

# Keeping the Faith: Spanish Missions and their Impact on Native Americans in the Southwest and California\*

Lee J. Alston  
Indiana University and the NBER

Marie Duggan  
Keene State College

Julio A. Ramos Pastrana  
Pennsylvania State University

March 2022

## Abstract

We explore the long run impact of the Spanish missions on Native American outcomes in the early 20<sup>th</sup> century. The Spanish missions created communities of Native enclaves, which survived assaults by the Mexico and the U.S. We found that having extensive contact with missions increased the percentage of Native Americans Catholic, decreased crime rates, and increased income from agriculture and overall earnings from wages. Surprisingly, we found no impact on education.

\*We thank Eric Alston, Ann Carlos, Christian Dippel, David Farris, Dustin Frye, John L. Kessell, Bryan Leonard, Gary Libecap and Steven Smith for comments and Douglass Allen, Dustin Frye and Bryan Leonard with help accessing the data for our analyses. We thank Eli Goldstein for research assistance. Lee J. Alston is Professor of Economics and Affiliate Professor of Law at Indiana University, and Research Associate at the National Bureau for Economic Research; Marie Duggan is Professor of Economics at Keene State College; and Julio A. Ramos is Assistant Research Professor of Public Policy at Penn State University.

## I. Introduction

The Spanish missions in the present-day states of Arizona, California and New Mexico had in some cases a presence of nearly two and a half centuries. Given the length of time over which Spain and then Mexico ruled Arizona, New Mexico, and California, it is surprising that there has been little systematic work assessing the long run socio-economic impact of the Spanish missions on Native Americans in the present-day U.S.<sup>1</sup> Our research seeks to change the way we talk about Spanish missions and US economic history. The role of the Catholic Church and the missions has been vilified to the point that in 2020 California mobs pulled down statues of Franciscans, and an arsonist set fire to Mission San Gabriel in Los Angeles. Catholicism has always had two sides, religion from below as well as rules from above. On the frontier, negotiation characterized the relationship between missionary and native communities because that was the means of pulling thousands of native people into Catholicism with minimal military backup. Negotiation created a syncretic form of religion, and it also created congregations with social cohesion. That cohesion fostered islands of native cultural and economic survival in the hard times that imperialism brought. Schermerhorn (2019) advises us to ask not what the Catholic hierarchy intended, but rather what Native Americans made of Catholicism.<sup>2</sup> Our research entails using qualitative and quantitative data to assess the long run impact of the missions on Native American communities. The closest to our work is Waldinger (2017), who estimated the impact of the different types of missionaries on educational and literacy outcomes across Mexico in the 21<sup>st</sup> century. She found that the Franciscans had the largest impact on education, literacy, and percentage Catholic.

---

<sup>1</sup> There is considerable literature on the impact of missionaries elsewhere: Woodberry (2004), Gallego and Woodberry (2010), and Nunn (2010) find a positive impact of missions in Colonial Africa on education; Bai and Kung (2015) find that missions in China had a positive impact on knowledge diffusion; Nunn (2014) finds a differential effect on education by gender across the Catholic and Protestant missionaries in Africa; Valencia Caicedo (2019) finds positive effects in the 21<sup>st</sup> century on education, income and health on the indigenous from Jesuit missionaries in Argentina, Brazil and Paraguay; and Bergeron (2020) finds that exposure to missions in Democratic Republic of the Congo led to more acceptance of outsiders as well as the adoption of more universal moral values as opposed to communal moral values. There has been recent work depicting the enslavement of Native peoples (Nunn 2008; Resendez 2016). Slaves did exist in Spanish America, but by mid-16<sup>th</sup> century **baptized** Native Americans could not be enslaved.

<sup>2</sup> Schermerhorn is informed by McNally 2009. See also page 123 where Schermerhorn's informant Tohono O'odham elder Simon Lopez says "Who are you gonna believe: God or I'itoi? ...the O'odham say, 'Our Creator,' it's the same thing."

We view the missions as a Spanish organization with its set of institutions and norms. In our narrative we segment the institutional change into four periods: 1) initial settlement and control by the Spanish from 1598 until 1680 when the Spanish were forced out of New Mexico for 16 years; 2) 1696-1811 when the Spanish and the missions became more accommodative to melding Native American religious practices with Catholicism; 3) New rules under Mexican occupation from 1811-1848; and 4) 1848-1917 when the U.S. took control over the land in present day AZ, CA and NM. We test whether the legacy of a mission enhanced the ability of Native Americans on reservations to preserve cultural cohesion and survive economically. We test for community cohesion by looking at crime statistics. We test for cultural persistence by considering the % of mission legacy reservations are located on a native community's ancestral lands, and whether marriages are within the native culture or not. We examine economic well-being through crops per capita and through income per capita. We examine social advancement through educational attainment.

## **II. Context**

In contrast to slaves, baptized native peoples in Spanish society were viewed as tied to the land. Indeed, it was the tie to the land that the Spanish manipulated to pressure people into baptism: the way a native community could retain long-term peaceful tie to its territory was to agree to be baptized into a mission. Doing so would activate the missionary's role as defender of labor and land rights of his congregation against threats of usurpation by military men stationed nearby (Duggan 2005: 348).

The Spanish arrived in New Mexico in 1598, Arizona in 1694, and California in 1769. Since the 16<sup>th</sup> century, Spaniards viewed the Pueblo of New Mexico as an advanced civilization while simultaneously holding other peoples of the Southwest to be uncivilized—an approach that the US legal system initially reinforced (Warren 1924: 36-38). The terraced structures and irrigated fields of the Pueblo impressed incoming Europeans. Other peoples of the West practiced seasonal migration (a nomadic way of life) as a shrewd adaptation to unpredictable

rainfall in an arid region. The O'odham of Arizona practiced agriculture along the Gila River, where they had grown cotton for centuries.

### **IIa. 1598-1680: Catholicism From Above New Mexico**

The motivation of the missionaries was to convert the Native Americans to Catholicism. The motivation of the Spanish civil actors was profit seeking through trade or mining. After Francisco Vázquez de Coronado's 1540-42 expedition to New Mexico in search of minerals, there was a hiatus in explorations of the territory north of present-day Mexico until 1598 when silver miner Juan de Oñate launched an expedition with the intent of settlement. The expedition included 560 individual settlers, and soldiers as well as 8 missionaries (Riley 1999: 40-44).

In 1598, missionaries established in New Mexico the first sustained presence, with the building of a church, San Juan Bautista, on the present day Ohkay Owingeh Pueblo, about 90 miles north of Santa Fe. The Crown was quite supportive of the missionaries and by 1629 New Mexico had 46 Franciscans spread across New Mexico from Seneca in the South to Taos in the North and from El Paso in the East to the Hopi in the West (part of present-day Arizona). Governors brought merchandise to Santa Fe, sending the baptized Pueblo to trade in the north with the Apache, Comanche, and Wichita. At times, the Santa Fe business community captured the unconverted Apache and sold them into slavery to the south.

Resentment against the missionaries, settlers and governors grew over the course of the 17<sup>th</sup> century though the numerous tribes and their own rivalries prevented any concerted resistance until the 1670s when they organized collectively under the leadership of Popé, a Tewa medicine man who moved to Taos, which had always been an area of resistance. By 1680, 250 missionaries had served in New Mexico since 1598 claiming upwards of 50,000 conversions (Kessell 2002: 102-104).

The Pueblo revolt on August 10, 1680, was masterfully orchestrated. The Native Americans, who always outnumbered the Hispanic residents, overwhelmed the missionaries, and lay populace alike. In six weeks of fighting, after which the New Mexicans left New Mexico, the Native Americans killed 21 of 32 missionaries and approximately 380 Hispanic New Mexicans (Kessell 2002: 123). The Hispanic New Mexicans left New Mexico but still retained a presence in El Paso.

### **IIb. Native American Land Rights Under Spain's Laws of the Indies: 1680 to 1810**

After the 1680 revolt, the Spanish did not return for 16 years, and thereafter compromise was a pronounced feature of Spanish relationships with the Native Americans. Traditional religious beliefs co-existed with baptism, “so long as such practice did not interfere with daily Christian instruction, worship and work” (Kessel 2008: 174).

This kind of syncretic religion-- blending traditional spirituality and Catholic practice-- came to characterize indigenous community throughout the Spanish American world. It also coincides with what the 21<sup>st</sup> century Tohono O'odham (of Arizona) Felix Antone states: ““Although we held on to our cultural values...we also brought in the Christian values that really kind of fit with O'odham values....We have our culture, but...this way of thinking fit pretty well with our traditional beliefs, our traditional values. And so we accepted and began to do some of those things that showed our faith in Christianity” (Schermerhorn 2019: 132). The implication is a religious practice that melded Catholic rituals onto older spiritual tradition.

The Laws of the Indies, a compilation of edicts published in 1680, stated that in the Spanish legal system, baptized native people could not be enslaved and those who practiced agriculture had rights to land. Missionaries would use it to act as advocates for native land rights, citing Law 9, Title 3, Book 6: “The land that they formerly held is not to be taken from those

Indians reduced<sup>i</sup>.” “Reduced” refers to the process of *congregación*, meaning baptized people practicing Catholic rituals in community had the legal right to hold onto their land. They continued, “[The land] will be preserved just as they had it before, so that they may cultivate it and attempt improvements.” On the other hand, per Law 9, Title 12, Book 4 “No [land] can be given to Spaniards if it damages the Indians, and if given and having caused harm, it must be returned.” Finally, Law 46, Title 6, Book 1 guaranteed every 400 Indians a parish with seven leagues (22 sq miles) of land attached to it (Duggan 2005: 348). In 1687, the King of Spain gave Pueblo Native Americans rights to their land, enjoining settlers to keep a distance of 1,000 varas<sup>3</sup> between Pueblo land and their own. The Pueblo people already lived in community, which facilitated inculcating new religious rituals.

Beginning in 1691 the Hispanic New Mexicans returned but there were still repeated battles in the mid-1690s until the fighting ended in 1696. By 1696 New Mexico had 13 missionaries but 8 more came in 1697 (Riley 1999: 247). Part of the revolt against Franciscans in 1680 had been due to the missions trying to stamp out Native American religious practices. When they returned, the missionaries became more flexible with respect to allowing conversion but still allowing the Native American religious rituals. This was the beginning of the building of community.

In 1691, before the Franciscans returned to New Mexico, the Jesuits established missions in the Pimeria from Guaymas up to Caborca and Nogales, near present-day Arizona. The Jesuit expansion was contemporaneous with silver mines opening between Sinaloa and Sonora (Real de San Juan 1657, Bacanuche 1678, Nacosari, Los Frailes 1683). The Jesuits continued to expand northward along the Santa Cruz River and established two missions, Guevavi/Tumacacori 1691-

---

<sup>3</sup> A vara is roughly equal to a yard.

and San Xavier del Bac near Tucson in 1692 (Bolton 1936, Brenneman 2014). They also established several *visitas* (outlying agricultural stations with a chapel for holding masses). After 1697, The Jesuit expansion in Sonora was accompanied on the opposite side of the Gulf of California by expanding Jesuit missions in Baja California. Despite a Native uprising in 1734, the Jesuits held on to Baja California until 1767, when their Order was expelled from the Spanish Empire. Jesuit expulsion also negatively impacted Sonora and Arizona (Kessell 1976: 7; and Kessell 2002: 188).

After the 1767 expulsion, Franciscans took over Jesuit missions in Sonora, and Franciscans in 1769 also established missions from San Diego to San Francisco. Between 1769 and 1804, the Spanish established 19 missions in Upper California.

How to evangelize among nomadic people was a challenge the 17<sup>th</sup> century Jesuits initially took on, and they carried their method to Arizona in 1694 and to Baja California in 1697. In a process known as “congregación,” as nomadic peoples converted to Catholicism, they settled to homes next to the mission church, i.e., they were pressured to transform into sedentary people living in community. When the people were baptized into a Spanish mission, they brought the land upon which they ranged with them—and in fact, continued to harvest acorns, pine nuts, sage seeds, agave root, and prickly pear.

Missions were initially tiny buildings tolerated by Native Americans inside their territory. When the missionaries and their small guard refused to leave and in addition protected those who accepted baptism, gradually the larger community’s tie to the land pressured it to make peace with the Spanish, which meant to accept baptism (Duggan 2017: 240-242). If a mission was constructed at a border between two ethnic communities, then the resulting *congregación* was multi-ethnic and multi-lingual (Johnson 1997). Thus, the direction of population movement was

toward the center. At the same time, the “mission” expanded in area in the opposite direction away from the initial central church building, to include the lands of those who accepted baptism.

The mission became a sort of estate, with pasture for cattle and sheep, irrigated and non-irrigated fields for grains and legumes. As missions expanded to the size of modern counties, “*asistencias*” were built--chapels with native suburbs--where the missionary might make an appearance once every two weeks and for death-bed confessions. Several reservations that exist in the 21<sup>st</sup> century are built around former *asistencias* such as Pala in San Diego County.

Having taken a vow of poverty, missionaries were nonetheless ambitious for power. What made a missionary powerful relative to military command was the personal loyalty and size of his native congregation. Accumulating assets for their heirs is what inspired military men and settlers to take land from native communities. Not having heirs made a missionary uniquely motivated to look out for his congregation’s interests among Spain’s representatives on the frontier.<sup>4</sup> Not money but rather Native allegiance was the key to power for a missionary. Effective compromise was then the path to a missionary’s status. Once baptized, native congregations had the missionary as an advocate to limit usurpation of their labor and their land by encroaching settlers or soldiers.

### **IIc. Deterioration of Native Land Rights Under Mexico, 1811-1848**

English-language literature tends to conflate Spanish institutions with Mexican ones, a simple mistake with severe implications for analysis. By 1808, Spain was bankrupt, and Napoleon imprisoned the Spanish king (Marichal 2007). By 1810, Spain ceased to subsidize

---

<sup>4</sup> A missionary who had offspring was therefore considered a failure by his peers, as was Blas Ordaz at Santa Cruz, who had a family with a native woman at Mission Santa Ines (Geiger 1969: 171-74).

missions or to pay soldiers—not to mention that revolution had broken out from Argentina to Acapulco (Salvucci 2009; Duggan 2016). Mexico declared independence in 1821.

The state was born into debt, so there was less financing for missions and for the military. Furthermore, independent Mexico leveraged the social status of mixed-race soldiers, and undermined respect for religious missionaries. In California by 1821, there were 21,000 Native Americans living in the Franciscan missions. The missions expanded in land area as they baptized Native Americans, so that by 1820, missions tended to bump up against one another in terms of land size. Over the course of the Spanish occupation the missionaries developed self-sustaining communities throughout the Southwest.

When Spain's empire unraveled in 1810, missions and military lost state funding, which independent Mexico proved unable to restore. To survive, missions and military turned to commercial activity. California was particularly successful at this, and exported from its Pacific ports, leather and tallow to South America and New England. Economic activities became paramount on California missions, which sold into the Pacific Rim trade between Canton, California, Mexico, and New England. The missionaries established schools and choirs and tried to stave off military expropriation of mission congregation land by paying local taxes.

In 1828 Mexico expelled the Spanish-born, though the law was imperfectly enforced. It wasn't clear initially if Spain's Laws of the Indies that granted missions/Native Americans rights to their land were still valid. There were encroachments by soldiers and their kin on former mission/Native American land. But the alignment of missionaries with Native Americans kept soldier/settler squatting to a minimum at missions such as San Luis Rey, whose congregation by then held a series of ranches as their land base, e.g., Rancho de San Mateo, Las Flores, Santa Margarita, San Juan, Pala, Temecula, San Jacinto, San Marcos, Pamuza, Pauma, Potrero, Agua

Hedionda, and Buena Vista (Salomon 2007-08: 357). But over time, with more Spanish missionaries being forced to leave the usurpation of land in California continued.

Even the Pueblos of New Mexico came into increasing conflict with settlers. In 1826, the Pueblo mayor of Pecos, Rafael Aguilar petitioned to Mexican officials to remove Hispanic settlers from encroaching on the four-square leagues that the Spanish Crown had granted to Pueblo. In 1829, the Pueblo of Pecos won their case and the Mexican state removed settlers (even so, incoming settlers harassed the Pecos to such an extent that they eventually relocated to Jémez Pueblo, in the mountains) (Weber 1992: 302-03). As Flora Seymour writes, “It is undisputed that the Pueblo Indians [of New Mexico] had the status of citizens in the Mexican Republic up to the time of the American occupation in 1846” (1924: 37).

Mexico secularized the mission lands in 1834. Although the language of the day was to “emancipate Indians,” in practice secularization meant distributing the lands of native people to the unpaid military and other settlers. The state-subsidized missionary would also be replaced with a parish priest who relied upon fees paid by the congregation for baptisms, marriages, and burials. In practice, native communities stripped of most of their land would not be able to pay fees for service, so secularization tended to reduce the missionaries serving native communities. In California, the San Francisco Bay area at one time held 8 missionaries, but after secularization, one new priest attempted to deliver mass at them all (Bacich 2017: 41). In New Mexico, the clergy fell from ... to .... A few native communities applied for townships on portions of ex-mission lands, using as the basis the stipulation that every 400 baptized people should get 4 leagues of land. The bulk went to military men. In San Diego, the son of a long-serving military office was Pio Pico. He was granted Rancho Margarita, 133,000 acres of land around the once-thriving Mission San Luis Rey. The native congregation was granted the

townships (pueblo) of Las Flores and Pala. Las Flores was a small location inside Pico's Rancho Margarita (Moyer 1969, Salomon 2007-08).

The coexistence of the native township of Las Flores with Pico's ownership of Rancho Margarita brings out that Mexican grants had an important stipulation: native communities could not be evicted from them (Shipek 1987: 26). For example, some Fernandeño of ex-mission San Fernando retreated to their Rancho El Tejon. In 1843, the land was granted to a military man from San Blas, Ignacio del Valle and his business partner from the port of Guaymas, José Antonio Aguirre. The grant stipulated: "The owners could not interfere with the Native Americans in the cultivation of their lands and could not alter the improvements they had made. The owners could not sell, alienate, or place any financial burden upon the land" (Phillips 2004: 9). The stipulation that the land would "belong" to Aguirre and Del Valle, but that they could not sell it, or interfere with the Native Americans already living there, indicates that the property rights granted by the Mexican government were quite different from those of the US legal system.

As noted earlier, in 1828, the Mexican state expelled the Spanish-born. This law removed powerful missionaries from California, paving the way for easier expropriation of native lands for the unpaid military there. In Arizona, the law expelling Spaniards had a similar negative effect on native land rights. Franciscan Ramón Liberós had been protesting the increasing private encroachment by settlers at Mission Tumacácori. The O'odham had tilled the fields since time immemorial and were baptized in 1698. In 1807, they had a survey made and received official title from Spain. Yet the surveyor Elías González must have liked what he saw because he came back in 1821 to obtain a grant at the Sonoita portion. He argued that "the very ancient pueblo of the Indians [is now] abandoned because of the incursions of the Apaches." Yet it was customary

for the community to move into the mountains during troubled times (as 1810-1821 certainly were in Mexico), only to return later. After the missionary was expelled as a Spaniard, the Tumacácori lost its best advocate, and the surveyor González got the grant. By 1841 international merchants at Guaymas had purchased nearly all the land of that O'odham congregation (Sheridan 2006: 94-194).

Like in California, the Mexican state, stopped funding the missions in Arizona and New Mexico. Unlike California, the Mexican state showed little interest in settlement or economic growth in Arizona and New Mexico and focused their attention on Texas and California. In part this was due to holding onto territory threatened by the U.S. in the East and West and Russia in the northern part of California. California and Texas also presented more potential economic opportunities.

#### **II d. Deterioration of Native Conditions Under Americans: 1848-1917**

In 1848, the US gained control of parts of Arizona, California, and New Mexico. The Gadsden Purchase in 1853 cemented control of Arizona. The US Catholic hierarchy did not initially prioritize providing missionaries than republican Mexico, Native Americans lost effective advocates in this transition. By the Treaty of Guadalupe Hidalgo, the US was to respect extant property rights, which made it difficult for US settlers to obtain lands previously held by Mexican ranchers or those granted to Native American Catholics as Pueblos. The Pueblo people in New Mexico had the law on their side. Yet in general, the U.S. did not recognize Native Americans as having rights of citizens. For example, US law did not recognize native peoples' applications for homesteads. US settlers at times murdered Indians who work for former Mexicans. U.S. signed treaties in California but did not ratify them. Yet even so, in formerly

Hispanic areas elites fought alongside Native Catholics to keep reservations local, as opposed to removal to Oklahoma.

### III. Data

We assess the impacts of a mission legacy<sup>5</sup> on Native Americans' outcomes at the superintendency level, geographic areas under the control of superintendents.<sup>6</sup> From Kessell (1976, 2002, 2008) and Milliken 2010 we can code whether a tribe in Arizona, California or New Mexico had significant contact with the missionaries, e.g., baptisms.<sup>7</sup> We can then track the Native Americans to the superintendency where they resided in the period 1911-1917. We use "superintendencies" as a proxy for Native communities—an imperfect substitute because Native people who wanted to assimilate to US society may have left the superintendencies.

We collected our data from the Annual Reports of the Commissioner of Indian Affairs in the period 1911 - 1917. Using these reports, we obtain data on religiosity (number of Native Americans professing Catholicism), schooling (number of children that attended school), employment (number of Native Americans that had a job, and their earnings), income, income from crops, number of crimes and misdemeanors, and demographic information such as the number of people in each superintendency and blood quantum (i.e., number of full blood Native Americans). We exclude Texas from this analysis because data are not available at the superintendency level. Importantly, not all outcomes were reported every year, thus, the number of observations for each outcome differs.

---

<sup>5</sup> In our sample, there were exclusively Franciscan missions in California and New Mexico. From 1691, the Jesuits had a presence in Arizona until they were expelled in 1767 from the Spanish Empire by King Carlos III, at which point Franciscans ran Arizona's missions as well.

<sup>6</sup> See <https://www.archives.gov/files/research/federal-employees/reference-reports/502-indian-agents.pdf>

<sup>7</sup> We also relied on advice from John Kessell.

#### **4. Missions and Downstream Outcomes: Transmission Mechanisms**

Recent scholars have explored the impact of missions on populations two centuries later. The most frequently found long-run impact is on education or more generally human capital (Gallego and Woodberry, 2010; Nunn, 2012; Bai and Kung, 2015; Waldinger, 2017; Valencia Caicedo, 2019; and Jedwab et al., 2021).

We want to test for the long-run impact of the Spanish missions on Native Americans in Arizona, California, and New Mexico who lived under the institutional rules of Spain, then Mexico and later the U.S. Some learned to read on the missions. In Spanish society, wearing clothing and practicing an agricultural way of life were critical aspects of conversion to Christianity, while literacy was not viewed as necessarily integral to that process, though some young males learned to read, write, and acquire numeracy. To the extent that missions fostered education in irrigation construction, tilling skills and crafts such as smithing, leatherworking, and weaving, we could expect the impact might be long-lasting with parents promoting tilling, husbandry, and craftsmanship for their children and on down through generations.

Missions also gave Native people from disparate communities a common language (Spanish) and experience collaborating with individuals of different tribes or of different bands within tribes. Some people did receive education in reading and writing which provided an explicit introduction to Western heritage (such as biblical allegories) and institutions which enabled those tribes impacted to advocate for themselves under the auspices of Mexico and the U.S, as for example, the Alcalde Rafeal did in writing at Pecos in 1826.

Missions created enclaves of communities with a culture influenced by Native American traditions as well as Catholicism. The experience made Native American bands more accepting

of people from other bands and facilitated through the Spanish language communication between tribes (particularly in California where there were nearly 100 ethnic enclaves). Native Americans who had the mission experience had common moral values and biblical imagery that could resonate with the wider Hispanic Catholic community, which could have had beneficial downstream effects.<sup>8</sup> This could make those impacted more willing and better able to organize against U.S. institutional rules, as for example the case that the “mission Indians” of California brought in 1891 to defend their lands. Rancho Tejón is another example that illustrates Kitenemuk Yokuts, Tataviam, and Chumash leadership collaborating to create a farming community, and to protest at times the treatment by US overseers sent to supervise when the area was turned into a temporary reservation. Many of the men were ex-mission San Fernando, which gave them some common heritage and a common language (in Spanish) (Phillips 2004).

Given experience with Spanish military and missionary control, tribes may have become better internally organized to preserve their tribal traditions, institutions, norms, and language. This happened early on in 1680 with the Pueblo Revolt in New Mexico in which the Native Americans forced the Spanish and the missionaries to leave New Mexico. The rationale for revolt was partly insistence by the Spanish that the Native Americans abandon many of their religious practices, and also was instigated by economic exploitation. In the wake of revolt, Franciscans accepted as practicing Catholics people who also respected traditional spiritual ways; furthermore, land was partially redistributed away from settlers and toward Pueblo communities.

---

<sup>8</sup> Bergeron (2020) found that missions during the Colonial period in the Democratic Republic of the Congo led the descendants of those on missions to have larger social networks, greater acceptance of people outside of their social sphere, and acceptance of more universal moral values as opposed to communal moral values.

We will be able to test directly for whether those tribes impacted by Spanish missions had higher participation in education or were more successful farmers which in turn may have in turn led to higher incomes and/or greater independence. In addition, we can test for whether those with mission contact were more Catholic in the 20<sup>th</sup> century and had lower crime rates as a result of more social cohesion. Less easily measurable are the impacts of missions leading directly to more cohesion and protection of a form of religion that blends protection of native practices with familiarity with Western thought and institutions.

## 5. Results

As mentioned before, our data are composed of superintendencies in the states of Arizona, California, and New Mexico. Our data encompass the period 1915 to 1917 for Catholicism; 1911 to 1917 for school attendance and income; 1914 to 1917 for employment; 1915 to 1917 for crime; and 1911 to 1917 for the blood quantum. Table 1 presents summary statistics for our sample.

**Table 1. Summary Statistics**

Variables	(1) N	(2) Mean	(3) SD	(4) Min	(5) Max
Annual Report of the Commissioner of Indian Affairs (1911-1917)					
Mission	237	0.33	0.47	0	1
Percent Catholic	94	0.23	0.35	0	1
Percent Attend School	241	0.32	0.39	0	1
Percent employed	126	0.24	0.22	0	0.97
Population	257	1960	2488	0	12,080
Income Per Capita	245	58	48	0	259
Income from crops per capita	245	15	22	0	190
# Children Eligible for School	249	512	691	0	4,064
Attendance					
Percent Full Blood	215	0.90	0.19	0.16	1

Note. N=Observations, SD=Standard Deviation. Percent Catholic=Number of Catholic/Total Population, Percent Attend School=Percent of Children that go to School/Percent of Children Eligible to School, Percent Employed=Number of individuals employed/Total Population, Income Per Capita=Income/Total Population.

To analyze how missions affected socioeconomic outcomes in the early 20<sup>th</sup> century, we use a standard regression framework. We estimate the following model:

$$Outcome_{it} = \alpha + \gamma Mission_i + X'_{it} \beta + Z_{st} + \varepsilon_i$$

where  $Outcome_{it}$  is a socioeconomic outcome for superintendency  $i$  in year  $t$ . Our outcome measures include the percentage of Native Americans that were Catholic; the percentage of children that attended school; the percentage of Native Americans that were employed; earnings per capita; total and crop income per capita; number of crimes, misdemeanors, and arrests because of drunkenness per capita; and the percent of full blood Native Americans.  $Mission_i$  is a dummy variable taking the value of 1 if tribes in the superintendency had earlier historic contact with missions and 0 otherwise;  $X_{it}$  are control variables for superintendency  $i$  in year  $t$  that include, depending on the outcome variable, total population;  $Z_{st}$  is a vector that includes state and year dummies; and  $\varepsilon_i$  is a random error.

The regression models compare, in each year, socioeconomic outcomes for superintendencies affected by missions, against superintendencies not affected by missions. All models are estimated using heteroskedastic-robust standard errors clustered at the superintendency level.

In Table 2 we present our results for Catholicism. We find that Native American communities self-identified as Catholic long after the Spanish structure imposed the religion. The data suggest that the missions were successful in the long-run in sustaining conversion. According to our results, contact with Missions increased the number of Catholics by 51.6 percentage points. Since the average percentage of Catholics was 0.23, the effect of the mission legacy was to increase percentage of Catholics by 224 percent.

**Table 2. Early 20<sup>th</sup> Century – Religiosity**

Variables	(1)
	Percent Catholic
Mission	0.516*** (0.130)
Population	0.000 (0.000)
California	0.190* (0.098)
New Mexico	0.025 (0.148)
Constant	-0.052 (0.049)
Year FE	Yes
Observations	91
R-squared	0.543
Years	1915-1917

Note. Heteroskedasticity-robust standard errors clustered at the superintendency level in parentheses. \*\*\* p\$<\$0.01, \*\* p\$<\$0.05, \* p\$<\$0.1.

We surmise that the reservations with contact with missions became enclaves of Native culture coupled with Catholicism. Even though Spanish intent was to turn Native Americans to being loyal to Spain, even under Spain missionaries often learned the native languages and accepted an interweaving of aspects of traditional culture. The enclave aspect of mission communities acted as a protective layer for a hybrid of Hispanic/Native culture. The Spanish and the missionaries had to be accommodative to Native American culture in order to win over to their way of life hundreds of thousands of people, despite a small standing army and even fewer missionaries.<sup>9</sup> The enclave aspect may have been reinforced in the 1848-1880 period, when Native ex-mission communities were pushed into mountains in California and retreated to many

<sup>9</sup> The Spanish initially tried stamping out Native religious practices, but this resulted in the Natives rebelling in 1680 New Mexico, forcing out the Spanish for 16 years.

Pueblos in AZ and NM. To further analyze this hypothesis, we analyzed the relationship between a mission legacy and the percentage of people who had married other Native Americans through the category ‘full blood’. In line with our expectations, missions increased the percentage married to other Native Americans in the superintendency in 13.4 percent

**Table 3. Preliminary Results Full Blood Native Americans**

Variables	(1) log(Percent Full Blood)
Mission	0.134* (0.079)
log(population)	-0.014 (0.023)
California	-0.356*** (0.109)
New Mexico	-0.005 (0.035)
Constant	0.114 (0.157)
Year FE	Yes
Observations	211
R-squared	0.336
Years	1911-1917

Note. Heteroskedasticity-robust  
standard errors clustered at the  
superintendency level in  
parentheses. \*\*\* p\$<\$0.01, \*\*  
p\$<\$0.05, \* p\$<\$0.1.

In table 4 below we present the result from educational outcomes. Our results indicate that the missions had a positive but not statistically significant impact on percentage of children attending school.

**Table 4. Education**

Variables	(1)
	Percent
	Children
	School
Mission	0.062 (0.040)
Population	-0.000 (0.000)
Number School	
Age	-0.000 (0.000)
California	-0.019 (0.040)
New Mexico	-0.036 (0.045)
Constant	0.046 (0.035)
Year FE	Yes
Observations	234
R-squared	0.788
Years	1911-1917

Note. Heteroskedasticity-robust standard errors clustered at the superintendency level in parentheses. \*\*\* p\$<\$0.01, \*\* p\$<\$0.05, \* p\$<\$0.1.

In Table 5 we present the results of a mission legacy on economic outcomes. We find that missions increased income from crops per capita by \$19.46 (column 1), and total income per capita (although not statistically significant, column 2). Since the average income from crops per capita was \$15.25, the effect of the missions was to increase income from crops per capita by 128 percent. Ex-missions seem to promote successful subsistence agriculture. Ex-mission Native Americans could build irrigation ditches that worked and were low cost, and were outstanding sheepshearers and riders for cattle herding. In addition, our results indicate that the missions reduced the percentage employed (although not statistically significant column 3). However, we

find a positive and statistically significant effect on earnings per capita (column 4). According to our results, missions increased earnings per capita by almost 56%.

**Table 5. Preliminary Results Early 20<sup>th</sup> Century - Economic**

Variables	(1) Income From Crops Per Capita	(2) Income Per Capita	(3) Percent Employed	(4) log(Earnings Per Capita)
Mission	19.457*** (5.736)	5.054 (10.201)	-0.013 (0.059)	0.556* (0.321)
Population	-0.002** (0.001)	-0.006** (0.003)	-0.000*** (0.000)	-0.625*** (0.141)
California	-8.159 (6.079)	-22.127 (13.504)	-0.077 (0.073)	-0.117 (0.410)
New Mexico	0.889 (5.986)	-0.954 (18.394)	-0.032 (0.070)	-0.328 (0.350)
Constant	7.273* (4.288)	47.811*** (11.302)	0.368*** (0.057)	6.879*** (1.026)
Year FE	Yes	Yes	Yes	Yes
Observations	238	238	122	122
R-squared	0.253	0.234	0.281	0.372
Years	1911-1917	1911-1917	1914-1917	1914-1917

Note. Heteroskedasticity-robust standard errors clustered at the superintendency level in parentheses. \*\*\*  
p\$<\$0.01, \*\* p\$<\$0.05, \* p\$<\$0.1.

Catholicism enforces morality because a community holds its members to certain standards, i.e., self-enforcement. Recent work by Lowe (2021) shows that Christian revivals in Wales in the early 20<sup>th</sup> century led to a reduction in crimes, especially public crimes, e.g., drunkenness. Lowe argues that the mechanism was likely fear of ostracism by others. Interestingly, when religiosity fell back to pre-revival levels, drunkenness remained lower than pre-revival times.<sup>10</sup> Given that missions led to greater prevalence of Catholicism (see Table 2) in the early 20<sup>th</sup> we could expect that Native American congregations generated norms against

<sup>10</sup> Lowe examined Protestant revivals but Catholicism could have had a similar impact.

drunkenness and minor crimes. In Table 6 we present results of the effect of missions (a proxy for Catholicism) on crime.

**Table 6. Crime**

Variables	(1) Crimes (felonies)	(2) Misdemeanors Committed by Native Americans Per Capita	(3) Native Americans Arrested for Drunkenness Per Capita
Mission	-0.000 (0.000)	-0.004** (0.002)	-0.005** (0.003)
Population	-0.000 (0.000)	-0.000* (0.000)	-0.000 (0.000)
California	0.000 (0.001)	-0.008* (0.004)	0.008** (0.004)
New Mexico	0.000 (0.000)	-0.005 (0.004)	0.005*** (0.002)
Constant	0.001** (0.000)	0.012** (0.005)	0.002 (0.001)
Observations	91	91	91
R-squared	0.039	0.122	0.220
Years	1915-1917	1915-1917	1915-1917

Note. Heteroskedasticity-robust standard errors clustered at the superintendency level in parentheses. \*\*\* p\$<\$0.01, \*\* p\$<\$0.05, \* p\$<\$0.1.

Our results indicate that the missions reduced the percentage of misdemeanors in a Native Americans community, as well as reducing per capita number of arrests for drunkenness on a superintendency. Since the average number of misdemeanors committed per capita was 0.006 and the average number arrested for drunkenness per capita was 0.004, the effect of a mission legacy was to decrease the number of misdemeanors committed per capita by 66 percent, and the number of arrested for drunkenness per capita by 125 percent.

## 6. Conclusion

Our research question was to determine the long-run impact of Spanish missions on the Native Americans residing on reservations in California, Arizona, and New Mexico. Because of their long presence, we expected enduring impacts, even as the communities moved through institutional change from Spanish imperialism to the Mexican state, and the United States' legal institutions. For all Native Americans the demographic impact of imperialism was devastating. In most cases population fell by at least 50% and never rebounded to pre-Spanish levels. Deaths were most common from smallpox. Yet the conventional wisdom in much of the Southwest and particularly California is that Native Americans did not survive missions, or that missions did not affect internal beliefs and norms of Native Americans. This view is certainly off base.

In exploring the legacy of a mission on Native American reservations in the early 20<sup>th</sup> century, one surprise was how much the definition of a “mission” changed over time. After 1680, Spanish institutions gave the Jesuits the power to stand up for baptized communities vis a vis money motivated actors, and promoted compromise in religious practice between Native American traditions and Catholic ritual. By 1810, “missions” were not only churches, but large land areas that included a central native village, in some cases a Pueblo, but also outlying villages near the widespread herds and fields. In 1834, the Mexican state removed land from a “mission,” though the churches still stood. Despite the attack on the missions by the Mexicans and later neglect by the U.S. Native communities survived with long lasting impacts on several margins.

Missions had an enduring impact on Catholicism with those Native Americans most impacted by the missions being considerably more Catholic by the early 20<sup>th</sup> century. We also found that in the early 20<sup>th</sup> century in California, Arizona and New Mexico, the historical

presence of a Spanish Franciscan mission meant that crops per capita rose, as did overall earnings from wages. The implication is that the legacy of Spanish missions was to promote subsistence agriculture, which is what the Franciscans had hoped to do.

## References

Allen, Douglas W. and Bryan Leonard. 2021. “Late Homesteading: Native Land Dispossession through Strategic Occupation.” Working Paper.

Alston, Eric, Lee J. Alston, Bernardo Mueller and Tomas Nonnenmacher. 2018. **Institutional and Organizational Analysis: Concepts and Applications**. Cambridge: Cambridge University Press.

Anderson, Terry L. and Dominic P. Parker. 2008. “Sovereignty, credible commitments, and economic prosperity on American Indian reservations.” **The Journal of Law and Economics**, 51(4): 641–666.

Bai, Ying, James K. Kung. 2015. “Diffusing Knowledge While Spreading God’s Message: Protestantism and Economic Prosperity in China, 1840–1920.” **Journal of European Economics Association**. 13 (4), 669–698.

Bannon, John Francis (editor). 1964. **Bolton and the Spanish Borderlands**. Norman: University of Oklahoma Press.

Bacich, Damien. (2017). “Surviving Secularization.” **California History**, 94 (2): 41-57.

Bergeron, Augustin. 2020. “Religion and the Scope of Morality: Evidence from Exposure to Missions in the D.R. Congo. Working Paper.

Bolton, Herbert. 1917. “The Mission as A Frontier Institution in the Spanish American Colonies.” **The American Historical Review**. 23 (1): 42-61.

Bolton, Herbert. 1936. **Rim of Christendom**. New York: Russell and Russell.

Brenneman, Dale. “2014. Learning the Landscape: The O’odham Acclimation of Father Agustín Campos.” **Journal of the Southwest**. 56(2): 269-291.

Valencia Caicedo, Felipe. 2019. “The Mission: Human Capital Transmission, Economic Persistence, and Culture in South America.” **The Quarterly Journal of Economics**. 134 (1), 507-556.

Carlos, Ann M., Donna L. Feir and Angela Redish. 2021. “Indigenous Nations and the Development of the U.S. Economy: Land Resources and Dispossession.” Working Paper

Carrico, Richard. 1987. **Strangers in a Stolen Land: American Indians in San Diego, 1850-1988**. Sacramento: Sierra Oaks Publishing Company.

Department of the Interior, Office of Indian Affairs. 1911. Annual Report of the Commissioner of Indian Affairs for the Year 1911. Washington, DC: Government Printing Office, 288.

Department of the Interior, Office of Indian Affairs. 1912. Annual Report of the Commissioner of Indian Affairs for the Year 1912. Washington, DC: Government Printing Office, 326.

Department of the Interior, Office of Indian Affairs. 1913. Annual Report of the Commissioner of Indian Affairs for the Year 1913. (Washington, DC: Government Printing Office, 292.

Department of the Interior, Office of Indian Affairs. 1914. Annual Report of the Commissioner of Indian Affairs for the Year 1914. (Washington, DC: Government Printing Office, 201.

Department of the Interior, Office of Indian Affairs. 1915. Annual Report of the Commissioner of Indian Affairs for the Year 1915. (Washington, DC: Government Printing Office, 219

Department of the Interior, Office of Indian Affairs. 1916. Annual Report of the Commissioner of Indian Affairs for the Year 1916. (Washington, DC: Government Printing Office, 211.

Department of the Interior, Office of Indian Affairs. 1917. Annual Report of the Commissioner of Indian Affairs for the Year 1917. (Washington, DC: Government Printing, 215.

Dippel, Christian. 2014. “Forced Coexistence and Economic Development: Evidence from Native American Reservations.” **Econometrica**. 82 (6), 2131-2165.

Dippel, Christian, Donna Feir, Bryan Leonard and Marc Roark. 2021. “Secured Transaction Laws and Economic Development on American Indian Reservations. **AEA Papers and Proceedings**.

Dippel, Christian, Dustin Frye, and Bryan Leonard. 2020. “Property Rights without Transfer Rights: A Study of Indian Land Allotments – NBER WP #27479.

Duggan, M.C. 2017. “Beyond Slavery: The Institutional Status of Mission Indians” in **From La Florida to La California: Adaptation, Negotiation and Resistance**. Oceanside: American Academy of Franciscan History, pp. 237-250.

Duggan, M.C. 2016. “With and Without an Empire: Financing for California Missions Before and After 1810” in **Pacific Historical Review**, 85 (1): 23-71.

Duggan, M.C. 2005. “Laws of the Market versus Laws of God: Scholastic Doctrine and the Early California Economy.” **History of Political Economy**, 37 (2): 343-370.

Farris, Glenn, ed. 2012. **So Far From Home: Russians in Early California**. Berkeley: Heyday Books.

Feir, Donna. 2016. “The Long-Term Effects of Forcible Assimilation Policy: The Case of Indian Boarding Schools. **Canadian Journal of Economics** 49 (2): 433-480.

Frye, Dustin and Dominic P. Parker. 2021. Indigenous Self-Governance and Development on American Indian Reservations. **AEA Papers and Proceedings**.

Gallego, Francisco. A., Robert Woodberry, 2010. “Christian Missionaries and Education in Former African Colonies: How Competition Mattered.” **Journal of African Economics**, 19 (3), 294–329.

Geiger, Maynard. 1969. **Franciscan Missionaries in Hispanic California, 1769 – 1848**. San Marino: The Huntington Library

Greer, Allan. 2018. **Property and Dispossession: Natives, Empires and Land in Early Modern North America.** Cambridge: Cambridge University Press.

Haas, Lisbeth. 2011. **Pablo Tac, Indigenous Scholar: Writing on Luiseño Language and Colonial History, c. 1840.** Berkeley: UC Press.

Jedwab, Remi, Felix Meier zu Selhausen, Alexander Moradi, 2021. "Christianization Without Economic Development: Evidence from Missions in Ghana." **Journal of Economic Behavior & Organization**, 190: 573-596.

Johnson, John R. 1997. "The Indians of Mission San Fernando." **Southern California Quarterly**, 79(3): 249–290.

Johnson, John R. 2006. "On the Ethnolinguistic Identity of the Napa Tribe: The Implications of Chief Constancio *Occaye*'s Narratives as Recorded by Lorenzo G. Yates" in **Journal of California and Great Basin Anthropology**, 26 (2):193-204.

Kessel, John L. 1976. **Friars, Soldiers and Reformers; Hispanic Arizona and the Sonora Mission Frontier, 1767-1856.** Tucson: University of Arizona Press.

Kessell, John L. 2002. **Spain in the Southwest: A Narrative History of Colonial New Mexico, Arizona, Texas and California.** Norman: University of Oklahoma Press.

Kessell, John L. 2008. **Pueblos, Spaniards, and the Kingdom of New Mexico.** Norman: University of Oklahoma Press.

Kessell, John L. 2012 [1980]. **The Missions of New Mexico Since 1776.** Santa Fe: Sunstone Press.

Lowe, Matt. 2021. "Religious Revival and Social Order." Working Paper

Madley, Benjamin. 2016. **An American Genocide: The United States and the California Indian Catastrophe, 1846-1873.** New Haven: Yale University Press.

Marichal, Carlos. 2007. **Bankruptcy of Empire: Mexican Silver and the Wars Between Spain, Britain and France, 1750-1810.** Cambridge: Cambridge University Press.

McNally, Michael. 2009. **Honoring Elders: Aging, Authority and Ojibwe Religion.** New York: Columbia University Press.

Milliken, Randall and John Johnson. 2005. "An Ethnogeography of Salinan and Northern Chumash Communities – 1769 to 1810" in *California Indian Ethnohistoric Studies*

Milliken, Randall. 2009. "Ethnohistory and Ethnogeography of the Coast Miwok and Their Neighbors, 1783-1840." Technical paper presented to the National Park Service, Oakland, California.

Milliken, Randall. 2010. **Contact-period Native California Community Distribution Model: a dynamic digital atlas and wiki encyclopedia.** Volume 1, Introduction. Davis: Far Western Anthropological Research Group, pp. 1-71.

Moyer, Cecil B. 1969. **Historic Ranchos of San Diego County**. San Diego, Union-Tribune Publishing Co.

Nunn, Nathan. 2010. "Religious Conversion in Colonial Africa". **American Economic Review: Papers & Proceedings**, 100:147–152

Nunn, Nathan. 2014. "Gender and Missionary Influence in Colonial Africa" in: Akyeampong, E., Bates, R., Nunn, N., Robinson, J.A. (Eds.), **Africa's Development in Historical Perspective**, Cambridge University Press, pp. 489–512.

Nunn, Nathan. 2008. "Slavery, Inequality, and Economic Development in the Americas: An Examination of the Engerman-Sokoloff Hypothesis," in Elhanan Helpman (ed.), **Institutions and Economic Performance**, pp. 148-180. Harvard University Press

Phillips, George Harwood. 2004. **Bringing Them Under Subjection: California's Tejón Indian Reservation and Beyond**. Lincoln: University of Nebraska.

Resendez, Andrés. 2016. **The Other Slavery: The Uncovered Story of Indian Enslavement in America**. Boston: Houghton Mifflin.

Riley, C. 1999. **The Kachina and the Cross: Indians and Spaniards in the Early Southwest**. Salt Lake City: University of Utah Press.

Salomon, Carlos. 2007-2008. "Secularization in California: Pio Pico at San Luis Rey." *Southern California Quarterly*, 89 (4): 349-371.

Salvucci, Richard. 2009. **Politics, Markets, and Mexico's London Debt, 1823-1887**. New York: Cambridge University Press.

Sando, J. 1992. **Pueblo Nations: Eight Centuries of Pueblo Indian History**. Clear Light Publishers.

Schermerhorn, Seth. 2019. **Walking to Magdalena: Personhood and Place in Tohono O'odham Songs, Sticks, and Stories**. Lincon: University of Nebraska Press and the American Philosophical Society

Seymour, Flora Warren. 1924. "Land Titles to the Pueblo Indian Country." **American Bar Association Journal**. 10 (1): 36-41.

Sheridan, Thomas. 2006. **Landscapes of Fraud: Mission Tumacácori, the Baca Float, and the Betrayal of the O'odham**. Tucson: University of Arizona Press.

Shipek. 1987. **Pushed into the Rocks**. Lincoln. University of Nebraska Press.

Stewart, Omer C. 1978. "Litigation and its Effects" in Robert Heizer (ed.), Volume 8 of the **Handbook of North American Indians: California**. Smithsonian: 705-712.

Thomas, A. 1958. **The Jicarilla Apache Indians A History – 1598-1888**. Tuscaloosa: University of Alabama Press.

United States Department of Commerce, Economics and Statistics Administration, US CENSUS BUREAU, Census.gov/tribal/

Waldinger, Maria. 2017. "The Long-Run Effects of Missionary Orders in Mexico." **Journal of Development Economics**, 127 (July): 355-378.

Seymour, Flora Warren. 1924. "Land Titles to the Pueblo Indian Country." **American Bar Association Journal**. 10 (1): 36-41.

Weber, David, J. 1982. **The Mexican Frontier, 1821-1846**. Albuquerque: University of New Mexico Press.

Weber, David, J. 1992. **The Spanish Frontier in North America**. New Haven: Yale University Press.

Wilson, H. 1964. **Jicarilla Apache Political and Economic Structures**. Berkeley: University of California Press.

Woodberry, Robert. 2004. The Shadow of Empire: Christian Missions, Colonial Policy, and Democracy in Postcolonial Societies (Ph.D. thesis), University of North Carolina, Chapel Hill.

## **Appendix 1 Contact with Arizona, California and New Mexico Missions**

To determine whether the missions had significant contact with tribes in AZ and NM we relied on the discussion in Kessell (1976; 2002; 2008; and 2012) as well as advice from John Kessell. For NM and AZ the categorization was relatively straightforward. The Native Americans who practiced settled agriculture (except for the Hopi) had significant contact. For the hunter/gather tribes, e.g., the Navaho and Apache there was little contact with the missions though significant conflict with the Spanish military personnel. The categorization in California was more difficult.

Following is a list of superintendencies affected and not affected by Missions (early 20<sup>th</sup> Century Data):

**Table A1. Superintendencies affected and not affected by Missions**

<b>Affected</b>	<b>Not affected</b>
<b>Arizona</b>	
Camp McDowell	Camp Verde
Moqui	Colorado River
Pima	Fort Apache
Salt River	Fort Mojave
San Xavier	Havasupai
Western Navajo	Kaibab
	Leupp
	Navajo
	Phoenix
	San Carlos
	San Xavier
	Truxton Canon
<b>New Mexico</b>	
Pueblo Day Schools (Albuquerque and Santa Fe)	Jicarilla

Zuni	Mescalero
	Pueblo Bonito
	San Juan
<b>California</b>	
Cahuilla	Bishop
Campo	Digger
Capitan Grande	Fort Bidwell
La Jolla	Fort Yuma
Malki	Greenville
Martinez	Hoopa Valley
Mesa Grande	Round Valley
Pala	
Pechanga	
Rincon	
Soboba	
Volcan	

Following is a list of Reservations affected and not affected by Missions for our 21<sup>st</sup> century data:

**Table A2. Reservations affected and not affected by Missions**

Affected	Not affected
<b>Arizona</b>	
Hopi Reservation and Off-Reservation Trust Land	Cocopah Reservation
Maricopa (Ak Chin) Indian Reservation and Off-Reservation Trust Land	Colorado River Indian Reservation
Gila River Indian Reservation	Fort Apache Reservation
Salt River Reservation	Fort McDowell Yavapai Nation Reservation
	Fort Mojave Reservation and Off-Reservation Trust Land
	Fort Yuma Indian Reservation
	Hualapai Indian Reservation and Off-Reservation Trust Land
	Kaibab Indian Reservation
	Navajo Nation Reservation and Off-Reservation Trust Land
	Pascua Pueblo Yaqui Reservation and Off-Reservation Trust Land
	San Carlos Reservation
	Tohono O'odham Nation Reservation and Off-Reservation Trust Land

	Tonto Apache Reservation and Off-Reservation Trust Land
	Yavapai-Apache Nation Reservation and Off-Reservation Trust Land
	Yavapai-Prescott Reservation
<b>New Mexico</b>	
Acoma Pueblo and Off-Reservation Trust Land	Jicarilla_Apache_Nation_Reservation_and_Off-Reservation_Trust_Land
Pueblo de Cochiti	Mescalero_Reservation
Isleta Pueblo	Navajo_Nation_Reservation_and_Off-Reservation_Trust_Land
Jemez Pueblo	Ute_Mountain_Reservation_and_Off-Reservation_Trust_Land
Laguna Pueblo and Off-Reservation Trust Land	
Nambe Pueblo and Off-Reservation Trust Land	
Ohkay Owingeh	
Picuris Pueblo	
Pueblo of Pojoaque and Off-Reservation Trust Land	
Sandia Pueblo	
San Felipe Pueblo	
San Ildefonso Pueblo and Off-Reservation Trust Land	
Santa Ana Pueblo	
Santa Clara Pueblo and Off-Reservation Trust Land	
Santo Domingo Pueblo	
Taos Pueblo and Off-Reservation Trust Land	
Tesuque Pueblo and Off-Reservation Trust Land	
Zuni Reservation and Off-Reservation Trust Land	
Zia Pueblo and Off-Reservation Trust Land	
<b>California</b>	
Agua Caliente Indian Reservation and Off-Reservation Trust Land	Benton Paiute Reservation and Off-Reservation Trust Land
Barona Reservation and Off-Reservation Trust Land	Berry Creek Rancheria and Off-Reservation Trust Land
Cabazon Reservation	Big Bend Rancheria
Cahuilla Reservation	Big Lagoon Rancheria
Campo Indian Reservation	Big Pine Reservation and Off-Reservation Trust Land

Los Coyotes Reservation	Big Sandy Rancheria and Off-Reservation Trust Land
Manzanita Reservation and Off-Reservation Trust Land	Big Valley Rancheria
Mesa Grande Reservation	Bishop Reservation
Morongo Reservation and Off-Reservation Trust Land	Blue Lake Rancheria and Off-Reservation Trust Land
Pala Reservation	Bridgeport Reservation and Off-Reservation Trust Land
Pauma and Yuima Reservation	Cedarville Rancheria and Off-Reservation Trust Land
Pechanga Reservation	Chemehuevi Reservation
San Manuel Reservation and Off-Reservation Trust Land	Cold Springs Rancheria
San Pasqual Reservation and Off-Reservation Trust Land	Colusa Rancheria
Rincon Reservation and Off-Reservation Trust Land	Cortina Indian Rancheria
Santa Rosa Reservation	Coyote Valley Reservation
Santa Ynez Reservation	Elk Valley Rancheria and Off-Reservation Trust Land
Santa Ysabel Reservation	Fort Bidwell Reservation and Off-Reservation Trust Land
Soboba Reservation and Off-Reservation Trust Land	Fort Independence Reservation
Sycuan Reservation and Off-Reservation Trust Land	Fort Mojave Reservation and Off-Reservation Trust Land
Torres-Martinez Reservation	Greenville Rancheria
Twenty-Nine Palms Reservation and Off-Reservation Trust Land	Grindstone Indian Rancheria
Viejas Reservation and Off-Reservation Trust Land	Guidiville Rancheria and Off-Reservation Trust Land
	Hoopa Valley Reservation
	Hopland Rancheria
	Karuk Reservation and Off-Reservation Trust Land
	La Posta Indian Reservation
	Laytonville Rancheria
	Lone Pine Reservation
	Lookout Rancheria
	Manchester-Point Arena Rancheria
	Mechoopda TDSA
	Montgomery Creek Rancheria
	Mooretown Rancheria and Off-Reservation Trust Land

	North Fork Rancheria and Off-Reservation Trust Land
	Pinoleville Rancheria
	Quartz Valley Reservation and Off-Reservation Trust Land
	Redding Rancheria
	Redwood Valley Rancheria
	Resighini Rancheria
	Roaring Creek Rancheria
	Robinson Rancheria and Off-Reservation Trust Land
	Rohnerville Rancheria
	Round Valley Reservation and Off-Reservation Trust Land
	Sherwood Valley Rancheria and Off-Reservation Trust Land
	Shingle Springs Rancheria and Off-Reservation Trust Land
	Smith River Reservation and Off-Reservation Trust Land
	Sulphur Bank Rancheria
	Susanville Indian Rancheria and Off-Reservation Trust Land
	Table Bluff Reservation
	Timbi-Sha Shoshone Reservation and Off-Reservation Trust Land
	Trinidad Rancheria and Off-Reservation Trust Land
	Tule River Reservation and Off-Reservation Trust Land
	Tuolumne Rancheria
	Upper Lake Rancheria
	Washoe Ranches Trust Land
	Woodfords Community
	XL Ranch Rancheria
	Yurok Reservation

## Appendix 2. Contact with California Missions

Our research question is how missions established 1600-1848 impacted the quality of Native American life, not then, but rather now inside US society of the 21<sup>st</sup> century. How did Indian communities who underwent transformation inside missions (under Spain and Mexico) fair inside US society compared to Native Americans who had little contact with imperialism?

The California data on reservations extant today comes from the Census Bureau<sup>11</sup>. Following Randall Milliken, we divide reservations into mission influenced, and those which had little contact with imperialism prior to 1848 (see table 1 and Figure 1). Nearly every reservation falls clearly into one category or the other. There are two exceptions, that is two reservations which do not fall neatly into one category or the other, the Tachi Yokuts and the Chukchansi Yokuts. After the Spanish empire dissolved in 1810, there was near war in the Central Valley, with Governor Pablo Vicente de Sola sending troops into the area. Throughout the Mexican period (1821-1847), the Central Valley was a semi-autonomous area which did include some people who had mission experience. We should also note that while the Pomo in Sonoma County had little contact with the Spanish missions, the Kashaya Pomo intermarried with Russian Aleuts working after 1812 from Fort Ross in the fur trade (Farris 2012 Johnson 2006, Milliken 2009).

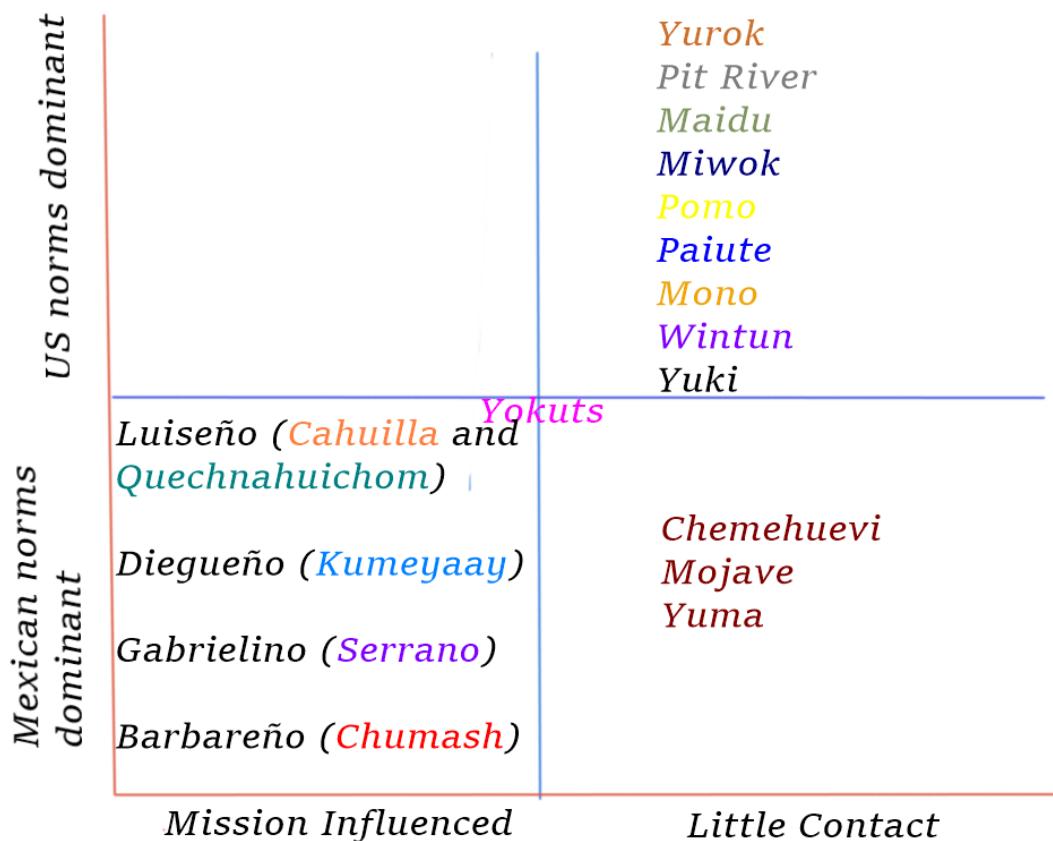
Figure one organizes the Native peoples in California who in the 21<sup>st</sup> century have reservations into a four-quadrant diagram. The horizontal axis moves from those influenced by missions (on the left) to those who had little contact with Mexican imperialism (on the right). What stands out immediately is that after 1848, ex-mission congregations in the areas where US institutions

---

<sup>11</sup> United States Department of Commerce, Economics and Statistics Administration, US CENSUS BUREAU, [Census.gov/tribal/](http://Census.gov/tribal/).

dominated, have no reservations in 1821. Those descended from the congregations of Missions San Francisco Solano, San Rafael, Dolores, Santa Clara, San Jose, San Juan Bautista, Santa Cruz, Carmel, La Soledad, San Antonio and San Miguel, San Luis Obispo, Santa Barbara, and San Juan Capistrano have no reservations! Cultural communities do exist—as for example, among the Chochenyo Ohlone descended from the congregation of San Jose. From that community, Andy Galvan is curator of Mission Dolores in San Francisco and Father Michael Galvan is a priest in San Leandro. It seems likely that the intense influx of US settlers and bias of US institutions in favor of Indian removal may have played a role in depriving these communities of reservation lands, but that is a subject that remains underexplored.

**Figure 1. 21<sup>st</sup> Century Native Californians Who Have Reservations**



The bottom left indicates those peoples who have reservations today who are descended from mission congregations: the Quechnahuichom, Cahuilla, Serrano, Chumash, and Kumeyaay peoples of ex-missions San Luis Rey, San Gabriel, Santa Ines, and San Diego. Ninety percent of those reservations are in San Diego County among peoples descended from the congregations of Mission San Luis Rey and San Diego. The top right quadrant indicates those peoples who had little contact with the Spanish. Most of these people were heavily impacted by the Gold Rush. The bottom right quadrant indicates the peoples who interacted with the Spanish over hundreds of years, but remained outside missions (the Mojave and Yuma). The congregations of Spanish missions feared the Mojave. The Paiutes of the Eastern Sierra raided mission livestock, which the mission vaqueros defended, so there was also mutual suspicion there.

Nearly all the ex-mission reservations belonged to descendants of the congregations of Mission San Luis Rey and Mission San Diego, both in what is now San Diego County. In Santa Barbara County, Santa Ynez Reservation is behind old Mission Santa Ines. In San Bernardino County, the San Manuel Reservation is among the Serrano people behind Mission San Gabriel.

**Appendix Table 1. Division of 21<sup>st</sup> Century Reservations into “Mission-Influenced” and “Little Contact” with Spanish/Mexican imperialism<sup>12</sup>**

<b>MISSION INFLUENCED (Y)</b>		<b>LITTLE CONTACT (N)</b>	
<b>Kumeyaay Reservations (San Diego)</b>		<b>Pit River in Far North</b>	
Barona Reservation	Kumeyaay of Mission San Diego	Alturas Indian Reservation	Achomavi people of Modoc language.
Campo Indian Reservation	Kumeyaay of Mission San Diego	Cedarville Rancheria	Northern Paiute in Modoc County
Capitan Grande	Kumeyaay of Mission San Diego	Big Bend Rancheria	Pit River, inland from Redding
Manzanita Reservation	Kumeyaay of Mission San Diego	Montgomery Creek Reservation	Pit River Tribe
Mesa Grande	Kumeyaay of Mission San Diego	Redding Rancheria	Pit River
San Pasqual Reservation	Kumeyaay of Mission San Diego	Roaring Creek Rancheria	Pit River
Santa Ysabel Reservation	Kumeyaay of Mission San Diego	XL Ranch	Pit River
Sycuan Reservation	Kumeyaay of Mission San Diego	<b>Maidu in Lassen/Mendocino Counties</b>	
Viejas Reservation	Kumeyaay of Mission San Diego	Berry Creek	Maidu
<b>Quechnajuichom and Cahuilla of San Luis Rey</b>		Greenville Rancheria	Maidu
Agua Caliente	Cahuilla and Yuma of Mission San Luis Rey	Mechoopda Reservation	Maidu
Cabazon	Probably Mission San Luis Rey	Mooretown Rancheria	Maidu/Pit River

<sup>12</sup> Milliken 2010, supplemented by tribal web sites.

Cahuilla Reservation	Cahuilla of Mission San Luis Rey	Susanville Indian Rancheria	Maidu
Los Coyotes Band		<b>Cahuilla and Cupeño Warner's Hot Springs</b>	
Morongo Reservation	Cahuilla and Serrano, Mission San Luis Rey	Woodford's Community	Washoe. In Alpine County, S. of Lake Tahoe, Nevada and CA
Pala Reservation	Quechnajuichom, San Luis Rey.	Washoe Ranch	In Nevada, on border
<b>MISSION INFLUENCED</b>		<b>LITTLE CONTACT</b>	
Pauma and Yuima Reservation	Quechnajuichom, Mission San Luis Rey	<b>Miwok</b>	
Pechanga Band	Quechnajuichom, Mission San Luis Rey	Shingle Springs Rancheria	
Rincon Band	Quechnajuichom, Mission San Luis Rey	Tuolumne Rancheria	Miwok
Santa Rosa Reservation	Cahuilla of Mission San Luis Rey	Chicken Ranch Rancheria	Miwok
Soboba Band	Cahuilla, Rancho San Jacinto of San Luis Rey	Jackson Rancheria	Miwok
Torres-Martínez Reservation	Desert Cahuilla, near the Salton Sea, San Luis Rey	Ione Band	Miwok
29 Palms Band of Mission Native Americans	Chemehuevi, near Oasis of Mara, San Luis Rey?	<b>Yurok/Karok/Wiyot in Siskiyou and Trinity and Humboldt Counties</b>	
<b>Chumash of Santa Ynez</b>		Big Lagoon Rancheria	Yurok and Tolowa on coast at Eureka
Santa Ynez Reservation	Chumash of Mission Santa Ines in Santa Barbara County.	Blue Lake Rancheria	Wiyot, Yurok, Hupa in Humboldt County
<b>Serrano of Mission San Gabriel</b>		Elk Valley	Tolowa and Yurok near Crescent City

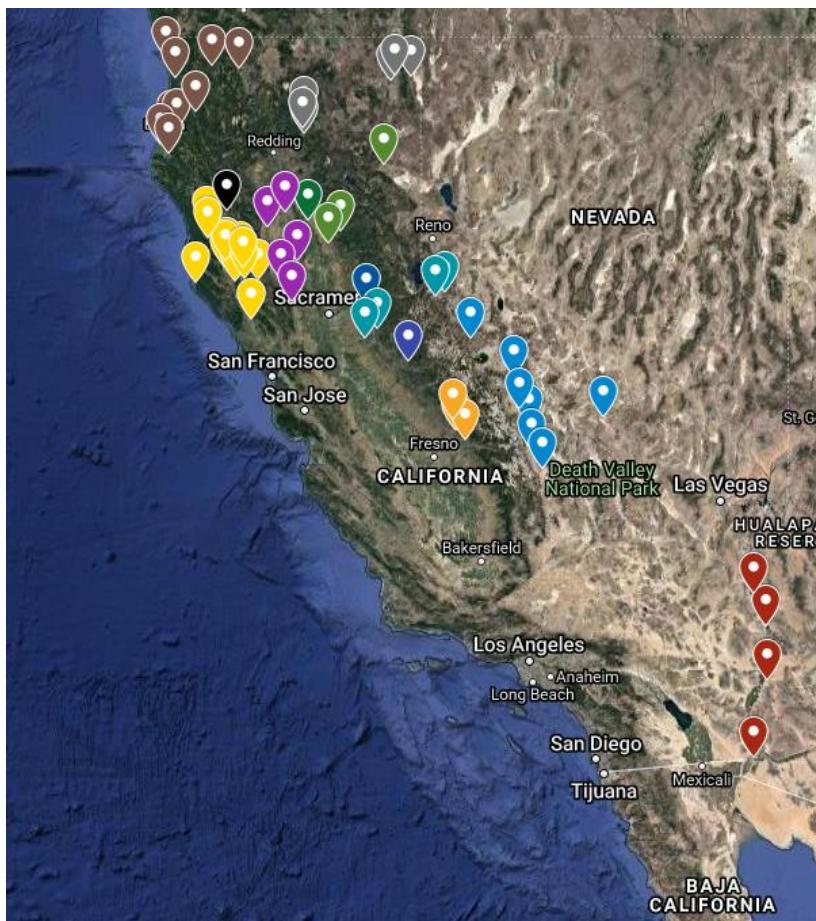
San Manuel Reservation	Near San Bernardino in the mountains behind Mission San Gabriel.	Hoopa Valley Tribe	Far North.
		Karuk Reservation	Near Crescent City
		Table Bluff	Wiyot People on the shore, Humboldt County
		Quartz Valley	Karuk people on the Klamath
		Reseghini Rancheria	Klamath
		Rohnerville	Wiyot People in Humboldt County

MISSION INFLUENCED		LITTLE CONTACT	
		Smith River Rancheria	On the coast north of Crescent City
		Trinidad Rancheria	South of Crescent City
		Yurok Reservation	On the Klamath, inland, south of Crescent City
		<b>Paiute/Shoshone (East of Sierra Nevada)</b>	
		Benton Paiute Reservation	Paiute
		Big Pine Reservation	Paiute-Shoshone
		Bishop Reservation	Paiute
		Bridgeport Reservation	Miwok, Mono, Shoshone, Paiute, and Washoe
		Lone Pine	Paiute
		Fort Independence	Paiute and Shoshone
		Timbi-Sha Shoshone Reservation	Shoshone (in Nevada)
		<b>Mono of Sierra Foothills</b>	
		Big Sandy Band of Western Mono	Near Fresno
		Cold Springs Rancheria	Mono
		North Fork	Mono
		<b>Chemehuevi, Mojave, Yuma</b>	
		Chemehuevi Reservation	Southern Paiute on Colorado River
		Colorado Indian Reservation	Chemehuevi, Mojave, Hopi and Navajo, in Arizona
		Fort Mojave Reservation	Mojave
		Fort Yuma	Yuma
		<b>Pomo</b>	

		Habematol Reservation	Upper Clear Lake
		Laytonville Rancheria	Cahto or Kaipomo people
		Stewart's Point Rancheria	Kashaya Pomo, Russian influence
		Sulphur Bank Rancheria	Southern Clear Lake
<b>MISSION INFLUENCED</b>		<b>LITTLE CONTACT</b>	
		Robinson Rancheria	North of Clear Lake
		Redwood Valley Rancheria	Very north of Clear Lake
		Pinoleville Rancheria	Pomo in Mendocino County
		Manchester Point Arena Rancheria	Pomo, once called Bokeya
		Hopland Rancheria	Pomo
		Dry Creek Rancheria	Pomo, Russian contact
		Coyote Valley	Pomo
		Sherwood Valley Reservation	Pomo
		Big Valley Rancheria	Pomo on Clear Lake
		<b>Wintun</b>	
		Colusa Rancheria	Near Yuba City
		Cortina Rancheria	Wintun
		Grindstone Rancheria	Wintun
		Paskenta Band of Nomlaki	Wintun
		Rumsey Indian Rancheria	Wintun
		<b>Yuki people of Humboldt County</b>	
		Round Valley Reservation	Near Yukiah

Figure 2 is a rough map of peoples who have reservations that exist today who prior to 1848 had little contact with Spanish or Mexican imperialism. The influx of Chinese, South Americans, and above all Americans for the Gold Rush between 1848 and 1860 suddenly brought complete change and often violent devastation to those in the North and the East. Native Californians did not practice agriculture—with the exception perhaps of the Mojave/Yuma who lived along the Colorado River and practiced agriculture at times.

**Figure 2. Map of Reservations with Little Contact with Mexican Imperialism Pre 1848<sup>13</sup>**



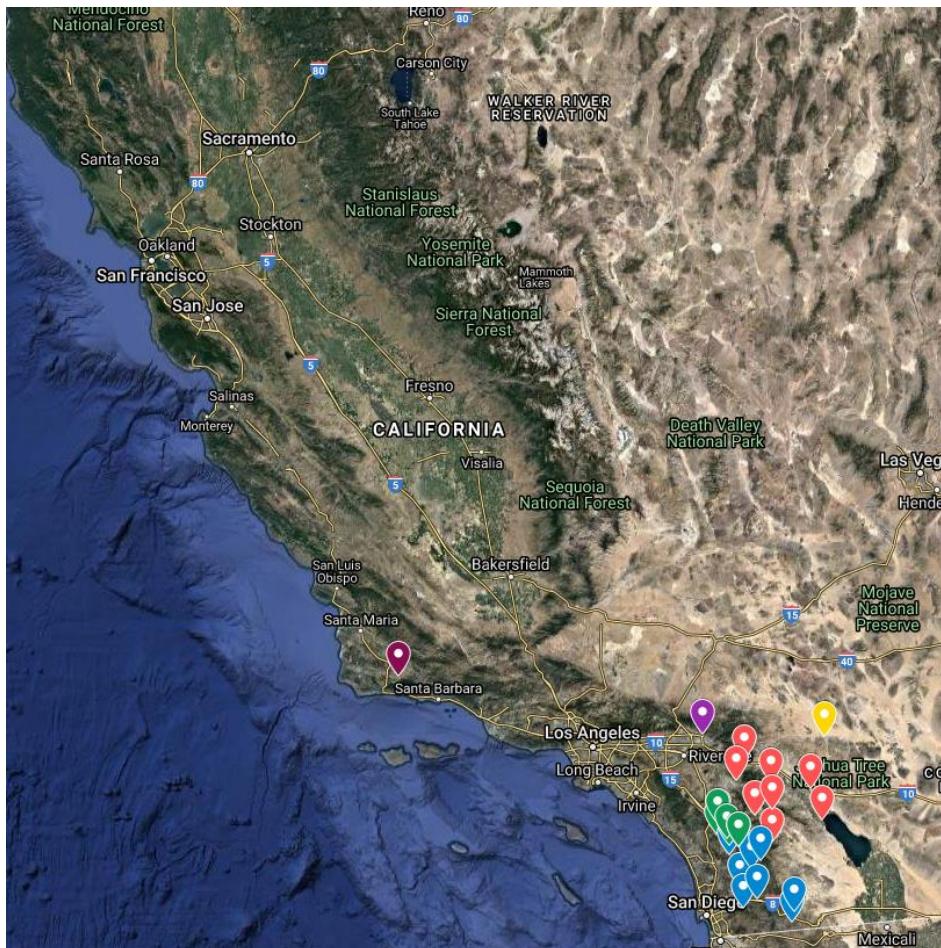
---

<sup>13</sup> Nota bene: the Pomo on the coast did experience Russian imperialism.

Figure 2 illustrates that Native people with little contact with pre-1848 imperialism lived in a wide half circle surrounding the area of cultural interaction between Native peoples and the Spanish and Mexicans. The Gold Rush had a major impact in most of these areas.

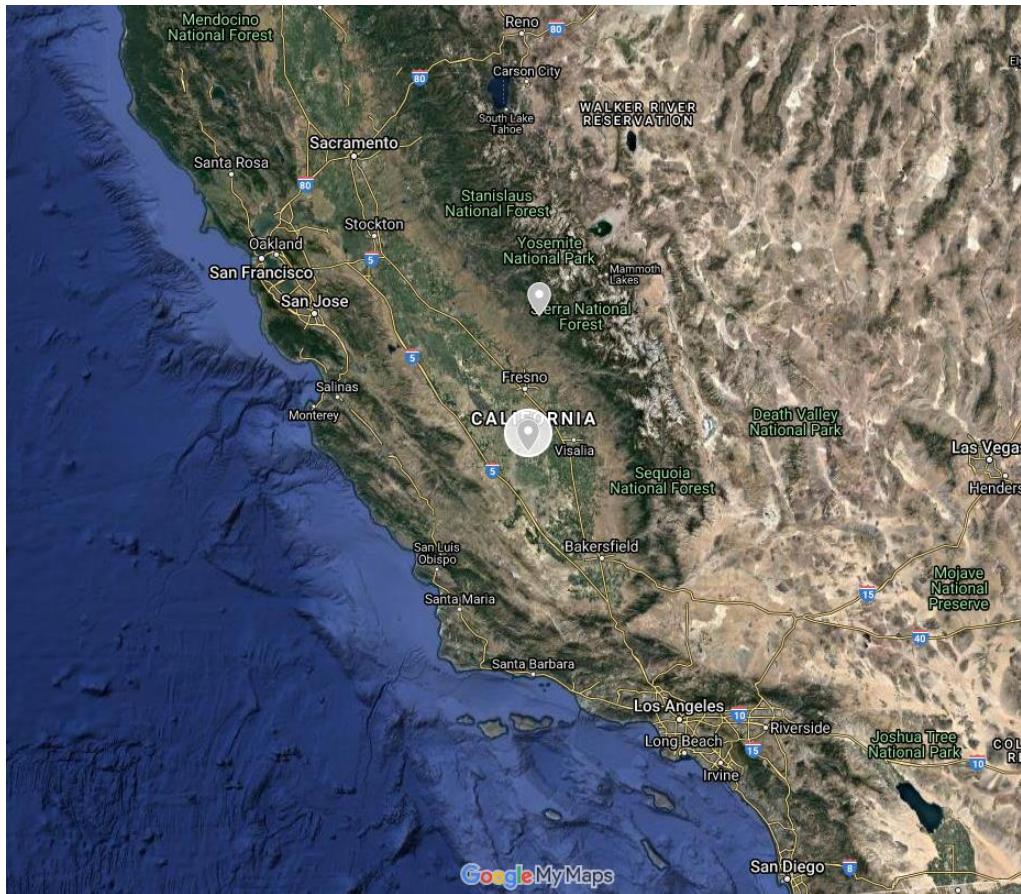
Figure 3 is a map of 21<sup>st</sup> century reservations among people who are descended from those whose ancestors were influenced by missions. Some of these communities when formed included both Christian and non-Christian people, but because of the mission influence of a significant portion of members, they were farming people.

**Figure 3. 21<sup>st</sup> Century Reservations Among People Whose Ancestors Were Influenced by Missions<sup>14</sup>**



**Figure 4. Reservations Among the Tachi (left) and Chukchansi (Right) Who Avoided Missions**

<sup>14</sup> Figure 3 does not include the Tachi and Chukchansi Yokuts reservations, among people who were at war with the Spanish between 1810 and 1830. Some people were baptized into missions, and these communities also harbored dissidents from missions.



The two modern-day reservations which it is difficult to categorize as either “mission-influenced,” or “little contact” are the Tachi Yokuts and the Chukchansi Yokuts.<sup>15</sup> Both of these villages are in the Central Valley. In the wake of Spain’s imperial dissolution—which occurred around 1810--, the Central Valley became contested terrain. As mission Native Americans were asked to replace the pay of unpaid soldiers with the fruits of their own labor, an increase in disaffection manifested itself in flight to the interior, which at that time housed Lake Tulare, a very large body of fresh water. Spanish-speaking dissidents who knew Spanish ways explained

---

<sup>15</sup> See Randall Milliken and John Johnson (2005) “An Ethnogeography of Salinan and Northern Chumash Communities – 1769 to 1810” in *California Indian Ethnohistoric Studies*.

to Yokuts how to fight Spanish horses. The Spanish responded in 1815 with increased military incursions into the central valley. Some Yokuts were baptized at missions, but many stayed out.

---