Aguaculture: Hispanic Water Management Along the Rio Pecos
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Abstract
Beginning in the 1860s, Hispanic families from the land grant communities of Northern New Mexico began homesteading public lands in the Middle Pecos valley. These families had to adapt their “aguaculture” to suit this new political and ecological environment. This project draws on multiple lines of evidence including previous archaeological research, GIS data, and oral history to describe and explain the different kinds of water control features constructed by these families. This research will add to our understanding of the evolution of Hispanic identity and traditional lifeways during the American period.

Introduction
Beginning in the late 1860s, Los Ojitos was populated by Hispanic settlers coming from land grants further north, where lands were communally owned and they maintained acequia, or irrigational systems, along river valleys and other public structures. At this new location, settlers to Los Ojitos were required to adapt to the new legal system that focused on private property rights and ownership, including adaptation to the physical environment where the river was noted to be more flood-prone and saline. Due to the socio-political shifts in laws and land tenure system after American conquest in New Mexico, historical research and archaeological investigation of the rural Los Ojitos Village will aid scholarship in understanding how Hispanic settlers may have adapted to American laws and environment in the Rio Pecos area. Identifying how these settlers adapted, why, and what impact these changes had on their cultural identity are aims of this research. Drawing on social identity theory, theories of cultural contact and change, and ecological theory, this research is significant in expanding our understanding of the roles these shifts in community or individual practices plays in New Mexico Hispanic identity following the American conquest. Focusing this research on water management systems and practices, such as acequias, in Los Ojitos aims to expand on the literature relating to traditional Hispanic identity that is dominated by regional studies of land grant communities located in northern New Mexico.

Objectives
The purpose of this research project is to identify how Hispanic settlers in the Middle Pecos valley adapted their “aguaculture” to suit their new legal and ecological environment, and to consider the cultural impact of these changes. Specifically, I aim to:
1. Identify types and locations of water control features constructed and used by the Hispanic settlers at Los Ojitos;
2. Compare these features at Los Ojitos with water control features constructed and utilized in the land grant communities of northern New Mexico;
3. Identify and explain adaptations in water control technology made by Los Ojitos residents; and
4. Explore the cultural impact of these shifts in “aguaculture,” especially in the way they shaped the residents’ views on:
   a) ownership of natural resources
   b) relationships between community members, and
   c) Hispanic identity in New Mexico

Methods
I draw upon archaeological and historical data to identify, describe, and explain the different kinds of water control features used in the Middle Pecos region. Data are collected from these sources:

Archaeological data
1. Spatial data and feature forms created by the 2014 Fort Lewis College Archaeological Field School at Los Ojitos
2. Additional field research conducted at the site, particularly along the Valdez claim

Historical data
1. Primary and secondary sources relating to Los Ojitos
2. Existing oral history interviews relating to acequia use and management in land grant communities
3. New oral history interviews conducted with past/present Hispanic residents of Los Ojitos or neighboring communities

Preliminary Findings
Thus far, I have been able to explore patterns in the existing archaeological data and conduct background research using primary and secondary sources relating to the Los Ojitos community. Research has identified two main Hispanic homesteading families living in Los Ojitos, the Ronquillo and Valdez families who seem to be employing strategies of “aguaculture” that reflect adaptations to living on quarter-section claims and the challenges living on the Middle Pecos river. Irrigational features for these families seems to channel runoff and spring water through agricultural fields within their claims rather than farming the river valley. The salinization or repeated flooding of the fields along the Pecos is likely the culprit for abandoning their river valley method of farming popular to land grant communities. Irrigational features and fields for both families were confined to each family’s homestead claim not following traditional land grant practices. At present more patterns has been documented and explored regarding the Ronquillo claim rather than the Valdez claim, future research is targeted to investigate the Valdez property.

The Ronquillo family farmed the drainage within their property by collecting surface runoff and spring water in aguajes (collection pools) to channel it through their fields from a ditch, with the ability of excess water to drain into the river. In contrast, the Valdez claim seems to be feeding their agricultural fields using a ditch fed by surface water runoff alone. In both examples, irrigational features are contained within their own homestead and not shared by others. This is a clear shift from the pattern of land grant communities where a acequia (ditch) functions to water plots of lands to sustain communities, anywhere a stream or river could provide reliable water to crops. Acequias usually incorporated the physical ditch (or ditches) and the community system that uses cooperative management over building and maintaining it to succeed in establishing and sustaining their community, as the ditches are community owned and managed in the land grant traditions.

However, in Los Ojitos likely due to the poor quality of water in that area of the Pecos river and due to the difference in land use (private vs. communal land) the village did not construct a traditional acequia line. Instead the acequias of Los Ojitos seems to be family owned and operated as they are constructed out of and fed through the nearby springs and runoff water from collection pools (aguajes) rather than the river waters. Additional research at the site, and exploration of the oral history regarding these types of agricultural practices and water control features, are planned for this coming summer and fall.

Future Research
This research is significant and will add to our understanding of the evolution of Hispanic identity and traditional lifeways during the American period. Doing additional field research to explore patterns on the Valdez grant and by conducting oral histories of agricultural practices and water control features in the homestead era is planned to address the cultural impact of these shifts in “aguacultura.” New oral history interviews with past or present Hispanic residents from Los Ojitos or neighboring communities will be vital to address how these shifts in water management practices shaped the resident’s views on: ownership of natural resources, relationships between community members, and Hispanic identity.

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