

PALEOETHNOBOTANICAL INVESTIGATIONS AT THE KEATLEY CREEK SITE: PLANTS AND PITHOUSES

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The Keatley Creek site is a large pithouse village where researchers at Simon Fraser University have been studying the prehistoric socioeconomy of the Southern Interior Plateau. The site is located about 25 km upstream from the modern community of Lillooet (Fig. 1) on benchlands above the Fraser River gorge. Walking across the site you have the feeling that you are walking on the moon—the landscape is covered in sagebrush and grasses, and is marked by 115 circular pithouse depressions ranging in size from 5-25 metres in diameter.

The Keatley Creek project is unique in British Columbia archaeology because it is the first large-scale project to actively incorporate paleoethnobotany into the research design. Paleoethnobotany has been used throughout the eight years of the Keatley Creek project to answer a variety of research questions concerning site formation processes, site seasonality, paleoenvironment, and prehistoric plant use.

In this paper I discuss the socioeconomy of the Keatley Creek village as reflected in the paleoethnobotanical record recovered from the living floors of a small, a medium, and a large housepit. In particular, I examine whether size differences in residential structures correlate with differences in housepit socio-economic organization.

The three housepits used in the comparison were

ideally suited for examining the paleoethnobotanical correlates of socioeconomic behaviour. Each of the three living floors dates to approximately 1100 BP.

The numerous hearths, and the fact that each of the structures was burned after abandonment, resulted in a relatively large sample of charred plant remains. Further, results of the botanical and other artifact analyses indicate that the floors are relatively intact and undisturbed, and that the patterning across the floors represents the accumulated effect of repeated activities in discrete areas.

Excavators collected bulk flotation samples for the paleoethnobotanical analysis from designated 50 x 50 cm sampling subsquares within the structures (Fig. 2). All samples were measured to a standardized volume of 1 litre, and then floated using the “garbage can” technique. Over 150 flotation samples were examined for archaeobotanical remains. Seeds, charred wood and conifer needles comprised the bulk of the botanical remains recovered. These remains represent 25 identified plant taxa, and many other taxa which have yet to be identified.

The detailed sampling strategy permitted me to map the frequency and distribution of plant remains across the floors of the structures.

Figure 2 displays the distribution of plant remains across the floor of the large housepit; similar maps were also generated for the medium and small structures. High concentrations of needles, charcoal, seeds (divided into food and non-food species based on

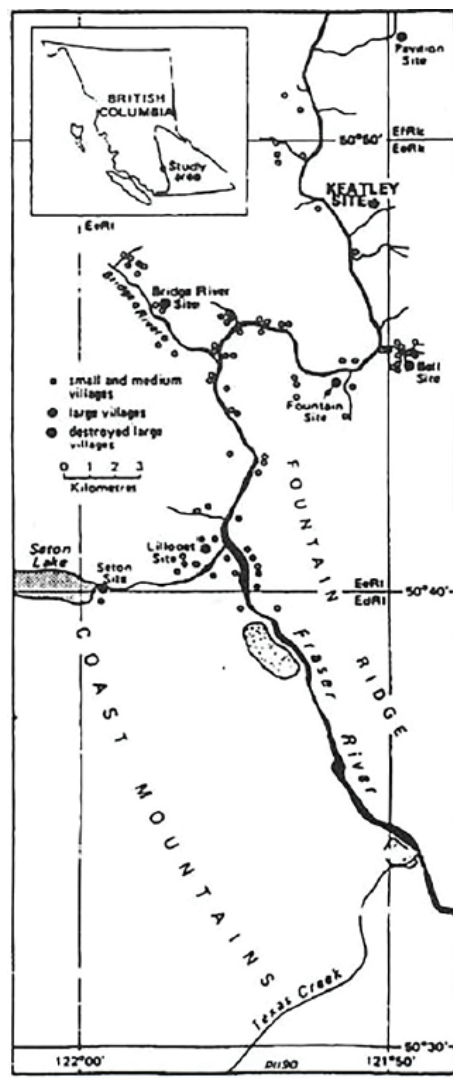


Figure 1 . Location of Keatley Creek Site.

ethnobotanical information) are circled in the figure.

There is clearly a non-random distribution of plant remains across the housepit floors. A common pattern displayed in all three structures is the relative absence of archaeobotanical remains in the centre of the floors. This pattern, however, is less marked in the small housepit than in the medium and large housepits. The centres of the floors may have been a communal use area for inhabitants of each structure.

Several charcoal concentrations are located across the floors of the three housepits. There is only a loose association between charcoal concentrations and hearths on the floors, suggesting that some hearths were not used frequently enough to have accumulated or retained large amounts of associated charcoal debris. In terms of the average amount of charcoal recovered per litre flotation sample, the large structure has significantly more charcoal on the floor than the medium structure, but not more than the small structure. In terms of wood species, the most common taxa are found in the same proportions in the large and medium structures (no charcoal identifications were conducted from the small structure).

From the foregoing we can conclude that the same kinds of fuel wood were generally burned in the large and medium structures, but that more fires were burned on average in the largest structure than in the medium-sized structure. It cannot be determined whether the burning of more fires has more to do with differential access to fuel, the intensity which the large house pit as a whole was used, or perhaps the length of time of the use of the floor.

The three housepits do not differ significantly from one another in average conifer needle abundance per litre flotation samples. However, nearly contiguous concentrations of needles around the peripheries of the large and medium structures, but not the small housepit, indicate that the needles may have been used differently in the latter structure. The peripheral concentrations of conifer needles in the larger two

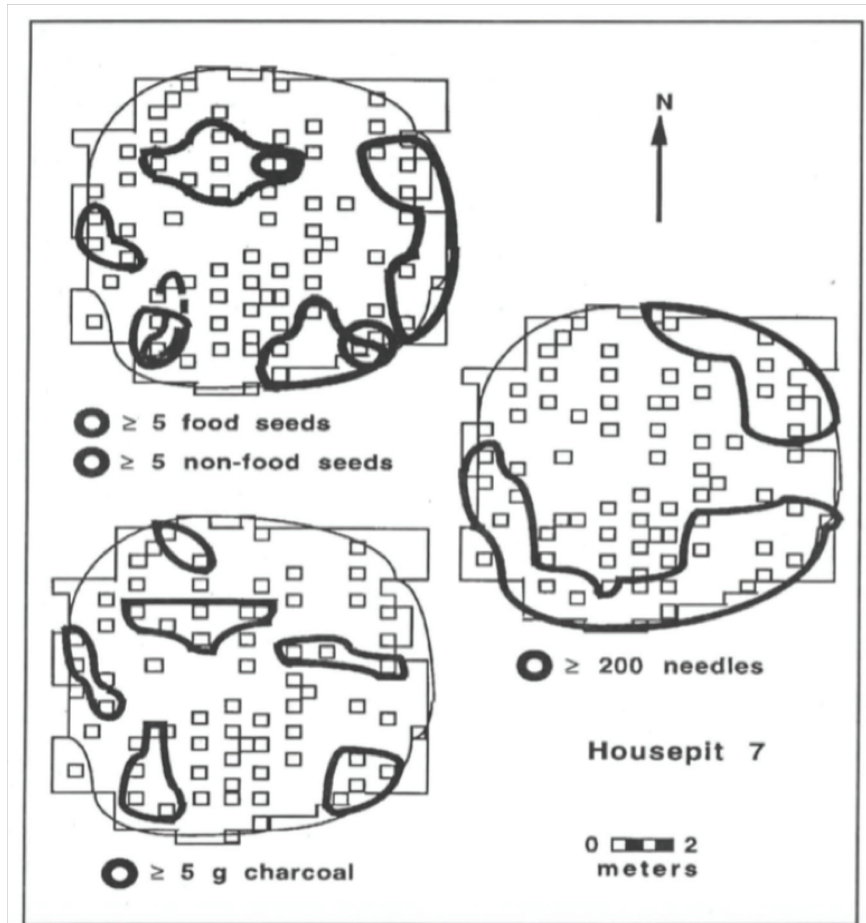


Figure 2. Floor of the large housepit showing designated 50 x 50 cm sampling subsquares, and concentrations of floral remains.

structures may indicate the deliberate covering of the floor with boughs for bedding or floor covering, as was documented in ethnographic times.

Food seeds in the large and medium housepits cluster in discrete areas associated with hearths, and likely represent plant food processing areas. Seed densities are strikingly low in all areas across the floor of the small housepit, and no area appears to have a greater or lesser concentration than another. Statistically, the large housepit has significantly more seeds per litre flotation sample than the small structure, and contains far more seed plant taxa than either the medium or small structures. Finally, the large housepit accumulated new taxa at a significantly higher rate than the medium and small structures relative to the addition of new seed specimens.

Taken together, the three housepits are quite distinct in terms of their paleoethnobotanical records, and suggest very different pictures of prehistoric plant use. In the large and medium structures, the floor peripher-

ies used for sleeping and activities involving sitting, presumably by all members of the pithouse. Plant processing and plant consumption in these structures was conducted in discrete areas—presumably either conducted communally by group members, and/or all pithouse inhabitants had access to the processed plant products. The lack of plant remains in the floor centres also argues for communal activities within the structures. By contrast, only a limited amount and kind of plant processing was conducted in the small structure, and we can only hypothesize that such activities were conducted communally.

Thus, based on the paleoethnobotanical analysis, the three structures reflect distinct socioeconomic patterns. The results indicate that the large housepit, followed by the medium housepit, may have been used more intensively and involved far more diverse

activities that the small structure. Whether these differences can ultimately be related to status differences, to a larger work force having access to a more diverse resource base, or to differences in the length of time of use of the floor cannot be definitively answered with the present study.

It is important to remember that the three housepits analyzed represent less than 3% of the village of Keatley Creek. A much larger sample size including more housepits of all sizes is needed before we can draw more definitive conclusions about the prehistoric socioeconomy at Keatley Creek. This study, however, clearly demonstrates the potential of paleoethnobotanical analyses in studies of prehistoric social and economic organization.

Mystery Artifact

DkSf-2:62

Chelsea Gogal



Artifact DkSf-2:62 (bone tool) resembles a projectile point, but has a squared dull edge and a distinctive notched base (Photo 4). This artifact, found by Baseline Archaeological Services in Courtenay could not be conclusively identified, however other archaeologists familiar with the culture area consider that it may be a skeuomorph or a knitting/weaving lucet-like tool (Al Mackie, Eric Forgeng and Quentin Mackie, personal communication, September 23, 2012).

Please send thoughts and comments to asbc.midden@gmail.com