

**Rebuttal Report**

by

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Prepared for the United States Department of Justice, for the case *United States of America, and Zuni Indian Tribe vs. State of New Mexico, Ex Rel. State Engineer, et al.*

  
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## TABLE OF CONTENTS

Sources .....	1
Spain and Mexico .....	3
Ditch Irrigation at Zuni .....	13
Early United States Period .....	21
The “Four Square League” Argument .....	25
Zuni Farming Villages .....	37
Zuni Agriculture, 1846-1876 .....	50
Zuni Agriculture, 1876-1902 .....	58
Zuni Agriculture, 1902-1940 .....	64
Aboriginal Title .....	70
Conclusions .....	74

### Maps

Location of Zuni Villages .....	following 10
Area of Zuni Sovereignty, 1846 .....	following 36
Traditional Zuni Agricultural Area .....	following 48
Area and Dates of Zuni Land Taken .....	following 74

This report is a rebuttal response to the Stanley M. Hordes “Critique...”<sup>1</sup> of my report on the history of Zuni water use.<sup>2</sup> Dr. Hordes reached a number of conclusions regarding my report, as well as conclusions regarding Zuni historic “land ownership” and water use, some of which are pertinent to my report and some of which are not.

### Sources

Dr. Hordes makes the claim that my report, with the exception of the period 1877 to 1944 (the greater bulk of my report), “relied largely on published secondary sources, with almost no citations to primary archival documents.”<sup>3</sup> This statement is demonstrably false.

Historians are in agreement about the definition of primary and secondary sources. Primary sources “are those that for the particular study in which you are engaged provide ear- and eyewitness accounts or the nearest approximation thereto that you can obtain.”<sup>4</sup> Primary accounts

...originate in the time period that historians are studying. They vary a great deal. They may include personal memoirs, government documents, transcripts of legal proceedings, oral histories and traditions, archaeological and biological evidence,

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<sup>1</sup>Hordes, Stanley M. “Critique of ‘A History of Zuni Water Use: Executive Summary,’ by E. Richard Hart, February 27, 2006 (Submitted November 25, 2007), and Supplemental Analysis of Spanish and Mexican-Period Pueblo Land Ownership, and of Irrigation and Water Use at Zuni Pueblo, 1902-2004,” February 26, 2010, submitted to the New Mexico State Engineer Office in *USA and Zuni Indian Tribe v. State of New Mexico, et al. 07CV00681-BB* (Hereafter “Hordes”).

<sup>2</sup>Hart, E. Richard. “A History of Zuni Water Use: Executive Summary,” Expert Testimony Submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe in *Zuni River Basin v. State of New Mexico, et al.*, February 27, 2006.

<sup>3</sup>Hordes, p. 3.

<sup>4</sup>Gray, Wood and others. *Historian’s Handbook: A Key to the Study and Writing of History*. Prospect Heights, Illinois: 1964, p. 84.

and visual sources like paintings and photographs...<sup>5</sup>

Primary sources may be translated, published or unpublished, in manuscript form, or as a public document.<sup>6</sup>

Secondary sources are not first-hand accounts.

Secondary works reflect on earlier times. Typically, they are books and articles by writers who are interpreting the events and primary sources... Secondary works vary a great deal, from books by professional scholars to journalistic accounts.

Some sources may have both primary and secondary elements.<sup>7</sup>

The line between sources and secondary works must be drawn functionally for each investigation. For example, William E. Dodd's biography, *Woodrow Wilson and His Work*, would be a primary source for a study of Professor Dodd as an historian, but a secondary work for the study of President Wilson. A primary source (which may simply be called a source) does *not* receive its classification from the fact that it was of primary importance or helpfulness in your study, nor is a secondary work necessarily one that was peripheral to your undertaking. This is emphasized as a common misunderstanding among beginners.<sup>8</sup>

In other words, an in-depth historical analysis of a historical period or incident may be of great importance, though it is a secondary, while on the other hand, a mistaken observation in a journal, while a primary source, may be of little value.

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<sup>5</sup>Storey, William Kelleher. *Writing History: A Guide for Students*, Second Edition. Oxford: Oxford University Press, 2004, p. 18.

<sup>6</sup>See, for instance:  
Gray, Wood and others. *Historian's Handbook: A Key to the Study and Writing of History*. Prospect Heights, Illinois: 1964, p. 84.

<sup>7</sup>Storey, William Kelleher. *Writing History: A Guide for Students*, Second Edition. Oxford: Oxford University Press, 2004, pp. 18-19.

<sup>8</sup>Gray, Wood and others. *Historian's Handbook: A Key to the Study and Writing of History*. Prospect Heights, Illinois: 1964, p. 84.

In any case, historians must take care to determine whether a primary source is actually contemporaneous to the event being described and to interpret both primary and secondary sources accurately.<sup>9</sup> As noted above, Dr. Hordes made the assertion that in my history of Zuni water use, I “relied largely on published secondary sources...”<sup>10</sup> Later in his report, he qualified this statement, to say I relied on secondary sources, “with the exception...of the period from 1877 to 1944.”<sup>11</sup> In point of fact, I relied mainly on primary sources throughout my report.

### Spain and Mexico

The purpose of my report was to document historical use of water by the Zuni tribe. Following the “Introduction,” the first section of my report summarized evidence of Zuni agriculture under “Spain and Mexico.” The important primary sources shedding light on Zuni during the Spanish and Mexican period have been translated and published. I cited more than twenty-five primary sources in this section, including the following first-hand accounts:

Fray Marcos de Niza in 1539,<sup>12</sup>

Don Antonio de Mendoza to the King, April 17, 1540,<sup>13</sup>

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<sup>9</sup>See, for instance:  
Howell, Martha and Walter Prevenier. *From Reliable Sources: An Introduction to Historical Methods*. Ithaca and London: Cornell University Press, 2001, pp. 17-20.  
Megill, Allan. *Historical Knowledge, Historical Error: A Contemporary Guide to Practice*. Chicago and London: University of Chicago Press, 2007, pp. 49-53.

<sup>10</sup>Hordes, p. 3.

<sup>11</sup>Hordes, pp. 93-94.

<sup>12</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 68 and 78-79. [HE75]

<sup>13</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 158-159. [HE75]

the “Narrative” of Pedro de Castañeda de Nájera, October 26, 1596,<sup>14</sup>

Francisco Vázquez de Coronado to Mendoza, August 3, 1540,<sup>15</sup>

“Traslado de las Nuevas,” circa 1540,<sup>16</sup>

“Relacion del Suceso,” 1541,<sup>17</sup>

“Narrative” of Captain Juan Jaramillo, circa 1540,<sup>18</sup>

“Relacion Postrera de Cibola,” circa 1540,<sup>19</sup>

Gallegos’ Relation of the Chamuscado-Rodríguez Expedition, July 8, 1582,<sup>20</sup>

Testimony of Hernando Gallegos, May 16, 1582,<sup>21</sup>

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<sup>14</sup>George Parker Winship (trans. and ed.), *The Journey of Coronado, 1540-1542, from the City of New Mexico to the Grand Canon of The Colorado and the Buffalo Plains of Texas, Kansas and Nebraska* (New York: Allerton Book Co., 1922--reprinted by Readex Microprint, 1966), p. 22. [HE163]

George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 207-209, and 252. [HE75]

<sup>15</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 166-167, 171-173, and 175-178. [HE75]

<sup>16</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, p. 181. [HE75]

<sup>17</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 284-286. [HE75]

<sup>18</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 298-299. [HE75]

<sup>19</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 308-309. [HE75]

<sup>20</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 67 and 108. [HE167]

<sup>21</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 133, and 136-137. [HE167]

Report of Antonio de Espejo, October, 1583,<sup>22</sup>

Diego Perez de Luxán's Account of the Antonio de Espejo Expedition, circa 1583,<sup>23</sup>

Oñate's 1604 journey by Zárate Salmerón, circa 1626,<sup>24</sup>

Benavides' Memorial of 1630,<sup>25</sup>

Fray Alonso de Benavides' Revised Memorial of 1634,<sup>26</sup>

Don Diego de Vargas Zapata Lujan Ponce de Leon, 1692,<sup>27</sup>

Pedro Tamarón y Romeral, Bishop of Durango, 1760,<sup>28</sup>

Fray Francisco Atanasio Dominguez, 1776,<sup>29</sup>

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<sup>22</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 213, 225-226 and 228. [HE167]

<sup>23</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp.183-186. [HE167]

<sup>24</sup>Zárate Salmerón. *Relaciones*; translated by Alicia Ronstadt Milich; Horn and Wallace; Albuquerque, 1966; pp. 64-65. [HE169]

Herbert Eugene Bolton. *Spanish Exploration in the Southwest, 1542-1706*, Barnes and Noble, New York, 1908, p. 268. [HE77]

<sup>25</sup>Peter P. Forrestal. *Benavides' Memorial of 1630*; Academy of American Franciscan History; Washington, D.C.; 1954; pp. 30-32. [HE79]

<sup>26</sup>Hodge, Frederick, George P. Hammond and Agapito Rey. *Fray Alonso de Benavides' Revised Memorial of 1634*; University of New Mexico Press; Albuquerque; 1945; pp. 210 and 213-214. [HE76]

<sup>27</sup>Don Diego de Vargas Zapata Lujan Ponce de Leon "The Re-Conquest of New Mexico, 1692: Extracts from the Journal of Don Diego de Vargas Zapata Lujan Ponce de Leon," *Old Santa Fe: A Magazine of History, Archaeology, Genealogy and Biography*; Vol. I, No. 3 (January, 1914); pp. 302-305. [HE170]

<sup>28</sup>Eleanor B. Adams (ed.). "Bishop Tamarón's Visitation of New Mexico, 1760," *Historical Society of New Mexico Publications in History*, Vol. XV; February, 1954, p. 68. [HE87]

<sup>29</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; pp. 195-202. [HE173]

Juan Bautista de Anza, 1780,<sup>30</sup>

Fray Juan Agustín de Morfi, 1782,<sup>31</sup>

Fray Saldivar, Fray Voragra, and Juan Pedro Sisneros' Zuni Census, 1790,<sup>32</sup>

Prada to Alencaster, May 19, 1805,<sup>33</sup>

Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776,<sup>34</sup>

George C. Yount, 1827-1828,<sup>35</sup> and

Josiah Gregg, 1844.<sup>36</sup>

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<sup>30</sup>Alfred Barnaby Thomas. *Forgotten Frontiers: A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Governor of New Mexico, 1777-1787*; University of Oklahoma Press; Norman, Oklahoma; 1969; pp. 229-231. [HE85]

Twitchell, Ralph E. (ed. and trans.) "Colonel Juan Bautista de Anza, Governor of New Mexico, Diary of his Expedition to the Moquis in 1780," *Historical Society of New Mexico*, No. 21, Paper read before the Historical Society at its Annual Meeting, 1918. This translation and annotation seem to be inferior to the Thomas version. [HE174]

<sup>31</sup>Alfred Barnaby Thomas. *Forgotten Frontiers: A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Governor of New Mexico, 1777-1787*; University of Oklahoma Press; Norman, Oklahoma; 1969; pp. 90 and 106-107. [HE85]

<sup>32</sup>Fray Mariano Saldivar, Fray Mariano Jose Sanchez Voragra, and Juan Pedro Sisneros "Census of all the people of the Pueblo of Zuni . . .," Navajo Plaintiff's Exhibit No. 780, Docket 229 (Navajo), Indian Claims Commission (New Mexico State Records Center Archives, Spanish Archives #1092c, translated by David M. Brugge). [HE175]

Myra Ellen Jenkins. "Documents Concerning the Pueblo of Zuni under Spanish Sovereignty," expert testimony submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe, *City of Gallup v. USA*, No. Civ 84-0164, District Court, McKinley County, New Mexico, 1988, p. 5. [HE376]

<sup>33</sup>Prada to Alencaster, May 19, 1805, New Mexico State Records Center Archives, Spanish Archives #1831, Translated by David M. Brugge, Navajo Plaintiff's Exhibit No. 782, Before the Indian Claims Commission (Docket 229). [HE176]

<sup>34</sup>Records of the Mission of Nuestra Senora...; Book I--Baptisms and Patentes Book II--Marriages and Burials, Book III--Baptisms, Microfilm, Manuscript Division, Library of Congress. [HE7]

<sup>35</sup>Charles L. Camp (ed.). *George C. Yount and His Chronicles of the West Comprising Extracts from his "Memoir" and from the Orange Clark "Narrative"*; Old West Publishing Co.; Denver; 1966; pp. 37-38 and 62. [HE178]

<sup>36</sup>Josiah Gregg. *Commerce of the Prairies*; edited by Max L. Moorehead; University of Oklahoma Press; Norman; 1954 (originally published 1844); pp.187n-188n. [HE95]

In addition to the above cited primary materials, a number of other items included elements of primary history. Hodge<sup>37</sup> provided original translations of some Spanish documents (he was later co-translator and editor of the acclaimed work, *Fray Alonso de Benavides' Revised Memorial of 1634*.<sup>38</sup> Adolph F. Bandelier, for whom Bandelier National Monument is named, provided extensive first-hand observations about Zuni culture as commentary on his history of the Zuni Tribe.<sup>39</sup> Bandelier's journals also provide primary accounts of life at Zuni during the early United States period.<sup>40</sup> Primary elements of Bohrer<sup>41</sup> and Kintigh will be discussed later in this report.<sup>42</sup> Jenkins<sup>43</sup> provided summaries and partial translations of documents related to Zuni found in the Archives of the Archdiocese of Santa Fe and in the Spanish Archives of New Mexico at the New Mexico State Records Center and Archives.

Of particular interest are the Records of the Mission of Nuestra Señora at Zuni from 1775 to 1858. Until 1987 the records were considered "lost." In 1987, I was able to determine that

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<sup>37</sup>Hodge, Frederick. *History of Hawikuh, New Mexico, One of the So-Called Cities of Cibola*; F.W. Hodge Anniversary Publication Fund, Los Angeles; 1937. [HE78]

<sup>38</sup>Hodge, Frederick, George P. Hammond and Agapito Rey. *Fray Alonso de Benavides' Revised Memorial of 1634*; University of New Mexico Press; Albuquerque; 1945. [HE76]

<sup>39</sup>A. F. Bandelier. "An Outline of the Documentary History of the Zuni Tribe," *A Journal of American Ethnology and Archaeology*, Vol. III, Houghton Mifflin and Company, Cambridge, 1892. [HE74]

<sup>40</sup>Charles H. Lange and Carroll L. Riley *The Southwestern Journals of Adolph F. Bandelier, 1883-1884*, The University of New Mexico Press; Albuquerque; 1970; pp. 49-50, 54-58, 67, 69, 70, 72. [HE255]  
Charles H. Lange, Carroll L. Riley and Elizabeth M. Lange *The Southwestern Journals of Adolph F. Bandelier, 1885-1888*; The University of New Mexico Press; Albuquerque; 1975; pp. 296-302. [HE255]

<sup>41</sup>Bohrer, Vorsila L. "Zuni Agriculture," (with sections by Lawrence Kaplan and Thomas W. Whitaker) *El Palacio*, Vol. 67 (1960), pp. 181-202. [HE164]

<sup>42</sup>Keith W. Kintigh. *Settlement, Subsistence, and Society in Late Zuni Prehistory*, The University of Arizona Press, Tucson, 1985. [HE14]

<sup>43</sup>Myra Ellen Jenkins. "Documents Concerning the Pueblo of Zuni under Spanish Sovereignty," expert testimony submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe, *City of Gallup v. USA*, No. Civ 84-0164, District Court, McKinley County, New Mexico, 1988, pp. 1-9. [HE376]

while Frank Hamilton Cushing was at Zuni in 1879, and while the mission was abandoned by the Catholic fathers, Cushing acquired registers containing most of the baptism, marriage and burial records of the priests at the mission between 1775 and 1858. I also determined that when Cushing died, the Director of the Bureau of American Ethnology, Frederick Webb Hodge, acquired them from Cushing's widow and then sold them to the Library of Congress. I arranged to have them microfilmed at the Library of Congress and provided a copy of the microfilm to the New Mexico State Records Center and Archives.<sup>44</sup>

I then commissioned a scholarly review of the records. Records kept by priests at the Zuni mission provide considerable evidence of Zuni agricultural activity during the 18th and 19th centuries.<sup>45</sup> Priests recorded all of the baptisms and marriage ceremonies that they conducted. They also attempted to give last rites to dying persons, and to record burials. There was especial resistance on the part of the Zunis to having their deaths recorded, and the priests seem to have been most successful in recording the deaths of Zunis who died of violence at the hands of

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<sup>44</sup>Robert W. Delaney and Myra Ellen Jenkins. "Guide to the 'Lost' Records of the Mission of Nuestra Señora de Guadalupe de Zuni, 1775-1858," New Mexico State Records Center and Archives, Santa Fe, 1988, pp. 1-2. [HE150]

<sup>45</sup>The Zuni mission was first established in 1629. It was completely or partially destroyed during the Pueblo Revolt of 1680. In 1700 the mission was reopened and the mission building rebuilt. Originally the mission was said to be dedicated to either "Nuestra Señora de la Candelaria" or "La Purissima Concepción," but by the mid-18th century it was known as "Nuestra Señora de Guadalupe." Between 1775 and 1780 the mission was remodeled. The remodeling work had just begun when Domínguez visited in 1776, accompanied by Escalanté and Miera y Pacheco. While there Miera y Pacheco carved two archangels—Michael and Raphael—to ornament the mission.

E. Richard Hart. "A Brief History of Religious Objects from the Old Zuni Mission," MS, prepared for the Zuni Tribe, July, 1987, pp. 2-3. In 1987 I drafted a report in which I showed that Matilda Coxe Stevenson's party took the archangels and deposited them with the Smithsonian Institution. One was seriously damaged by fire in 1965. The other was on display at the time of my 1987 report. As a result of that report, an internal Smithsonian investigation was conducted, and recently the Archangel Michael was returned to Zuni and is now prominently displayed in the Visitors' Center. [HE151]

Merrill, William L. and Richard E. Ahlborn. "Zuni Archangels and Ahayu:da: A Sculpted Chronicle of Power and Identity," in *Exhibiting Dilemmas: Issues of Representation at the Smithsonian* (edited by Amy Henderson and Adrienne L. Kaeppler). Washington and London: Smithsonian Institution Press, 1997, pp. 176-205.

Navajos and Apaches, perhaps because these deaths raised alarm and unusual notoriety within the community. The mission records demonstrate that the Zuni used a number of farming villages, or *ranchos*, throughout the 18th century and through the first half of the 19th century. Deaths of persons living at farming villages are occasionally recorded, including deaths that actually occurred in the farm fields as a result of lightning strikes and snake bites. Priests took care to try and baptize as many infants as they could find. Especially during the period from 1775 to 1780, priests reported many if not most of the children were being born of families either in or associated with the Zunis' farming villages. In 1773 a priest reported that two "adults," aged 12 and 15, were baptized. The reason they had escaped baptism to that point, according to the priest, was that they had lived at the ranchos until that time.<sup>46</sup>

During this period (1770s) the record-keeping at the mission seems to have generally been more detailed, which may partly account for the better records of the farming areas. The records may also indicate a heightened use of farming areas some distance from the central Zuni village. A number of Zuni farming villages were listed by the Spanish priests. Evidence that

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<sup>46</sup>Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Fragment from Book of Baptisms, 1699-1700, (1699, No. 2, Zuni Fragment); Microfilm Roll #51, Archives of the Archdiocese of Santa Fe. [HE3]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Baptisms, 1725-1774; B-56, Zuni, Box 85, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE4]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Marriages and Burials, 1705-1775; M-45, Zuni, Box 42 Microfilm Roll #33, Archives of the Archdiocese of Santa Fe, AASF #33. [HE5]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Burials, 1699-1712; Bur-45, Zuni, Box 37, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE6]

Records of the Mission of Nuestra Señora...; Book I--Baptisms and Patentes Book II--Marriages and Burials, Book III--Baptisms, Microfilm, Manuscript Division, Library of Congress. [HE7]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1775-1858," Commissioned by the Institute of the North American West for use as expert testimony in behalf of the Zuni Tribe; March, 1988. [HE149]

these were, indeed, Zuni farming villages is conclusive, since priests frequently noted that although the person being entered in the ledgers was from a *ranchito*, that person was a resident of Zuni proper. The Zuni *ranchos* documented by the priests include the following: Colorado, Cañon, Piedras Negras, Galisteo, Hawikku, Quiahuaná, and Pinahua. Piedras Negras referred to the farming area near what is now called Black Rock. Pinahua, or Pinawa, and Hawikku were farming villages located near today's Ojo Caliente. Galisteo may have referred to the farming area found in today's Galistina Canyon, near the Zuni mesa Dowa Yalanne. Quiahuaná was certainly a Spanish spelling of a Zuni word, a word suggesting a source of water. Colorado, Cañon, and Quiahuaná could have referred to the Zuni farming villages at Pescado and Nutria, but their precise location is unknown. The mission records also mention two other Zuni *ranchos*—Rancho de la Laguna, and Rancho de Moqui. Since the priests' entries appear to differentiate between the Pueblo of Laguna and the Rancho de la Laguna, as well as between the Hopi villages and the Rancho de Moqui, it may be that these are two additional farming villages, one located near a small body of water and the other farmed by Hopis living at Zuni or Zunis with some Hopi descent or lineage.<sup>47</sup> (The attached Ferguson map shows selected Zuni village

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<sup>47</sup>Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Fragment from Book of Baptisms, 1699-1700, (1699, No. 2, Zuni Fragment); Microfilm Roll #51, Archives of the Archdiocese of Santa Fe. [HE3]

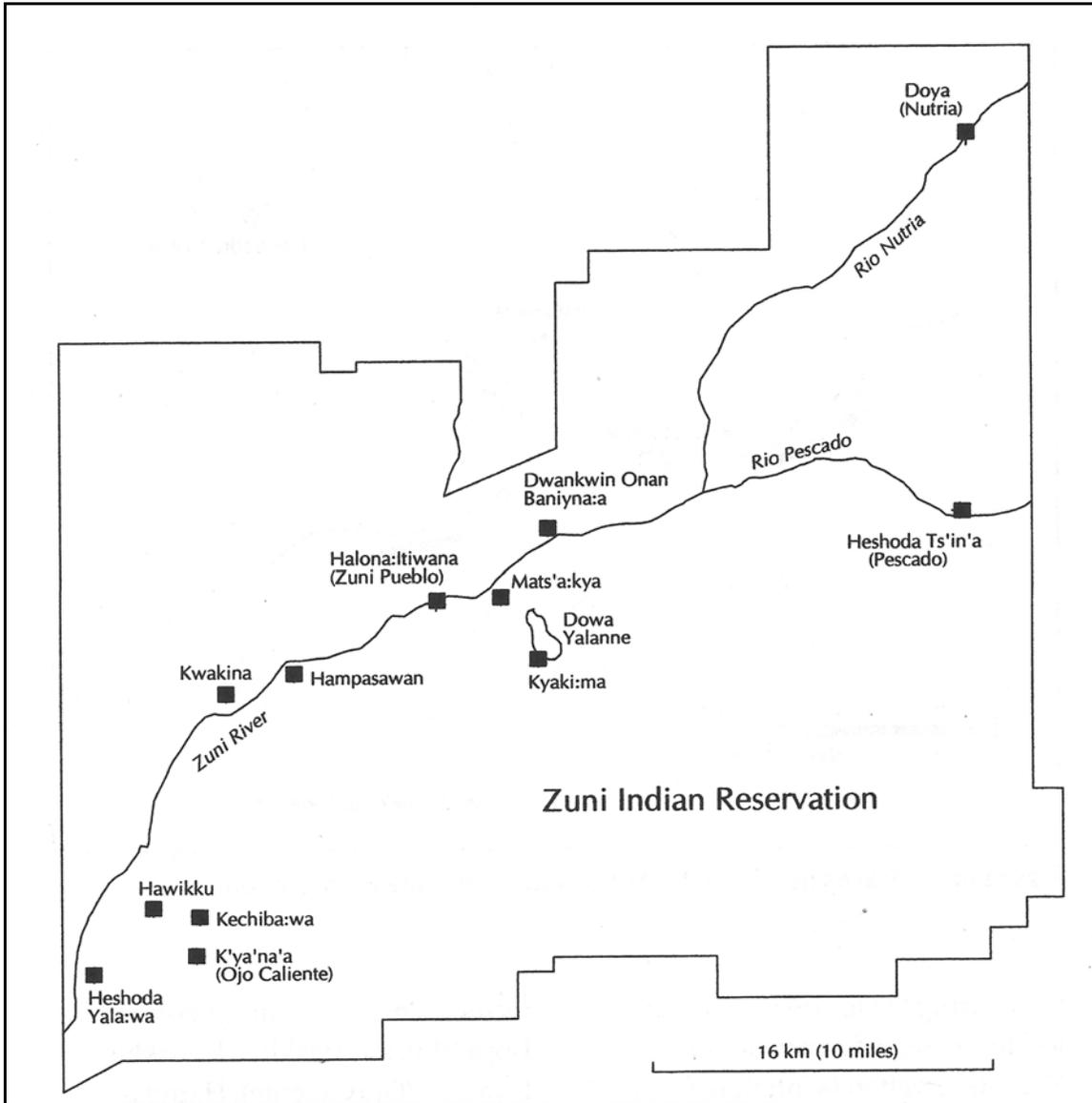
Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Baptisms, 1725-1774; B-56, Zuni, Box 85, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE4]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Marriages and Burials, 1705-1775; M-45, Zuni, Box 42 Microfilm Roll #33, Archives of the Archdiocese of Santa Fe, AASF #33. [HE5]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Burials, 1699-1712; Bur-45, Zuni, Box 37, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE6]

Records of the Mission of Nuestra Señora...; Book I--Baptisms and Patentes Book II--Marriages and Burials, Book III--Baptisms, Microfilm, Manuscript Division, Library of Congress. [HE7]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1775-1858," Commissioned by the Institute of the North American West for use as expert testimony in behalf of the Zuni Tribe;



Ferguson, "Zuni Traditional History and Cultural Geography," p. 398.

locations)

Dr. Hordes addressed my assessment of the 1776 description of Zuni by Fray Francisco Atanasio Domínguez. I pointed out that Domínguez indicated there were Zuni farm lands in an area of about 16,000 acres.

The Indians have farmlands for a league above, a league below, and the same distance on either side of the pueblo. And all those mentioned are dependent on rain, for there is no river to use for irrigation.<sup>48</sup>

I reported that Domínguez also described irrigated crops near what is called today Black Rock, but that since Domínguez was at Zuni in December, his knowledge of the full farming activities of the Zunis seems to have been limited, and he reported only on those agricultural lands in the immediate vicinity of the pueblo.

Dr. Hordes said that since Domínguez' description of the Pueblos of Laguna and Acoma "included descriptions of farming activities in areas distant from the centers of both pueblos...it stands to reason that if other areas of Zuni Pueblo had been under cultivation in 1776, they would have been noted by Domínguez."<sup>49</sup> Domínguez actually did not describe irrigated lands "distant" from Acoma and Laguna. Domínguez described Laguna irrigated lands up to 2 ½ leagues from

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March, 1988. [HE149]

<sup>48</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; p. 201. [HE173]

<sup>49</sup>Hordes, p. 5.

the pueblo.<sup>50</sup> At Acoma he described irrigated lands 3 leagues from the pueblo.<sup>51</sup>

The Zunis' main farming villages were located much farther away from the main pueblo, from fifteen to twenty-five miles away (at least 6 to 10 leagues distant). Domínguez, as I noted above, did describe the Zuni agricultural activities at Black Rock, which took place three leagues from Zuni. So Domínguez was consistent in his descriptions of these three pueblos, describing farming activities within two to three leagues from each.

Fourteen years later, in 1790, a census taken at Zuni listed five ranchos being used by the tribe, in addition to the pueblo of Zuni proper: Rancho Colorado (Red Ranch), Rancho de Piedras Negras (Black Rock Ranch, spoken of by Domínguez in 1776), Rancho de Galisteo (Galisteo Ranch), Rancho del Cañon (Canyon Ranch) and Rancho de Senora Santa Ana (Ranch of Saint Ann).<sup>52</sup> I previously commented on the possible location of these farming villages.

As noted above, mission records from Zuni also indicate use of the farming villages in the 1770s, and, as I pointed out, some children had avoided baptism for over a decade by living at

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<sup>50</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; p. 187. [HE173]

<sup>51</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; p. 194. [HE173]

<sup>52</sup>Ward Alan Minge. "Zuni in Spanish and Mexican History," expert testimony submitted to the United States Court of Claims in behalf of the Zuni Indian Tribe; *Zuni Indian Tribe of New Mexico v. United States*, Docket 161-79L, 1980, pp. 51 and 56. [HE88]

Fray Mariano Saldivar, Fray Mariano Jose Sanchez Voragra, and Juan Pedro Sisneros "Census of all the people of the Pueblo of Zuni . . .," Navajo Plaintiff's Exhibit No. 780, Docket 229 (Navajo), Indian Claims Commission (New Mexico State Records Center Archives, Spanish Archives #1092c, translated by David M. Brugge). [HE175]

Myra Ellen Jenkins. "Documents Concerning the Pueblo of Zuni under Spanish Sovereignty," expert testimony submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe, *City of Gallup v. USA*, No. Civ 84-0164, District Court, McKinley County, New Mexico, 1988, p. 5. [HE376]

the farming villages.<sup>53</sup> Indeed, it is interesting to note that Zuni Governor Pedro Pino,<sup>54</sup> as a young man withdrew from the main Zuni pueblo and lived at the farming Zuni farming village of Heshoda, where a peach orchard was planted, in order to avoid the harsh discipline of the priest at Zuni proper.<sup>55</sup>

### Ditch Irrigation at Zuni

Dr. Hordes asserts that I based my conclusions on pre-contact ditch irrigation “on either secondary sources, or published translations of documents.”<sup>56</sup> This misleading statement suggests that I did not rely on primary sources. The opposite is true. Dr. Hordes in his footnote to support the above assertion, cites my footnotes 6-8 on pages 2-3 and footnotes 51-52 on pages 19-20 of my initial report.

The first citation in footnote 6 on page 2 of my initial report is from a letter from

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<sup>53</sup>Donna L. Pierce. “Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776,” analysis (1988) of Book of Baptisms, 1725-1774; B-56, Zuni, Box 85, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE4]

See also:

Donna L. Pierce. “Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1775-1858,” Commissioned by the Institute of the North American West for use as expert testimony in behalf of the Zuni Tribe; March, 1988. [HE149]

<sup>54</sup>Not to be confused with his namesake, Pedro Bautista Pino, a prominent merchant and city official in Santa Fe, who according to Frank Hamilton Cushing, ransomed the Zuni Lai-iu-ah-tsai-lu from Navajo captors and later freed him to return to Zuni. Lai-iu-ah-tsai-lu subsequently took the name Pedro Pino when dealing with Spanish, Mexican and United States officials. At about the same time as Lai-iu-ah-tsai-lu was freed, Pedro Bautista Pino drafted his famous *Exposition of the Province of New Mexico, 1812*.

<sup>55</sup>Hart, E. Richard. *Pedro Pino: Governor of Zuni Pueblo, 1830-1878*. Logan, Utah: Utah State University Press, 2003, p. 133, which reprints Frank Hamilton Cushing’s biography of Pino. [HE478]

For the location of Heshoda, see:

Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 36-38. [HE479]

<sup>56</sup>Hordes, p. 4.

Francisco Vázquez de Coronado to Antonio de Mendoza, viceroy of Mexico. The letter is translated and reproduced by the renowned historians George P. Hammond and Agapito Rey.<sup>57</sup> This is a primary source; Dr. Hordes has provided no reason whatsoever to believe that the esteemed Hammond and Rey translations are unreliable for the purposes for which I have cited them. Coronado wrote to Mendoza on August 3, 1540 to describe the country he had passed through during his expedition from Culiacan to the north. This is, of course, a primary account of the Coronado expedition, and one of the most important. In it Coronado describes what he saw at Zuni, which he called the Seven Cities of the kingdom of Cibola. Coronado said that the Zunis had a “great abundance of maize,” as well as beans. With so much corn, it is not surprising that Coronado would add, “They make the best tortillas that I have ever seen anywhere, and this is what everybody ordinarily eats.” He also commented on the Zunis’ method for grinding corn (“one of these Indian women here will grind as much as four of the Mexicans do”), and praised their method of grinding.<sup>58</sup>

Frederick Webb Hodge, cited often in my initial report, was an archaeologist, anthropologist and historian who held prominent positions with the Smithsonian Institution, the United States Geological Survey, and Columbia University. He was director of the Southwest Museum in Los Angeles. Between 1917 and 1923 Hodge excavated the ruins of the Zuni village of Hawikku, where Coronado encountered the Zuni people in 1540. Hodge’s *History of Hawikuh* combines evidence Hodge collected in all of his disciplines. He translated original

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<sup>57</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 171-173. [HE75]

<sup>58</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 171-173. [HE75]

documents relating to Hawikku's history, including documents associated with the Coronado expedition; he excavated the ruins of Hawikku, and he interviewed and did field work with Zunis while undertaking his excavation. Thus, his book contains both primary and secondary characteristics. In his book, Hodge translated and published accounts related to the arrival at Hawikku of Fray Marcos de Niza, a year earlier than Coronado, in 1539. In one account, an Indian who accompanied Fray Marcos reported that while at Hawikku, he "felt thirsty, and went out of the house to get a drink of water in a stream near by..."<sup>59</sup> Hodge, who had excavated Hawikku, knew the topography of the area intimately, and had studied Zuni traditions, concluded that the "stream" was actually "an irrigation canal, no doubt." Hodge also noted that two irrigation canals were reported by Diego Pérez de Luxán's account of the Espejo 1583 Expedition.<sup>60</sup>

I cited the Luxán account in footnote 7 on page 3 of my initial report. This is one of the citations which Dr. Hordes highlighted.<sup>61</sup> Antonio de Espejo visited Zuni in 1583 accompanied by Diego Pérez de Luxán. Both Espejo and Luxán reported on the journey through the Zuni villages. Translations of their accounts are provided in George P. Hammond and Agapito Rey's *The Rediscovery of New Mexico, 1580-1594*. Espejo was the first writer to use the word "Zuni" (the Zunis' word for themselves is "Ashiwi") in describing the Zuni region. He arrived at Zuni in March, after a heavy snow, was at the villages through April and stopped again in May, saying

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<sup>59</sup>Hodge, Frederick. *History of Hawikuh, New Mexico: One of the So-Called Cites of Cibola*, Southwest Museum, Los Angeles, p. 20. [HE78]

<sup>60</sup>Hodge, Frederick. *History of Hawikuh, New Mexico: One of the So-Called Cites of Cibola*, Southwest Museum, Los Angeles, p. 111, note 32. [HE78]

<sup>61</sup>Hordes, p. 4, n. 1.

that, “In this province we saw a quantity of Castile Flax, which seems to grow in the fields without being planted,” perhaps referring to fields of corn stalks still remaining from the previous season. Espejo continued in his narrative that the Zunis possessed “quantities of game; they wear cotton blankets or others which look like coarse linen,” and on his departure, he reported that the Zunis asked them to return with more Spaniards, “for in this expectation they were planting a large corn crop that year in order to have enough for everybody.”<sup>62</sup>

Diego Pérez de Luxán’s account of the Espejo expedition also provides details on the Zunis’ interior lands. Luxan described the party’s passage through the lava fields (“bad lands without water”) to the east of Zuni country, described the “large pine forest” (Zuni Mountains) which they passed through before reaching El Morro, and then came into the Zuni valley, where Luxan called the Zuni River “a small arroyo with water.” He also described the six villages then permanently occupied by the Zunis and said the people had cloth made of yucca fiber, but said they gathered “little cotton because the land is cold.” “At present,” said Luxan, “I merely wish to say that if there are good mines this will be the best land ever discovered, because the people of these provinces are industrious and peaceful. There are many mountains, lands for cultivation, and the natives are great farmers.” At Hawikku he reported that planting of the fields was taking place (it was then Easter time), and that the people there spun cotton and wove cloth. He went on:

In this pueblo. . . there is a large marsh with many water holes which enables the natives to irrigate some fields of corn. There are two canals with water and ample facilities for building a city or

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<sup>62</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 213, 225-226, and 228. [HE167]

town, as there are abundant woods and good lands. The people are extremely healthy, for neither in this province nor in the others we crossed have we seen any sick or crippled persons, but only many old ones.<sup>63</sup>

The Espejo and the Luxán accounts are, of course, primary accounts, and provide convincing evidence that the Zunis were engaging in extensive agricultural operations, which did require canals for irrigation. In my notes 6 and 8 on pages 2 and 3 of my initial report I also cite two secondary publications. Primary sources are very important in establishing historical facts, but it is also important to consult with other experts who have examined the pertinent issues to see what conclusions they made.

Keith Kintigh authored *Settlement, Subsistence, and Society in Late Zuni Prehistory*, in which he cited historical, anthropological and archaeological evidence in order to establish Zuni subsistence in late Zuni prehistory. Like Hodge, Kintigh, who worked for many years in the Zuni area, stated that Zuni aboriginal canal irrigation “is suggested in chronicles deriving from Coronado’s expedition . . .”<sup>64</sup>

Vorsila L. Bohrer did field work at Zuni in the 1950s and provided an extensive ethnobotanical report on Zuni agriculture. Since it is the report of her first-hand work at Zuni it is mainly a primary document. She described irrigated agriculture around the springs at Ojo Caliente, Nutria and Pescado; floodwater irrigation in surrounding lands; and “waffle gardens”

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<sup>63</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 183-186. [HE167]

<sup>64</sup>Keith W. Kintigh. *Settlement, Subsistence, and Society in Late Zuni Prehistory*, The University of Arizona Press, Tucson, 1985, p. 96. [HE14]

along the north bank of the Zuni River.<sup>65</sup> Bohrer listed the following plants as being cultivated before contact with the Spaniards: corn of many varieties, twenty varieties of beans, seven varieties of squash and pumpkin, three kinds of gourds, cotton and amaranth. Both Bohrer and Kintigh give credence to the argument of Karl A. Wittfogel and Esther S. Goldfrank, who argue that canal-irrigated agriculture was an indigenous technique at Zuni.<sup>66</sup>

Historian Karl A. Wittfogel and Anthropologist Esther S. Goldfrank summarized much of the evidence bearing on pre-contact canal irrigation at Zuni (they overlooked the primary Espejo accounts). They quoted from Matilda Coxe Stevenson, who described canals she observed at Ojo Caliente in the late 19<sup>th</sup> century. They also described Frank Hamilton Cushing's observations of Zuni agriculture and ditches in an 1884 publication. They concluded:

Before the Franciscan Friars introduced wheat to the pueblo of Zuni, its inhabitants used irrigation in cultivating their indigenous crops of corn and vegetables, as had the other pueblos. In 1539, the first European in the Southwest, Friar Marco, found the Indians of the Gila River region, who had many contacts with the Pueblos, using irrigation generously. ("The whole land is irrigated.") The "stream" near one of the Zuni pueblos, which was crossed by a surviving member of the Friar's vanguard was, Hodge believes, "an irrigation canal, no doubt."<sup>67</sup>

It is apparent, then, that the materials I cited in footnotes 6, 7 and 8 on pages 2-3 of my

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<sup>65</sup>Bohrer, Vorsila L. "Zuni Agriculture," (with sections by Lawrence Kaplan and Thomas W. Whitaker) *El Palacio*, Vol. 67 (1960), p. 181. [HE164]

<sup>66</sup>Bohrer, Vorsila L. "Zuni Agriculture," (with sections by Lawrence Kaplan and Thomas W. Whitaker) *El Palacio*, Vol. 67 (1960), pp. 181-202. [HE164]

Karl A. Wittfogel and Esther S. Goldfrank, "Some Aspects of Pueblo Mythology and Society," *Journal of American Folklore*, Vol. 56, (1943), pp. 20-21. [HE165]

Keith W. Kintigh. *Settlement, Subsistence, and Society in Late Zuni Prehistory*, The University of Arizona Press, Tucson, 1985, p. 96. [HE14]

<sup>67</sup>Karl A. Wittfogel and Esther S. Goldfrank, "Some Aspects of Pueblo Mythology and Society," *Journal of American Folklore*, Vol. 56, (1943), pp. 20-21, quoted at 21. [HE165]

initial report do, in fact, provide very convincing evidence to support the conclusion that Zunis had canal irrigation prior to contact with the Spaniards. I cited primary accounts by Coronado, Fray Marcos, Antonio de Espejo, and Diego Pérez de Luxán (who specifically described canals). The Hodge, Bohrer and Kintigh contained both primary materials and secondary critical observations. Wittfogel and Goldfrank provide a synthesis of works on the issue and cite the additional primary sources of Stevenson and Cushing. Pages 19 and 20, footnotes 51 and 52, of my initial report, which were also criticized by Dr. Hordes, at p. 4, include the same citations described above: Hodge, Kintigh, Bohrer, Wittfogel and Goldfrank.

Contrary to Dr. Hordes' assertion, using the available documentary record, I demonstrated that primary evidence, secondary analysis, and synthesis of available information all point to the existence of Zuni extensive pre-contact agriculture and the use of canals or ditches to feed water to fields. Accordingly, my conclusions related to Zuni irrigation in the Spanish and Mexican periods were based on primary historical documents as well as other sources. Dr. Hordes was mistaken to suggest otherwise.

In 1987 the United States Claims Court issued a ruling on the extent of Zuni "Aboriginal Land and Title; Exclusive Use and Occupancy." While I did not rely on the Findings issued by Judge Judith Ann Yannelo in Court of Claims Docket 161-79L, it is interesting to note that Judge Yannelo concluded that members of the 1583 Espejo expedition reported Zuni irrigation of crops, and that "Since prehistoric times, through and including 1846, the Zuni people farmed in all of the well-watered drainages throughout the Zuni area."<sup>68</sup>

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<sup>68</sup>Yannelo, Judge Judith Ann. "Indian Claims: Extent of Aboriginal Land and Title; Exclusive Use and Occupancy," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas:

The primary documentary evidence from this period therefore demonstrates with considerable clarity that Dr. Hordes is incorrect to suggest the Zunis did not have farming villages and ranchos located throughout their extensive territory. As discussed in detail later in this rebuttal, this evidence also demonstrates conclusively that the pueblos were not located on four square leagues, nor was there ever any attempt on the part of the Spanish authorities to limit the Zunis to anything less than what they could effectively use and occupy.

Additional documentary records throughout the Spanish and Mexican periods indicate continuing extensive cultivation of corn. One report in the latter part of the eighteenth century indicated cultivation of approximately 16,000 acres of corn in the immediate vicinity of Zuni alone, and not including the ranchos.

After the Reconquest of 1692, and during the early eighteenth century the Zunis consolidated into one central village, Halona:wa (today's Zuni), and established seasonal farming villages near their old major villages, including the farming villages at Nutria, Pescado, and Ojo Caliente. Zunis had acquired several important crops from Spaniards, including wheat and peaches. Wheat was grown at the farming villages, using the traditional canal system already in place, and orchards of peaches were planted and cultivated in sandy areas at the bases of mesas around the village of Zuni, using a variety of floodwater management techniques. The acquisition of farm animals, especially the burro, allowed the Zunis to cultivate fields even further from the central Zuni village.

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University Press of Kansas, 1995, pp. 241, 253 and quoted at 270. [HE480]

## Early United States Period

Dr. Hordes also asserted that my work covering the early United States territorial period, 1846 to 1877 was “based primarily on published secondary sources.”<sup>69</sup> This is, again, a inaccurate characterization of my work. My analysis of the period 1846 to 1877 was based on primary materials, including the following:

diary of Jacob S. Robinson, with the Santa Fe Expedition, 1846,<sup>70</sup>

John T. Hughes eye-witness account of the Santa Fe Expedition, 1848,<sup>71</sup>

“Navajo Expedition,” *The Republican*, October 16, 1847,<sup>72</sup>

Boyakin Order No. 41, July 1, 1848,<sup>73</sup>

“Articles of Convention . . .,” July 1, 1848,<sup>74</sup>

Journal of James H. Simpson during the Navajo Expedition of 1849,<sup>75</sup>

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<sup>69</sup>Hordes, pp. 93-94.

<sup>70</sup>Jacob S. Robinson. *A Journal of the Santa Fe Expedition Under Colonel Doniphan*; Princeton University Press; Princeton; 1932, pp. 53-54. [HE179]

<sup>71</sup>Hughes, John T. *Doniphan's Expedition; Containing an Account of the Conquest of Mexico...* Cincinnati: J.A. & U.P. James, 1848, reprinted in:

William Elsey Connelley. *Doniphan's Expedition and the Conquest of New Mexico and California*, Bryant and Douglas Book and Stationery Co., 1907 (which reprints the report of John T. Hughes first published in 1848), pp. 305-314. [HE96]

<sup>72</sup>“Navajo Expedition,” *The Republican*, October 16, 1847. [HE377]

<sup>73</sup>Boyakin Order No. 41, July 1, 1848, Hodge-Cushing Collection, Southwest Museum, Los Angeles, California. [HE182]

<sup>74</sup>“Articles of Convention . . .,” July 1, 1848, Hodge-Cushing Collection, Southwest Museum. These documents were given to Zuni Governor Pino, who saved them meticulously, along with other documents he obtained over his long career. Eventually they became a part of the Southwest Museum collection; and fortunately so, for the United States authorities apparently did not retain their copies of these important documents. [HE183]

<sup>75</sup>Frank McNitt. *Navaho Expedition: Journal of a Military Reconnaissance from Santa Fe, New Mexico to the Navaho Country Made in 1849 by Lieutenant James H. Simpson*; University of Oklahoma Press; Norman; 1964; pp. 113, 120, 122-125, and 131-132. [HE28]

the official correspondence of James S. Calhoun, 1849-1851,<sup>76</sup>

Richard Kern, Notes of a Military Reconnaissance, 1849,<sup>77</sup>

Colonel George Archibald McCall, "A Military View," 1850,<sup>78</sup>

Chandler to McLaws, April 24, 1851,<sup>79</sup>

Dodge to Munroe, May 12, 1851,<sup>80</sup>

the journal of Josiah M. Rice, 1851,<sup>81</sup>

Richard H. Kern diaries during Sitgreaves expedition, 1851,<sup>82</sup>

Captain Lorenzo Sitgreaves report of 1853,<sup>83</sup>

Diaries of François Xavier Aubry, 1853-1854,<sup>84</sup>

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<sup>76</sup>Abel, Annie Heloise (ed.). *The Official Correspondence of James S. Calhoun*; Washington; Government Printing Office; 1915; pp. 30-31, 37-39, 48, 56, 78-79, 249-250, 262-265, and 292-294. [HE97]

<sup>77</sup>Kern, Richard H.. "Notes of a Military Reconnaissance of the Pais de los Navajos in the Months of August and September, 1849," H. E. Huntington Library, MSS. #4274, 1849, pp. 60-61 and 65. [HE186]

<sup>78</sup>Frazer, Robert W. (ed.). *New Mexico in 1850: A Military View*; University of Oklahoma Press; Norman, Oklahoma; 1968; pp. 160-161. [HE187]

<sup>79</sup>Chandler to McLaws, April 24, 1851, Records of the War Department, Department of New Mexico, Letters Received, File Mark C-38/1851, Record Group 98, typed copy submitted to the Indian Court of Claims, Docket 229. [HE189]

<sup>80</sup>Dodge to Munroe, May 12, 1851, Records of the War Department, Department of New Mexico, Letters Received, File Mark D-1/1851, Record Group 98, typed copy submitted to the Indian Court of Claims, Docket 229. [HE190]

<sup>81</sup>Richard H. Dillon (ed.). *Journal of Private Josiah M. Rice, 1851: A Cannoneer in Navajo Country*; Old West Publishing Company; 1970; p. 64. [HE192]

<sup>82</sup>Kern, Richard H.. Untitled diaries written while accompanying the Sitgreaves expedition of 1851, 2 vols., MSS., H. E. Huntington Library MSS. #4277, entry for Sunday the 31st. [HE191]

<sup>83</sup>Captain Lorenzo Sitgreaves. *Report on an Expedition Down the Zuni and Colorado Rivers*; 32nd Congress, 2nd Session, Executive Document No. 59 (originally published Washington; Robert Armstrong, 1853); reprinted by Rio Grande Press, Inc.; Chicago; 1962; pp. 5-6 and 6 and 35. [HE193]

<sup>84</sup>Ralph P. Bieber and Averam B. Bender. *Exploring Southwestern Trails*; The Arthur H. Clark Company; Glendale, California; 1938(reprinted by Porcupine Press, Inc., 1974 in Philadelphia); pp. 372-373. [HE194]

Lieutenant A. W. Whipple, 1853-1854,<sup>85</sup>

Baldwin Möllhausen, 1858,<sup>86</sup>

A. W. Whipple, Thomas Ewbank and Wm. W. Turner, Report on Tribes, 1855,<sup>87</sup>

Colonel Joseph King Fenno Mansfield, the Department of New Mexico, 1853,<sup>88</sup>

Kendrick to Meriwether, August 22, 1856,<sup>89</sup>

Lt. Col. J. H. Eaton, "Description of...New Mexican Tribes," 1854,<sup>90</sup>

Report of Edward Fitzgerald Beale and journal of May Humphreys Stacy, 1857-1858,<sup>91</sup>

John Udell Journal, 1857,<sup>92</sup>

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<sup>85</sup>"Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean . . . , 1853-1854," 33rd Congress, 2nd Session, Executive Document #78, Vol. III, pp. 65-66, 66n, 67, 69, and 72. [HE19]

Grant Foreman. *A Pathfinder in the Southwest: The Itinerary of Lieutenant A. W. Whipple During His Explorations For a Railway Route From Fort Smith To Los Angeles In The Years 1853 & 1854*; University of Oklahoma Press; Norman Oklahoma; 1941; pp. 136-140, 144-145 and 148-149. [HE20]

<sup>86</sup>Baldwin Möllhausen. *Diary of a Journey from the Mississippi to the Coasts of the Pacific, with a United States Government Expedition*; translated by Mrs. Percy Sinnett, Vol. I; Longman, Brown, Green, Longmans, & Roberts; London; 1858; pp. 84-85, 87-92, and 95-98. [HE11]

<sup>87</sup>Whipple, A. W., Thomas Ewbank, and Wm. W. Turner "Report Upon the Indian Tribes," 33rd Congress, 2nd Session, Senate Executive Document #78 (Washington, D.C.; 1855), pp. 39-40. [HE195]

<sup>88</sup>Frazer, Robert W. (ed.). *Mansfield on the Condition of the Western Forts*; University of Oklahoma Press; Norman, Oklahoma; 1963; pp. 23 and 47. [HE196]

<sup>89</sup>Kendrick to Meriwether, August 22, 1856, New Mexico Superintendency, Letters Received, microfilm. [HE197]

<sup>90</sup>Lt. Col. J. H. Eaton. "Description of the True State and Character of the New Mexican Tribes," in *Information Respecting the History, Condition and Prospects of the Indian Tribes of the United States: Collected and prepared under the Direction of the Bureau of Indian Affairs by Henry R. Schoolcraft*; Part IV; Philadelphia; Lippincott, Grambo & Company; 1854; p. 221. [HE198]

<sup>91</sup>Lewis Burt Lesley (ed.). *Uncle Sam's Camels: The Journal of May Humphreys Stacey Supplemented by the Report of Edward Fitzgerald Beale (1857-1858)*, Cambridge, Harvard University Press, 1929, pp. 88-89, 188-190 and 277-278. [HE102]

<sup>92</sup>John Udell. *John Udell Journal: Kept During a Trip Across the Plains Containing an Account of the Massacre of a Portion of his Party by the Mohave Indians in 1859* [misdated]; with an introduction by Lyle H. Wright; N.A. Kovach; Los Angeles; 1946; pp. 24-25. [HE103]

William P. Floyd Journal, 1858-1859,<sup>93</sup>

William A. Bell, 1870,<sup>94</sup>

Special Agent W. F. M. Arny, 1870,<sup>95</sup>

Francis Klett, 1874,<sup>96</sup>

First Lt. George M. Wheeler, 1875,<sup>97</sup>

Correspondence of Zuni Governor Pedro Pino, 1875-1877,<sup>98</sup>

*Santa Fe Weekly New Mexican*, October 5, 1875,<sup>99</sup>

Annual Report of Agent Ben Thomas, 1875,<sup>100</sup>

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<sup>93</sup>William P. Floyd. "Journal kept by the surgeon of Edward Fitzgerald Beale's wagon road expedition, describing his trip from Virginia to Fort Smith, and thence to the Colorado River"; September 27, 1858-May 1, 1859; Typewritten copy made by Carroll W. Dodge; Manuscript #19334; Huntington Library; pp. 28-29. [HE199]

<sup>94</sup>William A. Bell. *New Tracks in North America. A Journal of Travel and Adventure Whilst Engaged in the Survey for a Southern Railroad to the Pacific Ocean During 1867-8*; Horn and Wallace Publishers; Albuquerque; 1965 (originally published by Chapman and Hall; London; 1870); pp. 164-167. [HE203]

<sup>95</sup>Lawrence R. Murphy (ed.). *Indian Agent in New Mexico: The Journal of Special Agent W. F. M. Arny*, 1870; Stagecoach Press; Santa Fe; 1967; pp. 31-32. [HE105]

<sup>96</sup>Francis Klett. "The Zuni Indians of New Mexico," *The Popular Science Monthly*, May-October, 1874 (V), pp. 580 and 585. [HE205]

<sup>97</sup>George M. Wheeler. *Annual Report Upon the Geographical Explorations and Surveys West of the One Hundredth Meridian . . . .: Appendix LL*; Washington, D.C.; Government Printing Office; 1875; p. 134. [HE207]

<sup>98</sup>Thomas to Gobernador del Pueblo de Zuni, June 14, 1875, Record Group 75, Copies of Letters Sent 12/1/74-2/12/76, Denver Federal Center (the original of this letter is housed in the Hodge-Cushing Collection, Southwest Museum). [HE211]

Quartermaster to Pino, April 22, 1875, Hodge-Cushing Collection, Southwest Museum. [HE212]

Armijo to Pino, August, 1875, Hodge-Cushing Collection (#24), Southwest Museum. [HE214]

Armijo to Pino, September 16, 1875, Hodge-Cushing Collection (#24), Southwest Museum. [HE215]

Thomas to Governor of Zuni, June 27, 1877, Copies of Miscellaneous Letters Sent, Pueblo Indian Agency, Denver Federal Center. [HE223]

<sup>99</sup>*Santa Fe Weekly New Mexican*, October 5, 1875. [HE213]

<sup>100</sup>*Annual Report of the Secretary of the Interior, 1875*, 44th Congress, 1st Session, House Executive Document, p. 586. [HE216]

R. H. Smith. “Among the Zunis,” 1876,<sup>101</sup> and

Ammon Tenney, Journal, 1875-1876.<sup>102</sup>

Despite the misrepresentation of my work by Dr. Hordes, as can be seen from the above, my history of Zuni water uses from 1846 to 1876 was almost entirely based on primary sources. Indeed, there are a number of other primary sources I considered that also support my conclusions in my initial report that, during this early United States’ period, the Zuni used water resources, and a variety of techniques to irrigate crops, over a broad area – including but not limited to the areas subsequently included within what is now the Zuni Reservation. In the interests of brevity and avoidance of cumulative effect, I did not include references to these sources in my initial report. However, I provided them to the United States, which included them in its July 30, 2008 United States’ Initial Disclosures.<sup>103</sup>

### The “Four Square League” Argument

Dr. Hordes argues that Spain limited the Zunis to four square leagues. He does not cite a single legitimate document which in any way indicates Spain issued, ordered or even suggested such a limitation on Zuni. All the documents he cites relate to pueblos much closer to where Spaniards were settled in New Mexico. This conclusion of Dr. Hordes is inconsistent with

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<sup>101</sup>R. H. Smith. “Among the Zunis,” *Juvenile Instructor*, September 1, 1876, p. 202, and October 1, 1876, provides the quote on pp. 223-224. [HE217]

<sup>102</sup>Ammon Tenney. “Journal of Ammon Tenney. October 20, 1875-September 10, 1876,” Mss., L.D.S. Church Historian’s Office; Salt Lake City, Utah. [HE218]

<sup>103</sup>For example, see:

Samuel Woodworth Cozzens. *The Marvellous Country*; Ross & Haines, Inc.; Minneapolis; 1967 (originally published by Lee and Shepard; Boston; 1876) [HE209], disclosed on page 16 of the United States’ Initial Disclosures.

experts' understanding of Spanish law.

According to Dr. Hordes, the historical record shows that “the king, represented by his governor in Santa Fe, issued grants of land to each Pueblo in the territory.”<sup>104</sup> He provides no citation to support this conclusion, and in fact, two pages later, admits that “no formal documents granting lands to the Pueblos of New Mexico have ever surfaced.”<sup>105</sup> He also admitted that, further, there is no record of any attempt by Spanish authorities to measure a four square league boundary at Zuni.<sup>106</sup> The sole “Spanish” document linking Zuni to any four square league grant is a forgery, as Dr. Hordes admits.<sup>107</sup>

The so-called “Cruzate Grants” have been known to be forgeries for a very long time. The “grants” documents for a number of different pueblos first appeared after 1840. We know these “grants,” including the purported Zuni document, are forgeries for several reasons. The countersignature on the documents is Don Pedro Ladron de Guitara, when it should be Pedro Ortiz Niño de Guevara. Both the signatures of Ladron de Guitara and of “Captain General Don Domingo Jironza y Petriz de Cruzate” have been judged counterfeit. The purported grant to Laguna is dated ten years before the pueblo was founded. Importantly, some language in the Cruzate documents, especially the ones of Santo Domingo and Laguna, seems to have been lifted from the book *Ojeada Sobre Nuevo Mejico*, written by Antonio Barreiro in 1832.<sup>108</sup> Sandra K.

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<sup>104</sup>Hordes, p. 9.

<sup>105</sup>Hordes, p. 11.

<sup>106</sup>Hordes, pp. 13-14.

<sup>107</sup>Hordes, p. 11, footnote 14.

<sup>108</sup>Hart, E. Richard. *Pedro Pino: Governor of Zuni Pueblo, 1830-1878*. Logan, Utah: Utah State University Press, 2003, pp. 50-51, in which I summarize the evidence of the forgeries and cite the pertinent studies. [HE478]

Mathews-Lamb focused her 1998 PhD dissertation on “The ‘Nineteenth-Century’ Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?” She reported that the Cruzate documents also have a watermark on the paper that was only found on documents dated from 1843 to 1862.<sup>109</sup>

In fact, scholars agree that Spanish law and policy protected Indian lands. According to Mathews-Lamb, Diego de Vargas, who became governor in 1691 and led the Reconquest, “made no mention of any Pueblo grants given to him by Cruzate to deliver to the Pueblo Indians.” Vargas, continued Mathews-Lamb, “did demand respect for Pueblo rights, as did many subsequent governors.”<sup>110</sup> The *Recopilación de leyes los Reinos de las Indias*, first appeared in 1681 and “was a compilation of published laws for use by the colonial administrators and judges in the colonies.” Mathews-Lamb pointed out that

According to numerous Spanish laws recorded in the *Recopilación de leyes los Reinos de las Indias*, lands belonging to the Indians were to be respected.<sup>111</sup>

Scholar S. Lyman Tyler compiled and edited an English translation of the *Recopilación* in 1980.<sup>112</sup> Tyler drafted a paper titled “The Zuni Indians Under the Laws of Spain, Mexico, and the United States,” which I included in my 1995 book *Zuni and the Courts: A Struggle for*

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<sup>109</sup>Mathews-Lamb, Sandra K. “The ‘Nineteenth-Century’ Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?,” PhD Dissertation in History, University of New Mexico; May, 1998, p. xv.

<sup>110</sup>Mathews-Lamb, Sandra K. “The ‘Nineteenth-Century’ Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?,” PhD Dissertation in History, University of New Mexico; May, 1998, p. 12.

<sup>111</sup>Mathews-Lamb, Sandra K. “The ‘Nineteenth-Century’ Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?,” PhD Dissertation in History, University of New Mexico; May, 1998, p. 13.

<sup>112</sup>Tyler, S. Lyman (editor and Compiler). *Spanish Laws Concerning Discoveries, Pacifications, and Settlements Among the Indians, with an introduction and the first English translation of the New Ordinances of Philip II, July 1573, and of Book IV from the Recopilación de Leyes de los Reinos de las Indias relating to these subjects*. Salt Lake City: American West Center (University of Utah), 1980.

*Sovereign Land Rights*. Tyler concluded that “Under Spanish law, Pueblo lands effectively used by the Indians were supposed to be protected.”<sup>113</sup> He continued, quoting Law 18 of the *Recopilación* which described such protection

We order that the sale, benefit and composición of lands be managed with such care that more than all the lands that belong to the Indians shall be left to them, to the individuals as well as the communities, and also the waters and irrigations. The lands in which they have created ditches, or any other benefit by which through their personal industry they may have fertilized them, shall be reserved for them above all; and in no case may they be sold or given away.<sup>114</sup>

Further, Spanish law indicated that local Indian officers and government were to receive respect from Spanish authorities.<sup>115</sup>

Mathews-Lamb agreed, concluding that

According to numerous Spanish laws recorded in the *Recopilación de leyes los Reinos de las Indias*, lands belonging to the Indians were to be respected.<sup>116</sup>

She reported that noted scholars have argued that they could find no reference “which stipulated that a pueblo should have one league of land in each cardinal direction from the church’s cross or cemetery.”

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<sup>113</sup>Hart, E. Richard (ed.). *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University of Kansas Press, 1995, p. 65. [HE480]

<sup>114</sup>Tyler, S. Lyman (editor and Compiler). *Spanish Laws Concerning Discoveries, Pacifications, and Settlements Among the Indians, with an introduction and the first English translation of the New Ordinances of Philip II, July 1573, and of Book IV from the Recopilación de Leyes de los Reinos de las Indias relating to these subjects*. Salt Lake City: American West Center (University of Utah), 1980, p. 166.

<sup>115</sup>Tyler, S. Lyman. “The Zuni Indians Under the Laws of Spain, Mexico, and the United States,” *Zuni and the Courts: A Struggle for Sovereign Land Rights* (edited by E. Richard Hart). Lawrence, Kansas: University of Kansas Press, 1995, p. 61. [HE480]

<sup>116</sup>Mathews-Lamb, Sandra K. “The ‘Nineteenth-Century’ Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?,” PhD Dissertation in History, University of New Mexico; May, 1998, p. 13.

Instead, customary law seems to concede that the Pueblos had rights to as much land as they utilized...<sup>117</sup>

Dr. Hordes was a member of Mathews-Lamb's PhD committee and approved of and signed her dissertation. Mathews-Lamb, as stated above, concluded that "customary law seems to concede that the Pueblos had rights to as much land as they utilized..."<sup>118</sup> If such was the case, and since there were no land grants to the pueblos before the 1740s, she raised the following question.

If no Spanish grants for Pueblo lands existed before the 1740s, upon what basis did Pueblo Indians claim ownership to land? Legal precedents seem to regulate Pueblo boundaries. In the Spanish period, some argue, land belonging to Pueblos was determined by default.

It is interesting that to support the previous quotation she cited a 1996 interview with Stanley M. Hordes.<sup>119</sup> These conclusions seem to be at odds with Dr. Hordes 2010 claim that Zuni was in some way limited to four square leagues.

While there is no evidence to support a conclusion that the pueblos were given four square league grants, there are indications that in the interior pueblos, "especially in areas heavily sought after or populated by Spaniards,"<sup>120</sup> Spanish authorities maintained that each pueblo was entitled, at the minimum, to four square leagues. John L. Kessell explained,

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<sup>117</sup>Mathews-Lamb, Sandra K. "The 'Nineteenth-Century' Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?," PhD Dissertation in History, University of New Mexico; May, 1998, p. 14.

<sup>118</sup>Mathews-Lamb, Sandra K. "The 'Nineteenth-Century' Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?," PhD Dissertation in History, University of New Mexico; May, 1998, p. 14.

<sup>119</sup>Mathews-Lamb, Sandra K. "The 'Nineteenth-Century' Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?," PhD Dissertation in History, University of New Mexico; May, 1998, p. 23.

<sup>120</sup>Mathews-Lamb, Sandra K. "The 'Nineteenth-Century' Cruzate Grants: Pueblos, Peddlers, and the Great Confidence Scam?," PhD Dissertation in History, University of New Mexico; May, 1998, p. 16.

The famous “pueblo league” was a legal fiction. Before the eighteenth century, the Pueblo Indians seem to have been entitled under Spanish law to whatever lands they habitually occupied or used. Sometime after 1700, however, there evolved the doctrine of a given league, a sort of recognized minimum right of the Pueblos.<sup>121</sup>

There were no Spanish or Mexican intruders in Zuni territory, no settlers, or other interlopers. Even the Zuni mission was abandoned periodically, and only visited occasionally after 1821.<sup>122</sup> At times two or three soldiers guarded the priests, but for the most part during the Spanish and Mexican periods the Zunis were almost completely isolated from Spanish authority.

Dr. Hordes cannot cite a single legitimate document from the Spanish period that even mentions a Zuni grant. The Cruzate document has been shown to be a forgery. The only other Spanish period document cited by Dr. Hordes in this section of his paper is Domínguez, and he mischaracterizes what Domínguez said. Domínguez reported seeing farmlands within one league on all sides of the central Zuni pueblo. He said nothing whatsoever about a four square league grant, yet Dr. Hordes characterizes Domínguez’ statement as supporting the conclusion that Zuni had a four square league grant.<sup>123</sup> This is simply untrue. Domínguez’ statement suggests Zuni had farmland within a 17,000 acre area, but says nothing about a four square league grant.

Domínguez does not in any way limit the Zunis to four square leagues. In fact, he described Zuni agricultural pursuits three leagues away. Domínguez said that the agricultural lands assigned to the convent were very sandy, “and in the course of time have become a sort of

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<sup>121</sup>Kessell, John L. *Kiva, Cross, and Crown: The Pecos Indians and New Mexico, 1540-1840*. Washington, D. C.: National Park Service, 1979, p. 439.

<sup>122</sup>After 1821 priests made occasional visits to Zuni. See, Hart. [HE151].

<sup>123</sup>Hordes, p. 14.

clay, and therefore useless.” He continued.

Therefore, at present the Indians sow for the convent some very small patches among others they have to the east on the small level sites there are near that little spring I mentioned 3 leagues before the convent, and something is harvested from them.<sup>124</sup>

One of the members of the 1776 Domínguez/Escalante party was Bernardo Miera y Pacheco, a cartographer. In 1779 he completed a *plano* which showed the “Alcaldia de Zuñi,” of which I will have more to say later.

In the meantime, in 1778 the Governor of New Mexico, Don Juan Bautista de Anza, received reports of a drought in the Zuni and Hopi area. The Governor dispatched Zuni’s missionary to the Hopis to see if they would now be willing to accept Spanish authority and aid. But Fray Garcia was unable to make the entire journey to Hopi because the lack of rain had left no forage for his animals and no watering holes available in early November 1779.<sup>125</sup>

The effects of the devastating drought first reported in 1778 were reported in more detail by Governor Anza himself, who visited the Zunis’ country in September of 1780. His expedition left Santa Fe on the tenth and by the fifteenth had passed through “the canyon and sierra called Zuni” and was camped at El Morro. They then marched six leagues to Ojito [Pescado Springs], where they remained for a night. When they reached Zuni, Anza reported the drought had left the pueblo in “most deplorable” state, because most of their crops had failed because of lack of rain for two years. He said, “The preceding [conditions] have forced them to continue living at

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<sup>124</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; pp. 200-201. [HE89]

<sup>125</sup>Alfred Barnaby Thomas. *Forgotten Frontiers: A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Governor of New Mexico, 1777-1787*; University of Oklahoma Press; Norman, Oklahoma; 1969; pp. 166-171. [HE85]

the ranches where they pasture their fairly large flocks of sheep.” He also said quite a number of Zunis had taken refuge with the interior pueblos.<sup>126</sup>

Three years later, in 1783, Fray Juan Agustín de Morfi visited Zuni, as part of what must have been a general inspection of the Spanish New Mexican missions. His report mentions the Zuni Mountains and includes a description of Halona:wa. “It rests in a flat plain with a spring for the supply of the pueblo. At a league distant from it runs an arroyo.” Describing the industry of the Zunis, Morfi wrote, “They possess two hundred and ninety-five *fanegas* of sowing and they had fifteen thousand three hundred and seventy-six head of sheep (15,376).”<sup>127</sup>

The Zunis would have required far more than four square leagues for their fifteen thousand sheep. In fact the evidence indicates that the Zunis required, in their semi-arid landscape, hundreds of thousands of acres of grazing land. My own conclusion about the extent of Zuni grazing, based on numerous interviews I conducted, as well as primary sources from the 18<sup>th</sup> and 19<sup>th</sup> centuries is that Zunis grazed their flocks of sheep and turkeys as far south as the Little Colorado, north to the Puerco River, west to beyond the mouth of the Zuni River and east

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<sup>126</sup>Alfred Barnaby Thomas. *Forgotten Frontiers: A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Governor of New Mexico, 1777-1787*; University of Oklahoma Press; Norman, Oklahoma; 1969; pp. 229-231, provides the quotation. [HE85]

Twitchell, Ralph E. (ed. and trans.) “Colonel Juan Bautista de Anza, Governor of New Mexico, Diary of his Expedition to the Moquis in 1780,” *Historical Society of New Mexico*, No. 21, also provided an early translation of this journal. [HE174]

<sup>127</sup>Alfred Barnaby Thomas. *Forgotten Frontiers: A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Governor of New Mexico, 1777-1787*; University of Oklahoma Press; Norman, Oklahoma; 1969; pp. 90 and 106-107. [HE85]

Ward Alan Minge. “Zuni in Spanish and Mexican History,” written testimony submitted to the United States Court of Claims in behalf of the Zuni Indian Tribe; *Zuni Indian Tribe of New Mexico v. United States*, Docket 161-79L, 1980, p. 67. [HE88]

to the Malpais. This was my testimony in United States Claims Court Docket 161-79L,<sup>128</sup> which was published in *A Zuni Atlas*, published in 1985.<sup>129</sup> In the decision of the court, which came in 1987 (obviously I did not rely on any findings of the court), Judge Yanello said that,

As of 1846, Zunis tended extensive flocks of domestic animals which were herded over a large portion of the [Zuni aboriginal] claim area. Before contact with Europeans, the Zunis tended extensive flocks of turkeys which were herded over a large area. Turkey feathers were used for clothes, and the birds themselves were used for food during times of need. The Zunis later obtained livestock from the Spaniards including sheep, cattle, horses, burrow, and other domestic animals. With the incorporation of livestock into their economic system, the Zunis began using extensive lands within their territory for grazing. The sheep industry was particularly well established by 1846, providing wool for weaving, as well as meat for food. During the summer the Zunis grazed their sheep in the grasslands as far as 70 miles from Zuni Pueblo. In the winter and during the spring lambing, the Zunis herded their sheep closer to Zuni Pueblo and the farming villages. Traditionally, flocks were rotated from one grassland to another to conserve range land and were often allowed to graze in agricultural fields after harvest.<sup>130</sup>

As noted above, Bernardo Miera y Pacheco, a cartographer and artist, drafted a map of the Spanish New Mexican *alcaldias* (rural jurisdictions with local authorities appointed by the governor<sup>131</sup>) including the “*Alcaldia de Zuñi*.” While this is not a map of Zuni territory, the Zuni

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<sup>128</sup>E. Richard Hart, "Boundaries of Zuni Land: With Emphasis on Details Relating to Incidents Occurring 1846-1946," Vol. I, Prepared for the Pueblo of Zuni, *Zuni Indian Tribe v. United States*, Docket 161-79L, before the United States Court of Claims, March, 1980, Volume I, pp. 8-11; Volume II, pp. 45-48 and Map 3.

<sup>129</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 40-42 and 143-144. [HE479]

<sup>130</sup>Hart, E. Richard (ed.). *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University of Kansas Press, 1995, pp. 269-270, providing a transcript of the findings in Docket 161-79L. [HE480]

<sup>131</sup>Espinosa, J. Manuel (trans. and ed.). *The Pueblo Indian Revolt of 1696 and the Franciscan Missions in New Mexico: Letters of the Missionaries and Related Documents*. Norman: University of Oklahoma Press, 1988, p. 10.

Alcaldia's eastern boundary is shown beyond the Zuni Mountains, the southern boundary well to the south of El Morro, and the northern boundary labeled "tierra de Messas y fronteras de la Provincia de Nabajo." Miera drafted other maps of the Zuni area showing the locations of other Zuni farming villages.<sup>132</sup> Judge Yanello correctly characterized the Miera y Pacheco plano.

The area controlled by the Zunis is not indicated, particularly the extensive area needed to graze the over 15,000 sheep counted as Zuni-owned...The Plano indicated the eastern boundary of the Alcaldia of Zuni to be the lava flow between Acoma and Zuni. The other two lines indicate northern and southern borders of the Alcaldia, the distance between them about thirty miles. The western boundary is completely open as far as the coast of California.<sup>133</sup>

Dr. Hordes also cites the depositions of ethnologist Frank Hamilton Cushing and former Zuni Governor Pedro Pino.<sup>134</sup> In my biography of Pedro Pino, I described these documents at some length. They were dated 1880. The Zuni Cruzate documents are first reported in 1875. In my opinion neither the depositions nor the forged Zuni Cruzate documents provide evidence to support the notion that there was ever any attempt to restrict the Zunis to four square leagues. In fact, as I pointed out in my biography of him, Governor Pedro Pino had repeatedly visited Santa Fe to meet with New Mexican officials in the 1850s', 60's and 70's and never mentioned any grant, four square league or otherwise, and assumed throughout the period that the United States

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<sup>132</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; p. 200. [HE89]

Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 40-42 and 143-144. [HE479]

<sup>133</sup>Yanello, Judge Judith. "Finding No. 47," *The Zuni Tribe of New Mexico v. The United States*, Docket 161-79L, United States Claims Court, May 27, 1987, as reproduced in

Hart, E. Richard (ed.). *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University of Kansas Press, 1995, pp. 259-260. [HE80]

<sup>134</sup>Hordes, p. 14.

understood Zuni's actual boundaries.<sup>135</sup>

In the end, Dr. Hordes cannot cite a single Spanish period document that links a four square league grant with Zuni. The only document with a Spanish period date is the Cruzate forgery, which he himself admits is spurious.

Judge Yanello, in her rulings on Court of Claims Docket 161-79L, also addressed the question of the Cruzate documents. Her "Finding No. 34: Zunis' Land Rights Protected Under Spanish Law," said the following.

The fraudulent Cruzate Grant, purportedly dated 1689, has no bearing whatsoever in determining Zuni use and occupation of the claim area. Historians generally agree that the "grant" purportedly issued to the Pueblo of Zuni in 1689 was forged by unknown persons, possibly during the late Mexican period. The fraudulent grant recites a spurious story in which the Governor and Captain General Don Domingo Jironza y Petros de Cruzate found a Zia Indian who assured the Governor that the Zunis would accept obedience; whereupon, the Governor granted the Zunis a one league grant, measured from the four corners of the Pueblo.

When the "grant" was finally measured in 1880 it excluded the Pueblo of Zuni itself. There is no evidence of any bona fide or non-spurious grants having been made to pueblos in New Mexico, except for Sandia in 1748. Instead, Spanish and later Mexican authorities applied Spanish decrees and ordinances which provided for protection of Pueblo Indian rights to the lands they used and occupied.<sup>136</sup>

Judge Yanello also ruled that Zuni aboriginal land was protected under Spanish law.<sup>137</sup>

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<sup>135</sup>Hart, E. Richard. *Pedro Pino: Governor of Zuni Pueblo, 1830-1878*. Logan, Utah: Utah State University Press, 2003, pp. 50-52. [HE478]

<sup>136</sup>Yanello, Judge Judith Ann. "Findings of Fact," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 258-259. [HE480]

<sup>137</sup>Yanello, Judge Judith Ann. "Findings of Fact," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas:

As noted above, one member of the 1776 Domínguez/Escalante party was Bernardo Miera y Pacheco, a cartographer who made a *plano* of the Zuni Alcaidia (the boundaries are described above). Judge Yanello ruled that the Spanish “Alcalde System Provided Political and Military Support for Zuni Land Use.”<sup>138</sup> She ruled, “The Zunis were secure in the use and ownership of their lands under the laws of Spain,” and “retained autonomy or the right of self-government under the law of Spain.”<sup>139</sup>

Zuni controlled a vast territory throughout the Spanish and Mexican periods. The United States Claims Court ruled that Zuni had exclusive use and occupancy of over fifteen million acres throughout the Spanish period and the subsequent Mexican period.<sup>140</sup> In *A Zuni Atlas*, which I co-authored with anthropologist T. J. Ferguson, we provided a map of Zuni aboriginal territory, as it existed throughout the Spanish and Mexican period and as of 1846, the beginning of the United States period. The area represented on that map is the area that the court ruled was under Zuni exclusive use and occupancy through the Spanish and Mexican periods.<sup>141</sup>

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University Press of Kansas, 1995, pp. 254-255. [HE480]

<sup>138</sup>Yanello, Judge Judith Ann. “Findings of Fact,” *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, p. 255. [HE480]

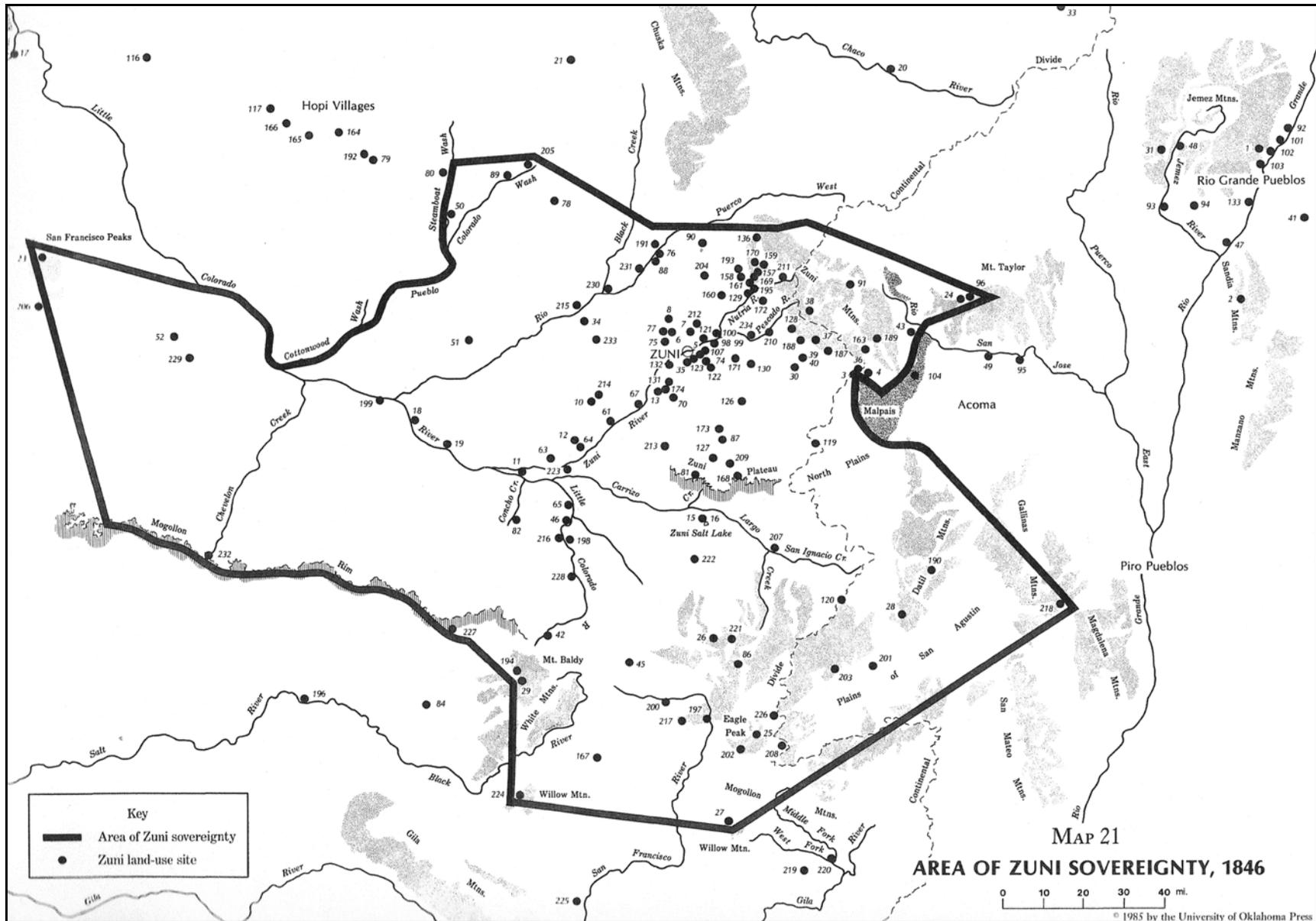
<sup>139</sup>Yanello, Judge Judith Ann. “Findings of Fact,” *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, p. 255. [HE480]

<sup>140</sup>Yanello, Judge Judith Ann. “Findings of Fact,” *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 261-265. [HE480]

<sup>141</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, p. 56. [HE479]



Ferguson and Hart, 1985, p. 56.

In the face of the evidence, Dr. Hordes' assertion that the Zuni people were limited four square leagues is far outside the limits of the scholarly world's knowledge and understanding of Zuni culture and history.

### Zuni Farming Villages

Dr. Hordes makes the claim that if Zunis were engaged in agricultural pursuits outside of his fictional four square league grant, "it escaped the notice of government officials."<sup>142</sup> A review of first-hand Spanish accounts of Zuni provides a radically different view.

From the time of first contact with Spanish parties, there were reports of Zunis having several villages. In his 1539 report, Fray Marcos de Niza reported to Antonio de Mendoza, viceroy of Mexico, about what he said he had learned of the Province of Cibola,<sup>143</sup> as Zuni was called by the first Spanish visitors. Fray Marcos reported that Indians he met along the way north to Zuni country talked of visiting Zuni and working there in Zuni fields in return for trade items. He said that there were seven villages in the province of Cibola.

They told me that from there they went to the city of Cibola, which is the first of the seven...I wanted to know, then, why they went so far away from their homes, and they said that they went after turquoises, hides of the cattle [buffalo], and other things, all of which they have in that pueblo in abundance. I also wanted to know what they traded for those things, and they replied that they gave their sweat and personal service. They said that they went to the first city, called Cibola, and worked there tilling the soil and doing other tasks, and for their services the inhabitants gave them

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<sup>142</sup>Hordes, p. 14.

<sup>143</sup>Although many arguments have been made linking the word "Cibola" with the Zuni word for themselves (Ashiwi), with other tribes' words for Zuni or for "buffalo," no conclusive relationship has yet been demonstrated.

hides of the cattle, of the kind they had there, and turquoises.<sup>144</sup>

Although Fray Marcos exaggerated some aspects in his report, he did provide important details about Zuni country. An expatriate Zuni told Marcos that the largest Zuni village was “Ahacus” (Hawikku).<sup>145</sup> Estevan, who led an advance party ahead of Fray Marcos, demanded that the Zunis give him turquoise and women. They refused and killed him. An Indian in Estevan’s party escaped and reported back to Fray Marcos. The eminent historian/archaeologist Frederick Webb Hodge concluded from this account that the escaped Indian had described “an irrigation canal” near the Zuni village of Hawikku.<sup>146</sup> Fray Marcos did not reach the Zuni villages, but claimed to have viewed them from a distance.<sup>147</sup>

We know now that in 1539 when Estevan was killed and Fray Marcos was approaching the Zuni province, there were at least six Zuni villages: Kechiba:wa, Kyaki:ma, Mats’a:kya, Hawikku, Kwa’kin’a, and Halona:wa (today’s Zuni Pueblo).<sup>148</sup> Each of these complex villages was multistoried and had a dependable water source. Kyaki:ma, Kwa’kin’a, Kechiba:wa and Hawikku are all between three and twenty miles from Halona:wa (today’s Zuni) and therefore far

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<sup>144</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, p. 68. [HE75]

<sup>145</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, p. 72. [HE75]

<sup>146</sup>Hodge, Frederick. *History of Hawikuh, New Mexico: One of the So-Called Cities of Cibola*, Southwest Museum, Los Angeles, 1937, pp. 22-23, 111n. [HE78]

George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 74-75. [HE75]

<sup>147</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 78-79. [HE75]

<sup>148</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 28-30. [HE479]

beyond a league in distance.<sup>149</sup> Archaeologists report that there were another four villages that were occupied after the fourteenth century, which may have been occupied at the time of Spanish contact. These villages are Heshoda Ts'in'a (the farming village later known as Pescado), Doya (the farming village later known as Nutria), K'ya'na'a (today's farming village known as Ojo Caliente), and Hampasawan.<sup>150</sup> Archaeologist Keith Kintigh believes the seventh Zuni village occupied in 1540 may have been Chalo'wa.<sup>151</sup>

Late in 1539 Melchior Diaz was dispatched by the viceroy to determine the veracity of Fray Marcos' claims. In April, 1540, he reported that he had been told that some of the houses in the Province of Cibola were three and four stories high, and that they had "many native tame chickens [turkeys]..." and "plenty of maize, beans, and melons." He said that "they cultivate the land in the same way as in New Spain..." and that "the land is good for maize and beans..."<sup>152</sup>

Viceroy Mendoza then appointed Francisco Vázquez Coronado to lead an expedition into the Province of Cibola. In 1540 Coronado reported that the Zunis had seven villages with houses that were three to five stories high.<sup>153</sup> I provided Coronado's comments regarding Zuni

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<sup>149</sup>Ferguson, T. J. "The Emergence of Modern Zuni Culture and Society: A Summary of Zuni Culture History, A. D. 1450 to 1700," paper prepared for Proto-Historic Conference, Arizona State University, March 23-24, 1979, p. 2 and Map 1. [HE499]

<sup>150</sup>Ferguson, T. J. "Zuni Traditional History and Cultural Geography," in *Zuni Origins: Toward a New Synthesis of Southwestern Archaeology* (edited by David A. Gregory and David R. Wilcox). Tucson: University of Arizona Press, 2007, p. 397.

Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 36-39. [HE479]

<sup>151</sup>Keith W. Kintigh. *Settlement, Subsistence, and Society in Late Zuni Prehistory* (Tucson: University of Arizona Press, 1985), pp. 73 and 81-83. [HE14]

<sup>152</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 158-159. [HE75]

<sup>153</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 169-171. [HE75]

crops above.<sup>154</sup> The principal chronicler of the expedition, Pedro Casteñeda, also said there were seven villages in the province of Cibola [Zuni], and that the largest was “Mazaque” [Mats’a:kya], and that they were up to seven stories high.<sup>155</sup> Other chroniclers of the expedition also emphasized the corn, beans and melons that the Zunis had in their villages.<sup>156</sup>

The next Spanish expedition would not reach Zuni until forty-one years later. The Chamuscado-Rodríguez party reached Zuni in 1581. The “Relation” of this expedition was written by Hernán Gallegos. Gallegos reported finding five villages in the “Suní” [Zuni] valley. Gallegos reported that the villages had hundreds of multistoried houses in the valley. He also described the extensive Zuni crops being grown around the villages in the valley.

This valley [of Zuni] is the best that has been discovered, since all of it is cultivated and not a grain of corn is lost. All the houses are of stone, which is indeed amazing; and all of them in this settlement have passageways, windows, doorways, and wooden ladders affording a means of ascent. There is not a house of two or three stories that does not have eight rooms or more, which surprised us more than anything else, together with the fact that the houses are whitewashed and painted inside and out, and the various pueblos have their plazas and streets. It is the custom of the natives to make mats of straw for their rooms, and many make them of fine light palm on which to sleep.<sup>157</sup>

Gallegos specifically identified the villages of Hawikku, Halona:wa, Mats’a:kya, and

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<sup>154</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 171-173. [HE75]

<sup>155</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, p. 252. [HE75]

<sup>156</sup>George P. Hammond and Agapito Rey. *Narratives of the Coronado Expedition, 1540-1542*, The University of New Mexico Press, Albuquerque, 1940, pp. 284-286 and 308-309. [HE75]

<sup>157</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 67, 108, 133, and 136-137, quoted at 108. [HE167]

Kyaki:ma as being in the Zuni Valley. The portion of the Zuni Valley he is describing is some twenty-five miles in length, along the Zuni River, and at least two miles wide. At a minimum he is describing an area in excess of 30,000 acres, which is said was all cultivated, with “not a grain of corn...lost.”<sup>158</sup> His report was addressed to “His Excellency, Don Lorenzo Suárez de Mendoza, County of Coruña, viceroy, governor, and captain general of New Spain...”<sup>159</sup>

I have reported above on the comments of Antonio de Espejo, who visited the province of Zuni in 1583, and who commented on Zuni agriculture and said that the Zunis “were planting a large corn crop that year in order to have enough for everybody...” should the Spaniards return.<sup>160</sup> I also discussed previously in this rebuttal, Diego Pérez de Luxán, a member of the Espejo expedition, who also described six villages then permanently occupied by the Zunis.<sup>161</sup>

In 1598 Juan de Oñaté was authorized to establish a permanent Spanish colony in New Mexico. After founding the first Spanish settlement at San Gabriel, along the banks of the Rio Grande, Oñaté set out to obtain the required Acts of Obedience and Vasselage from the New Mexican Indian pueblos. In November, 1598 Oñaté’s party reached the six Zuni villages. Oñaté reported that the tribe submitted to the acts and said that the Zunis received him with great

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<sup>158</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 108 and 136-137, quoted at 108. Gallegos mentions five pueblos by name in his “Relation” and then says there were six in additional testimony he provided. [HE167]

<sup>159</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; p. 67. [HE167]

<sup>160</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 213, 225-226, and 228, quoted at 228. [HE167]

<sup>161</sup>George P. Hammond and Agapito Rey. *The Rediscovery of New Mexico, 1580-1594: The Explorations of Chamuscado, Espejo, Castano de Sosa, Morlete, and Leyva de Bonilla and Humana*; University of New Mexico Press; Albuquerque; 1966; pp. 183-186. [HE167]

hospitality.

The Indians received us with a large quantity of maize, tortillas, and rabbits. Remaining here one day, on Tuesday we went three leagues to visit the last pueblo, which they call Cíbola [Hawikku], or by another name Granada, where Francisco Vazquez Coronado nearly sixty years ago had the encounter with the Indians. They received us very well with maize, tortillas, squashes, beans and quantities of rabbits and hares, of which there are a great many. They are a very amiable people and all rendered obedience to his Majesty.<sup>162</sup>

Another account of Oñaté's visits to Zuni also reported their maize, beans and squash.<sup>163</sup> Oñaté's visit to Zuni was also memorialized in Gaspar Pérez Villagrà's 1610 *Historia de la Nueva México*.<sup>164</sup>

Dr. Hordes asserted that Spanish officials did not report Zuni agriculture outside his fictional four square league grant. The reports I have cited demonstrate that Spanish officials at the highest level throughout the 16<sup>th</sup> and 17<sup>th</sup> centuries were aware of five or six Zuni villages other than the central village of Halona:wa, and that crops were being cultivated on lands associated with these villages.

It was 1629 before there were enough Spanish missionaries in New Mexico that a mission could be established at Zuni. In that year Governor Francisco Manuel de Silva Nieto led a party to Zuni to establish missionary work among that tribe, a journey described in a 1632 report by

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<sup>162</sup>Hodge, Frederick. *History of Hawikuh, New Mexico, One of the So-Called Cities of Cibola*; F.W. Hodge Anniversary Publication Fund, Los Angeles; 1937; pp. 74-75. [HE78]

<sup>163</sup>Zárate Salmerón. *Relaciones*; translated by Alicia Ronstadt Milich; Horn and Wallace; Albuquerque, 1966; pp. 64-65. [HE169]

<sup>164</sup>Villagrà, Gaspar Pérezde. *Historia de la Nueva México, 1610* (Translated and edited by Miguel Encinias, Alfred Rodríguez, and Joseph P. Sánchez). Albuquerque: University of New Mexico Press, 1992, pp. 171-174 (Canto XVIII, lines 310-385).

Fray Estevan de Perea.<sup>165</sup> Like Spaniards before him, he also described an abundance of Zuni crops in the province. Of Zuni province, he said “This land is pleasant and fertile,” and “the land has an abundance of corn, beans, calabashes...”<sup>166</sup> Fray Alonso de Benavides, writing in his 1630 Memorial, echoed the above comments, saying, “The land is very fertile and produces supplies of all kinds.”<sup>167</sup>

Twelve years after the great Pueblo Revolt, General Don Diego de Vargas led his troops to Zuni country in 1692 as a part of the Spanish Reconquest of New Mexico. In November he passed by El Morro, where he inscribed a message on the mesa’s rock wall, then moved on to the “water hole of Ojito de Zuni” [today’s Pescado] on Sunday, November 9, where they camped. In the afternoon a delegation of ten or twelve Zunis rode in on horseback to meet him and make peace. The Zunis brought with them mutton, watermelons and tortillas. The next day Vargas moved his party to the foot of Dowa Yalanne, the large mesa three miles to the southeast of the village of Halona:wa. During the intervening years since the Revolt, the Zunis had constructed a defensive refuge on top of the mile and half long and one mile wide mesa and were now stationed there. Vargas said that Zunis from five villages had taken refuge on top of the mesa. Vargas again met with Zuni leaders and he expressed his desire to go to their village of Halona:wa, but the Zunis asked him not to do that, because they “had not yet completely

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<sup>165</sup>Hodge, Frederick, George P. Hammond and Agapito Rey. *Fray Alonso de Benavides’ Revised Memorial of 1634*; University of New Mexico Press; Albuquerque; 1945; pp. 210 and 213-214. [HE76]

Hodge, Frederick. *History of Hawikuh, New Mexico, One of the So-Called Cities of Cibola*; F.W. Hodge Anniversary Publication Fund, Los Angeles; 1937; pp. 80-81. [HE78]

<sup>166</sup>Hodge, Frederick, George P. Hammond and Agapito Rey. *Fray Alonso de Benavides’ Revised Memorial of 1634*; University of New Mexico Press; Albuquerque; 1945; pp. 210 and 213-214. [HE76]

<sup>167</sup>Peter P. Forrestal. *Benavides’ Memorial of 1630*; Academy of American Franciscan History; Washington, D.C.; 1954; pp. 30-32. [HE79]

harvested their milpas [corn field] and there was not enough firewood there.”

On this llano, the horses had pasture and water all around, and the people also had firewood. To please them, I stopped , quartering the camp there.<sup>168</sup>

Vargas had with him nearly ninety soldiers and thirty Indian allies, along with herds of horses and cattle. Clearly, the Zunis did not want their cornfields between Dowa Yalanne and Halona:wa decimated by the Spaniards’ stock.

The rest of the story of the General’s admittance to the top of the sacred mesa and the discovery of mission relics is well-known and oft-repeated. In an essay describing the history of the Zunis’ sacred mesa, Frederick Webb Hodge reported that the Zunis had a reservoir on Dowa Yalanne and that the ancient Zunis used large snowballs to help fill it with water in the winter.<sup>169</sup>

After the Pueblo Revolt and the Reconquest, the Zunis concentrated from six villages into one central village, Halona:wa, where they remain today.<sup>170</sup> However, they continued to use the agricultural land around the former permanent villages and now used seasonal villages while cultivating crops in areas distant from Halona:wa.<sup>171</sup>

In the eighteenth century Spaniards who visited villages in the province of Zuni continued

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<sup>168</sup>Kessell, John L. and Rick Hendricks (eds.). *By Force of Arms: The Journals of don Diego de Vargas, New Mexico, 1691-93*. Albuquerque: University of New Mexico Press, 1992, pp. 545-547 and 610, quoted at 547.

<sup>169</sup>F. W. Hodge. *Tówayaláne: A Mesa with a History*, February 20, 1954, privately printed, n.p., p. 4. [HE375]

<sup>170</sup>Ferguson, T. J. “The Emergence of Modern Zuni Culture and Society: A Summary of Zuni Culture History, A. D. 1450 to 1700,” paper prepared for Proto-Historic Conference, Arizona State University, March 23-24, 1979, p. 7. [HE499]

<sup>171</sup>See, for instance:

Ferguson, T. J. “Zuni Traditional History and Cultural Geography,” in *Zuni Origins: Toward a New Synthesis of Southwestern Archaeology* (edited by David A. Gregory and David R. Wilcox). Tucson: University of Arizona Press, 2007, p. 397.

Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 36-39. [HE479]

to describe the harvests of extensive cultivated crops. In 1760, the Bishop of Durango made a visit to New Mexico. He traveled as far as Laguna, but gave up on going on to Zuni because his mules were already bloated from the heat and there was only one watering hole and little pasturage along the rest of the trail. He did, however, provide more evidence of Zunis' use of farming villages. Bishop Pedro de Tamarón also gave one additional reason for not visiting Zuni:

One of the difficulties alleged against my going there was that I should not find even half of the inhabitants because they are so dispersed in their ranchos. They breed livestock, and large flocks of sheep come from there.<sup>172</sup>

I have previously reported in this paper that in 1776 Domínguez and Escalante observed agricultural fields in an area of about 17,000 acres surrounding the village of Halona:wa. Domínguez also reported irrigation of small plots from Black Rock Spring. He said that in spite of the fact that the Zunis had no oxen, "God deigns to grant them very reasonable crops."<sup>173</sup>

I also have previously reported that in 1780 Governor Don Juan Bautista de Anza reported that many Zunis were staying at their ranchos as a result of drought.<sup>174</sup> Ten years later it

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<sup>172</sup>Eleanor B. Adams (ed.). "Bishop Tamarón's Visitation of New Mexico, 1760," *Historical Society of New Mexico Publications in History*, Vol. XV; February, 1954, p. 68. [HE87]

Ward Alan Minge. "Zuni in Spanish and Mexican History," written testimony submitted to the United States Court of Claims in behalf of the Zuni Indian Tribe; *Zuni Indian Tribe of New Mexico v. United States*, Docket 161-79L, 1980, p. 60. [HE88]

Myra Ellen Jenkins. "Documents Concerning the Pueblo of Zuni under Spanish Sovereignty," expert testimony submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe, *City of Gallup v. USA*, No. Civ 84-0164, District Court, McKinley County, New Mexico, 1988, p. 2. [HE376]

<sup>173</sup>Eleanor B. Adams and Fray Angelico Chavez. *The Missions of New Mexico, 1776: A Description by Fray Francisco Atanasio Domínguez with Other Contemporary Documents*; University of New Mexico Press; Albuquerque; 1956; p. 201. [HE173]

<sup>174</sup>Alfred Barnaby Thomas. *Forgotten Frontiers: A Study of the Spanish Indian Policy of Don Juan Bautista de Anza, Governor of New Mexico, 1777-1787*; University of Oklahoma Press; Norman, Oklahoma; 1969; pp. 229-231. [HE85]

was evident that the population of the Zuni villages was recovering and that their farming villages were still being intensively utilized. A census taken in that year listed five ranches being used by the tribe, in addition to the pueblo of Zuni proper: Rancho Colorado (Red Ranch), Rancho de Piedras Negras (Black Rock Ranch, spoken of by Domínguez in 1776), Rancho de Galisteo (Galisteo Ranch), Rancho del Cañon (Canyon Ranch) and Rancho de Senora Santa Ana (Ranch of Saint Ann).<sup>175</sup> Galisteo Ranch may have been in the vicinity of the Zunis' mesa Dowa Yalanne, but three of the ranches cannot be located with certainty, though by the 19<sup>th</sup> century (as demonstrated by many accounts I have cited) the Zunis were utilizing their farming villages at Pescado, Nutria, and Ojo Caliente.

An 1808 census listed the principal Zuni industries as farming and maintaining herds of sheep.<sup>176</sup> I have also previously reported on the contents of records kept by the priests at the Zuni mission between 1775 and 1850. A number of Zuni farming villages were listed by the Spanish priests, including Colorado, Cañon, Piedras Negras, Galisteo (probably Galistina Canyon), Hawikku (near today's Ojo Caliente), Quiahuaná, Pinahua (also near today's Ojo Caliente),

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<sup>175</sup>Ward Alan Minge. "Zuni in Spanish and Mexican History," expert testimony submitted to the United States Court of Claims in behalf of the Zuni Indian Tribe; *Zuni Indian Tribe of New Mexico v. United States*, Docket 161-79L, 1980, pp. 51 and 56. See also the appendix to this report entitled "Zuni Population, 1539-1989." [HE88]

Fray Mariano Saldivar, Fray Mariano Jose Sanchez Voragra, and Juan Pedro Sisneros "Census of all the people of the Pueblo of Zuni . . .," Navajo Plaintiff's Exhibit No. 780, Docket 229 (Navajo), Indian Claims Commission (New Mexico State Records Center Archives, Spanish Archives #1092c, translated by David M. Brugge). [HE175]

Myra Ellen Jenkins. "Documents Concerning the Pueblo of Zuni under Spanish Sovereignty," expert testimony submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe, *City of Gallup v. USA*, No. Civ 84-0164, District Court, McKinley County, New Mexico, 1988, p. 5. [HE376]

<sup>176</sup>Myra Ellen Jenkins. "Documents Concerning the Pueblo of Zuni under Spanish Sovereignty," expert testimony submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe, *City of Gallup v. USA*, No. Civ 84-0164, District Court, McKinley County, New Mexico, 1988, p. 7. [HE376]

Rancho de la Laguna, and Rancho de Moqui.<sup>177</sup>

Contrary to Dr. Hordes' assertion, it is apparent from the primary sources I have cited during the Spanish period that authorities were well aware of Zunis' use of farming villages and ranchos located distant from the central village of Halona:wa.

There are relatively few documentary materials describing Zuni during the Mexican period (1821-1846), but these sources do provide evidence of Zuni agriculture. A trapping party under George C. Yount visited Zuni in 1827 and 1828. On the first visit, the group was near starvation when they arrived at Zuni pueblo. The Zunis fed them paper bread, a thin, highly prized bread made from cornmeal baked on a hot stone. The following year Yount's party was also treated very humanely by the Zunis. Yount left Zuni traveling east and later described the country through which he passed, "On leaving the territory of the Sunies (the Zunis), the march lay directly over fertile meadows and rich bottoms . . ."<sup>178</sup>

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<sup>177</sup>Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Fragment from Book of Baptisms, 1699-1700, (1699, No. 2, Zuni Fragment); Microfilm Roll #51, Archives of the Archdiocese of Santa Fe. [HE3]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Baptisms, 1725-1774; B-56, Zuni, Box 85, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE4]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Marriages and Burials, 1705-1775; M-45, Zuni, Box 42 Microfilm Roll #33, Archives of the Archdiocese of Santa Fe, AASF #33. [HE5]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1699-1776," analysis (1988) of Book of Burials, 1699-1712; Bur-45, Zuni, Box 37, Microfilm Roll #25, Archives of the Archdiocese of Santa Fe. [HE6]

Records of the Mission of Nuestra Señora...; Book I--Baptisms and Patentes Book II--Marriages and Burials, Book III--Baptisms, Microfilm, Manuscript Division, Library of Congress. [HE7]

Donna L. Pierce. "Records of the Mission of Nuestra Señora de Guadalupe, Zuni Pueblo, 1775-1858," Commissioned by the Institute of the North American West for use as expert testimony in behalf of the Zuni Tribe; March, 1988. [HE149]

Robert W. Delaney and Myra Ellen Jenkins. "Guide to the 'Lost' Records of the Mission of Nuestra Señora de Guadalupe de Zuni, 1775-1858," New Mexico State Records Center and Archives, Santa Fe, 1988. [HE150]

<sup>178</sup>Charles L. Camp (ed.). *George C. Yount and His Chronicles of the West Comprising Extracts from his "Memoir" and from the Orange Clark "Narrative"*; Old West Publishing Co.; Denver; 1966; pp. 37-38 and 62. [HE178]

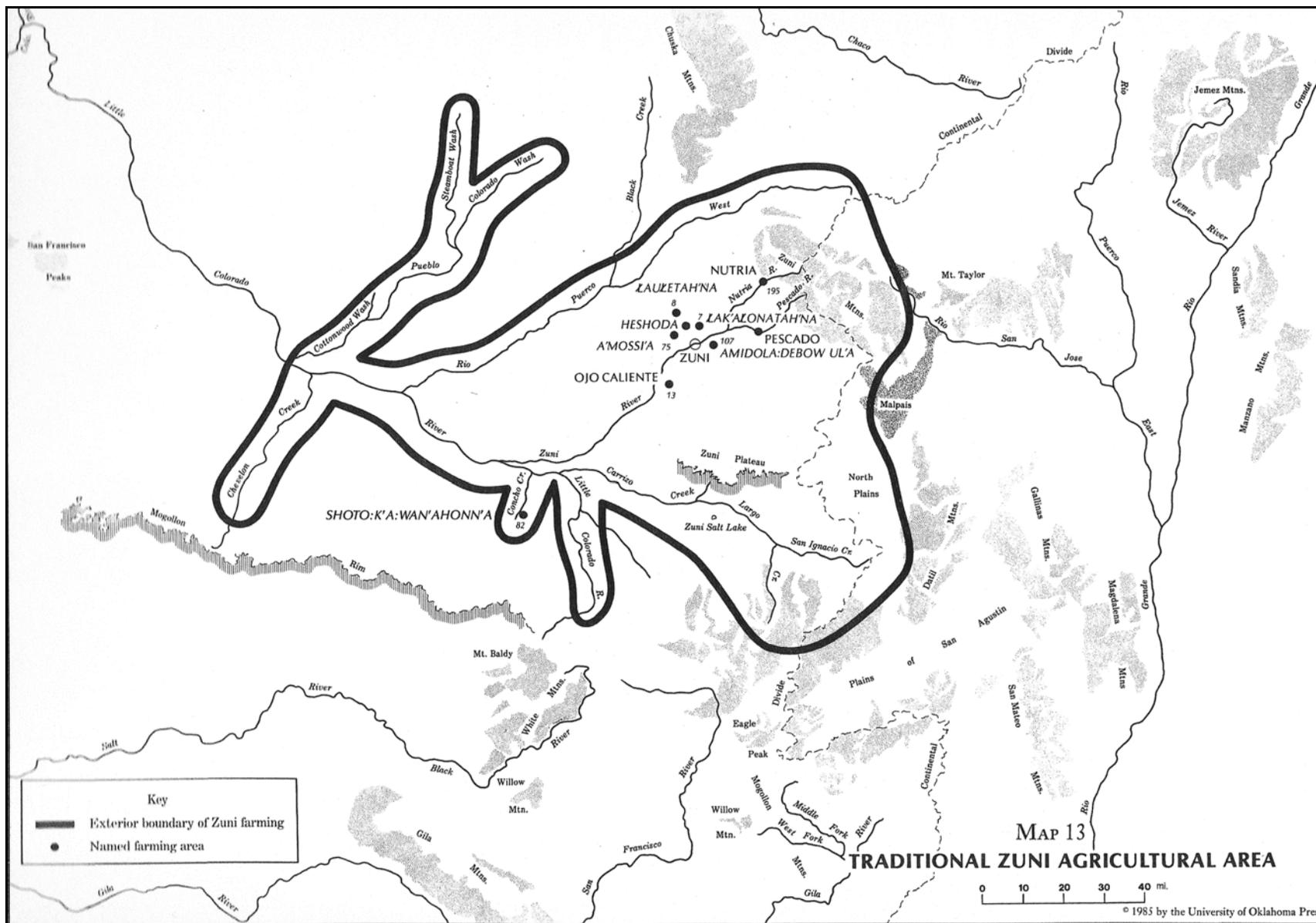
The only other report describing Zuni lands between 1821 and 1846 came from the American merchant, Josiah Gregg, whose book about his experiences on the Santa Fe trail was published in 1844. He said of Zuni, “They cultivate the soil, manufacture, and possess considerable quantities of stock. Their village is . . . on the waters of the Colorado of the West...”<sup>179</sup>

As I pointed out above, from the beginning of the Spanish period to the end, Spanish accounts provided evidence of Zuni agriculture very distant from the village of Halona:wa (today’s Zuni) and the use of ranchos, some at even more distant locations. After hearing the voluminous testimony in Docket 161-79L, Judge Yanello ruled on the extent of Zuni farming as it existed at the end of the Spanish and Mexican periods, and issued “Finding No. 71: Zuni Farming Area as of 1846.”

The traditional Zuni farming area as of 1846 is depicted in Plaintiff’s Exhibit 245. The economic base of traditional Zuni society was agriculture, stabilized by gathering and hunting. Since prehistoric times, through and including 1846, the Zuni people farmed in all of the well-watered drainages throughout the Zuni area. Crops included a variety of plants developed in the southwest before European contact as well as a variety of plants acquired from the Europeans. While much of the farming was concentrated in the valley of the Zuni River, many small farms as far away as St. Johns, Arizona, were still being planted as of 1846. In addition, many sheepherders planted small plots of corn and squash in the outlying areas used for grazing. These small plots were tended by the sheepherders during the summer months while they were watching their flocks. In the Zuni River Valley, corn was planted wherever there was sufficient runoff to provide growth. Wheat and other irrigated crops were grown in large farms nearer to the villages. Small, hand-watered waffle gardens for chili, coriander, and onions were planted on the banks of the Zuni River at the Zuni

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<sup>179</sup>Josiah Gregg. *Commerce of the Prairies*; edited by Max L. Moorehead; University of Oklahoma Press; Norman; 1954 (originally published 1844); pp.187n-188n. [HE95]



Ferguson and Hart, 1985, p. 36.

Pueblo, and tended by women. The traditional agriculture of the Zunis employed dry farming and flood water farming methods, conserving the soil and making maximum use of available water. Irrigated agriculture was an indigenous technique at Zuni which included the use of viaducts made from large hollow logs.<sup>180</sup>

The map referenced in Judge Yanello's 1987 Finding, is drawn from the map "Traditional Zuni Agricultural Area," reproduced in *A Zuni Atlas*, published in 1985. This map shows that agricultural pursuits took place in all areas of the Zuni Reservation and in areas well outside the boundaries of today's Zuni Reservation.<sup>181</sup> In March, 1980, I submitted an earlier version of this map, that I prepared, as expert testimony in Docket 161-79L.<sup>182</sup> My initial written testimony on the extent of Zuni agriculture was submitted to the court in Docket 161-79L in March of 1980.<sup>183</sup> I documented Zuni agriculture at Zuni villages and farming areas throughout what was to become the Zuni Reservation, both in my testimony to the court and in the earlier-published *Zuni Atlas*.<sup>184</sup> While the court's ruling mirrored much of my testimony, the court had much more evidence

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<sup>180</sup>Yanello, Judge Judith Ann. "Findings of Fact," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, p. 270. [HE480]

<sup>181</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, p. 36. [HE479]

<sup>182</sup>E. Richard Hart, "Boundaries of Zuni Land: With Emphasis on Details Relating to Incidents Occurring 1846-1946," Vol. II, Prepared for the Pueblo of Zuni, *Zuni Indian Tribe v. United States*, Docket 161-79L, before the United States Court of Claims; March, 1980; Map 6. [HE166]

<sup>183</sup>E. Richard Hart, "Boundaries of Zuni Land: With Emphasis on Details Relating to Incidents Occurring 1846-1946," Vol. II, Prepared for the Pueblo of Zuni, *Zuni Indian Tribe v. United States*, Docket 161-79L, before the United States Court of Claims; March, 1980; pp. 25-40. [HE166]

<sup>184</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, pp. 36-39. [HE479]

E. Richard Hart, "Boundaries of Zuni Land: With Emphasis on Details Relating to Incidents Occurring 1846-1946," Vol. II, Prepared for the Pueblo of Zuni, *Zuni Indian Tribe v. United States*, Docket 161-79L, before the United States Court of Claims; March, 1980; pp. 25-40. [HE166]

which it consulted prior to issuing Findings. Experts testifying for Zuni submitted fifteen expert reports and Zuni lay witnesses provided another twelve depositions, documenting Zuni land use.<sup>185</sup>

### Zuni Agriculture, 1846-1876

Dr. Hordes does not disagree with anything I concluded regarding the period from 1846 to 1902, and completely ignores this critical historical period. Although primary Spanish accounts demonstrate widespread Zuni agriculture up to 1846, it is not until the American period, after 1846, when observers paid close enough attention to Zuni practices to more accurately characterize the extent of cultivation of Zuni corn, beans, wheat, melons and other vegetables. Early travelers to Zuni also provided accounts that demonstrated the continuity with which the Zunis were cultivating large fields of crops around their summer farming villages.

Early American visitors to Zuni provided first-hand evidence of the extent of Zuni agriculture. When the United States first expressed sovereignty over the Zunis' lands in 1846, Colonel Alexander W. Doniphan led a command of troops into Zuni country. Several members of the command commented on the Zunis' hospitality, "friendly disposition," and industry. John T. Hughes, Doniphan's chronicler, said the Zunis, were "situated on the right bank of the river Pisco [Pescado]" and that the population "derive their support almost exclusively from

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<sup>185</sup>Hart, E. Richard (ed.). *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University of Kansas Press, 1995, pp. 319-322. [HE480] On these pages I provide a list of all reports and depositions in the case.

agriculture.”<sup>186</sup> Doniphan was able to secure “ a supply of provisions, and also of various fruits in which the country abounds.” He praised the Zunis’ “intelligence and ingenuity,” and described their agricultural pursuits.

The country around the city of Zuni is cultivated with a great deal of care, and affords food, not only for the inhabitants, but for large flocks of cattle and sheep.<sup>187</sup>

These types of comments were repeated often in the ensuing decades. After the Treaty of Guadalupe Hidalgo (February 2, 1848), the Zuni Tribe continued to support United States parties that came through its territory. The following year the governor of New Mexico ordered an expedition against the Navajos. Accompanying the troops were Superintendent of Indian Affairs James S. Calhoun and Lieutenant James Hervey Simpson of the Topographical Engineers. The troops held a council at Canyon de Chelly and then traveled southeast to Zuni country, passing by Zuni Buttes before entering the valley of the Zuni River on September 15, 1849. Simpson reported:

Thirteen miles from our last camp, we entered the valley of the *Rio del Pescado* (or, as some call the stream, the *Rio de Zuni*), which we find extensively cultivated in corn. There are indications also of there having been an abundant harvest of wheat.<sup>188</sup>

He then said that the Pueblo of Zuni was first seen from three miles away, meaning that he had

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<sup>186</sup>Jacob S. Robinson. *A Journal of The Santa Fe Expedition Under Colonel Doniphan*; Princeton University Press; Princeton; 1932; p. 53, described their “good behavior and industry.” [HE179]

William E. Connelley. *Doniphan’s Expedition and the Conquest of New Mexico and California*; Bryant & Douglas Book and Stationery Co.; Kansas City, Mo.; 1907; pp. 311-312. Connelley reprinted Hughes’ first-hand account on Zuni agriculture. [HE96]

<sup>187</sup>William E. Connelley. *Doniphan’s Expedition and the Conquest of New Mexico and California*; Bryant & Douglas Book and Stationery Co.; Kansas City, Mo.; 1907; p. 312. [HE96]

<sup>188</sup>Frank McNitt. *Navaho Expedition: Journal of a Military Reconnaissance from Santa Fe, New Mexico to the Navaho Country Made in 1849 by Lieutenant James H. Simpson*; University of Oklahoma Press; Norman; 1964; p. 112. [HE28]

entered Zuni Valley at least three miles from the Zuni Pueblo and that he said there was cultivated corn there. After a tumultuous Zuni welcome, the Zunis provided the Americans with “bread in every variety of form (loaf, *tortilla*, and *guayave*), watermelons, muskmelons, and peaches. . .in profusion before us.<sup>189</sup>

Simpson said the Zunis had “large herds of sheep and horses, and extensively cultivate the soil,” and Calhoun reported the Zunis had offered them large amounts of fruit and bread, which the soldiers accepted. He reported cultivation near today’s Black Rock, and in the vicinity of Pescado, as they left the Pueblo going east, said,

We have met today, as we did yesterday, a number of Zuni Indians carrying bags of wheat upon horses and burros to their pueblo. These people seem to have discovered the principle of industrial accumulation, and therefore of social progress.<sup>190</sup>

These comments make it clear the Zunis were farming many miles distant from the central pueblo, as they had been throughout the Spanish and Mexican periods.

In 1851, Captain Lorenzo Sitgreaves, of the Topographical Engineers, in a party that included R. H. Kern and Private Josiah M. Rice, visited Zuni to determine if the Zuni River was navigable. At Ojo Pescado, Rice described a walled-in spring, where he said “erected across the

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<sup>189</sup>Frank McNitt. *Navaho Expedition: Journal of a Military Reconnaissance from Santa Fe, New Mexico to the Navaho Country Made in 1849 by Lieutenant James H. Simpson*; University of Oklahoma Press; Norman; 1964; p. 112. [HE28]

<sup>190</sup>Frank McNitt. *Navaho Expedition: Journal of a Military Reconnaissance from Santa Fe, New Mexico to the Navaho Country Made in 1849 by Lieutenant James H. Simpson*; University of Oklahoma Press; Norman; 1964; pp. 114 and 124-125. [HE28]

Abel, Annie Heloise. *The Official Correspondence of James S. Calhoun*; Washington; Government Printing Office (hereafter GPO); 1915; p. 30. [HE97]

Kern, Richard H.. “Notes of a Military Reconnaissance of the Pais de los Navajos in the Months of August and September, 1849,” H. E. Huntington Library, MSS. #4274, 1849, pp. 60-61 and 65, also reported evidence of cultivation at the Pescado farming village. [HE186]

stream, was a dam full of water..."<sup>191</sup> On September 24, 1851, as Sitgreaves led his party down the Zuni River, he reported,

The corn-fields of the Zuni Indians extended at intervals for several miles down the stream, their crops and orchards being planted on the edge of the valley, or in the fertile gorges of the mountains. The only cultivation in the immediate vicinity of the pueblo consisted of small vegetable gardens, tended by the women and watered by hand, in which were grown chiefly onions, beans, and chile. Their orchards produce good peaches, with which we were abundantly supplied during our stay at the village.

He added in a note that the Zunis' cultivation had been increased to 10,000 acres of corn since the establishment of Fort Defiance.<sup>192</sup> This is a particularly interesting observation by Sitgreaves. He suggested that most cultivation was not done in the immediate vicinity of Zuni Pueblo, but out in the edges of the valleys, where run-off could be directed into fields. Near the pueblo were the "waffle gardens" watered by hand by women. Sitgreaves described the land along the Zuni River going southwest from the pueblo. His physician and naturalist, S. W. Woodhouse, reported on the country five miles to the east of Zuni, the location of Black Rock Spring. He said,

About five miles from the pueblo of Zuni there is a large spring [Blackrock], in which the *Siredon lichenoides* is quite abundant. The valley from here to the pueblo is cultivated by the Indians.<sup>193</sup>

First-hand accounts from the 1853 Whipple party provided evidence of Zuni agriculture

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<sup>191</sup>Richard H. Dillon (ed.). *Journal of Private Josiah M. Rice, 1851: A Cannoneer in Navajo Country*; Old West Publishing Company; 1970; p. 64. [HE192]

<sup>192</sup>Captain Lorenzo Sitgreaves. *Report on an Expedition Down the Zuni and Colorado Rivers*; 32nd Congress, 2nd Session, Executive Document No. 59 (originally published Washington; Robert Armstrong, 1853); reprinted by Rio Grande Press, Inc.; Chicago; 1962; pp. 5-6 and 6n. [HE193]

<sup>193</sup>Captain Lorenzo Sitgreaves. *Report on an Expedition Down the Zuni and Colorado Rivers*; 32nd Congress, 2nd Session, Executive Document No. 59 (originally published Washington; Robert Armstrong, 1853); reprinted by Rio Grande Press, Inc.; Chicago; 1962; p. 35. [HE193]

in the main valley and at the farming villages. Lt. A. W. Whipple led an expedition exploring a possible railroad route, arriving in November, from the east, at the farming village of Pescado (well outside the four square league grant imagined by Dr. Hordes) which he said was “occasionally occupied in summer by Zuni Indians, while cultivating the well watered valley.”<sup>194</sup> He continued that the Indians came there every year “to cultivate vegetables and grain.”<sup>195</sup> The draughtsman and naturalist for the party, Baldwin Möllhausen, also commented on the Zuni fields at Pescado.

[The fields] . . . bore the marks of harvests reaped not long before; and I subsequently learned that the people of Zuni come at certain seasons every year to the forsaken town to sow and reap on the fruitful lands around. . . the fields hereabout are of richer soil than those in the neighbourhood of Zuni.<sup>196</sup>

Twelve miles west of Pescado, as the party reached the vicinity of Black Rock, Whipple described Zuni ranchos located near springs which watered “numerous patches of cultivated

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<sup>194</sup>“Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean . . . , 1853-1854,” 33rd Congress, 2nd Session, Executive Document #78, Vol. III, p. 65. [HE19]

Grant Foreman. *A Pathfinder in the Southwest: The Itinerary of Lieutenant A. W. Whipple During His Explorations For a Railway Route From Fort Smith To Los Angeles In The Years 1853 & 1854*; University of Oklahoma Press; Norman Oklahoma; 1941; p. 136. [HE20]

<sup>195</sup>“Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean . . . , 1853-1854,” 33rd Congress, 2nd Session, Executive Document #78, Vol. III, p. 65. [HE19]

Grant Foreman. *A Pathfinder in the Southwest: The Itinerary of Lieutenant A. W. Whipple During His Explorations For a Railway Route From Fort Smith To Los Angeles In The Years 1853 & 1854*; University of Oklahoma Press; Norman Oklahoma; 1941; p. 137. [HE20]

<sup>196</sup>Grant Foreman. *A Pathfinder in the Southwest: The Itinerary of Lieutenant A. W. Whipple During His Explorations For a Railway Route From Fort Smith To Los Angeles In The Years 1853 & 1854*; University of Oklahoma Press; Norman Oklahoma; 1941; pp. 138-139. [HE20]

“Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean . . . , 1853-1854,” 33rd Congress, 2nd Session, Executive Document #78, Vol. III, p. 66 and 66n. In a note appended to his report, Whipple remarked, “We afterwards learned that the Indians considered this spring sacred.” [HE19]

gardens.”<sup>197</sup> Möllhausen also provided a detailed description of the Zunis’ sacred spring at Black Rock, and “cultivated fields that surround the spring” and were watered from it.<sup>198</sup> Zuni Governor Pedro Pino explained the religious importance of the spring, and water in general, to Whipple.<sup>199</sup> These were the Ranchos de Zuni first described by Domínguez in 1776. William A. Dodge, former director of the Zuni Archaeology Program has provided a history of these Zuni farming ranchos, and described in some detail the archaeological remains of this farming area. The sacred spring is now covered by Black Rock Dam, but there still remain in the area waffle gardens, that were once irrigated with water from the spring. There are also remains of structures, hearths, manos, pottery and other features from the old farming village.<sup>200</sup> Of course, one can also walk over the ancient ruins at the Ojo Caliente, Hawikku, Pescado, and the Nutria villages to this day. Material from the ancient farming villages is incorporated into contemporary structures used in today’s farming villages in those locations.

Möllhausen, following a Zuni guide, explored the terrain around Dowa Yalanne and Galestina Canyon (south of Dowa Yalanne), where the guide led them up a canyon “passing

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<sup>197</sup>Grant Foreman. *A Pathfinder in the Southwest: The Itinerary of Lieutenant A. W. Whipple During His Explorations For a Railway Route From Fort Smith To Los Angeles In The Years 1853 & 1854*; University of Oklahoma Press; Norman Oklahoma; 1941; pp. 138-139. [HE20]

“Reports of Explorations and Surveys to Ascertain the Most Practicable and Economical Route for a Railroad from the Mississippi River to the Pacific Ocean . . . , 1853-1854,” 33rd Congress, 2nd Session, Executive Document #78, Vol. III, p. 66 and 66n. In a note appended to his report, Whipple remarked, “We afterwards learned that the Indians considered this spring sacred.” [HE19]

<sup>198</sup>Baldwin Möllhausen. *Diary of a Journey from the Mississippi to the Coasts of the Pacific, with a United States Government Expedition*; translated by Mrs. Percy Sinnett, Vol. I; Longman, Brown, Green, Longmans, & Roberts; London; 1858; pp. 87-88. [HE11]

<sup>199</sup>Whipple, A. W., Thomas Ewbank, and Wm. W. Turner “Report Upon the Indian Tribes,” 33rd Congress, 2nd Session, Senate Executive Document #78 (Washington, D.C.; 1855), pp. 39-40. [HE195]

<sup>200</sup>Dodge, William A. *Black Rock: A Zuni Cultural Landscape and the Meaning of Place*. Jackson, Mississippi: University Press of Mississippi, 2007, pp. 69-78.

many cultivated fields and some lightly-built houses, which seemed to be intended only for occasional occupation--at harvest time, and other seasons when there was work to be done in the neighbourhood,” and eventually reached a spring.<sup>201</sup>

In 1858, Lieutenant Edward Fitzgerald Beale passed by Pescado, which he described:

The spring bursts a lively brook from under the rocks, and runs a bold stream at this season beyond Zuni. Here the fine wheat of the Zunians is principally raised, and the stubble remaining on the imperfectly cultivated patches, show clearly the natural resources of this beautiful valley.<sup>202</sup>

The surgeon of Beale’s party, William P. Floyd, also kept a journal of another trip they made in 1859. At Pescado farming village he reported “The Zunia Indians cultivate some land in wheat near the spring which is said to be the finest raised in the Territory....” When they reached Zuni, Floyd said, that though “the soil seems to be poor,” the Zunis “manage with irrigation to raise moderate crops of corn and splendid crops of wheat.”<sup>203</sup>

First-hand reports of visitors to Zuni between 1846 and 1860 indicate that the tribe was cultivating in excess of 10,000 acres, and producing enough corn that they could sell tons of it to the United States military. Many visitors praised the Zunis for their hospitality, industry, and ingenuity, but prior to the 1870s there were no technical descriptions of just how the Zunis actually were able to grow such large crops on their semi-arid landscape. Visitors in the late

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<sup>201</sup>Baldwin Möllhausen. *Diary of a Journey from the Mississippi to the Coasts of the Pacific, with a United States Government Expedition*; translated by Mrs. Percy Sinnett, Vol. I; Longman, Brown, Green, Longmans, & Roberts; London; 1858; pp. 89-92. [HE11]

<sup>202</sup>Lewis Burt Lesley (ed.). *Uncle Sam’s Camels: The Journal of May Humphreys Stacey Supplemented by the Report of Edward Fitzgerald Beale (1857-1858)*, Cambridge, Harvard University Press, 1929, pp. 277-278. [HE102]

<sup>203</sup>William P. Floyd. “Journal kept by the surgeon of Edward Fitzgerald Beale’s wagon road expedition, describing his trip from Virginia to Fort Smith, and thence to the Colorado River”; September 27, 1858-May 1, 1859; Typewritten copy made by Carroll W. Dodge; Manuscript #19334; Huntington Library; pp. 28-29. [HE199]

1860s and early 1870s expressed puzzlement at how the Zunis accomplished their agriculture. It would take later visitors to explain how the Zunis were delivering water to their crops.

Lieutenant George M. Wheeler, who arrived at Zuni in August of 1873, did report on Zuni irrigation. Wheeler noted the farming villages of Nutria, Pescado and Ojo Caliente and said there were “small irrigated fields at Black Rocks.” At Zuni he mentioned a well and said,

Most of the cultivated patches were of corn, while little groups of squashes and melons, beans, and wheat were noted. In the little gardens near the town, onions, tomatoes, and caraway were seen. They were watered by hand by the women from large ollas carried on the head, some of which were ornamented with considerable taste. The best corn fields were watered by irrigation ditches from the river (nearly dry at this date). Most of the Zuni herds were at the Nutrias and at Pescado...<sup>204</sup>

Wheeler also passed down the Zuni River and described the Zuni farming village of Ojo Caliente.<sup>205</sup>

During 1875 Agent Ben Thomas remarked in his annual report on Zuni agricultural efforts and made what seems to be the first reference to the forged Zuni land grant documents, while also providing evidence of the tribe’s use of its farming villages. “The Indians,” said Thomas, “have hitherto succeeded in raising enough for their subsistence by planting every season three different farming districts outside the limits of their land-grants, which they claim as their own...”<sup>206</sup>

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<sup>204</sup>Capt. Geo. M. Wheeler. *Report upon United States Geographical Surveys West of the One Hundredth Meridian, Vol. I--Geographical Report*; Washington, D.C.; Government Printing Office; 1889; pp. 60-61. [HE206]

<sup>205</sup>Capt. Geo. M. Wheeler. *Report upon United States Geographical Surveys West of the One Hundredth Meridian, Vol. I--Geographical Report*; Washington, D.C.; Government Printing Office; 1889; p. 61. [HE206]

<sup>206</sup>*Annual Report of the Secretary of the Interior, 1875, 44th Congress, 1st Session, House Executive Document, p. 586.* [HE216]

## Zuni Agriculture 1876-1902

The extent of Zuni agriculture was established by reports from visitors to Zuni between 1846 and 1875, some of which were cited in my initial report. However, many of these early visitors did not witness or understand the Zunis' cultivation practices and erroneously reported that they did not irrigate. Starting in 1876 reports of non-Indians at Zuni began to explain the methods used by Zunis to cultivate their extensive fields. Reports from this period also document the continuity of use of Zuni farming villages and fields that had been used throughout the Spanish and Mexican periods.

In 1876 a vanguard of Mormon settlers arrived and settled at the western base of the Zuni Mountains, a location that would become Ramah. After they arrived they met with Zuni religious and civil authorities and then spent time in the farming village of Ojo Caliente. R. H. Smith provided a description of springs in the vicinity of the farming village, and dams, "where they save water for farming purposes." He provided a detailed description of Zuni agricultural methods at the farming villages. Smith said that two springs were at the head of the Ojo Caliente valley, which was seven miles long and a half mile wide. The farming village included a row of houses and corrals for horses, sheep and cattle. Smith said the Zunis raised corn, wheat, pumpkins, beans, peas and "a great deal of red pepper." They used a wooden plow, pulled by yoked cattle. Wheat was sowed prior to plowing, so that the plowing caused the seed to be covered with earth.<sup>207</sup>

Smith said that the Zunis irrigated their farming village land the same way the Mormons irrigated their lands in Utah, with water coming from the mountains or from springs. He said the

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<sup>207</sup>R. H. Smith. "Among the Zunis," *Juvenile Instructor*, September 1, 1876, p. 202. [HE217]

Zunis built “tanks,” or small reservoirs, to hold water until it was used. He then described the laborious method of the Zunis to water their farming village crops.

In getting their land ready for watering they commence and hoe up ridges all the way across the land about a rod apart; then they ridge it the other way about a rod apart, making the land in beds about a rod square, with a ridge about a foot high all around them. When it comes watering time they will commence at one corner of their land and let the water into one of these beds until it fills it up, letting it stand thus until they think the land is sufficiently soaked; then they let the water from this bed run into another and stand until the ground is saturated, and so on until the whole is watered.<sup>208</sup>

Obviously this method of moving the water from bed to bed to make sure all the crops were watered and none of the water was wasted was time-consuming and required many hands. Smith said the Zunis were highly organized.

I have seen as many as forty men and boys working in the same field together and all for one man, sowing, hoeing, planting and making ditches, and after this field was completed they would go to the next, and so on until they had their crops put in and ready for irrigating.<sup>209</sup>

Three years later, in 1879, Taylor F. Ealy, a Christian missionary, was taken on a tour of one of the Zunis’ orchards to the west of Zuni by former Zuni Governor Pedro Pino. Ealy described passing through a large corn field, where Pino picked two watermelons for them to eat, and then reached the orchard. He said small houses were constructed “all around the orchards” and were occupied when Zunis were drying the peaches. He said men, women and children would carry loads of peaches to the top of “great rocks,” where the peaches were left to dry. He

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<sup>208</sup>R. H. Smith. “Among the Zunis,” *Juvenile Instructor*, September 1, 1876, p. 202. [HE217]

<sup>209</sup>R. H. Smith. “Among the Zunis,” *Juvenile Instructor*, October 1, 1876, p. 223. [HE217]

thought they had between five hundred and a thousand bushels of peaches.<sup>210</sup>

During the same year, 1879, ethnologist Frank Hamilton Cushing arrived at Zuni. He would provide additional detailed descriptions of Zuni agricultural practices. Cushing was sent to study Zuni culture by the Bureau of American Ethnology. Cushing was adopted by the Zunis and made a member of a number of Zuni religious societies, which put him in a good position to learn intricacies of many aspects of Zuni practices and culture.

Cushing described, in some detail, how floodwater lands were put under cultivation in the traditional Zuni way. He described how a young Zuni man would go out across the countryside to find the mouth of a streambed which winds down into the plain from the mountains or hills. The Zuni then hoed up dirt borders for the whole field and using check dams and additional internal dirt hills created interior plots. Thus when water flowed down the streambed, it could be moved to the various plots within the overall field. I reproduced Cushing's drawing of such a field, "Plan of a Zuni Cornfield," in my initial report. Cushing said that such fields were still in use as far as forty miles away from the main village.<sup>211</sup>

When the Zuni farmer was ready to plant his field he refined his plant and dirt barriers and then gave prayers that the field would work as it was supposed to, "namely, that with every shower, although the stream go dry three hours afterward, water has been carried to every portion of the field, has deposited a fine loam over it all, and moistened from one end to the other, the

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<sup>210</sup>Norman J. Bender. *Missionaries, Outlaws, and Indians: Taylor F. Ealy at Lincoln and Zuni, 1878-1881*; University of New Mexico Press; Albuquerque; 1984; pp. 119-121. [HE227]

<sup>211</sup>Frank Hamilton Cushing. *Zuni Breadstuff*, Indian Notes and Monographs, Vol VIII, Museum of the American Indian (first published in *The Millstone* in 1884-85), 1974, pp. 152-153, 157-158 and Plate II. [HE514]

substratum.”<sup>212</sup>

Cushing also described irrigation at the farming villages, where springs and permanent streams were found. Water could be delivered to fields at the farming villages by canal and Zunis even used hollow logs as viaducts.<sup>213</sup> Scarecrows and seasonal living huts were also constructed among the fields located far from Zuni (see Cushing’s drawing “A Zuni Cornfield with its Scarecrows,” which I reproduced with my initial report).

Cushing’s residence at Zuni attracted a number of other visitors, including Silvester Baxter, who visited Zuni in 1881 and the following year published an account of his time at Zuni, describing in detail the Zunis’ “waffle gardens.” These plots were similar to the floodwater plots in that they were bordered with small mud walls. But these plots were relatively small and rectangular and women watered these crops by hand.<sup>214</sup>

So by the mid-1880s published reports by first-hand observers had indicated the extent of Zuni agriculture and the methodology for growing crops on their semi-arid landscape, using various complex technologies, including canals and ditches, checkdams, small and large earthen barriers, and hand-watering with the use of ollas. In 1877, the year the Zuni Reservation was first established, using the various farming techniques described by Smith and Cushing, reports indicate that Zuni had a total of about 12,000 acres of irrigated crops under cultivation.<sup>215</sup> After

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<sup>212</sup>Frank Hamilton Cushing. *Zuni Breadstuff*, Indian Notes and Monographs, Vol VIII, Museum of the American Indian (first published in *The Millstone* in 1884-85), 1974, pp. 164-165. [HE523]

<sup>213</sup>Frank Hamilton Cushing. *Zuni Breadstuff*, Indian Notes and Monographs, Vol VIII, Museum of the American Indian (first published in *The Millstone* in 1884-85), 1974, Plate IV and pp. 259 and 584. [HE523]

<sup>214</sup>Sylvester Baxter. “The Father of the Pueblos,” *Harper’s New Monthly Magazine*, Vol. LXV, No. CCCLXXXV (June, 1882) p. 81. [HE35]

<sup>215</sup>E. Richard Hart. "Rebuttal Report: 'Damage to Zuni Trust Lands,'" Expert Testimony, Docket 327-81L, United States Claims Court, 1988, Table 1. [HE571]

studying the documentary record, conducting interviews at Zuni over several decades, and consulting the reports of other experts in different disciplines, it is my opinion that prior to the twentieth century the Zunis cultivated between 12,000 and 15,000 acres of land using the various irrigation technologies that were available to them, and making use of water arising on what is now the Zuni Reservation, water that flowed through the reservation, and a considerable amount of land and water adjacent to the current boundaries of the reservation.

Early observers had wondered how the Zunis managed to produce such large crops where there was so little water. In 1849, James H. Simpson of the Corps of Topographical Engineers, had made the insightful observation that the Indians must have needed not only the rainfall, but the runoff from the mountains in order to survive in such a dry climate.<sup>216</sup> Most locations on what is now the Zuni Reservation could not have supported maize crops with rainfall alone. Irrigation was necessary. David Rhode has conducted a study to determine if conditions on Zuni trust lands could have supported the extensive cultivation that has been reported in historical documents. As I noted in my initial report, he concluded that there was sufficient catchment acreage for the floodwater irrigation of some 20,000 to 25,000 acres.<sup>217</sup> This conclusion is consistent with historical reports suggesting 12,000 to 15,000 acres of irrigated, cultivated lands.

I have already cited, in my initial report, many more first-hand accounts which

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<sup>216</sup>Frank McNitt. *Navaho Expedition: Journal of a Military Reconnaissance from Santa Fe, New Mexico to the Navaho Country Made in 1849 by Lieutenant James H. Simpson*; University of Oklahoma Press; Norman; 1964; pp. 131-132. [HE28]

<sup>217</sup>Rhode, David. "Estimating Agricultural carrying Capacity in the Zuni Region, West-Central New Mexico: A Water Allocation Model," *Soil, Water, Biology, and Belief in Prehistoric and Traditional Southwestern Agriculture* (Edited by H. Wolcott Toll), New Mexico Archaeological Council, Special Publication No. 2, 1995, pp. 85-100, quoted at 89. [HE493]

documented Zuni agriculture between 1882 and 1902, including William E. Curtis in 1883,<sup>218</sup> Adolph F. Bandelier in 1883,<sup>219</sup> Julian Scott in 1890,<sup>220</sup> Hamlin Garland in 1895,<sup>221</sup> John L. Bullis in 1897,<sup>222</sup> and many others.

A vast predominance of evidence demonstrates the continuity of Zuni agriculture through the Spanish and Mexican periods and through the first half-century under the United States. In 1540, when Coronado arrived in the Province of Cibola, the Zunis had at least six villages. At the end of the Reconquest in 1692, the Zunis consolidated into one village, Halona:wa (today's Zuni). However, they continued to use the farmland around all of the former villages, and began to establish seasonal farming villages in those areas. In the 19<sup>th</sup> century, the principal farming villages were Ojo Caliente, Pescado and Nutria. Zunis acquired horses and burros during the Spanish period, which made it easier to transport harvested crops over longer distances. First-hand accounts of Spaniards demonstrate that the Zunis were not only farming a large area around the main pueblo, but were cultivating other large fields around their other villages and elsewhere where there was irrigable acreage. Zuni also acquired new crops under Spain. The Zunis planted several peach orchards, to the north, east and west of the central village. They also began to

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<sup>218</sup>William E. Curtis. *Children of the Sun*, Inter-Ocean Publishing Co., Chicago, 1883 (reprint by AMS Press), pp. 10-12, 43-44, 56-57, 73-74, 79 and 95. [HE111]

<sup>219</sup>Charles H. Lange and Carroll L. Riley *The Southwestern Journals of Adolph F. Bandelier, 1883-1884*, The University of New Mexico Press; Albuquerque; 1970; pp. 49-50, 54-57, 67, 69-70 and 72. [HE255]

<sup>220</sup>Julian Scott. "Pueblos of Laguna, Acoma, and Zuni," in *Extra Census Bulletin: Moqui Pueblo Indians of Arizona and Pueblo Indians of New Mexico*, by Thomas Donaldson; Eleventh Census of the United States, Robert P. Porter, Superintendent; Washington, D.C.; U.S. Census Printing Office; 1893; p. 128. [HE115]

<sup>221</sup>Lonnie E. Underhill and Daniel F. Littlefield, Jr. (eds.) *Hamlin Garland's Observations on the American Indian, 1895-1905*; Tucson; University of Arizona Press; 1975; pp. 111-117. [HE311]

<sup>222</sup>Bullis to C.I.A., February 8, 1897, Record Group 75, Letters Received, National Archives. [HE312]

irrigate wheat, principally at the farming villages.

It is important to note that all agricultural land within the current reservation was available to Zuni irrigation and cultivation throughout the period from 1846 to 1902.<sup>223</sup>

### Zuni Agriculture, 1902-1940

In my initial report I summarized the use of irrigation by Zuni from 1900 to 1940. Dr. Hordes affects some surprise that my report ends in 1940. There is nothing whatsoever surprising about that. The United States Department of Justice provided me with my scope of work, asking me to end my study in 1940, after which date other expert disciplines could provide the necessary syntheses. I described the dams that were constructed by the Bureau of Indian Affairs at Nutria, Pescado, Zuni and Ojo Caliente.

Prior to its first failure, in 1909 it was reported that 3,200 acres were available to irrigation and cultivation with water from Black Rock Dam.<sup>224</sup> After Black Rock Dam was rebuilt, in 1915 the Bureau reported there were 5,000 acres being irrigated and cultivated with water from the dam.<sup>225</sup> As Black Rock Dam filled with silt, in 1918 the Bureau reported that 3,500 acres were being irrigated and cultivated with water from Black Rock Dam.<sup>226</sup> In 1918 an additional 1,600 acres of land were being irrigated at Nutria, 750 acres at Ojo Caliente, 160 acres

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<sup>223</sup>Yanello, Judge Judith Ann. "Findings of Fact re: Taking of Zuni Lands," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in: Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 297-300. [HE480]

<sup>224</sup>S. Lyman Tyler. "Report on the Zuni Pueblo," sent to Arthur R. Fife, United Pueblos' Agency, September 1, 1955, Southern Pueblo Agency Files, Denver Federal Center, p. 18. [HE276]

<sup>225</sup>Meritt to Overson, May 15, 1915, RG 75, CF, NA. [HE465]

<sup>226</sup>H. F. Robinson. "The Silt Problem of the Zuni Reservoir," RG 75, CF, NA. [HE529]

at Pescado, along with additional small tracts totaling 900 acres were being irrigated and farmed. Combined with the 3,500 acres at Black Rock, the total irrigated cultivation in that year was 7,000 acres.<sup>227</sup> The reason that Pescado had such small acreage was because the non-Indian community at Ramah, to the east of Zuni, had dammed the Pescado drainage in 1903 to provide water for their own fields.<sup>228</sup>

I pointed out in my initial report that additional dams were also constructed to provide Zunis with ditch-fed irrigation. The following dams were constructed between 1929 and 1937:<sup>229</sup>

Nutria Diversion Dam	1929-31
Pescado	1931
Nutria No. 2	1932
Nutria No. 3	1934
Ojo Caliente	1934
Tekapo	1937
Nutria No. 4	1938

The record shows, as I demonstrated in my initial report, that throughout the period from 1902 to 1940, Zuni irrigated with all the water that they had available to use on their cultivated fields. The decline of Zuni irrigated agricultural acreage through this period has been thoroughly documented, as well the causes for that decline.<sup>230</sup> In response to losses of agricultural land and

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<sup>227</sup>E. B. Linnen, H. T. Brown, and Walter G. West. "Report . . . On the Irrigation Project on the Zuni Indian Reservation in the State of New Mexico," April 25, 1918, RG 75, CF, NA. [HE530]

Horace G. Wilson. "Inspection: Zuni Agency & School," December 12, 1918, RG75, CF, NA. [HE531]

<sup>228</sup>Robinson to C.I.A., February 14, 1921, RG 75, CF, NA. [HE541]

<sup>229</sup>Hart, E. Richard. "A History of Zuni Water Use: Executive Summary," Expert Testimony Submitted to the United States Department of Justice in behalf of the Zuni Indian Tribe in *Zuni River Basin v. State of New Mexico, et al.*, February 27, 2006, pp. 84-89.

<sup>230</sup>See, for instance:

Hart, E. Richard. "Statement of E. Richard Hart," before the Select Committee on Indian Affairs, United States Senate, re: S. 2203, Hearing held May 7, 1990, with attachments.

water during the twentieth century, Zuni has been engaged for over two decades in a Resource Development Plan, with help from proceeds coming from the Zuni Land Conservation Act of 1990 and is actively working to restore and increase the amount of irrigated agricultural land.<sup>231</sup>

I previously referred to depositions taken from Zuni elders for Docket 161-79L.<sup>232</sup> Additional testimony on 20<sup>th</sup> century Zuni agriculture and farming villages was provided by the Zunis who were deposed. In the following depositions, which are by their nature, primary sources, Zunis talked about agriculture and irrigation during the twentieth century. The term “dry farming” has been used by Dr. Hordes in his paper. It is important to note that when the Zunis use that term, they are discussing floodwater irrigation as opposed to canal or ditch-fed irrigation. They are delivering the water to the crops through the use of check dams, mounds of earth and diversionary furrows, as described above, so that large catchment basins can provide enough water to much smaller cultivated plots.

Tom Awelagte was ninety-three years old when he was deposed in February, 1980. He recalled that Zunis used to plant corn along the Zuni River and its side channels between Zuni and what is now St. Johns, Arizona, and even beyond for ten or twelve miles.<sup>233</sup>

Fred Bowannie, Sr. had his deposition taken February 26, 1980. He was sixty-nine when he was deposed. Mr. Bowannie described where traditional floodwater farming took place,

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<sup>231</sup>United States Congress. “Zuni Land Conservation Act of 1990,” Public Law 101-486, 101<sup>st</sup> Congress, 2<sup>nd</sup> Session, October 31, 1990.

<sup>232</sup>Hart, E. Richard (ed.). *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University of Kansas Press, 1995, pp. 319-322. [HE480] On these pages I provide a list of all reports and depositions in the case.

<sup>233</sup>Awelagte, Tom. Deposition, February 21-22, 1980. *The Zuni Indians of New Mexico vs. The United States of America*, Docket No. 161-79L, pp. 7 and 36.

“places where the water might have spread out.” He noted that they did not plow these areas.<sup>234</sup>

Belle Bowannie, who was old enough to remember World War I, had her deposition taken on September 20, 1984. She described farming corn with her husband, harvesting it and processing it into various kinds of food.<sup>235</sup>

Chester H. Gaspar was seventy-six years old when his deposition was taken February 26, 1980. He described farming at the Zuni farming village of Ojo Caliente. At the farming village, where irrigation water was available, the fields were plowed. He recalled plowing with a horse when he was a boy in 1914. He was still using a horse to pull a cultivator in 1930.<sup>236</sup>

When Mazone Harker was deposed on September 24, 1984, he was eighty-four years old. He described the old method of planting a floodwater field with a digging stick, or “wooden leg” (see my photograph of Chester Mahooty holding a traditional digging stick in my initial report).<sup>237</sup> Digging sticks were used where there was floodwater irrigation.

Tom Idiaque was one hundred one years old when his deposition was taken on September 17, 1984. He recalled growing wheat at Upper Nutria and corn with some melons at a location near lower Nutria (Ta:lapa/k/yanna). He described how the seeds were planted and irrigated in the Nutria area. He also described how diversion furrows and check dams were used to deliver runoff water to floodwater fields. He said he recalled that type of irrigation being used near

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<sup>234</sup>Bowannie, Fred. Deposition, February 26,1980. *The Zuni Indians of New Mexico vs. The United States of America*, Docket No. 161-79L, pp. 7 and 13.

<sup>235</sup>Bowannie, Belle, Deposition, September 20,1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 2, 13, 21, 25 and 27.

<sup>236</sup>Gaspar, Chester H. Deposition, February 26, 1980. *The Zuni Indians of New Mexico vs. The United States of America*, Docket No. 161-79L, pp. 9-10 and 13.

<sup>237</sup>Harker, Mazone. Deposition, September 21,1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 5 and 38.

Lower Nutria until about 1929. He also described how the Zunis made earthen dams using horses and [fresno] “scrapers” to impound water for crops.<sup>238</sup>

Ta:lapa/k/yanna, the farmland identified by Tom Idiaque as being farmed by floodwater methods until about 1929, is located on Map 21 in *A Zuni Atlas* as location number 169.

Traditional Zuni farms documented in the Zuni depositions taken for Dockets 169-79L, 327-81L, and 224-84L and located on Map 21, include farms along the Zuni River, in the Upper and Lower Nutria area, and on Concho Creek, flowing into the Little Colorado just above the mouth of the Zuni River.<sup>239</sup>

Robert Edward Lewis was deposed on September 22, 1984. Lewis was sixty-nine years old at the time, and had been governor of Zuni for fourteen years between 1965 and 1984. He recalled farming operations around the central Pueblo of Zuni, as well as at the farming villages of Pescado, Nutria and Ojo Caliente. He recalled the period when Black Rock Dam actually impounded water, before it was silted in, and was useful in delivering irrigation water to farms in the Zuni Valley. He also described the use of windmills to pump water for farmland.<sup>240</sup>

Chester Mahooty was fifty years old when deposed on February 20, 1980. He said that traditionally Zunis raised melons, corn, wheat, beans, chili, onions, squash, coriander and peaches.<sup>241</sup> Pacque Ondelacy was eighty-nine when he was deposed on September 20, 1984. He

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<sup>238</sup>Idiaque, Tom. Deposition, September 17, 1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 9, 15-16, 18-23, and 37.

<sup>239</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, p. 56. See, especially, numbers 7, 8, 13, 75, 82, 107, 169 and 195. [HE479]

<sup>240</sup>Lewis, Robert Edward. Deposition, September 22, 1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 4-5, 9, 24-26, and 53.

<sup>241</sup>Mahooty, Chester. Deposition, February 20, 1980. *The Zuni Indians of New Mexico vs. The United States of America*, Docket 169-79L, pp. 6 and 36.

described farming in the Pescado area.<sup>242</sup>

Sol Ondelacy was eighty-four when he was deposed on September 19, 1984. He described floodwater farming techniques. He said that Zunis controlled the runoff and caused it to spread out over their corn and squash fields at places like Bosson Wash, northwest of the central Zuni village, where they could plant corn using a digging stick, before Bosson Wash became too incised. He also described, in some detail, how early 20<sup>th</sup> century erosion made floodwater farming impossible in many areas that were formerly farmed by Zunis. He said he learned floodwater planting techniques from his grandparents, who farmed at Ojo Caliente and described the use of check dams and diversions to control the water.<sup>243</sup>

In his 1940 article in *Scientific Monthly*, as noted in my initial report, Dr. Guy R. Stewart also described floodwater irrigation that formerly took place in Bosson Wash. He concluded that the methods used by Zuni traditional farmers, not only resulted in productive farmland, but worked to control erosion. Stewart quoted the Zuni governor as saying, “Zuni farming always keeps the land good.” Stewart himself concluded that Zuni floodwater farming in the Southwest was an essentially sustainable agricultural technology.<sup>244</sup>

Ralph Quam was deposed on February 24, 1980. He was born in 1914 at the Nutria farming village. When he was young he said “all that Nutria valley was nothing but wheat.” He

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<sup>242</sup>Ondelacy, Pacque. Deposition, September 20, 1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp.5 and 23-24.

<sup>243</sup>Ondelacy, Sol. Deposition, September 19, 1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 6, 36-37, 48-49, 55-59, 64, 113-114 and 125.

<sup>244</sup>Dr. Guy R. Stewart. “Conservation in Pueblo Agriculture,” *Scientific Monthly*, Vol. 51 (1940), pp. 201-220, 329-340, quoted at p. 337. [HE342]

had continued to farm, but now used a tractor.<sup>245</sup>

Kathlulah Telsee was probably about eighty when he was deposed September 18, 1984.<sup>246</sup> He described how Zunis used fresno scrapers to build small earthen dams in the Nutria River in order to impound water for crops. The dams were approximately ten feet high and fifteen feet across. He also described the use of a digging stick.<sup>247</sup> Zunis also built dams to the south of the reservation, on land that is now off the reservation.<sup>248</sup>

Frank Vacit was born in 1915 and was deposed on September 19, 1984. He recalled his father farming in Gallestina Canyon prior to it becoming too incised.<sup>249</sup>

Nathaniel Nasheboo, in an interview I did with him in 1973, confirmed the Zunis' use of farmland far from Zuni Pueblo. He reported that Zunis used to farm across from today's St. Johns in the south, as well as on lands to the west in what is now Arizona.<sup>250</sup>

### Aboriginal Title

On page 7 of his report, Dr. Hordes misapprehends a statement, and fact, from my initial report. He claims that the 1917 proclamation of President Wilson in 1917 did not add 73,000

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<sup>245</sup>Quam, Ralph. Deposition, February 24, 1980. *The Zuni Indians of New Mexico vs. The United States of America*, Docket No. 161-79L, pp. 6-7 and 9-11.

<sup>246</sup>He said his age was estimated at thirty when Nutria Dam was being built. Nutria Dam #3 was constructed in 1933, giving him an estimated date of birth as 1903.

<sup>247</sup>Telsee, Kathlulah. Deposition, September 18, 1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 6, 10 and 16-18.

<sup>248</sup>Pinto, Gabriel. Interview by E. Richard Hart, August 14, 1980, at Zuni, New Mexico. [HE526]

<sup>249</sup>Vacit, Frank. Deposition, September 19, 1984. *The Zuni Indians of New Mexico vs. The United States of America*, Docket Nos. 327-81L and 224-84L, pp. 5 and 35.

<sup>250</sup>Nathaniel Nasheboo. Interview with E. Richard Hart, June 4, 1973, Zuni, New Mexico, transcript of recording, pp. 19-20. [HE292]

acres of “**aboriginal lands**” to the Zuni Reservation.<sup>251</sup> He goes on to quote the proclamation, which, of course, says nothing about aboriginal lands—the president could not create aboriginal lands.

On December 8, 1941, when the Supreme Court issued its fifteen page opinion on *United States v. Santa Fe Pacific Railroad Company*, it not only set the stage for the massive cases presented to the Indian Claims Commission, but helped mold the discipline of ethnohistory. Justice William O. Douglas, writing for a unanimous court, included a short statement that would have a far-reaching impact on general tribal litigation in the 20<sup>th</sup> century. He said the court had concluded that “occupancy necessary to establish aboriginal possession is a question of fact to be determined as any other question of fact.” That opinion not only made the Indian Claims Commission possible, it probably made it necessary. The determination of tribal exclusive use and occupancy of aboriginal territory led directly to the development of ethnohistory as a new discipline, combining elements of ethnographic fieldwork and historical documentary research.<sup>252</sup>

The Zuni Tribe adjudicated its aboriginal land claim in the United States Claims Court. Judge Yanello issued “Findings of Fact re: Taking of Zuni Lands” in May of 1987. As I have noted above, Judge Yanello ruled that Zuni had exclusive use and occupancy of a large area of land throughout the Spanish and Mexican periods, that was still intact as of 1846.<sup>253</sup> The extent

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<sup>251</sup>Hordes, p. 7.

<sup>252</sup>*United States as Guardian of the Hualapai Indians of Arizona v. Santa Fe Pacific Railroad Company*, Supreme Court of the United States, 314 U.S. 339 (1941).

McMillen, Christian W. *Making Indian Law: The Hualapai Land Case and the Birth of Ethnohistory*. New Haven: Yale University Press, 2007, pp. 159-165.

<sup>253</sup>Yanello, Judge Judith Ann. “Finding No. 84: Description of Zuni Aboriginal Lands as of 1846,” *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas:

of Zuni aboriginal territory as of 1846 is reflected in Map 21 in *A Zuni Atlas*, published two years prior to Judge Yanello's rulings.<sup>254</sup>

Judge Yanello also issued a series of Findings that established when aboriginal title to Zuni territory outside of the current reservation boundaries was extinguished. The judge ruled that aboriginal title to a large portion of Zuni territory was extinguished between 1846 and 1876,<sup>255</sup> aboriginal title to another portion of Zuni territory was extinguished between 1877 and 1900,<sup>256</sup> aboriginal title to a smaller portion of Zuni territory was extinguished between 1901 and 1912,<sup>257</sup> aboriginal title to land close to the current reservation was extinguished between 1912 and 1924,<sup>258</sup> aboriginal title to lands immediately adjacent to the Zuni Reservation was

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University Press of Kansas, 1995, p. 275. [HE480]

<sup>254</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, p. 56. [HE479]

<sup>255</sup>Yanello, Judge Judith Ann. "Finding 28: Description of Land Taken (1846-1876)," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, p. 297. [HE480]

<sup>256</sup>Yanello, Judge Judith Ann. "Finding 31: Description of Land Taken Between 1877 and 1900," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 299-300. [HE480]

<sup>257</sup>Yanello, Judge Judith Ann. "Finding 34: Description of Land Taken Between 1901 and 1912," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, p. 301. [HE480]

<sup>258</sup>Yanello, Judge Judith Ann. "Finding 37: Description of Land Taken (1912-1924)," *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in:

Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 302-303. [HE480]

extinguished between 1925 and 1935,<sup>259</sup> and finally, aboriginal title to a small portion of lands adjacent to the northwest corner of the current reservation was extinguished between 1936 and 1946.<sup>260</sup> The boundaries of these takings are reflected in Map 32 of *A Zuni Atlas*.<sup>261</sup>

During the early years of the 20<sup>th</sup> century Zunis were still using grazing lands near Nutria to the northwest of Zuni Pueblo and other lands south of Pescado. Because these lands were necessary, Zunis repeatedly petitioned government officials to have them added to the reservation. In response, in 1917, President Wilson issued a proclamation making them a part of the Zuni Reservation.<sup>262</sup> As can readily be seen examining the Court of Claims taking areas, aboriginal title to this land had not been extinguished. When I said that 73,000 acres of Zuni aboriginal land was added to the reservation, I was making a statement of fact. Zuni held aboriginal title to the lands in question at the time they were made part of the reservation.

In fact, it is important to understand, as the Court of Claims has made abundantly clear, that aboriginal title to all of the Zuni Reservation, with the possible exceptions of three tiny recent additions,<sup>263</sup> has never been extinguished.

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<sup>259</sup>Yanello, Judge Judith Ann. “Finding 40: Description of Land Taken (1925-35),” *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in: Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 303-304. [HE480]

<sup>260</sup>Yanello, Judge Judith Ann. “Finding 43: Description of Land Taken (1936-46),” *The Zuni Tribe of New Mexico v. the United States*, United States Claims Court, Docket Number 161-79L, May 27, 1987, as reported in: Hart, E. Richard (ed.) *Zuni and the Courts: A Struggle for Sovereign Land Rights*. Lawrence, Kansas: University Press of Kansas, 1995, pp. 304-305. [HE480]

<sup>261</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, p. 88. [HE479]

<sup>262</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, Map 34 and p. 95. [HE479]

<sup>263</sup>Hart, E. Richard and T. J. Ferguson. *A Zuni Atlas*. Norman: University of Oklahoma Press, 1985, Map 35, p. 99. [HE479]

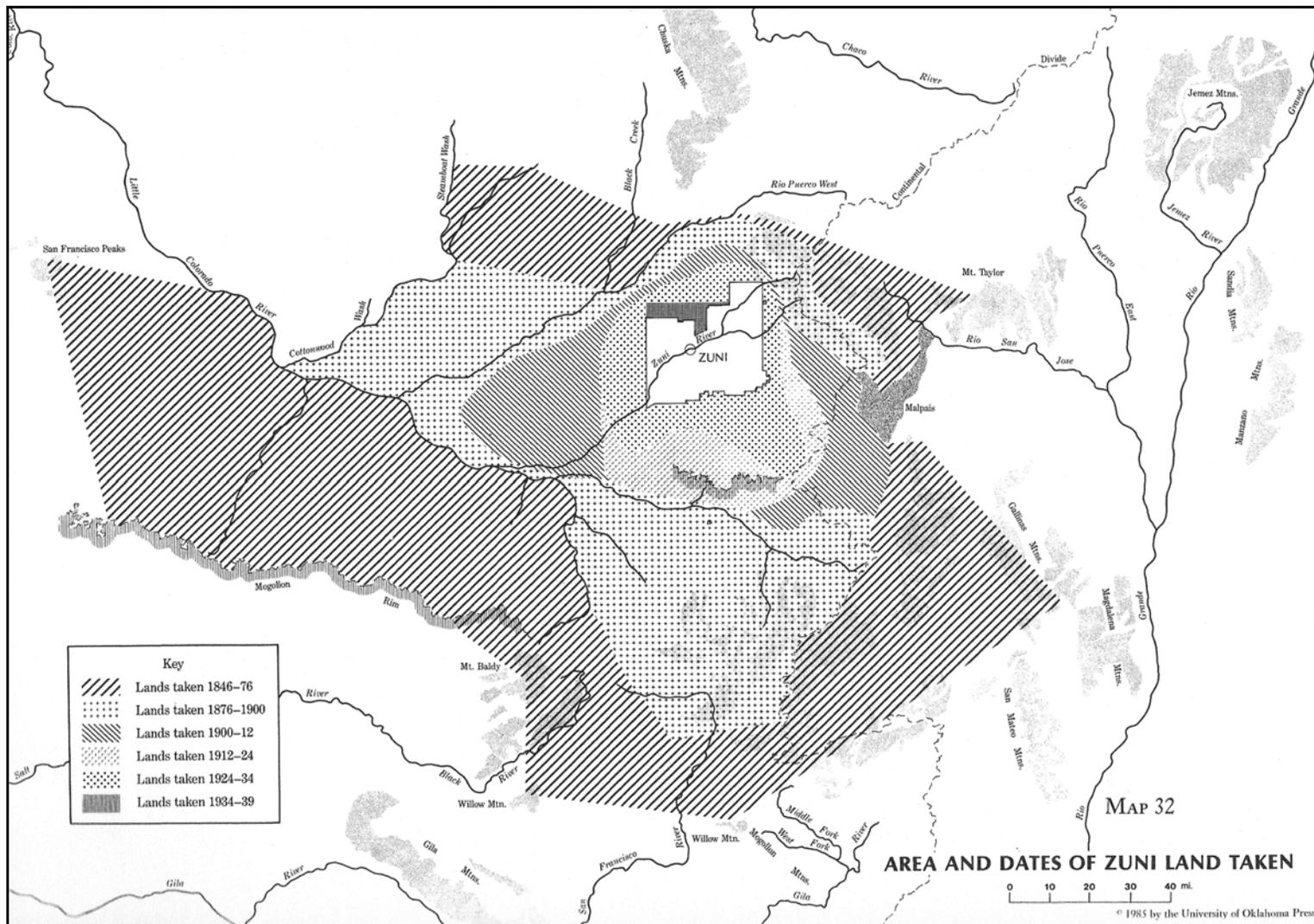
## Conclusions

Relying on primary documentary resources I have provided a history of Zuni water use from 1540 to 1940. The documentary record is very clear, indicating that the Zunis irrigated between 12,000 and 15,000 acres of cultivated land.

Zuni was remote from Spanish and Mexican authorities, who exerted little authority over the Tribe. Nevertheless, Spanish visitors to Zuni between 1540 and 1821 provided numerous accounts documenting Zuni agriculture throughout the region and around Zuni villages and farming villages. There was never any attempt by Spanish authorities to limit the Zunis to four square leagues of land. Instead, under Spanish law, Zuni had a right to all the land it was using.

The continuity of Zuni's large agricultural operations became even more apparent during the period from 1846 and 1876. It is apparent that Zunis were irrigating and cultivating between 12,000 acres and 15,000 acres during that period. In the late 1870s and early 1880s observers explained in some detail the various irrigation technologies used by the Zunis, including dams, canals, floodwater farming (using checkdams, furrows and hand labor), and hand watering of specialty crops in "waffle gardens." At the time the reservation was formed Zuni was farming at least 12,000 acres of irrigated land.

Aboriginal title to the Zuni Reservation, with the possible exception of three tiny late additions, was never extinguished.



Ferguson and Hart, 1985, p.88.

I, E. Richard Hart, will receive a total of \$23,587.50 in compensation for producing my rebuttal report and the accompanying exhibits for the United States Department of Justice in the case *United States of America, and Zuni Indian Tribe vs. State of New Mexico, Ex Rel. State Engineer, et al.*