramics associated with Yuman ones have so far been found for any of the periods in the area studied.

Another element dated indirectly by radiocarbon is the use of rock shelters. The unique case of the Sierra de las Pintas contains a preceramic occupation that,

together with all its contents, has not been possible to date. Without knowing how distant chronologically the two known Yuman I occupations may be, they are very similar in their elements, except for the absence of ceramics (Porcayo 2015).

At this same location, manos and bedrock metates were found in association with ceramic dates, as well as obsidian point fragments (Tables 2 and 3) whose geological source is the nearby Sierra de las Tinajas, located to the west, also in the Laguna Salada basin. Portable stone mortars are not yet dated; however, the one from site ASU-LSS-DCC has been included, since it is the only example that has been found at a Yuman site of all those known and recorded by the present author after 14 years of field work. It is a site that does not share the characteristics of later periods, except for the use of ceramics, which are also different (as discussed below). Rogers (1945) assigned portable mortars made of wood only to Yuman III, and he never mentioned, as in this case, that they might be made of stone; consequently, it is most likely that the mortars are early.

If the use of bedrock mortars is confirmed, it would be added to the use of portable stone metates and manos for processing seeds into flour. If the antiquity of the camp south of the Laguna Salada were also to be confirmed, this would represent another type of adaptation that involved staying in or using sites other than rock shelters; this camp is located between dunes and open to the sky.

As mentioned, based on the archaeological evidence that has been found, there was an austerity or simplicity with respect to material culture, reflecting a high degree of mobility that even, in one way or another, kept the groups directly or indirectly linked with the Pacific coast, as attested by abalone (*Haliotis* sp.) shell beads.

There are not yet rock art sites dated from this period.

### ***Yuman II (AD 1000–1500)***

In our study area, the increased number of archaeological traits total seven (see Tables 2 and 3), one more than the previous period, and the number of representative dated sites is just two: La Biznaga and La Explanada (Table 4). Portable mortars and ornaments are no longer reported. Bedrock mortars and the use of metates (portable and bedrock) appear, and rock shelters as places to spend the night, manos for grinding, and arrowheads continue in use. At the site of La Biznaga, the use of pictographs and petroglyphs belonging to a style other than La Rumorosa appears for the first time; although El Vallecito has the earliest date, it is a rock shelter with domestic occupation but still without rock art.

The use of ceramics also continued. It has been hypothesized, based on a new study and reordering of vessel forms, that in this period there was a notable increase in the variety of forms, all derived directly from the archetypes that preceded them (Porcayo 2016, 2018a). The use of the paddle and anvil and smoothing of clay strips continued as a technique for the manufacture of ceramics.

At both sites, the radiocarbon dates fall closer to the period's end than to its beginning, so there is still a considerable gap in dates between this period and the prior one. With the evidence available, we can assume that the locations of La Biznaga and La Explanada in Sierra de Juárez, no longer in the desert and lower delta, suggest a rearrangement of the Yuman groups in Baja California, at least by the end of Yuman II.

### ***Yuman III (AD 1500–1850)***

As shown in Table 3, it is quite remarkable that there is almost a doubling of archaeological traits in Yuman III compared to the prior period within our study area. Of 13 elements, eight were continued from the

Table 4. Representation of Archaeological Periods at the Cited Sites.

	Periods			
	Yuman I AD 700-1050	Yuman II AD 1050-1500	Yuman III AD 1500-1850	Yuman IV 1850-present
1. Algodones Dunes				✓
2. Sierra del Mayor Cucapá: Mayor 2			✓	
3. Sierra de las Pintas: El Gran Abrigo	✓			
4. Southern Laguna Salada: ASU-LSS-DCC	✓			
5. Eastern foothills of Sierra de Juárez: La Biznaga		✓		
6. La Rumorosa: Kilómetro 57			✓	
7. La Rumorosa - El Vallecito La Explanada, El Corral		✓	✓	✓
8. Sierra de Juárez: El Murillo			✓	
9. Sierra de Juárez: Rancho Jacuín				✓
10. Sierra de Juárez: La Huerta				✓
11. Central Desert: Mission San Fernando Velicatá			✓	
12. Desierto Central: Espinazo del Indio			✓	
<b>Total</b>	2	2	6	4

Note: From Porcayo (2018a).

previous period, and within these, the overnight sites, grinding artifacts, arrowheads, and ceramics date back even to Yuman I. Five of the elements are new, at least as archaeologically recognized up to the present.

Of the traits, we call particular attention to the fact that the round structures for habitation ringed with rocks, or *corralitos*, have only been dated for this period in the Sierra del Mayor Cucapá (at the Mayor 2 site), where the associated fauna have also corroborated that the site was probably occupied during the winter; that is, it was a seasonal site (Porcayo et al. 2016:68). The only hearths directly dated by radiocarbon also belong to this period: one is in a *corralito* in the Sierra del

Mayor and the other is at El Corral, a rock shelter with cave pictographs at El Vallecito.

Beginning with Yuman III, there is clear evidence of the use of ceramic pipes for ritual, therapeutic, or simply recreation purposes. In contrast with Rogers's (1945:Table 1) proposal, ceramic pipes from the previous periods have not been dated or found anywhere. Shell beads reappear as ornaments.

In the ceramic analyses of this period's sites, it has been proposed that there is a greater increase in the variety of the vessels' shapes and dimensions, and an increase that makes them proportionally taller than

those that were manufactured during previous periods (Porcayo 2016, 2018a).

Arrowheads made of stone, mainly obsidian, are found throughout our study area from Yuman periods I to III. However, during Yuman III there is a greater morphological variety, represented by the types of Dos Cabezas Serrated, Vallecito, Desert Side-notched, and Cottonwood (see Table 2) (Moranchel 2014; Panich et al. 2015:260).

The rock art style termed La Rumorosa by the archaeologist Ken Hedges also emerged during Yuman III. This style, previously known as Diegueño Representational, was renamed La Rumorosa by Hedges (1970, 1973, 1986, 2003). The most representative site is El Vallecito, located just north of the town of La Rumorosa. The style is defined by pictographic representations of digitate anthropomorphs highlighting the fingers and toes, lizard-like motifs, suns, circles, rectangular grids, abstract motifs, etc. The designs appear in at least four colors—red, black, white and yellow—and at most sites at least two colors appear together.

In partial agreement with Hedges (1970:158), the La Rumorosa style would fall in a range between AD 1500 and 1900 (Yuman III/IV). However, radiocarbon dates from several sites (El Corral, Km 57, Rancho Jacuín, and El Murillo), including one from El Vallecito, may more accurately locate its starting date around AD 1660 (Table 2). This is reinforced by its direct association at all these sites with another relevant characteristic of this period: obsidian chemically identified as coming from Obsidian Butte, located in Imperial Valley. Based on the evidence now available, the acquisition and use of this raw material in Baja California only began around AD 1700. By that time, Lake Cahuilla had receded to the level of the current Salton Sea, making the obsidian source accessible (Panich et al. 2012, 2015, 2017). This obsidian's almost exclusive presence at La Rumorosa and in

the Sierra de Juarez, associated precisely with the La Rumorosa style, makes it an excellent chronological marker for the style in question, although not marking the style's beginning, because previously other sources of obsidian may have been used, such as the one in the Sierra de las Tinajas.

Finally for this period, it is also interesting to note in Table 4 that the sites increase in number, going from two in the prior period to six, although two of these, from the Central Desert, represent the presence of Yuman elements in Cochimí territory. This testifies to an extension of the Yuman groups' material influence into the peninsula's interior. Such an influence has not been reported for other periods. It may perhaps have to do, to a lesser extent, with some Native converts' rearrangement and reutilization in the Spanish missions, but to a greater degree with the previous interaction of these two hunter-gatherer groups. As mentioned, the three clearly Yuman sites for this period are located in the Sierra de Juárez, La Rumorosa, or its eastern foothills, and one in the Sierra del Mayor Cucapá, in the present territory of the Cocopa.

#### *Yuman IV (AD 1850 to the Present)*

This new Yuman IV period was not considered by Rogers, who did not define a time limit for the previous one. This is largely because since AD 1850, with the annexation of territory to the United States, the Alta California Yumans' way of life changed in a much more drastic, radical, and rapid way, in comparison with that of the Baja California Yumans. This was true, at least in material terms, until the twentieth century, when the Paipai began to market their pottery as crafts, while preserving the ancestral manufacturing technique (Wade 2004:93–94; Panich and Wilken 2013).

There are a total of 10 representative archaeological elements (Tables 2 and 3). One element, pottery, as already mentioned, has been present since Yuman I;

five more go back to the prior period, Yuman III; and four were chronologically located exclusively in the Yuman IV period, according to the presently available evidence.

Ceramics are represented by pots from the Algodones dunes, associated with charcoal dated between AD 1881 and 1900 (Tables 2 and 3). The vessels' proportional heights continue to increase, becoming greater than in the previous period (Porcayo 2018a). Material elements from Yuman III that persist include shell beads as ornaments; reused Archaic stone pipes; La Rumorosa-style rock art, indirectly dated with other diagnostic materials, including Obsidian Butte obsidian; representations in the La Rumorosa style of men on horseback and firearms at the Valle Seco site; stone shaft straighteners; and a U.S. Army button (ca. 1851–1870) and a 1869 dollar. Basketry, disposition of the dead by cremation, archaeological specimens of wooden bows, and agriculture are all Yuman innovations, but based on present evidence, they appear far more recent than had previously been thought (Rogers 1945:Table 1).

There are a total of four occupied sites dated by radiocarbon, or two less than during Yuman III. One is in the Algodones dunes, near the mouth of the Colorado River in the delta. Three more are Rancho Jacuín, La Huerta, and El Vallecito in the Sierra de Juárez; the latter was occupied frequently, without any major hiatuses, from at least 1474 and until at least 1869 (Table 2).

Sites that do not have earlier dates are those located in the Algodones dunes, and only one, the village of La Huerta, is still inhabited by Kumeyaay; it is known that there and in the surrounding area a considerable number of Yuman archaeological sites are waiting to be studied and dated. These may be able to confirm that Yuman IV was the period of the Baja California Yuman complex's persistence against the West and its continuity by means of the adaptation of its

characteristics to a process of gradual sedentarization (Porcayo 2018a).

### **The Yuman Complex in Baja California and the Little Ice Age: A Hypothesis to be Developed**

The El Vallecito archaeological zone near La Rumorosa, whose time of greatest activity was in the Yuman III and IV periods, has an area of 160 ha. Within the zone are concentrated 23 rock shelters with several sets of cave pictographs and petroglyphs, 35 occupational rock shelters, and five extensive open-air camp sites, all with evidence of continued ritual and/or domestic use. Additionally, there are 50 agave roasting pits and various concentrations of lithics, ceramics, and bedrock mortars and metates (Porcayo 2018b, 2018c). Together, these suggest a frequent, persistent, intensive occupation at the sites. However, all of this archaeological evidence, taken together or considered separately, is difficult to explain if we take into account that there are no perennial water sources within the 160 ha or in the adjacent areas.

At El Vallecito, 104 *tinajas*, or natural depressions found in granite blocks that can capture a very significant amount of water with frequent and/or abundant rainfall, have been recorded throughout the archaeological zone (Porcayo 2014, 2015). Under such circumstances, the *tinajas* could explain to a large extent the ancient inhabitants of El Vallecito's supply of the vital liquid, as well as the timing of the zone's florescence in all aspects of its material and ritual culture, manifested in particular by La Rumorosa rock art.

Some research conducted in the area in recent years related specifically to trying to answer the question of how its inhabitants were supplied with water (Vázquez 2014, 2015). This led to exploring the hypothesis that a climatic event, the Little Ice Age (ca. AD 1400<sup>5</sup>–1900) (Schwitalla 2013:8), may have been the fundamental climatic condition for this

intensive, frequent, and persistent occupation and may also have brought in consequence many other changes.

From the information currently available, it is known that during the Yuman I and II periods (ca. AD 700–1500), droughts were frequent, and there was little rainfall in the American West (Cook et al. 2007). These droughts must have caused greater mobility in the search of water and food, limiting the technological innovations and material culture of the Yuman groups, as seen in the corresponding archaeological evidence already presented.<sup>6</sup> The archaeological sites for what would be Yuman I are extremely rare. This rarity could be explained by the great mobility, without persistence or constant occupation in the same place. Mobility, together with the meager material culture that they are thought to have had, makes them difficult to identify archaeologically and very atypical in the area studied. Those sites identified as Yuman II (La Biznaga and Explanada), with an increase in the identifiable material elements, are closer chronologically to the next period, during which climatic conditions were more favorable (Table 2).

During Yuman III (AD 1500–1850) and Yuman IV (AD 1850 to the present), droughts were less frequent and precipitation more constant, which enabled longer stays in a specific area to exploit all its resources in a constant manner. This may have been the case at El Vallecito, where enough *tinajas* capturing rain made possible longer stays and more permanent occupation. These conditions also resulted, especially in the area of the Colorado delta, in a process of pre-mission incipient

sedentism (Porcayo 2018a). There was a florescence of religious beliefs as well as technological innovations and diversified material culture, reaching what we know today as the Yuman complex. This corresponded to the Cuyamaca complex of southern San Diego County (True 1966, 1970), which also has bearing on the chronology of Baja California (Tables 2, 3, and 4).

Further strengthening the hypothesis that the Little Ice Age was the climatic factor conditioning the great changes in the way of life and the timing of the Yuman archaeological complex's development, it is interesting to note that despite more than 14 years of investigations in the area, there is still a chronological and archaeological gap between Yuman I and II. As shown in Table 5, the distance in time between the ranges of the available dates within each period is reduced. However, at the chronological boundary between Yuman I and II, dates and identified sites are lacking for a span of about 385 years. Between Yuman II and III there is a gap of about 175 years; and between Yuman III and IV, of around 64 years. To what could this be due? As mentioned, around AD 1500, rainfall became more frequent, precisely when Yuman III began with its diversification of material elements and more identified sites. The gap between Yuman III and IV is smaller because there were more sites at this time, with longer occupations and more identifiable and datable material culture.<sup>7</sup> These resulted from better climatic conditions than those prevailing between Yuman I and II, for which the gap in dating is 385 years. The adverse weather conditions probably limited the Yumans' existence in all respects; hence it must be stressed that the evidence from Baja California for

Table 5. Chronological Gaps in the Available Archaeological Information.

Rogers 1945	Yuman I AD 700–1050		Yuman II AD 1050–1500		Yuman III AD 1500–1850		Yuman IV
Porcayo 2018	AD 895–1020		AD 1405–1474		AD 1649–1805		AD 1869–1940
Lacking archaeological information in Baja California		Yuman I/II AD 1020–1405 (385 years)		Yuman II/III AD 1474–1649 (175 years)		Yuman III/IV AD 1805–1869 (64 years)	

Yuman I is so far almost null, but the evidence at the end of Yuman II is more notable.

With the information presented in this article, we propose four hypothetical chronological divisions for understanding the Yuman complex in an archaeological and environmental context. These will need to be tested in an interdisciplinary manner. The first division, Yuman I, between ca. AD 700 and 1300, was characterized by a high mobility of hunter-gatherer groups, largely in consequence of their adaptation to the adverse climatic conditions caused by constant droughts. Yuman II would be placed between ca. AD 1300 and 1500. Although the droughts did not cease, they were balanced by an increase in rainfall; hence the dates around AD 1450 presented for sites such as La Biznaga and La Explanada, when the occupation of these sites and a “varied” material culture were closer chronologically to the next period. The third division, ca. AD 1500 to 1850, was characterized by diversified technological and adaptive innovations and less mobility, resulting from an increase in rainfall and humidity, a product of the Little Ice Age. The site so far most representative of this period is El Vallecito. The fourth division, from AD 1850 to the present, has been characterized by the persistence of the peninsular Yumano complex as opposed to the Western one, and its continuity through the adaptation of some of its surviving material elements, like pottery among the Paipai, within a context of acculturation, sedentarization, and complete territorial confinement.

### Endnotes

1. The Yuman I, II, and III periods of Rogers were replaced by some other researchers with Patayan I, II, and III. The term Patayan means “ancient people” in the Hualapai language and was used to avoid the assumption that the archaeological record was linked to the Pai and Yuman ethnographic groups (Colton 1945). As we will show at the end of this article, we think, like Rogers, that indeed there was no cultural

break and that the descendants have materially persisted in many prehistoric Yuman manifestations up to the present. For this reason, the names of the periods will be used here as proposed by Rogers. Nevertheless, it is important to mention that the association of these linguistic and archaeological patterns does not hold true in some other regions.

2. Based on ceramics, the year AD 700 has been proposed as the initial date for this period (Waters 1982).

3. For practical reasons, this proposal has been limited to presenting and discussing the archaeological information of northern Baja California. We do not want to ignore the substantial evidence and extensive work done after Rogers by our colleagues in California concerning the Yuman groups living north of the U.S.-Mexico border, which in no sense was a cultural boundary during prehistory. In the future, we intend to work more specifically with this evidence, contrasting it with what is proposed here. For a synthesis of how the Yuman complex, its chronologies, and its principal investigators have been addressed after Rogers, see Moratto 2004:153–158.

4. The archaeologist Michael Waters (1982) dated the presence of Yuman pottery in Arizona at about AD 700, which therefore is taken as the beginning of Yuman I.

5. It is more generally accepted that the Little Ice Age began around AD 1300.

6. We lack extensive archaeological research on Baja California’s portion of Lake Cahuilla, which would be needed to determine how much influence the lake may have had on the Yuman groups that lived adjacent to it, as well as to document the archaeological material complex associated with it. However, the evidence so far obtained seems to indicate that the lake was not very important. In California, where the lake’s dimensions were much larger and the archaeological

studies have spanned decades, some researchers have argued that Lake Cahuilla did not have a profound effect on prehistoric mobility and demography; effects varied according to the different shorelines of the lake and its surrounding geography (Weide 1976; Schaefer 1994; Schaefer and Laylander 2007).

7. However, the decrease in elements and sites for Yuman IV was due to the historic process of westernization, marginality, and territorial confinement to which the Yumans were subjected by the Spanish, U.S., and Mexico (see Tables 3 and 4).

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