Preserving Human-Environment Relationships:
Nineteenth Century Food Practices on the Grand Ronde Reservation

Report Prepared for the University of Washington Quaternary Research Center

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Introduction

The Preserving Human-Environment Relationships project was conducted as part of Field Methods in Indigenous Archaeology (FMIA). FMIA is a community-based, summer field school co-directed by the University of Washington and the Confederated Tribes of Grand Ronde Historic Preservation Office (HPO). Since 2015, FMIA has conducted archaeological survey and excavation on the Grand Ronde Reservation in northwestern Oregon with the dual goals of (1) enhancing the capacity of the HPO to identify and protect tribal cultural resources and (2) understanding reservation daily life during the nineteenth century.

For Native families forcibly removed to the reservation in the 1850s, life at Grand Ronde came with a host of challenges. Chronic food shortages were likely the most serious. The reservation's clay-rich soils and wet climate frustrated agricultural efforts while government supplies, equipment, and agricultural personnel repeatedly failed to reach treaty-promised levels. Native families responded by procuring wild plants and animals, both on the reservation and throughout their ancestral homelands. Specific information about reservation diets, however, including taxa harvested and the relative proportion of traditional and introduced foods, remains unknown. Ethnographic and documentary sources offer only general accounts of Native families' hunting, fishing, and gathering activities (Berreman 1934; Gatschet et al. 1945; Lewis 2009; Merrill and Hajda 2007; Zenk 1984), while the reservation's few archaeological studies did not record food remains (Becker et al. 2008; Roulette et al. 2002; Wilson 1998).

Project Goal and Hypothesis

The goal of the Preserving Human-Environmental Relationships project was to use archaeological investigation to acquire new information about Grand Ronde diets and, by extension, resource availability in northwestern Oregon from the establishment of the reservation in 1856 through the turn of the century. Given the cultural importance of pre-reservation foods and the multiple lines of evidence pointing to their continued harvest, I hypothesized that Native families at Grand Ronde consumed a range of wild plant and animal taxa. Archaeological deposits associated with reservation households and containing floral and faunal assemblages dominated by these taxa would support this hypothesis.

Methods

I evaluated this hypothesis over a six-week field season in the summer of 2017. With assistance from graduate student volunteers and undergraduates enrolled in FMIA, I supervised survey and excavation at a reservation habitation area along Cosper Creek in Grand Ronde, Oregon (Figures 1-2). Native families lived on and worked at this property from 1856, when it was the site of a three-hundred-person encampment established by the reservation's founding Molalla community, through at least the 1920s. Fieldwork expanded ground penetrating radar and magnetometry survey and intensive surface collection (see Gonzalez 2017 for a full description of this method) conducted during the 2016 field season. Thirty-two new 1-meter x 1-meter surface collection units were completed within two 20-meter x 20-meter survey blocks. Surface collection units were excavated to

approximately 4 centimeters below surface. Excavated sediment was screened through 1/8-inch mesh. In addition, a 4-inch bucket auger was used to explore sub-surface deposits along the Cosper Creek riparian zone and a sloped hillside east of the creek. Auger testing offered an alternative to geophysical survey and intensive surface collection, which were not feasible given the dense vegetation in these two areas. Using a judgmental survey strategy, sixty auger bores were completed, most of which extended to 1-meter below surface. Sediment was screened through 1/8-inch mesh and later wet screened through 1/16-inch mesh to enhance recovery of micro-artifacts.

The second half of the 2017 field season focused on excavation. Nine excavation units, ranging from 50-centimeters x 50-centimeters to 1-meter x 1-meter in size, were placed in areas overlying sub-surface anomalies and/or containing elevated numbers of surface or near-surface artifacts. Units were excavated using a combination of natural and 10-centimeter arbitrary levels. Excavated sediments were screened through 1/8-inch mesh. Ten-liter scatter sediment samples were collected for each level. Units were excavated to 50 or 60 centimeters below surface.

Results

Surface collection units, auger bores, and excavation units yielded a range of late nineteenth and early to mid-twentieth century artifacts, including ungalvanized cut and wire nails; sawn wood and other construction materials; flat, vessel, and lamp glass; semi-vitrified white earthenware; floral and faunal remains; and obsidian and cryptocrystalline silica flakes and flake shatter (Figure 3). These artifacts date to between 1850 and 1940. A summary of artifacts recovered from excavation units is shown in Table 1.

Recovered artifacts offer new insight into the material signature of the reservation and the types of belongings used by Native families to navigate life at Grand Ronde. However, they only partially speak to the project's guiding hypothesis. The archaeological deposits identified along Cosper Creek are associated with domestic habitation, but field teams identified no formal hearths or middens dominated by food remains. As shown in Table 1, the faunal assemblage from the site was small (NISP = 33). With the exception of one intact elk tooth (Figure 3), the assemblage consisted entirely of fragmented mammal remains unidentifiable to taxa.

By contrast, the floral assemblage from the site provides detailed information about reservation diets. Ten-liter sediment samples from each level were floated according to standard procedures (Pearsall 2015:46-62). Macrobotanical remains preserved in sample light fraction were then examined by Dr. Joyce LeCompte-Mastenbrook, who has considerable experience in Pacific Northwest ethnobotany. Dr. LeCompte-Mastenbrook identified domesticated taxa such as wheat (*Triticum aestivum*) as well as a range of culturally important foods, including oak acorns (*Quercus garryana*), tarweed (*Madia* sp.), Saskatoon berries (*Amelanchier alnifolia*), thimble/black/raspberries (*Rubus* spp.), and blue elderberry (*Sambucus caerulea*). The distribution of select plant taxa by level is shown in Table 2. Macrobotanical data indicate Grand Ronde families continued to harvest wild plant foods post-removal. Identified taxa currently grow within the original boundaries of the reservation, suggesting that Native families maintained local patterns of resource acquisition, at least for plants. Though additional data are needed to fully evaluate the relative contributions of introduced and traditional plants to Grand Ronde diets, this analysis provides preliminary support for the hypothesis that reservation families consumed a range of culturally important plant foods.

Implications for Quaternary Science

In recent decades, archaeological research on European and American colonialism has undergone

topical and conceptual shifts. Where the study of settler lifeways once dominated research, scholars increasingly examine the experiences of Native peoples at missions, trading posts, reservations, and in other colonial contexts (Graesch et al. 2010; Lightfoot 2005; Panich and Schneider 2014; Silliman and Witt 2010). Though this research has expanded our understanding of colonialism's varied impacts on Native societies, it continues to focus primarily on the decades immediately following "contact" between Native communities and Euro-American traders, explorers, and settlers. The nineteenth and twentieth centuries persist as disciplinary blind spots. In the Pacific Northwest, the paucity of archaeological research on recent Native history has left unanswered fundamental questions about reservation daily life and the ways Native families navigated a rapidly changing environment. Beginning in the 1840s in Oregon, domesticated plants and animals imported by settlers disrupted local ecologies and resource availability while increasing federal control prevented Native communities from continuing landscape management practices such as prescribed burns. Given these changes, the disappearance of particular taxa from Native diets may reflect declining availability as much as shifting dietary patterns due to removal.

The Preserving Human-Environment Relationships project expands the temporal scope of colonialism studies in archaeology. It complements anthropological and historical scholarship focused on the diverse strategies used by Native families to adapt and preserve cultural practices on reservations. And for those interested in Oregon's archaeological and environmental history, it provides information about the kinds of resources that remained available following the political, ecological, and demographic upheavals of the mid-nineteenth century. Of course, additional research, at Grand Ronde and throughout the Pacific Northwest, is needed to build regional understandings of these issues. Yet at this point, this project demonstrates that long-important connections between Native communities and traditional foods persisted on the Grand Ronde Reservation. For staff of the Grand Ronde Culture and Natural Resources Departments, which oversee initiatives to revitalize pre-reservation foodways and rehabilitate fishing, gathering, and hunting areas, this project provides important time depth. It highlights how these initiatives are contemporary expressions of a century-old effort to adapt and continue pre-reservation traditions within the boundaries of the reservation system.

Acknowledgements
I would like to extend my thanks to the UW QRC for their support during the 2017-2018 academic year. Without the QRC Research Award, only minimal excavation and macrobotanical analysis would have been possible. Not only would this have limited my understanding of archaeological deposits along Cosper Creek, it would have diminished my chances of securing additional grant support. As it turns out, the opposite occurred. I incorporated summer 2017 field results into my National Science Foundation Doctoral Dissertation Research Improvement Grant application, which had been unsuccessful the previous year. In April 2018, my application received full NSF funding, supporting additional fieldwork and macrobotanical analysis during the summer of 2018. Furthermore, in autumn 2017 I drew on field results in an application for a Mellon Foundation/American Council of Learned Societies Dissertation Completion Fellowship, which supports final dissertation writing and analysis over an entire academic year. I was fortunate to receive the award in March 2018. I am confident these applications would have been unsuccessful had I not first received the QRC Research Award. As I have learned from my colleagues at Grand Ronde, *hayu masi*. Thank you.

Figures

Figure 1. The 2017 Field Methods in Indigenous Archaeology field team.

Figure 2. FMIA survey and excavation in July 2017.

Depth (cmbs)	Faunal Remains		Lithic Material		Glassware		Historic Ceramics		Metal Artifacts		Sawn Wood	Charcoal
	NISP	Weight	NISP	Weight	NISP	Weight	NISP	Weight	NISP	Weight	Weight	Weight
0-10	0	0	4	3.45	18	53.13	2	0.25	95	164.06	175.78	23.96
10-20	0	0	10	5.03	76	186.07	3	5.02	366	1589.05	20.41	60.41
20-30	11	1.52	3	3.76	40	37.33	9	24.37	217	804.17	8.59	65.43
30-40	21	26.41	11	19.64	29	278.74	1	7.74	141	495.99	56.11	15.51
40-50	0	0	4	4.61	10	6.41	1	3.95	48	65.01	5.28	12.32
50-60	1	2.57	2	2.50	1	0.39	0	0	7	30.52	0.33	4.48
Total	**33**	**30.50**	**34**	**38.99**	**174**	**562.07**	**16**	**41.33**	**874**	**3148.80**	**266.50**	**182.11**

Table 1. Number of Identified Specimens (NISP) and weight (grams) of cultural material recovered from summer 2017 excavation units.

Figure 3. Select artifacts recovered from excavation units along the eastern edge of Cosper Creek. From left to right, top to bottom: flat glass, elk tooth, patterned vessel glass, iron spike, ungalvanized cut nail, cryptocrystalline silica flakes (4), and sherds of semi-vitrified white earthenware (3).

Depth (cmbs)	Family	Genus	Species	Common Name	Type	NISP
20-30	Polygonaceae	*Rumex*	sp.	Sorrel	Seed	10
	Asteraceae	*Madia*	sp.	Tarweed	Seed	3
	Rosaceae	*Rubus*	spp.	Black/thimble/raspberry	Seed	3
	Fagaceae	*Quercus*	*garryana*	Garry oak	Nut	1
	Poaceae	*Triticum*	*aestivum*	Wheat	Seed	1
30-40	Poaceae	*Triticum*	*aestivum*	Wheat	Seed	6
	Rosaceae	*Rubus*	spp.	Black/thimble/raspberry	Seed	5
	Polygonaceae	*Rumex*	sp.	Sorrel	Seed	4
	Fagaceae	*Quercus*	*garryana*	Garry oak	Nut	2
40-50	Adoxaceae	*Sambucus*	*caerulea*	Blue elderberry	Seed	3
	Fagaceae	*Quercus*	*garryana*	Garry oak	Nut	2
	Poaceae	*Triticum*	*aestivum*	Wheat	Seed	2
	Rosaceae	*Amelanchier*	*alnifolia*	Saskatoon	Fruit	1
	Rosaceae	*Rubus*	spp.	Black/thimble/raspberry	Seed	1
	Polygonaceae	*Rumex*	sp.	Sorrel	Seed	1

Table 2. Select macrobotanial remains recovered from summer 2017 excavation units.

References Cited

Becker, Thomas, Bill R. Roulette, and Erica McCormick

2008 Archaeological Investigations at the Confederated Tribes of the Grand Ronde's Proposed Tribal Museum and Cultural Center Development Property, Grand Ronde, Polk County, Oregon. Applied Archaeological Research Report No. 702. Report submitted to The Confederated Tribes of Grand Ronde, Grand Ronde, Oregon.

Berreman, Joel V.

1934 *Background and History of the Grand Ronde Tribes*. Eugene.

Gatschet, Albert S., Leo J. Frachtenberg, and Melville Jacobs

1945 *Kalapuya Texts*. University of Washington Publications in Anthropology.

Gonzalez, Sara L.

2016 Indigenous Values and Methods in Archaeological Practice: Low-Impact Archaeology through the Kashaya Pomo Interpretive Trail Project. *American Antiquity* 81(3):533-549.

Graesch, Anthony P., Julienne Bernard, and Anna C. Noah

2010 A Cross-Cultural Study of Colonialism and Indigenous Foodways in Western North America. In *Across a Great Divide: Continuity and Change in Native North American Societies, 1400-1900*, edited by Laura L. Scheiber and Mark D. Mitchell, pp. 212-238. University of Arizona Press, Tucson.

Lewis, David G.

2009 Termination of the Confederated Tribes of the Grand Ronde Community of Oregon: Politics, Community, Identity. Ph.D. Dissertation, Department of Anthropology, University of Oregon, Eugene.

Lightfoot, Kent G.

2005 *Indians, Missionaries, and Merchants*. University of California Press, Berkeley.

Merrill, Brent, and Yvonne Hajda

2007 The Confederated Tribes of the Grand Ronde Community of Oregon. In *The First Oregonians*, edited by Laura Berg, pp. 120-145. Oregon Council for the Humanities, Portland.

Panich, Lee M., and Tsim D. Schneider (editors)

2014 *Indigenous Landscapes and Spanish Missions: New Perspectives from Archaeology and Ethnohistory*. The University of Arizona Press, Tucson.

Pearsall, Deborah M.

2015 *Paleoethnobotany: A Handbook of Procedures*, 3rd edition. Left Coast Press, Walnut Creek, CA.

Roulette, Bill R., Aimee Finley, and Paul S. Solimano

2002 Cultural Resource Study for the Proposed Fort Yamhill State Park, Polk County, Oregon. Applied Archaeological Research Report No. 307. Report prepared for the Oregon Parks and Recreation Department, Salem, Oregon.

Silliman, Stephen W., and Thomas A. Witt
2010 The Complexities of Consumption: Eastern Pequot Cultural Economics in Eighteenth-Century New England. *Historical Archaeology* 44(4):46-88.

Wilson, Douglas C.
1998 Cultural Resources Survey of the Murphy Mill Site, Grand Ronde, Oregon. Archaeology Consulting Report No. 7. On file at the Confederated Tribes of Grand Ronde Tribal Historic Preservation Office.

Zenk, Henry
1984 Chinook Jargon and Native Cultural Persistence in the Grand Ronde Indian Community, 1856-1907: A Special Case of Creolization. Ph.D. Dissertation, Department of Anthropology, University of Oregon.