

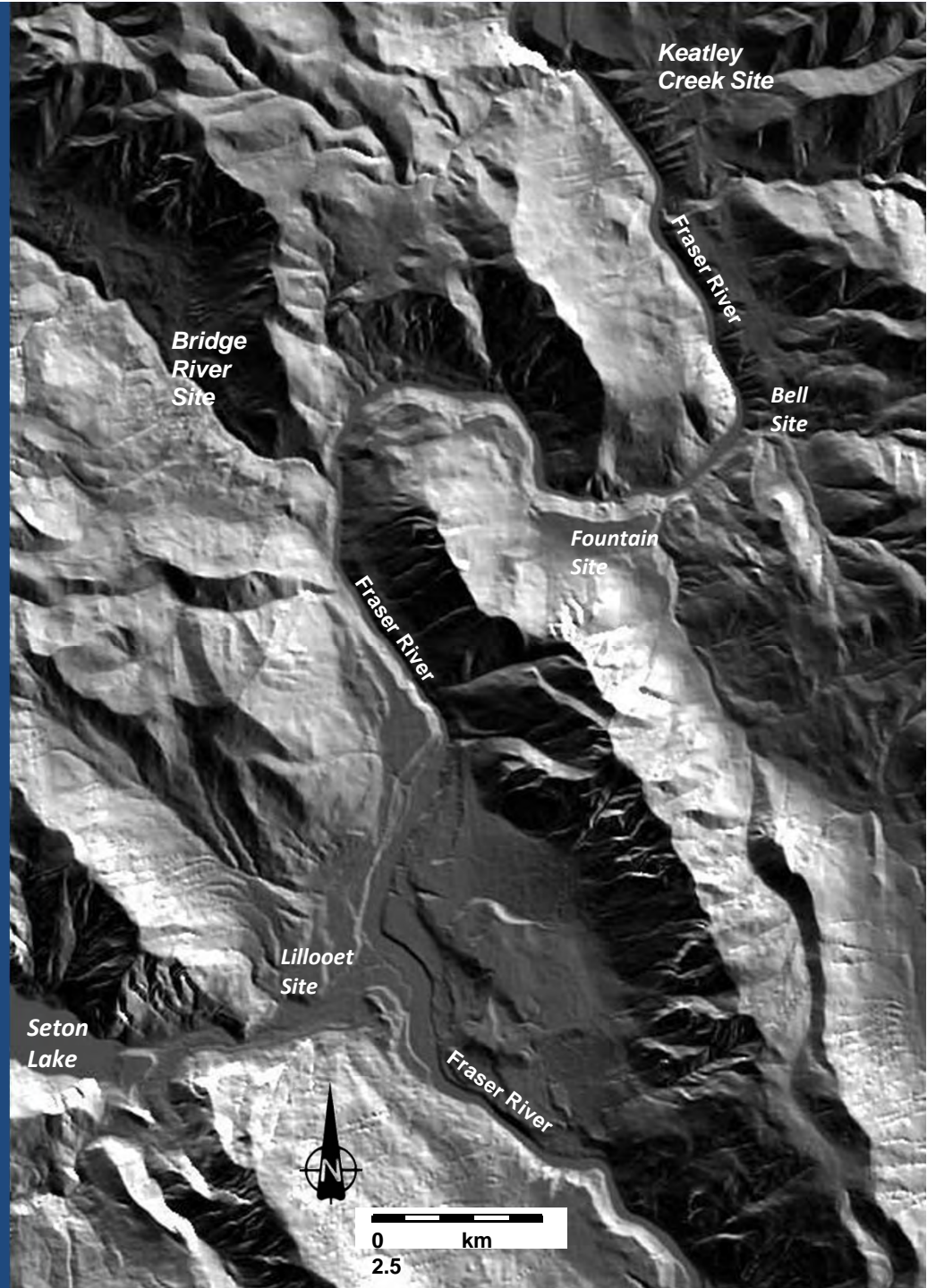
Climate Change and the Rise and Fall of Large Villages in  
the Middle Fraser Canyon, B.C.







Middle Fraser Canyon







Mid-Fraser Housepits





Large Villages: Keatley Creek site

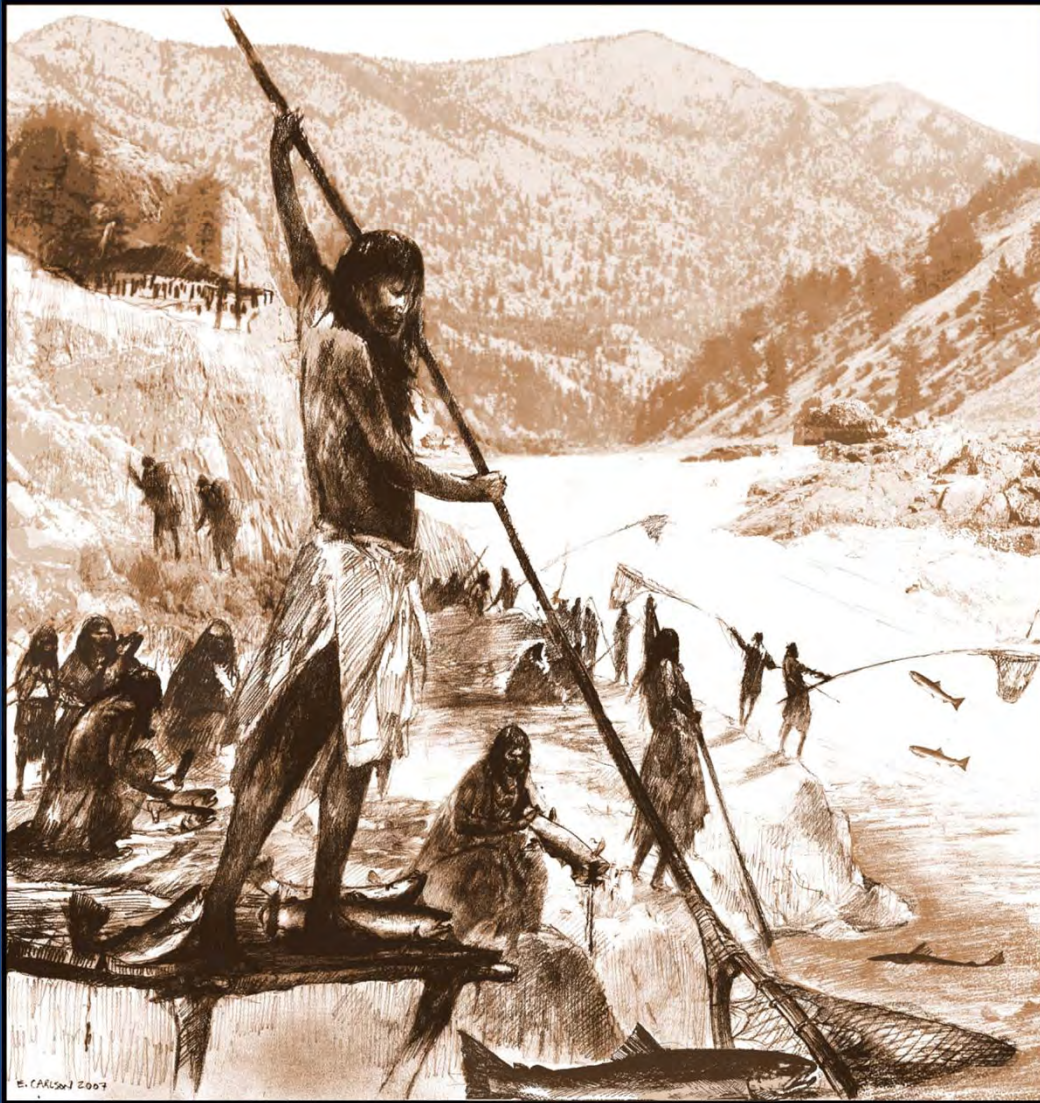
Photograph by Duggan Backhouse-Prentiss





Bridge River  
Site



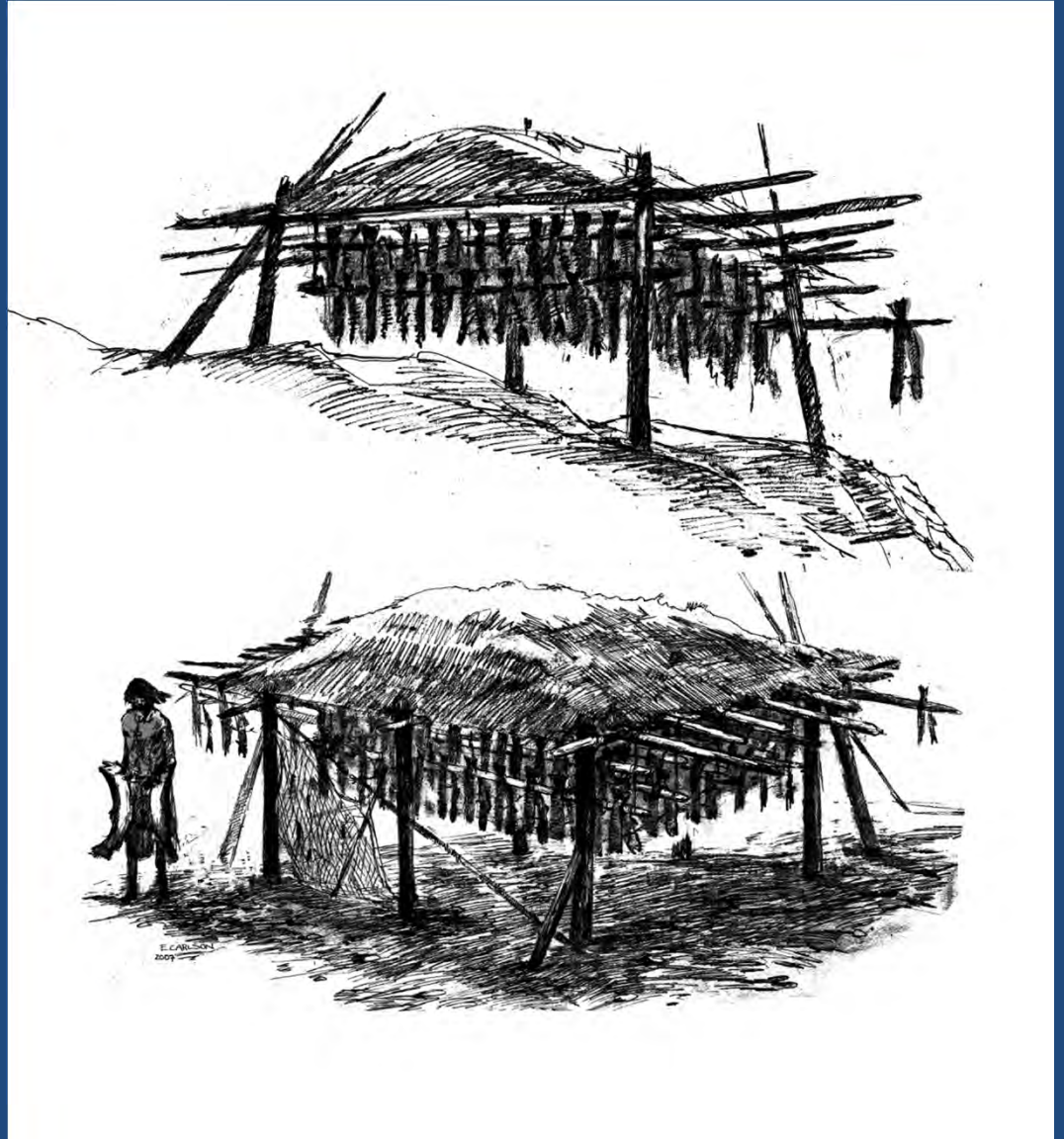


Mid-Fraser Salmon  
Fishing





Heat and Wind Dried Salmon

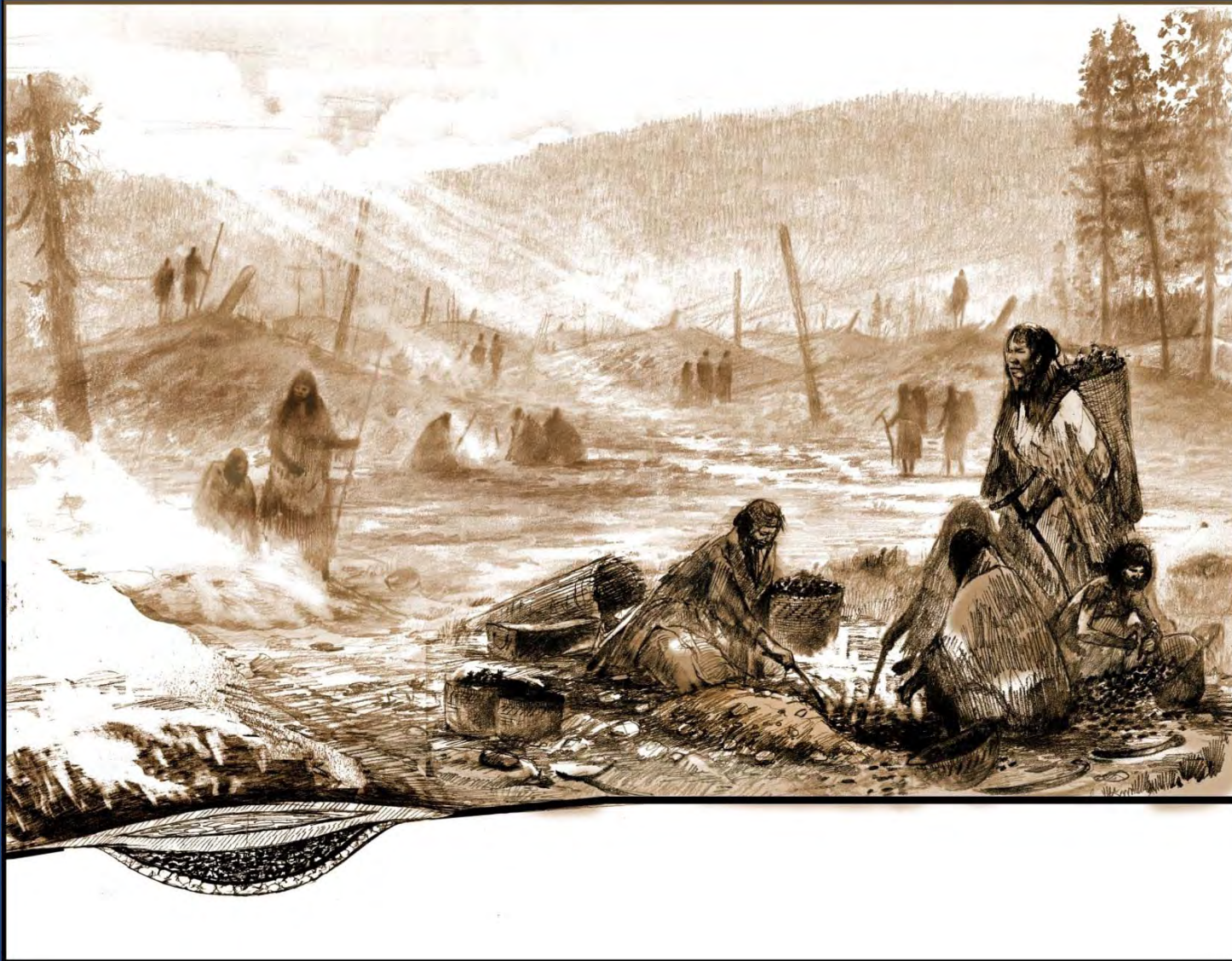






Hunting and Game Processing





Outdoor Cooking (roots, meat, fish)





Household Storage and Cooking





Social Complexity in the Mid-Fraser



## Excavations at Bridge River in 2003-2009

Why did the “Classic” (pre-1000 B.P.) Mid-Fraser villages grow, change, and eventually collapse?

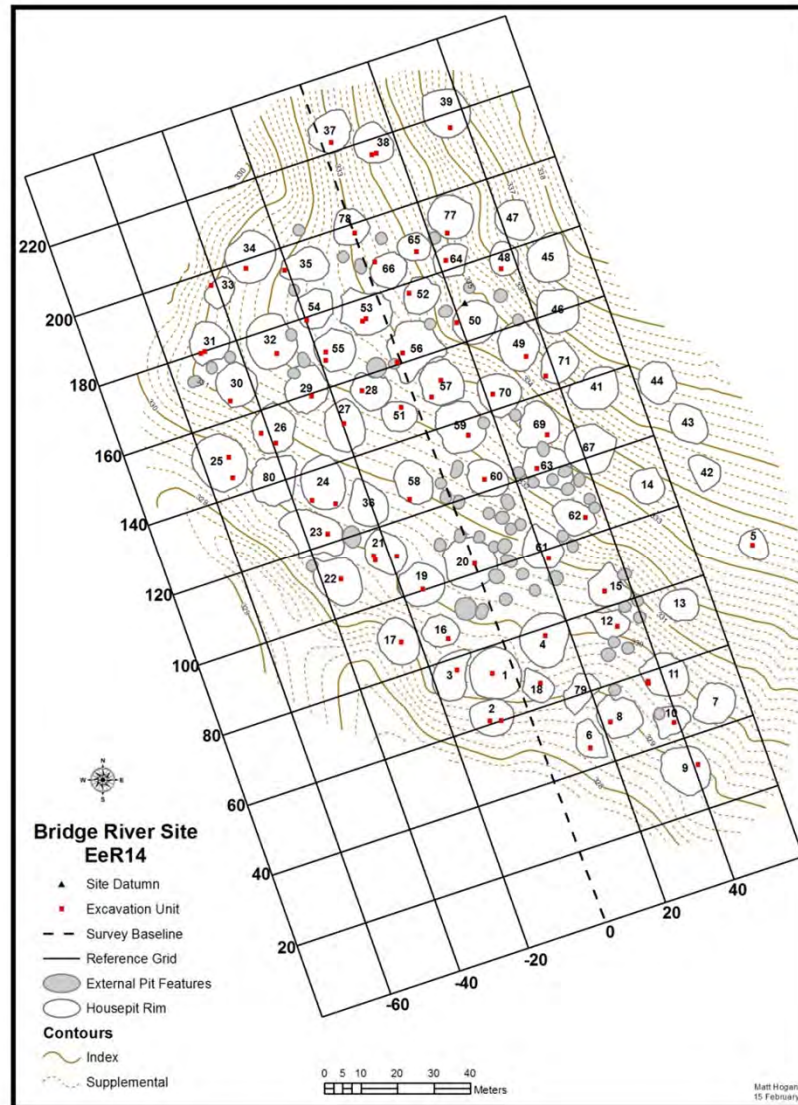




Excavating at  
Bridge River in  
2009: Complex  
stratigraphy  
accumulated over time







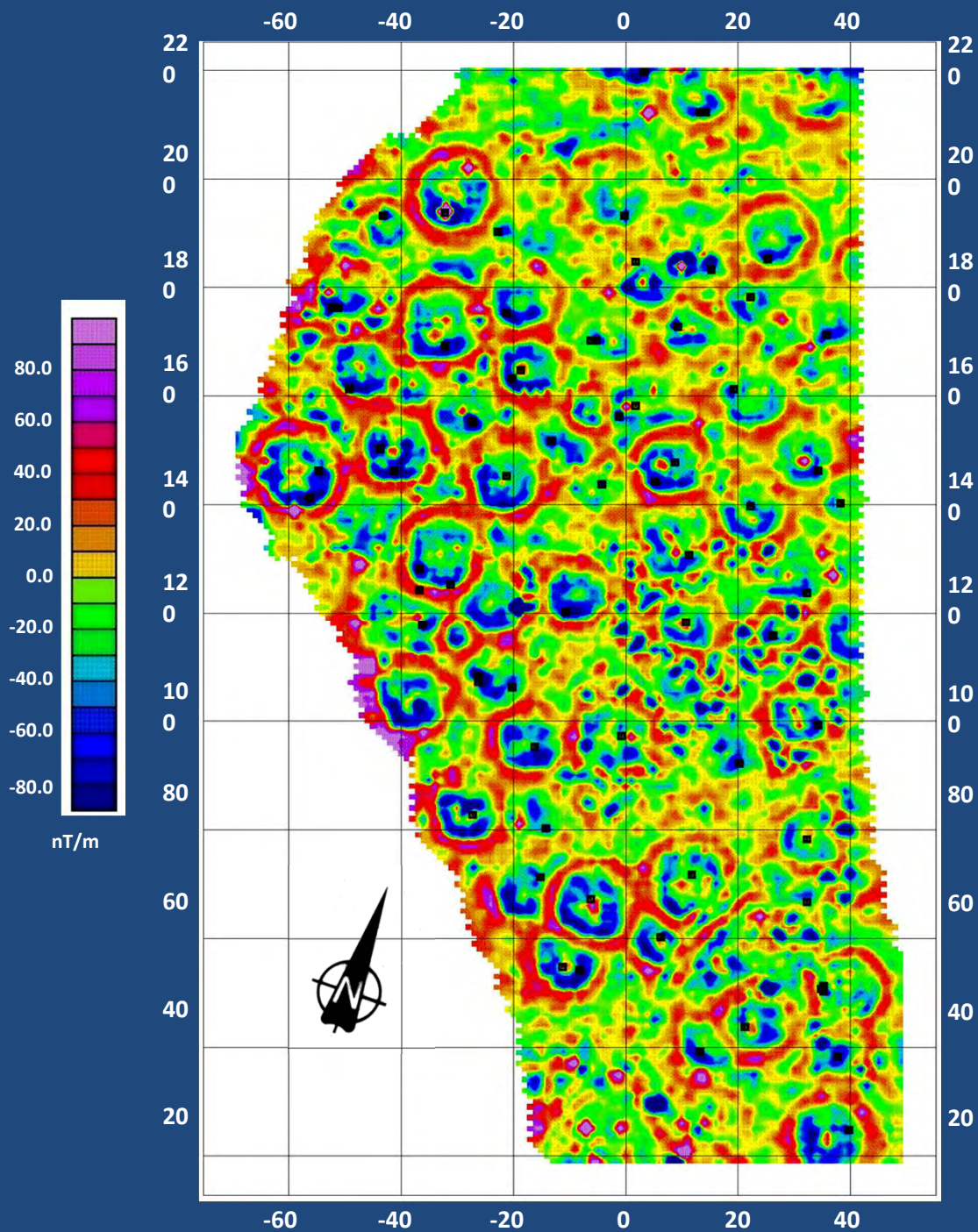
## Bridge River Project Phase I

Studying village  
emergence, growth,  
and decline.



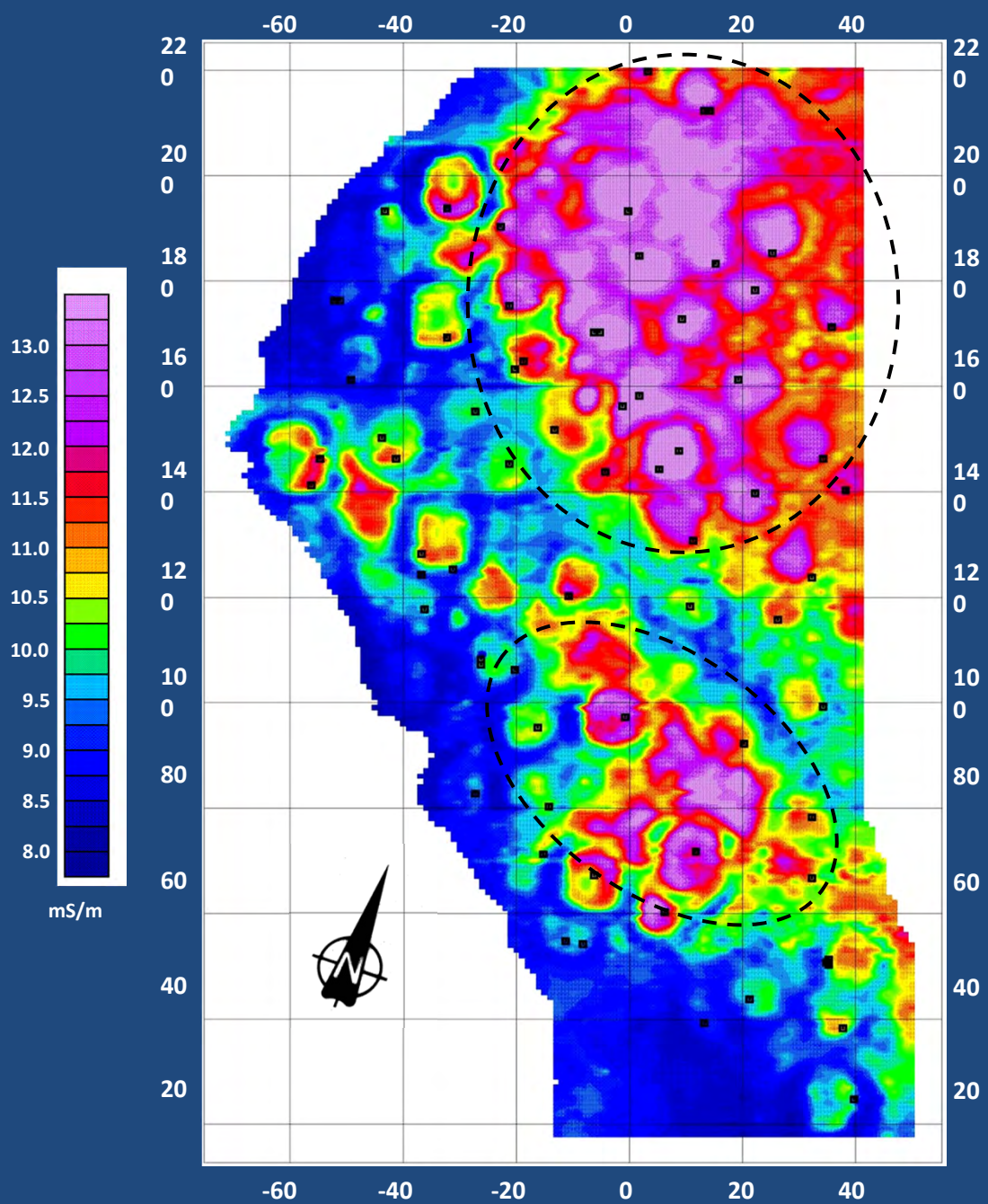






**Magnetic Susceptibility Map**

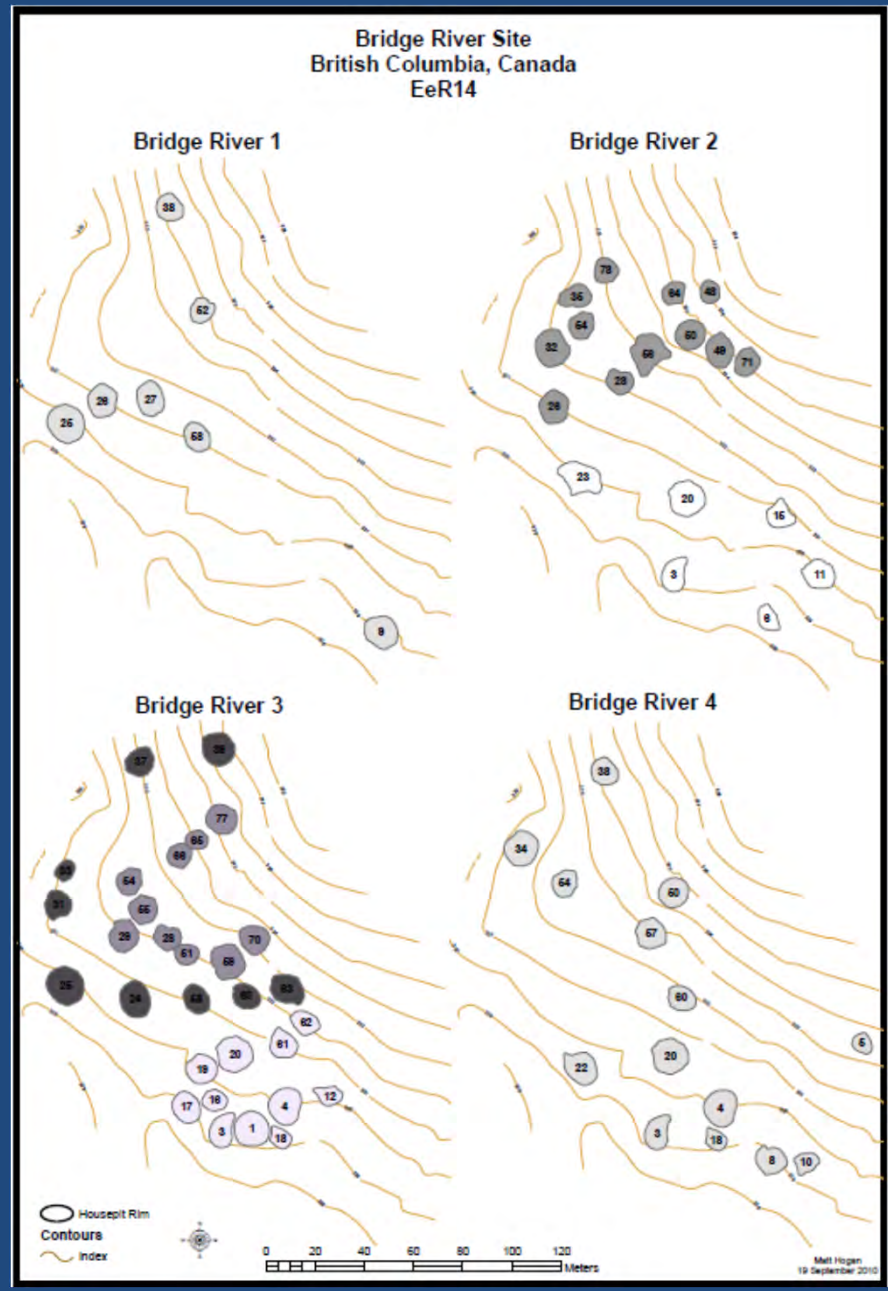
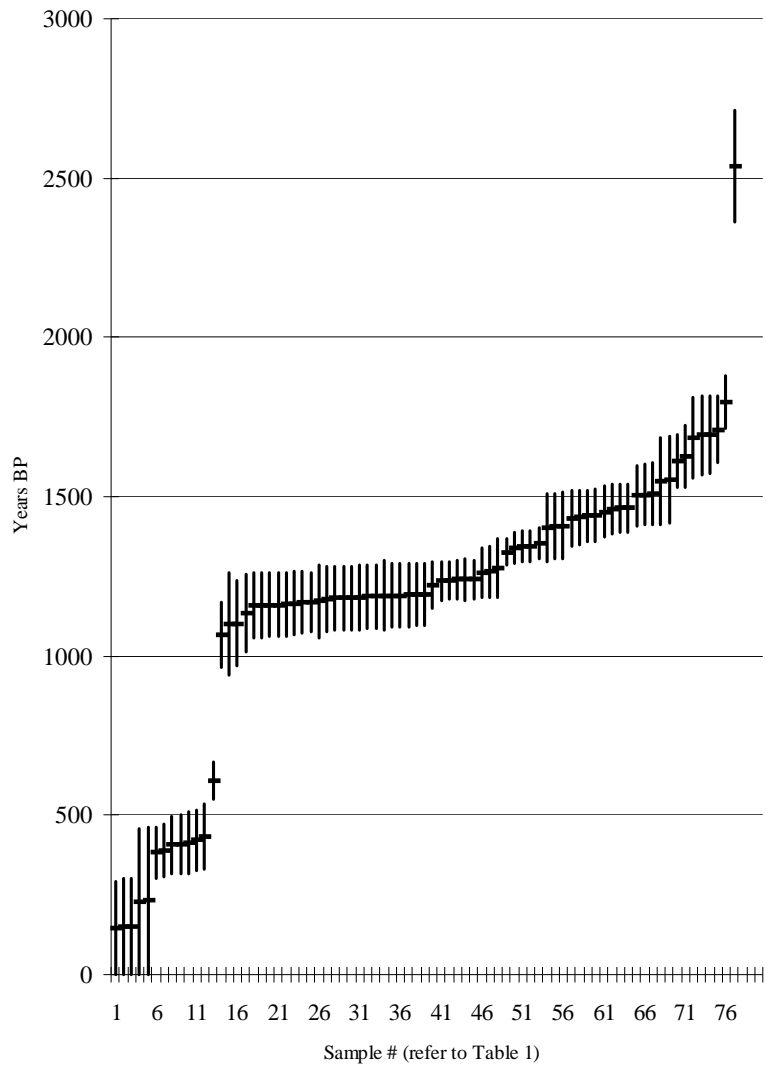




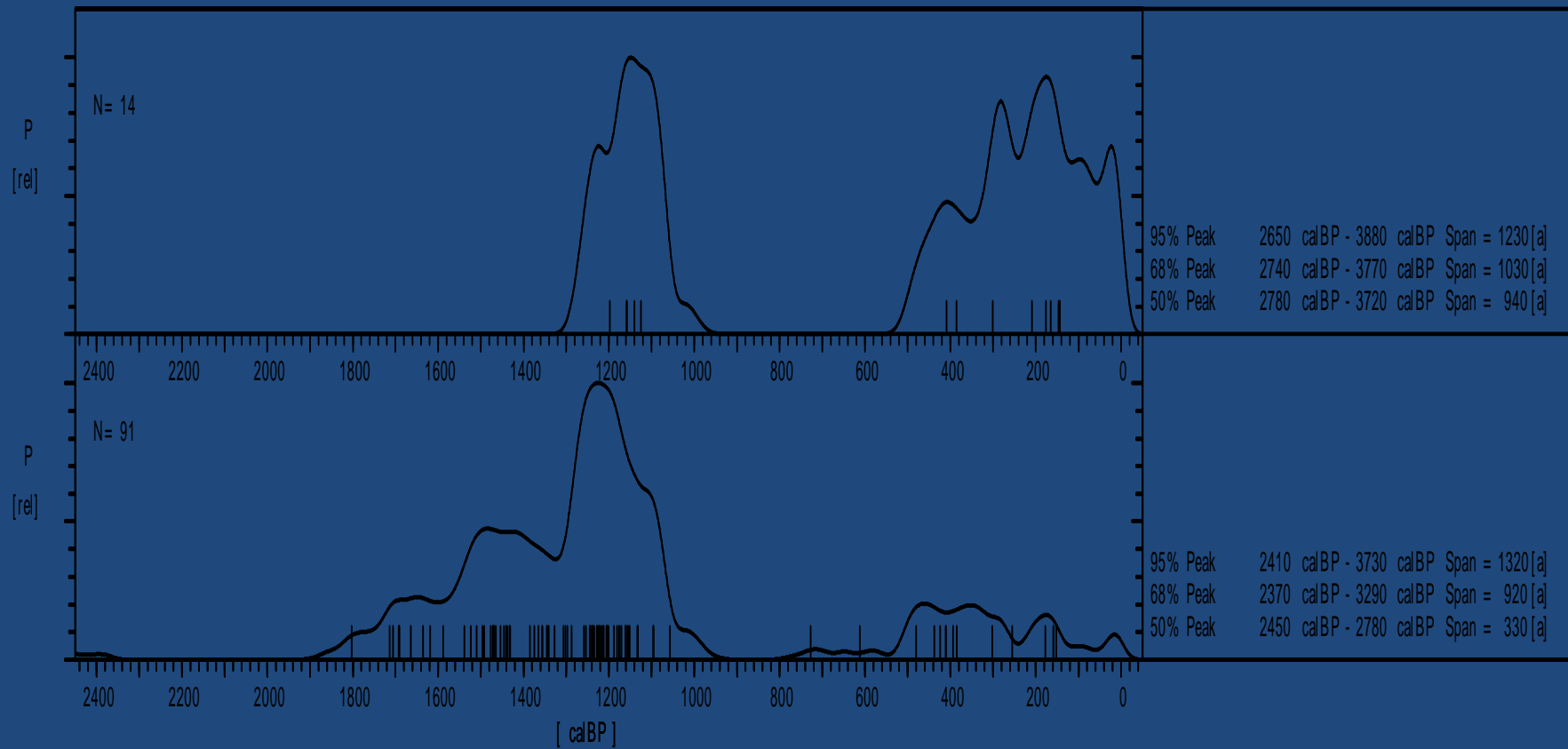
Conductivity Map



**Bridge River Calibrated Dates at 2 Standard Deviations**







Cumulative probability distributions for all housepit (lower) and external pit feature (upper) radiocarbon dates.





Bridge River 1



Bridge River 2



Bridge River 3



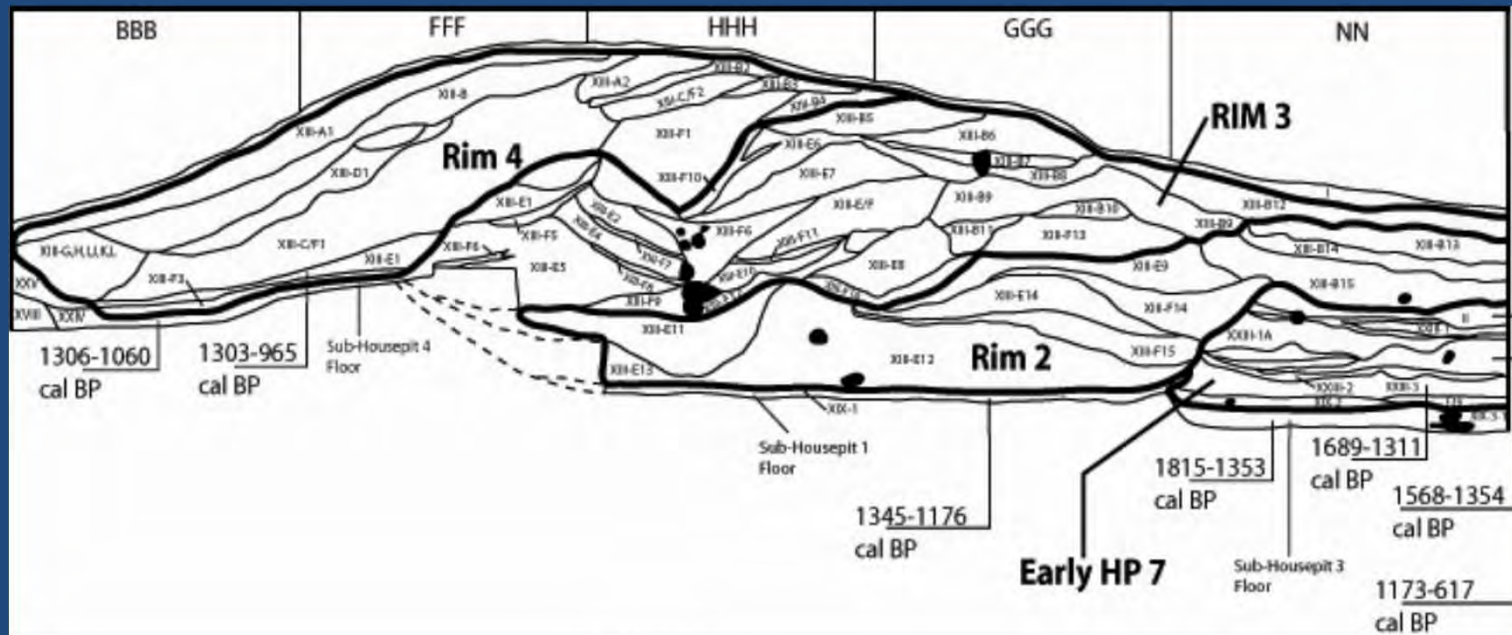


Keatley Creek:  
Montana Excavations,  
1999-2002

Is demographic and social  
Change reflected in the histories  
Of individual houses?





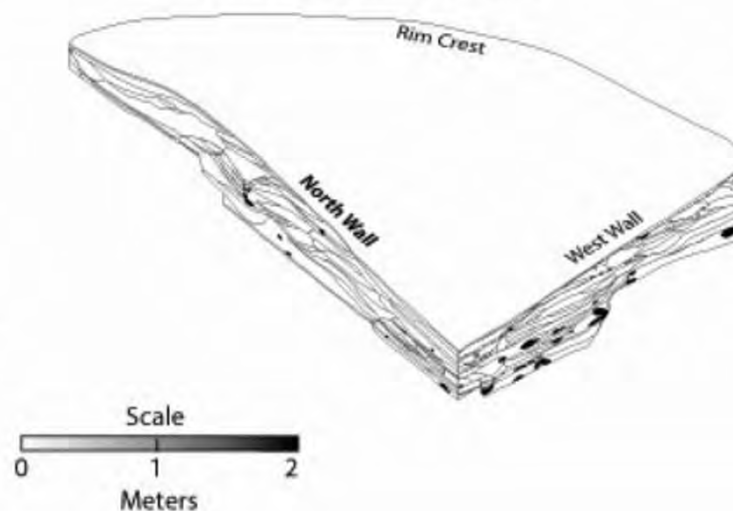


### LEGEND

#### EeRI 7: Housepit 7 Stratigraphy

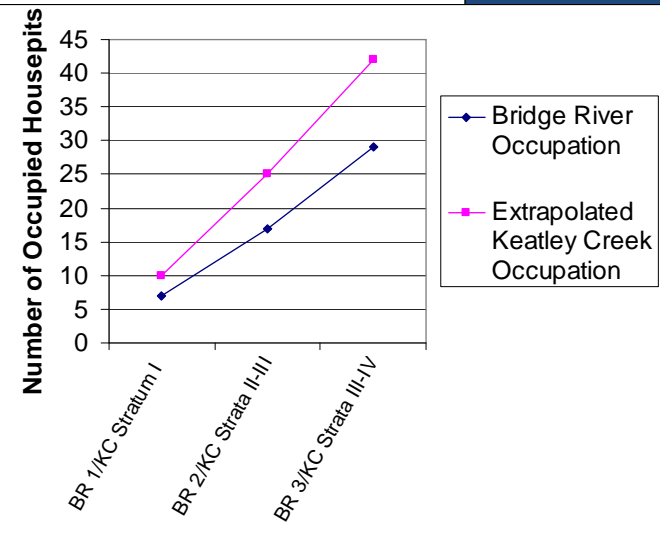
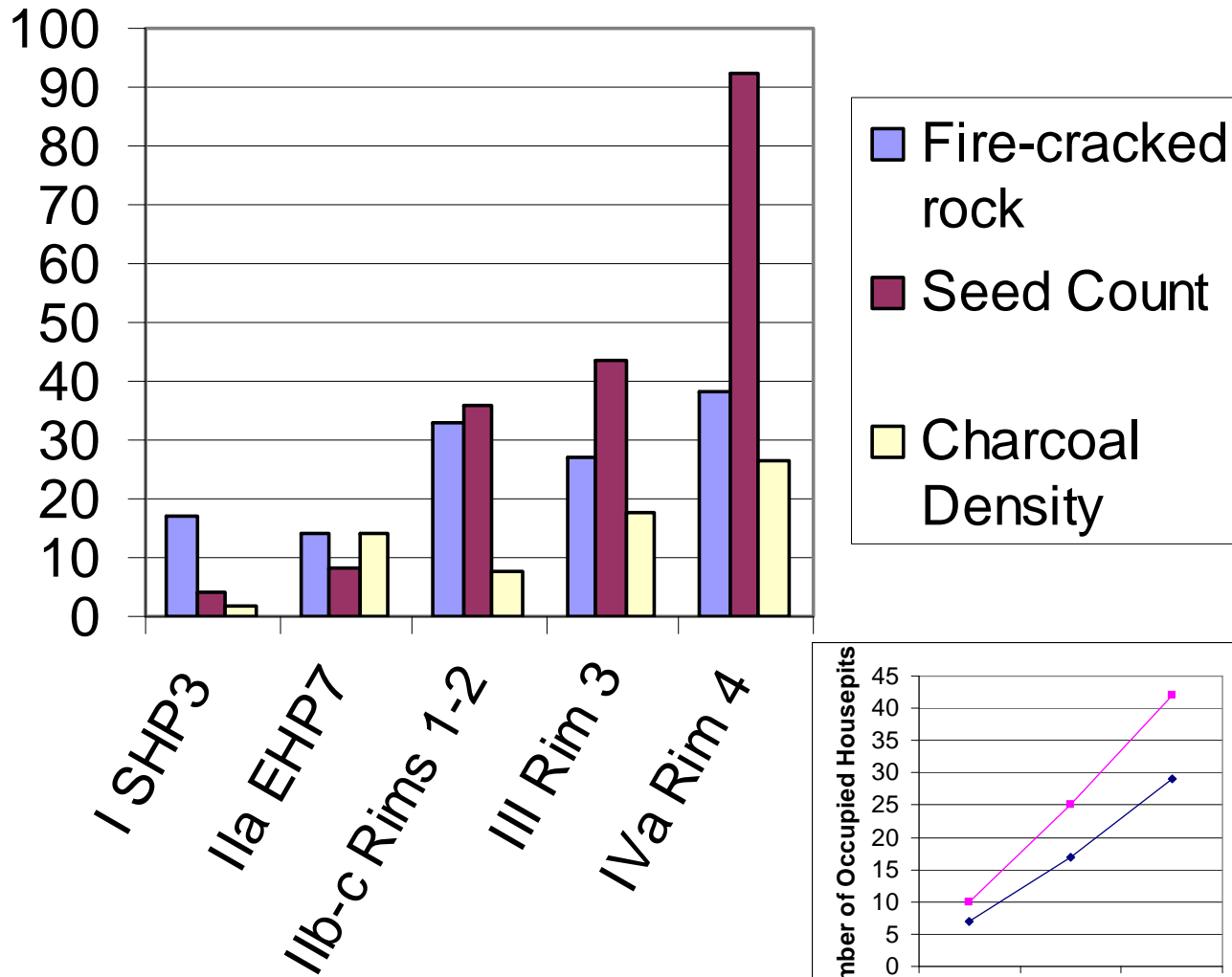
- I - Surface
- II - Housepit 7 Floor
- XIII-E, XIII-1 - Rim: Redepleted Floor Sediments
- XIII-F, XIII-2 - Rim: Redepleted Roof Sediments
- XIII-A, XIII-B - "Roof Like" Rim
- XIX-1 - Sub-Housepit 1
- XIX-2, XIX-3-1 - Sub-Housepit 3
- F.16, XXIII-1, XXIII-2, XXIII-3 - Late Sub-Housepit 3/ Early Housepit 7 Fill and Occupation Surfaces
- XXIV - Sub-Housepit 4
- XVIII - Middle Holocene Colluvium
- XXV - Sub-Housepit 4 Rim Slump
- - Rock

#### Housepit 7 Rim Profile





seeds/grams/numbers per liter



Proxies for population packing at Housepit 7



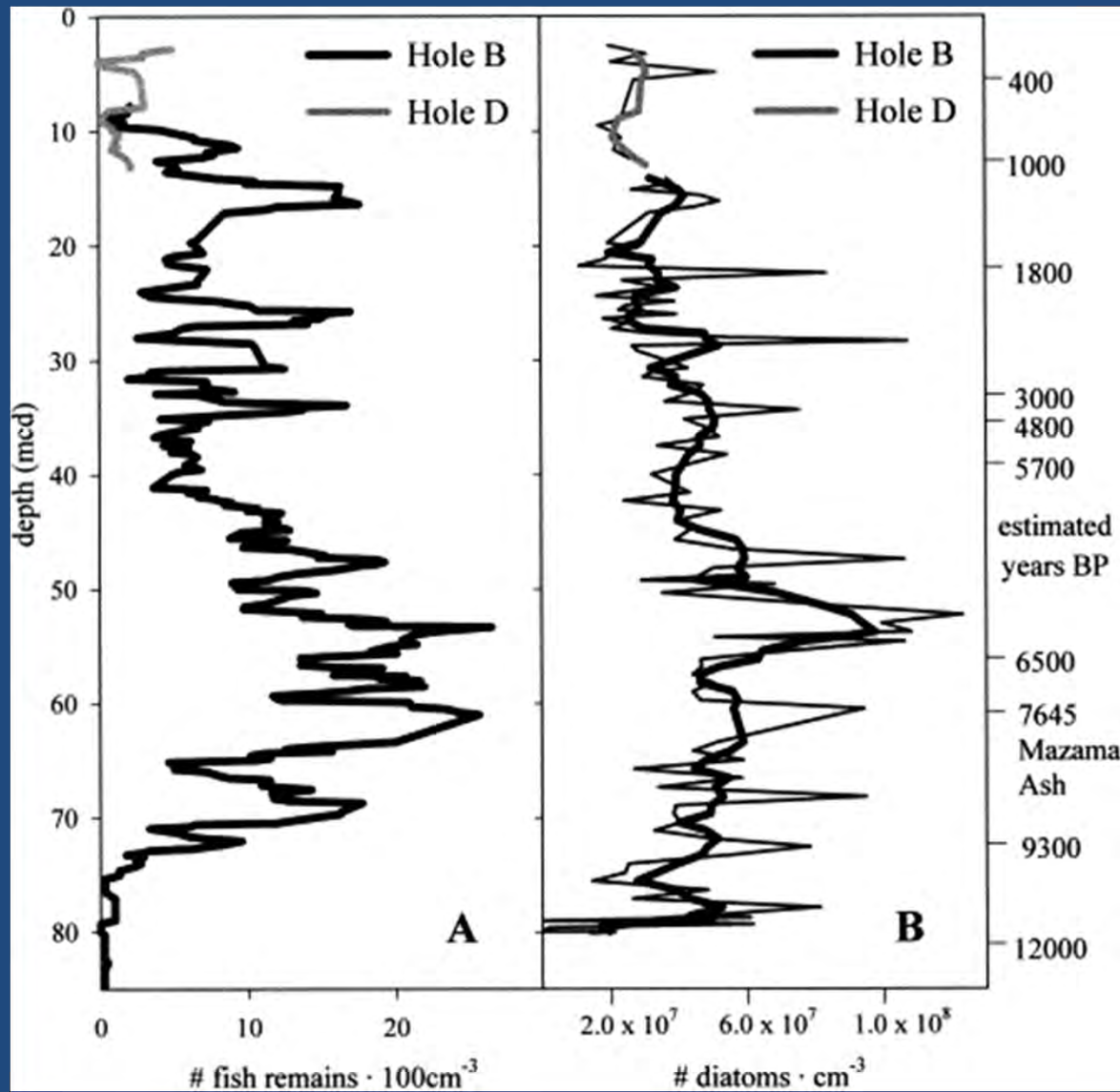


Figure 5 from Tunnicliffe et al.  
(Marine Geology 174:197-210)

Variability in Fish Remains and  
Diatoms From Saanich Inlet,  
Vancouver Island,  
B.C.

Does change in climate and  
marine productivity correlate  
with change in the  
Mid-Fraser villages?



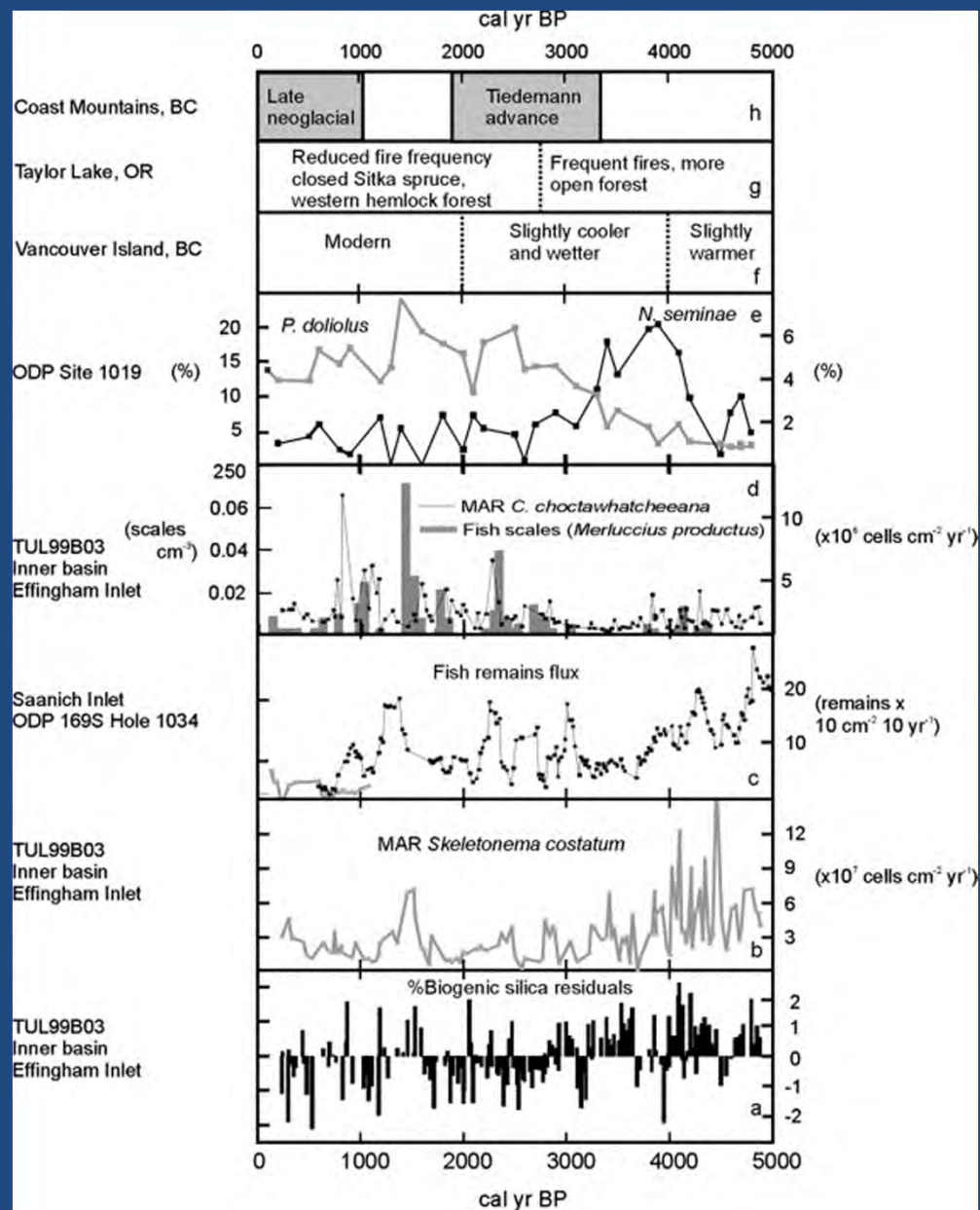
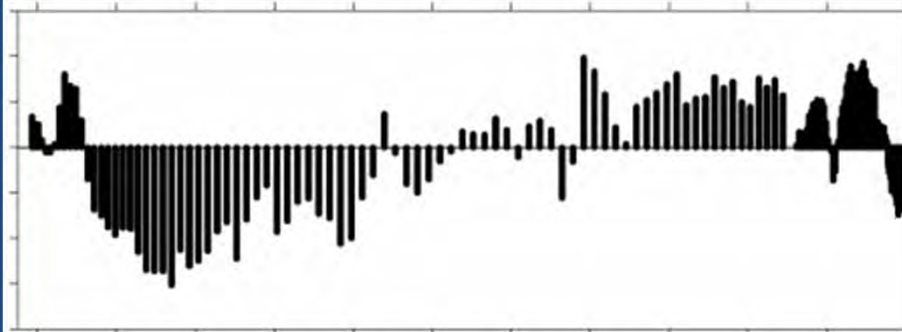


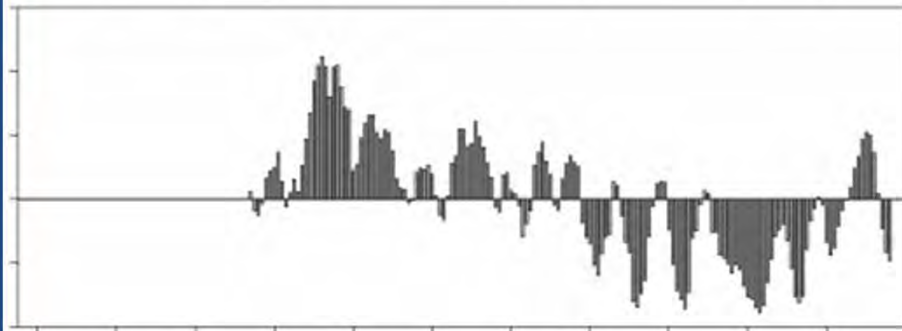
Figure 7 from Hay et al.  
(Quaternary Research 67:33-49)

Evidence for effects of Climate Change on Central Northwest Coast 0-5000 years ago.

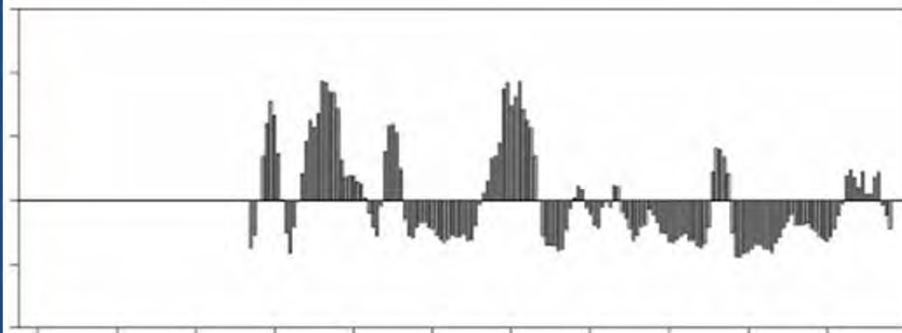




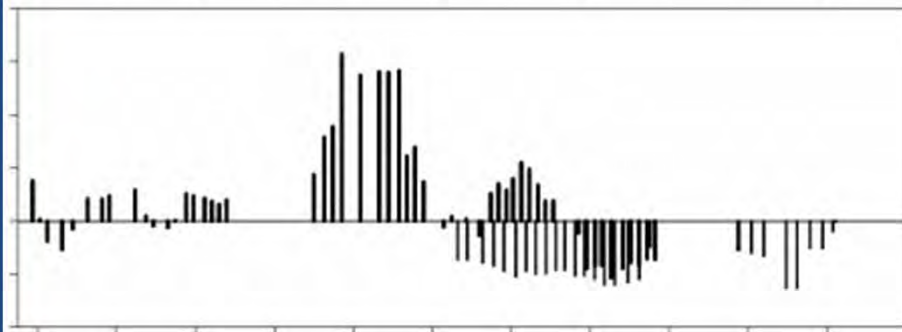
Karluk Lake (Kodiak island)  
Isotopic Proxy for Salmon Abundance



Santa Barbara Basin Anchovy Scales



Santa Barbara Basin Sardine Scales

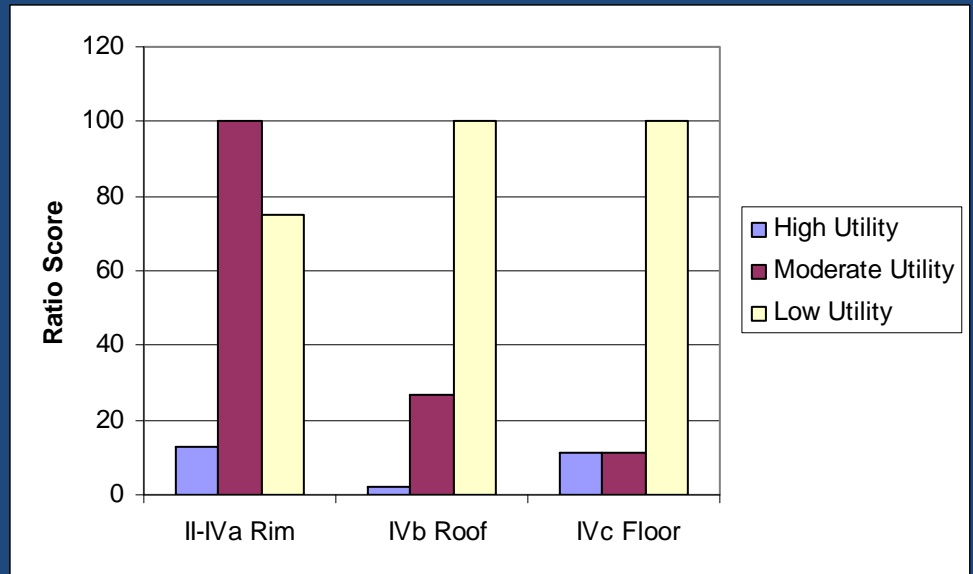
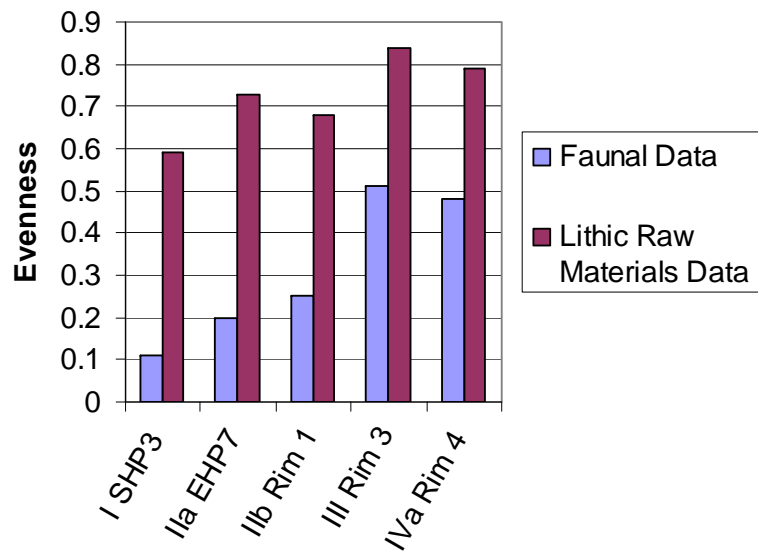


Saanich Inlet Fish Remains

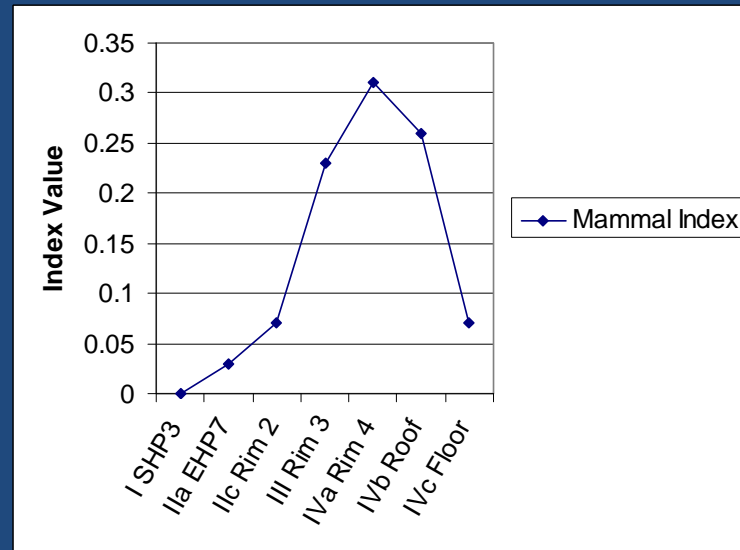
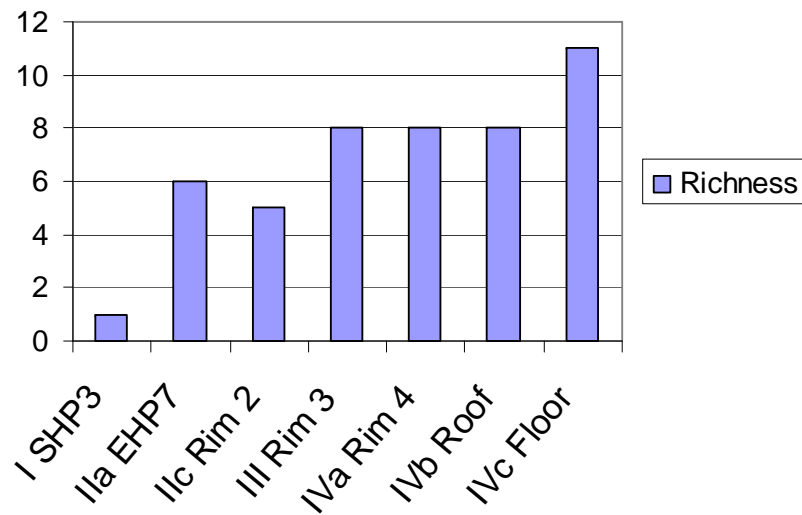
Data from Finney et al. (2002)  
(Nature 416:729-733)

1200 B.P. 800 B.P.



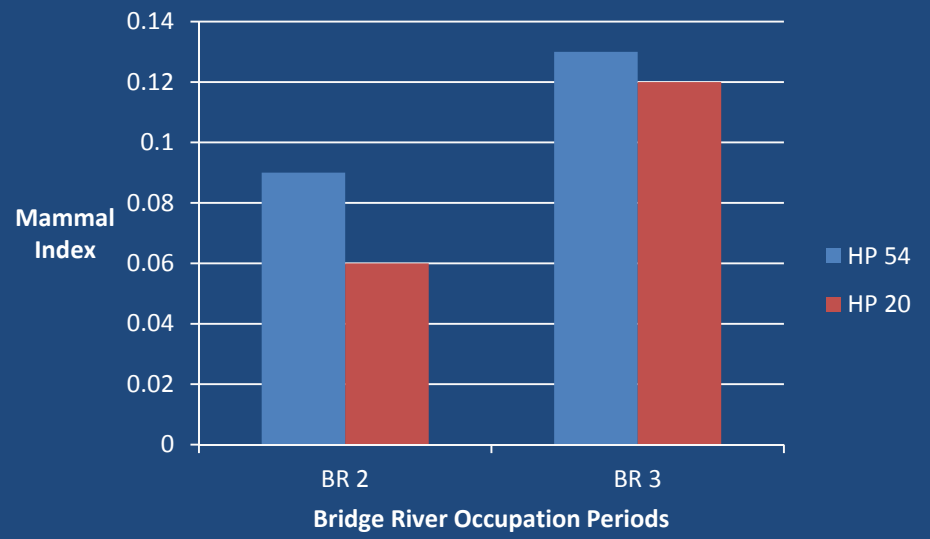
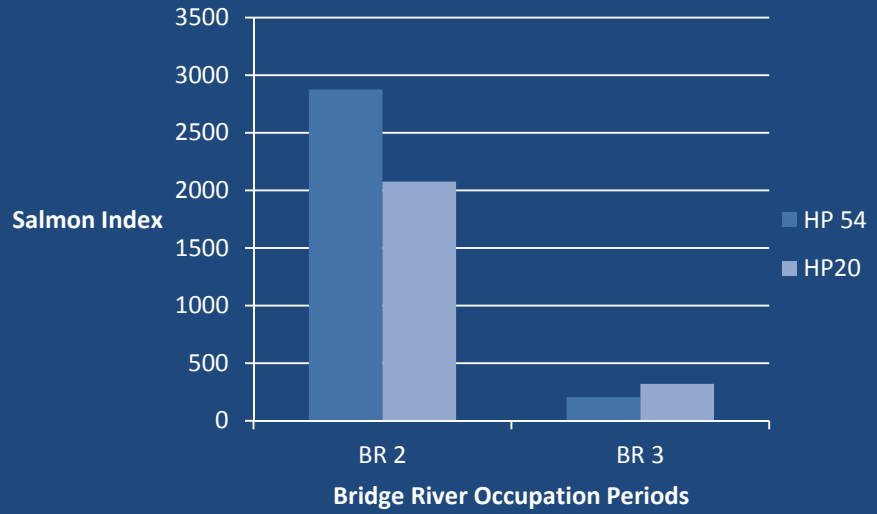


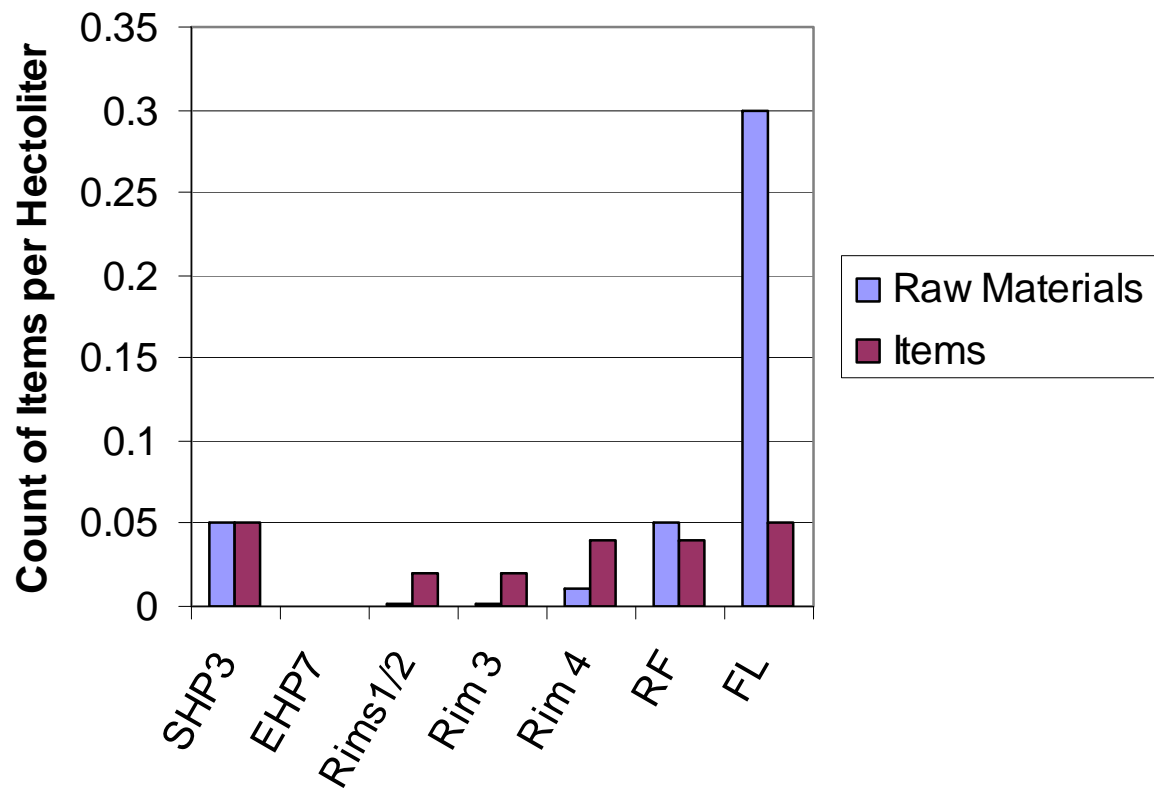
### Change in Prey Choice at Keatley Creek





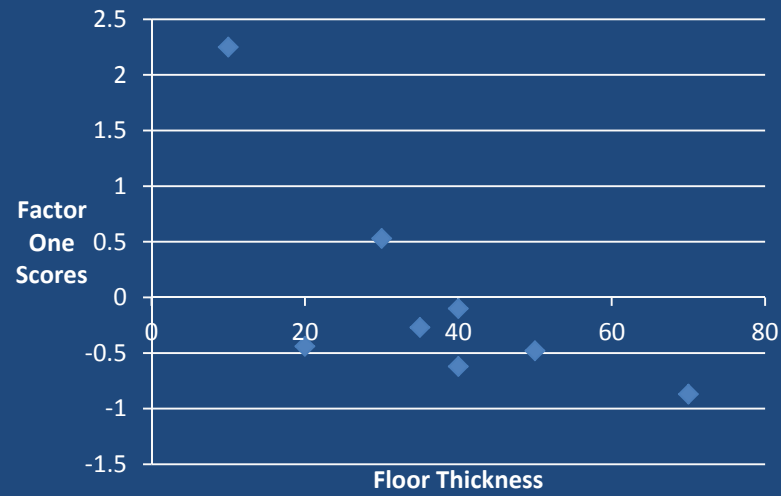
## Subsistence Change at Bridge River



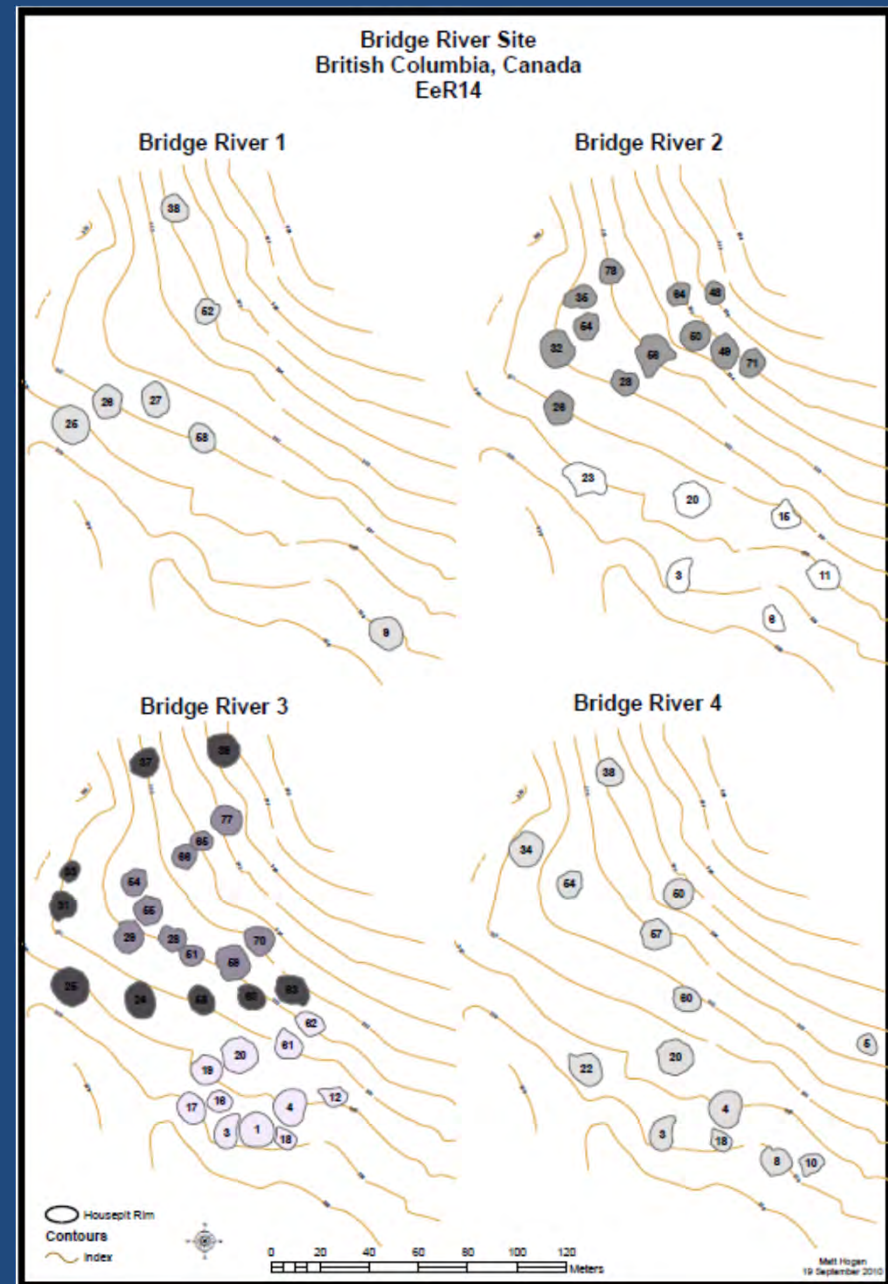


Evidence for material wealth at Housepit 7, Keatley Creek Site






Emergent wealth-based inequality  
At Bridge River after ca. 1250 B.P.



# Summary

- Optimal Resource Access and Population Growth in aggregated villages
- Warming and decline in salmon
- Population Imbalance and wider diet
- Socio-economic and political competition
- Population Dispersal
- Later Return and Aggregation



A landscape photograph showing a wide, rocky field in the foreground, likely a glacial outwash plain. The field is covered with light-colored rocks and sparse, dry vegetation. In the middle ground, there is a dense forest of evergreen trees. The background features rolling mountains under a clear blue sky. The text is overlaid on the upper portion of the image.

Acknowledgements: Keatley Creek and Bridge River excavations were generously funded by the National Science Foundation, the Wenner-Gren Foundation, and The University of Montana. Our research is also the result of an on-going partnership and collaboration with the St'átl'imx Nation, the original people of the Middle Fraser Canyon.

Thank you very much!