The Greater Chaco Landscape

Ruth M. Van Dyke, Carrie C. Heitman

Published by University Press of Colorado


For additional information about this book https://muse.jhu.edu/book/83549
FIGURES

1.1. Map of the greater Chacoan landscape. 7

1.2. Group photo from the Chaco Landscapes: What We Know and What We Don’t conference, which took place at Crow Canyon Archaeological Center, Cortez, Colorado, on August 4–6, 2017. 9

3.1. Isopluvial contours across the San Juan Basin. Chaco community sample locations in red. 42

3.2. Composite of the Guadalupe–Cabezón Peak area showing La Mesa Encantada with the Guadalupe great house on top, Cabezón and the Twin Peaks to the north beyond the masonry rooms of Guadalupe Ruin in the foreground, and the plan of the Guadalupe Chacoan Community. 47

3.3. The possible Chacoan “court” kiva depression at the top of a cinder cone looking southeast from La Mesa Encantada overlooking the potential farming area along the Tapia Wash floodplain. 48

3.4. Google Earth view of the Guadalupe Community area shown with agricultural areas marked by old fields and potential floodwater usage with green pins. 49
3.5. Temperature and precipitation graphs for the Guadalupe area using the San Francisco Peaks temperature and Jemez Mountain precipitation dendrochronological indices.

3.6. The Hispanic irrigation ditches (orange) and dams (red) along the Rio Puerco in the Cabezon area.

3.7. Subannual precipitation graph for areas south of the Middle Rio Puerco Valley.

3.8. The Pueblo Pintado great house situated along the snowy ridge line overlooking the eastern subcommunity area in the foreground. Looking southeast.


3.10. Google Earth view of the Pueblo Pintado area shown with potential agricultural plots in flood-runoff areas marked by green pins 1–9.

3.11. The Chaco East Community during the AD 900–950 and 950–1000 periods; note preference for a south-side house location within the narrow canyon, indicative of seasonal occupations.

3.12. The Chaco East Community great house and the AD 1175–1300 small house community occupation; note expansion of small house settlement to the north canyon side.

3.13. Google Earth view of the Chaco East Community and the Pueblo Pintado west subcommunity area shown with potential agricultural lands marked by green pins (1–3, and 9 for the Pintado western subcommunity and a–f for the East Community, separated by the heavy vertical orange line).

3.14. House orientations for the Chaco East Community sites. Note preference for nontraditional orientations (those other than southeast and south) that indicate seasonal occupations.


3.16. The South Fork Valley at left looking north to Fajada Butte and Chaco Canyon, with Huerfano Mesa along the far horizon.
3.17. The Padilla Wash Valley great house, great kiva, and connecting prehistoric roads.

3.18. The shrine and cairns at 29SJ 1088 on the top west end of West Mesa. a. Some of the cairns taken by C. Mindeleff or F. Russell in ca. 1890. b. Shrine (split by cliff fissures; cairns in background) by Buck Cully in 1972 (CHCU n31694). c. Overview looking west past the Chaco visual communications shrine to the mouth of Padilla Wash Valley (left center) and the Chaco River below, by Nancy Akins in 1979 (CHCU n28394).

3.19. Google Earth view of the Padilla Wash Valley dominated by the Chaco River with its reliable ground waters suitable for farming. Note the proximity of the Casa del Rio, Kin Klizhin, Padilla Wash Valley, and the Peñasco Blanco great houses to one another, and the Escavada Wash/Chaco River and Chaco Canyon. Some areas for potential agricultural lands marked by various green pins.

3.20. Casa del Rio great house (in tan, marked by room outlines) underlain by a very long pioneer Pueblo I house. Note the prolific associated gray midden deposits.

3.21. The Willow Canyon Community. Note the centrally located late pioneer Pueblo I house in orange, the unusual widespread use of Type I masonry, the prolific gray midden deposits, and the lack of a great kiva and great house.

3.22. Google Earth view of the Willow Canyon Community area shown with some potential agricultural areas marked by various green pins.

3.23. Composite map of the Skunk Springs area: a. The great house plan. b. The plan view of the community with possible pathways or streets (in orange). c. A photo showing the many prominent peaks to the north. Community site number sequences run from LA 7000–7057, 7083–7089, to 7146–7163, though some site locations are missing.

3.24. View of the present ditch-irrigated fields (marked by multiple fine light-green parallel lines) at Newcomb, New Mexico, which may have prehistoric origins.

3.25. Google Earth view of the Skunk Springs Community area shown with present Navajo agricultural areas that probably overlap the prehistoric ones (green pins). The area is still irrigated by local Navajos from springs and ditches.

3.27. Temperature (orange) and precipitation (blue/green) graphs for Chaco Canyon and northwest New Mexico AD 825–1000, 1100–1300, 1850–1950 using the San Francisco Peaks temperature and Chaco Canyon precipitation dendrochronological indices.

4.1. Phillip Tuwaletstiwa at Escalon.

5.1. Large Basketmaker II human figure near Pueblo Bonito.
5.2. Small Basketmaker II human figure near Pueblo Bonito.
5.3. Basketmaker II human figures in Stewart Canyon.
5.4. Basketmaker III human figures near Pueblo Bonito.
5.5. Rosa-style human figures in Stewart Canyon.
5.6. Connected spirals in Stewart Canyon.
5.7. Textile in Chaco Canyon.
5.8. Jerusalem Cricket petroglyph in Chaco Canyon.
5.9. The “Supernova” pictograph in Chaco Canyon.
5.10. Scratched design in Chaco Canyon.
5.11. Abraded design in Chaco Canyon.
5.12. Drilled design in Chaco Canyon.
5.13. Bas relief design in Chaco Canyon.
5.15. Pronghorn antelope depicted with combined techniques (pecked, incised) in Chaco Canyon.
5.17. Rectilinear lizard man in Chaco Canyon.
5.18. Pueblo II human figure in Chaco Canyon.
5.19. Flute player and quadruped in Chaco Canyon.
5.20. Quadruped in Chaco Canyon.
5.21. Oversized human figure in Chaco Canyon.
5.22. Great panel in Chaco Canyon.
5.23. Spiral in Chaco Canyon.
5.24. Repeated flute players in Chaco Canyon.
5.25. Waterflow Site.  
5.26. Waterflow Site rock art.  
5.27. Square elements at the Waterflow Site.  
5.28. Mountain lion in Chaco Canyon.  

6.2. “Windes’ shrine” atop 29SJ 423, looking west down the Chaco Wash.  
6.3. Plans of “Windes’ shrines.”  
6.4. Seven “Chacoan crescentic structures.”  
6.7. Plan of 29SJ 1565.  
6.9. (a) Stone basin on the north rim of Chaco Canyon. (b). Stone basin near the great kiva at Chimney Rock, 5AA 88.  
6.10. Yellow Point Herradura, LA 35417.  
6.11. Avanzada at Gallegos Crossing, LA 34303.  
6.16. Cairn on sandstone spire on west side of Chacra Mesa, looking east toward Fajada Butte.  
6.18. Cairn 29SJ 184, on the south edge of Chacra Mesa, looking south toward Mount Taylor, and marking an access trail on the south side of the mesa.  
6.19. The cairns of 29SJ 1088, as seen from the Padilla Wash Chacoan community.  
6.20. Working with the Navajo Nation Heritage and Historic Preservation Department, Pat Alfred examines an ERF that his team identified as an eagle trap, situated atop an escarpment on the north side of the Chaco River.
7.1. Ernest Vallo at Pueblo Bonito. 182
7.2. Ernest Vallo and William B. Tsosie Jr. at Pueblo Bonito. 182
8.1. Denise Yazzie, Tristan Joe, Eurick Yazzie, and Will Tsosie in Chaco Canyon. 185
9.1. Hopi Cultural Resources Advisory Task Team members Terrance Outah, Sue Kuyvaya, Georgiana Pongyesva, and Ronald Wadsworth in Pueblo Bonito. 187
10.1. Zuni Cultural Resources Advisory Team members Curtis Quam, Octavius Seowtewa, and Presley Haskie above Pueblo Bonito. 189
11.1. Composite LiDAR and satellite imagery of the central Chaco Canyon area, showing locations of Bis sa’ani and Pierre’s great house communities. 195
11.2. Bis sa’ani great house, looking north. 201
11.3. Map of the Bis sa’ani community. 202
11.4. Eastern component of Bis sa’ani great house, with Casa Quemada denoted by red star. 203
11.5. Example of a circle map: viewscape from Casa Quemada, Bis sa’ani. 204
11.6. Reach of a human shout emanating from the West Great House at Bis sa’ani. 207
11.7. Reach of a conch shell blast emanating from the West Great House at Bis sa’ani. 207
11.8. The Pierre’s landscape, with numbered viewpoints and drill rigs corresponding to Van Dyke’s viewscape videos. 209
11.9. Carrie Heitman and Julian Thomas sit atop Pierre’s Great House B (LA 16508) as seen from Great House A (LA 16509) in September 2015, looking north, with drill rig #s 8, 9, and 1 on the horizon. 210
11.10. Hoss Com #95 (pumpjack #6), 650 m southwest of the Pierre’s community, with Great Houses A and B on butte in background. 212
11.11. Reach of a human shout emanating from Pierre’s great house A (LA 16509). 216
11.12. Reach of a conch shell blast emanating from Pierre’s Great House A (LA 16509). 216
11.13. Cumulative soundscape showing reach of noise from sixteen drill rigs in the Pierre’s vicinity. 217
12.1. Night sky view from Chaco Canyon. 225
13.1. Map showing prehistoric roads documented at Two Grey Hills, a Basketmaker III site. 234
13.2. The Padilla Wash Great House landscape, with prehistoric roads connecting two great houses with a great kiva, and roads linking a noncontemporaneous great kiva and great house. 235
13.3. The Aztec Airport Mesa Road in 1919. Note the monumental scale and white surface treatment. 239
13.4a–d. The Aztec Airport Mesa Road in Soil Erosion Service aerial photography from 1934 (a); 2009 Google Earth Imagery (b); LiDAR data (c); and the road’s cross-sectional profile as documented by LiDAR (d). 240
13.5a–d. The Pueblo Alto Landscape as documented through various remote-sensing methods, including 1934 Soil Conservation Service aerial photography (a); 2005 with low sun angle NAIP photography (b); 2009 with standard sun angle (c); and hill-shaded LiDAR (d). Note the vast decrease in visibility over time and the clear definition of roads in the LiDAR image. 242
13.6. Twenty-times exaggerated vertical profile of a section of the North Road detected by LiDAR that is not visible on the ground. 243
13.7. LiDAR data showing a road running southwest from the Reservoir Site. 244
13.8. Possible second, parallel alignment of the South Road in the new BLM LiDAR data. 245
13.9. Example of a typical Pole Aerial Photography setup. 246
13.10. View of “as built” 3D model of Kin Kletso as it is today (a); example of a common map of Kin Kletso (from the Chaco Research Archive) (b); and map of Kin Kletso created using SfM-derived orthophotos and elevation data (c). 248
13.11. Physical massing model created from computer model data in the Chaco Culture National Historical Park Museum (a); and computer-generated 3D massing model of Kin Kletso (b). 250
14.1. GIF animation (for web) / static figure (for print) showing the ongoing process of the geospatial Chaco Great House data’s disaggregation and reaggregation. 261
14.2. NASA DEVELOP Chaco Canyon Cross-Cutting study area. 265
14.3. NASA DEVELOP Chacoan Sites Risk Map. 265
14.4. Pueblo Pintado Road Survey Area.

14.5. 1935 Soil Conservation Service Aerial Imagery of Pueblo Pintado Road. Four aligning segments are visible and are framed by the blue dashed line.

14.6. 1991 Aerial Imagery of Pueblo Pintado Road. Only one portion of the road is visible and articulates directly with Pueblo Pintado ruins. The blue dashed line, which framed the visible road in 1935, is shown for reference.

14.7. 2015 Farmington Field Office LiDAR data of the Pueblo Pintado Road. All segments that were visible in the 1935 aerial imagery are also visible in portions of the 2015 LiDAR data. Visible segments are framed in the blue dashed line.

14.8. Chacoan Road Confidence Map.

15.1. A stone barn and drystone wall in the Yorkshire Dales, one of the iconic regional landscapes of England.

15.2. Kit’s Coty House, Kent, a Neolithic dolmen that was the first site taken into guardianship following the Ancient Monuments Act of 1882, with its surrounding railings erected by General Pitt-Rivers.

15.3. A “Druid trilithon” from William Blake’s Jerusalem, Plate 70.

15.4. The Stonehenge World Heritage Site.

15.5. Stonehenge: the façade of the sarsen circle, seen from the northeast.

15.6. Stonehenge free festival 1984, gathering at the stones on midsummer solstice morning.

15.7. The new Stonehenge Visitor Centre at Airman’s Corner in the World Heritage Site.

16.1. Pueblo Bonito, Chaco’s grandest great house, from the air.

16.2. Map showing the Greater Chaco Landscape, areas leased for oil-gas development, and the 10 mi. protection zone around Chaco Culture National Historical Park.

16.3. Map showing the Co-administered Chaco Cultural Heritage Area Protection Act withdrawal area (10 mi. zone) adjacent to Chaco Culture National Historical Park.

16.4. Map showing 10-mile zone and six identified site clusters and communities around Chaco.
16.5. Aerial view of the Pierre’s Community, the largest Chacoan community along the Great North Road. View is to the north. 320

16.6. Aerial photograph showing the crisscrossing roads and oil-gas facilities that are impacting the Greater Chaco Landscape. 322

16.7. Satellite image of Parcel 30 from BLM March 2018 oil-gas lease sale. This figure shows a possible Chacoan road alignment in southeast corner of Parcel 30. 323

16.8. View of Fajada Butte, in Chaco Canyon, from the south. Fajada Butte is a very important landmark in Chaco and was the focus of important ceremonial activities. 324

VIDEOS

11.1. Bis sa’ani Viewscape. 205

11.2. Pierre’s Pinnacle Viewscape #5. 214


13.2. Casa Cielo PAP Data. 247

TABLES

3.1. A sample of early Chaco settlements across the San Juan Basin. 44

3.2. Environment, landscape, and topographic features. 45

5.1. Great houses associated with rock art. 121

5.2. Frequencies of rock art panels and elements at selected San Juan Basin sites. 122

5.3. Regional rock art traditions. 125

6.1. Previous ERF classifications. 139

11.1. Sound model variables for raised voice, conch trumpet, and pump jack sources. 200

14.1. Outline of the process of reconciling the two most complete great house community databases. 264
THE GREATER CHACO LANDSCAPE