The Archaeology of Gardening at Amache

Summary Report-Summer 2010

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Introduction

During World War II, over 120,000 people of Japanese descent were removed from their homes along the west coast of the United States, and interned in the country's interior. The internment camps themselves are significant resources for better understanding this pivotal, yet shadowed history. The Granada Relocation Center—better known as Amache—is located in southeastern Colorado. Home to over 10,000 internees between 1942 and 1945, the site of Amache contains remnant landscaping, largely intact building foundations, and surface artifacts. In part because of its archaeological integrity, in 2007, the site was designated a National Historic Landmark, the highest federal recognition of a historic site in the U.S. Amache's cultural landscape, especially gardens and other elements that are the result of internee labor, have been identified as particularly valuable for long-term site interpretation and development. Because about half of the people interned at Amache were gardeners or farmers from California, the gardens can reveal how internees were applying their expertise to a new environment, the High Plains. Gardens were also an important way internees transformed the stark military landscape of the camp.

Design of Field Research

The archaeological investigation of gardens at Amache in 2010 was undertaken by the University of Denver, Department of Anthropology as an element of a field school in historical archaeology held at the site. The investigations were designed to integrate multiple landscape archaeology techniques, including ground-penetrating radar, stratigraphic excavation, soil chemistry analysis, archaeobotany, and palynology.

Research questions that drove the work included:

1) Were internees amending the poor soil of the camp and if so, how?
2) What types of strategies for transforming the military environment are evident both in the hardscaping and plant remains of the gardens?
3) How do the gardens fit into the larger picture of life in confinement?
4) Are there intact gardens located in areas of the site slated for development?

Also at issue was the refining of field techniques first employed at the camp in 2008. Some methodological questions included:

1) Could ground penetrating radar be used effectively to identify gardens without hardscaping (such as walls or gravel beds)?
2) Could we recover pollen in these gardens despite the overly-drained sandy parent soil? If so would it complement the data from archaeobotanical analysis?
3) Could we refine the soil chemistry analysis to better capture the chemical legacy of internee gardening?

Three gardens were chosen for analysis in 2010, one vegetable garden and two entryway gardens, located immediately in front of an internee barrack. Entryway gardens have a deep tradition in Japan and are still found near many Japanese American residences. Because of the historical records kept at the camp, these features can be at connected to specific internee households, at least at certain times in the camp's occupation. We chose one entryway garden photographed at the time the camp was occupied, and another identified during site survey in an area of the site slated for possible future development. The vegetable garden chosen for analysis was also visible in historic photographs. It is adjacent to the camp's water tower, which site managers plan to renovate and return to the camp. Better understanding of that garden's location and significance will assist site managers during construction activities in this vicinity.

Results of Garden Investigations

To better capture the relatively shallowly buried, and often ephemeral garden features of the camp, we employed fine-grained ground penetrating radar analysis. Woody vegetation (such as sagebrush) was cleared to allow for better coupling between the 400 MHz antenna and the ground surface. We also ran transects at a very close, 25 cm spacing. Our results were very promising, particularly in the vegetable garden. Despite only having been demarcated originally by a light fence, the boundaries of the garden, especially the corners, were quite visible in the GPR reflections (Figure 1). Test excavations in this garden revealed remnants of the light wood and wire fence that appears to have been the source of the GPR anomaly. These results bode well not just for the future of research at Amache, but also for the application of GPR for landscape archaeology of ephemeral features.

Similarly, the soil chemistry analysis suggested even more subtle ways of identifying garden locations. There are notable differences between the nutrient concentrations and patterns of nutrient concentrations in the garden samples and those from control sites. At shallow depths, nutrient concentrations are similar across all sites because of soil deposition since the camp was abandoned. At greater depth, the historic garden surfaces show distinct differences in soil chemistry (Figure 2). Garden sites often showed greater variability between units within a garden than did the three control sites, even though the three non-gardened pits were at much greater distances from each other and had different (though non-garden) histories. This suggests that human gardening activities had a great influence on the spatial heterogeneity of soil nutrients. It also implies a significant investment in both amending the soil and watering gardens. Although these activities were performed for only three years, they have left a legacy in the soil 60 years later.

Excavations in one of the entryway gardens suggest one source for these soil nutrients, composted food remains. We recovered crumbled eggshell distributed lightly but evenly throughout the garden contexts revealed in the excavation. While that excavation occurred, we were lucky to be visited by a former Amache internee who recalled the use of eggshell and tea leaves in the preparation of gardens. These food resources, however, were not equally available to all internees, but primarily to those who worked in the mess halls located in each block. And indeed in the six overall gardens tested to date at the camp, only the entryway garden in 12H has yielded eggshell. Yet, the soil chemistry does indicate pervasive soil amendment of all gardens, indicating a wide variety of strategies were probably employed to enhance the very poor soil of the camp.

Analysis of the macrobotanical and pollen evidence from the gardens likewise indicates significant internee investment in improving the stark environment of the camp. In some gardens, higher than expected quantities of remains associated with locally available plants, such as yucca, asters, and purslane, suggest the deliberate transplanting of more decorative local plant species. Other plants were clearly exotics that were brought to the gardens at some effort, including cattail, rose, elderberry, dogwood and even canna. Canna is employed in the tropics as a food source and may reflect Hawaiian foodways conserved at great effort in the camp.

Other strategies and resource networks are reflected in the non-organic materials employed in the gardens. Scavenged materials were employed in a number of the gardens, perhaps none so dramatically as the one where broken water pipes were placed into the ground collar up to create attractive planters (Figure 3). Large construction materials such as these would not have been widely available, especially because the camp dump was located outside the guarded perimeter. Like the eggshell, this material reveals explicit strategizing to acquire gardening materials. All three of the gardens excavated this summer yielded wire of varying gauges. The pervasive presence of wire in the gardens is particularly noteworthy given that its use was restricted to the war effort and it was not available for purchase. The wire in these gardens was likely scavenged or stolen from stores of construction materials, practices that former internees recall as widespread throughout the camp. Interestingly, some of the wire appears to have been made into homemade barbed wire, perhaps in an attempt to keep small browsers common to the area, especially Cottontail rabbits, out of the gardens.

The gardens of Amache also reflect the relationship of internees to the larger physical and social environment of the Arkansas River Valley where the camp was located. Internees made great use of materials available near, but beyond, the barbed wire perimeter of the camp, especially gravel and larger river cobbles. Although many of these materials were gathered from the banks of the Arkansas River four miles north of camp, others evidence even greater movement of internees. This summer excavations revealed two large stones used as decorative garden elements: one of quartz, the other petrified wood. Both of them derive from a type of geological formation the nearest outcrop of which is about 40 miles from Amache. Historic accounts indicate that internees could get permits to travel, both for work and in the case of organized youth groups, for pleasure. If collected on one of these forays such specimens are not only decorative, they are mementos of the nearby landscapes of freedom outside camp.

Conclusion

This work models a set of methods effective for archaeological analysis of relatively recent gardens. By combining interdisciplinary analysis and careful controlled test excavations, a robust data set was captured from these features. These results suggest the cultural landscape of Amache includes gardens with significant integrity and data potential. This knowledge is key to responsible, long-term site management. This work also reveals specific data about the way this confined community was connected to each other through the sharing of valuable, if scavenged resources, and to the physical setting through the use of local and not so local natural resources. They reveal a people with great skill in transforming the land and great determination to do so in a location they were forced to inhabit. This work thus contributes to the anthropological study of placeways, identity, and the strategies of confined peoples.

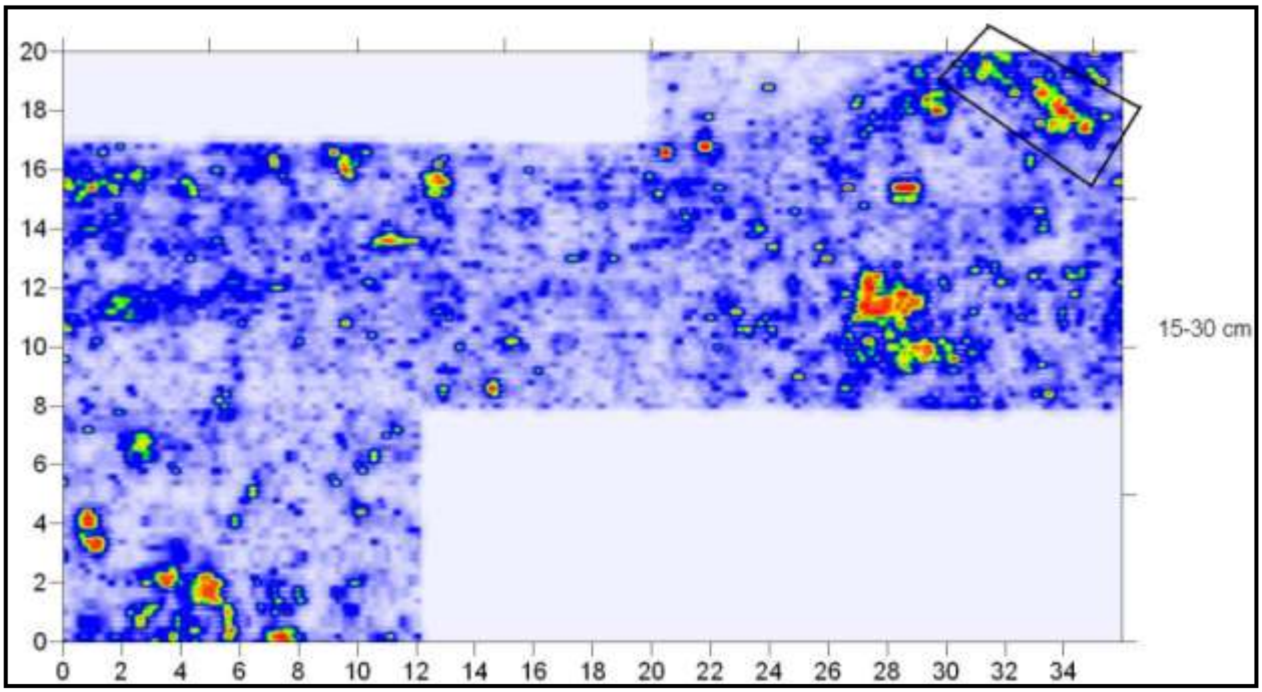

Figure 1 – GPR imagery for victory garden area at 15-30 cm. Fence anomaly is annotated by box in upper right hand corner. Test excavations were located in this area.

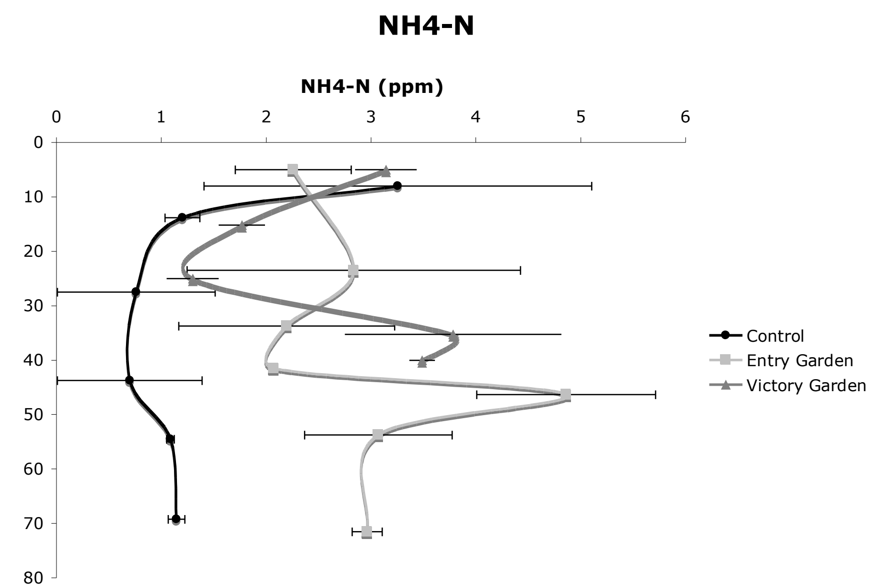

Figure 2 – Example of soil chemistry profile showing marked elevation of soil nutrients (in this case ammonium nitrogen) in the garden levels of test excavations as compared to the control plots.

Figure 3: One of two water pipes employed as planters in an excavated entryway garden. Photograph by author, July 2010.