



# **BACK TO THE MOUNTAIN: LONGITUDINAL INVESTIGATION AND ARCHAEOLOGICAL RESEARCH PROGRAMS**

**Lawrence Todd**

***66th Plains Conference, Laramie, Wyoming***



# Greybull River Sustainable Landscape Ecology Project 2002-2008

## Mission Statement:

Integrating natural and social sciences to promote local ecological and economic sustainability through transdisciplinary research, education, and stewardship initiatives.

GRSLE 2008



GREYBULL RIVER  
SUSTAINABLE LANDSCAPE  
ECOLOGY



# GRSLE 2002-2008

7 MA Theses

58 Plains Conference Presentations

13 Other Conference (SAA, GSA, AAAS) and Public Presentations

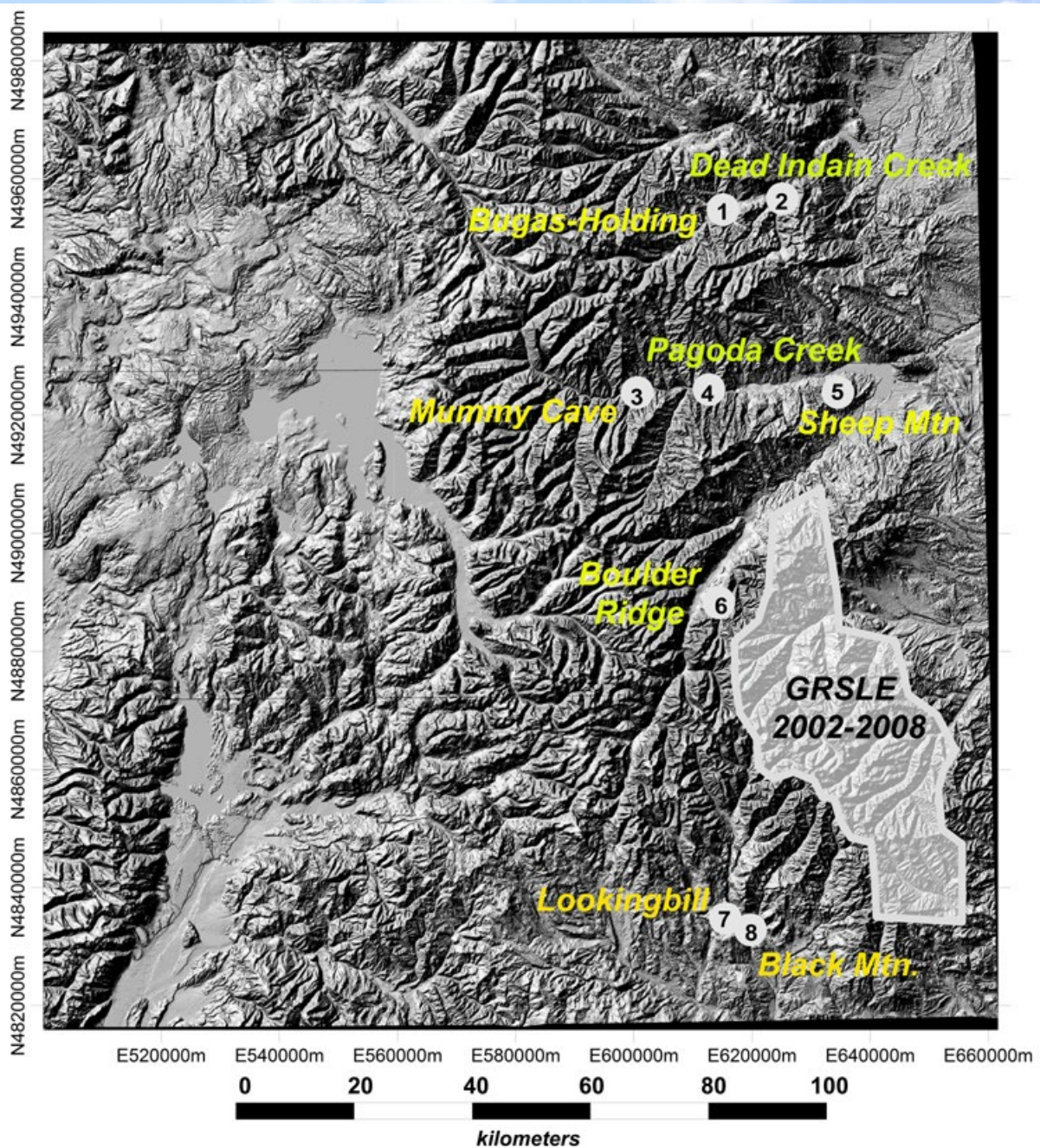


[www.greybull.org](http://www.greybull.org)

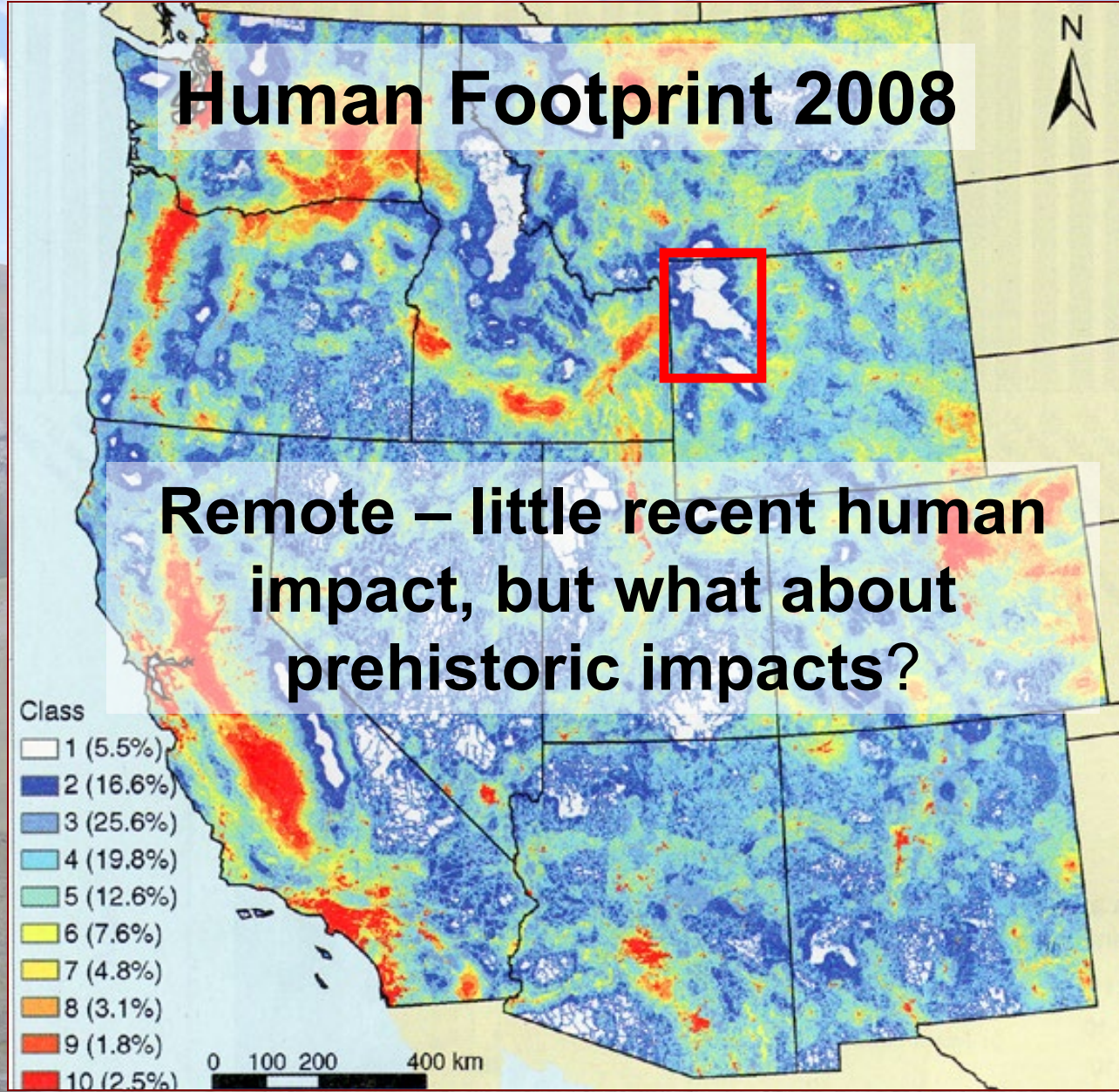
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# Key Sites

What does the rest of the region look like?



# Human Footprint 2008



Remote – little recent human impact, but what about prehistoric impacts?

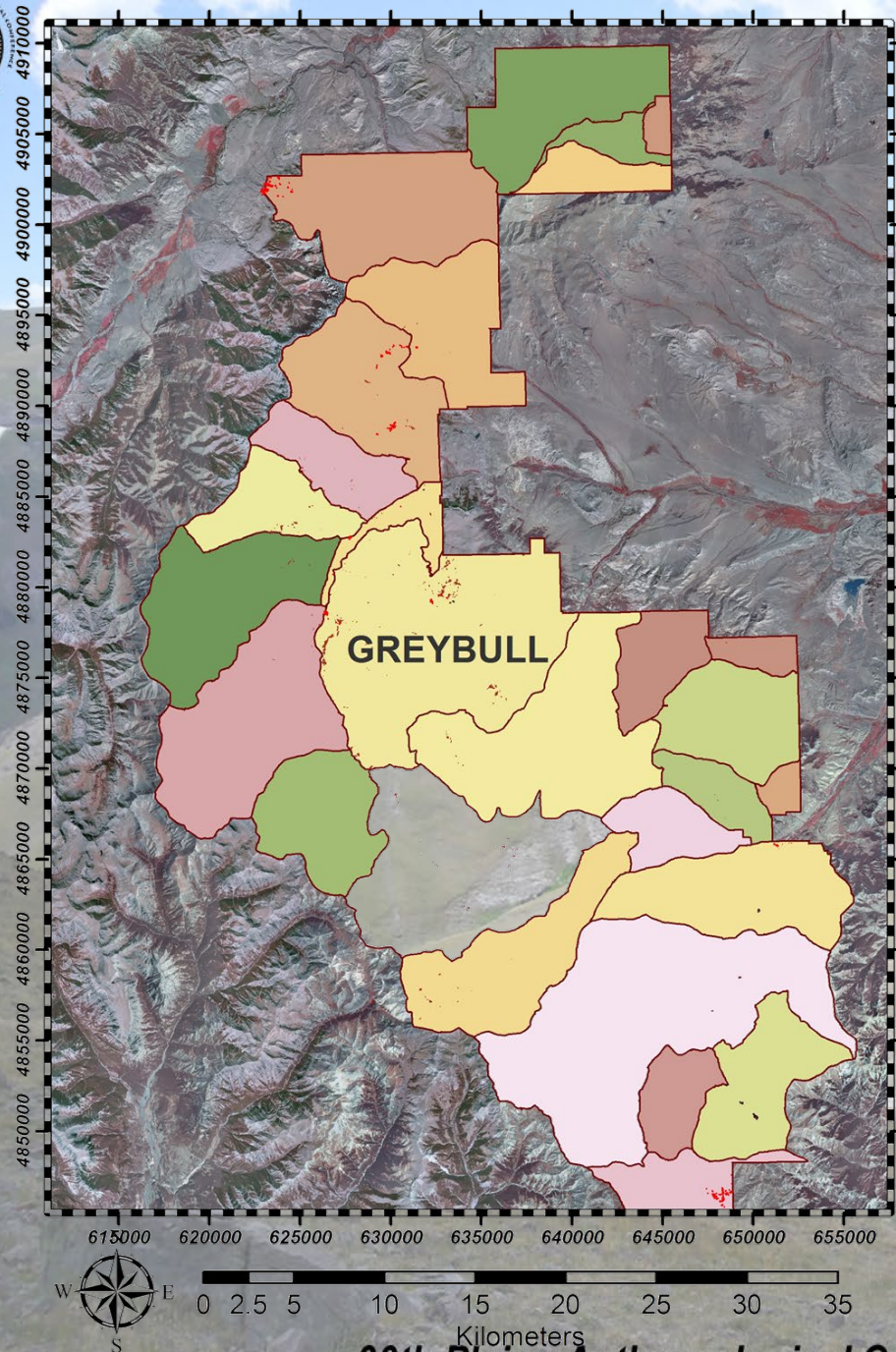
From: Leu et al. (2008). The Human Footprint in the West: A Large-scale Analysis of Anthropogenic Impacts. *Ecol. Appl.* 18(5):1119-1139. Figure 3.

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# Creating Sampling Units

## USFS Range Allotments

- 29 Allotments in current project sample (usually following hydrological boundaries)
- 135,160 ha (333,992 ac) total
- have done work in 20 allotments
- Have surveyed 1.2% in block surveys (2002-2008) – approaching 2% when trail corridors included





# Survey and Documentation




**2002-2008**

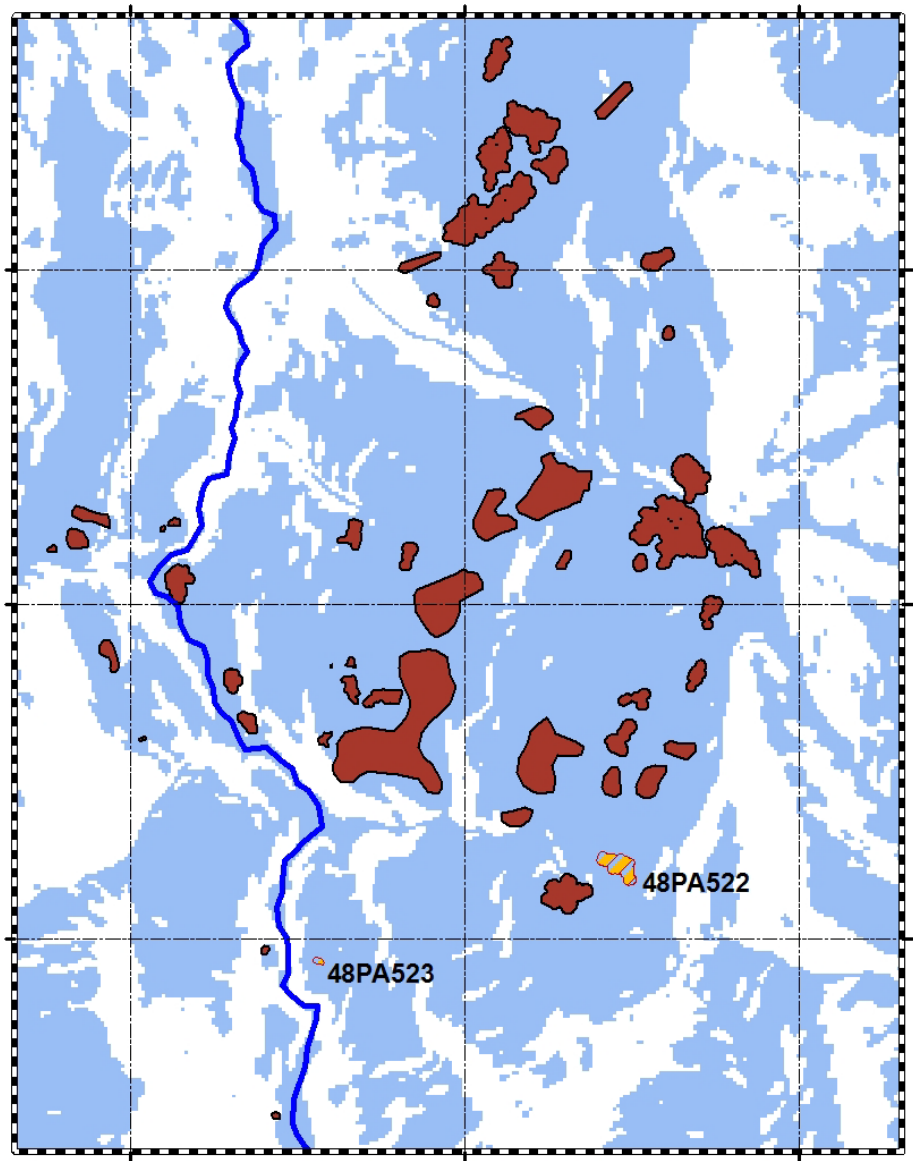
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# Peopling a Wilderness

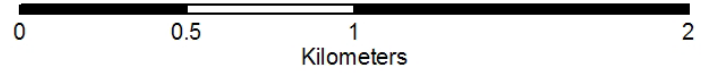
At start of project, only 7 prehistoric sites reported from project area, part of which is shown here.

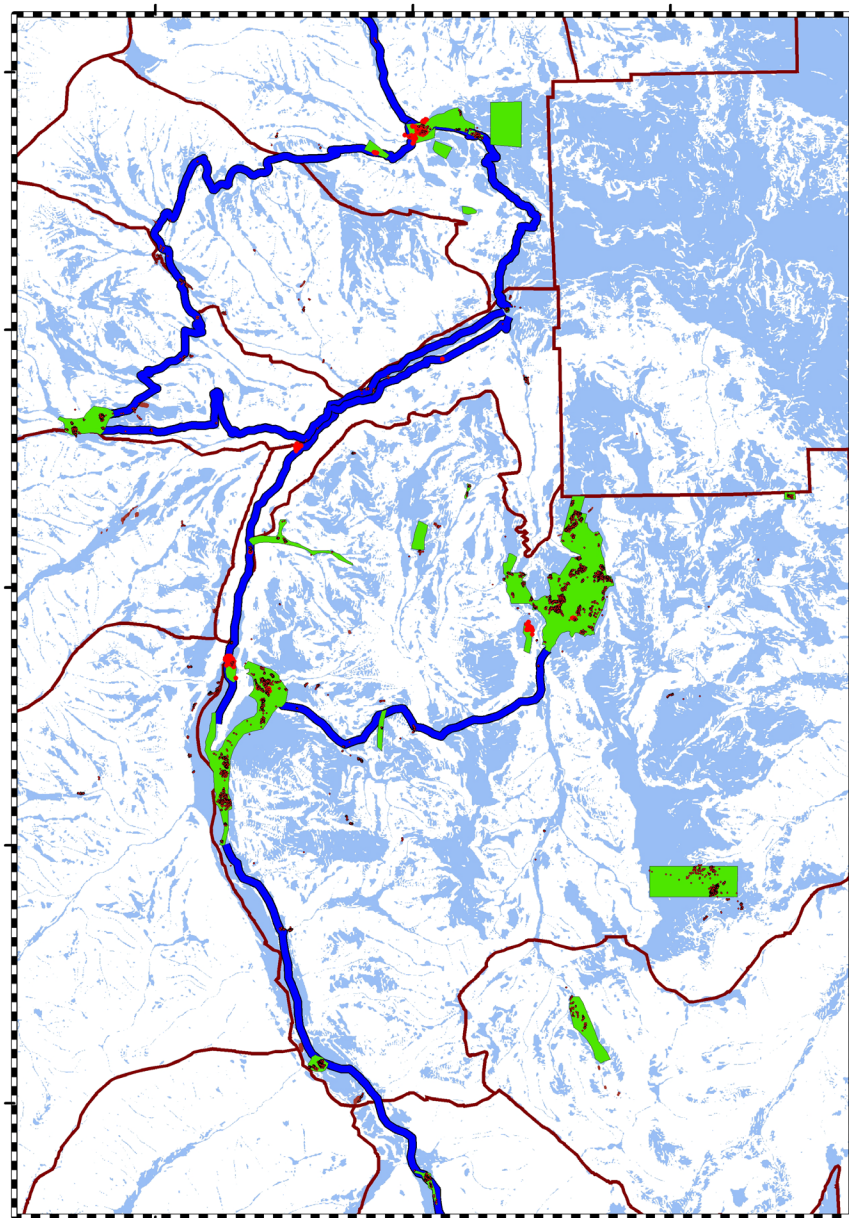
This is largely a non-collection project

 Slope  $\leq 15^\circ$




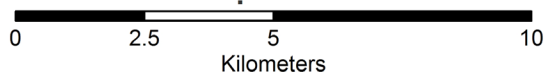
PREHISTORIC SITES RECORDED AFTER 2002

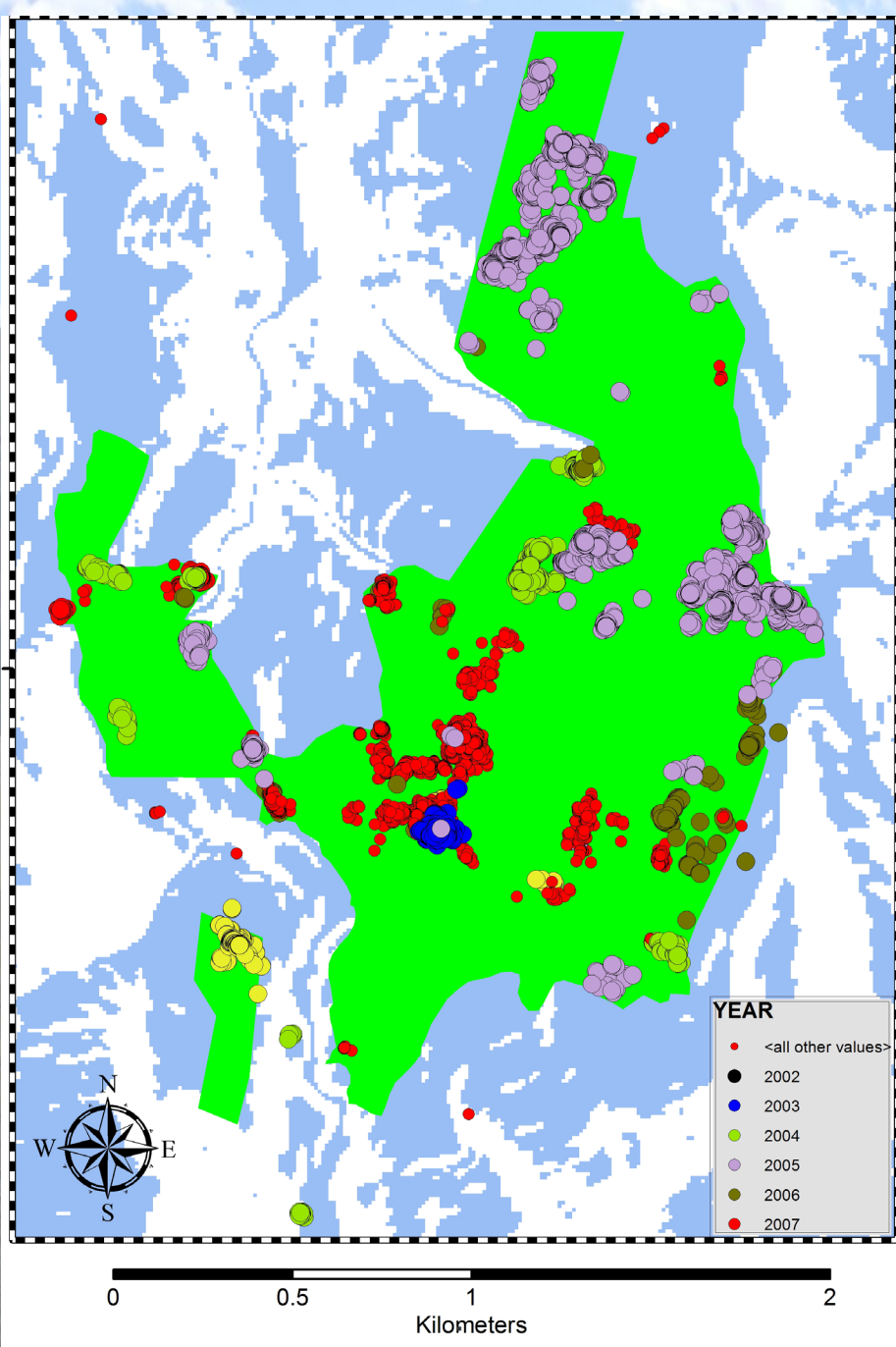





**Block areas (green)**  
**Trail Corridors (blue)**

 **Slope  $\leq 15^\circ$**





# Cumulative Record

 Slope  $\leq 15^\circ$



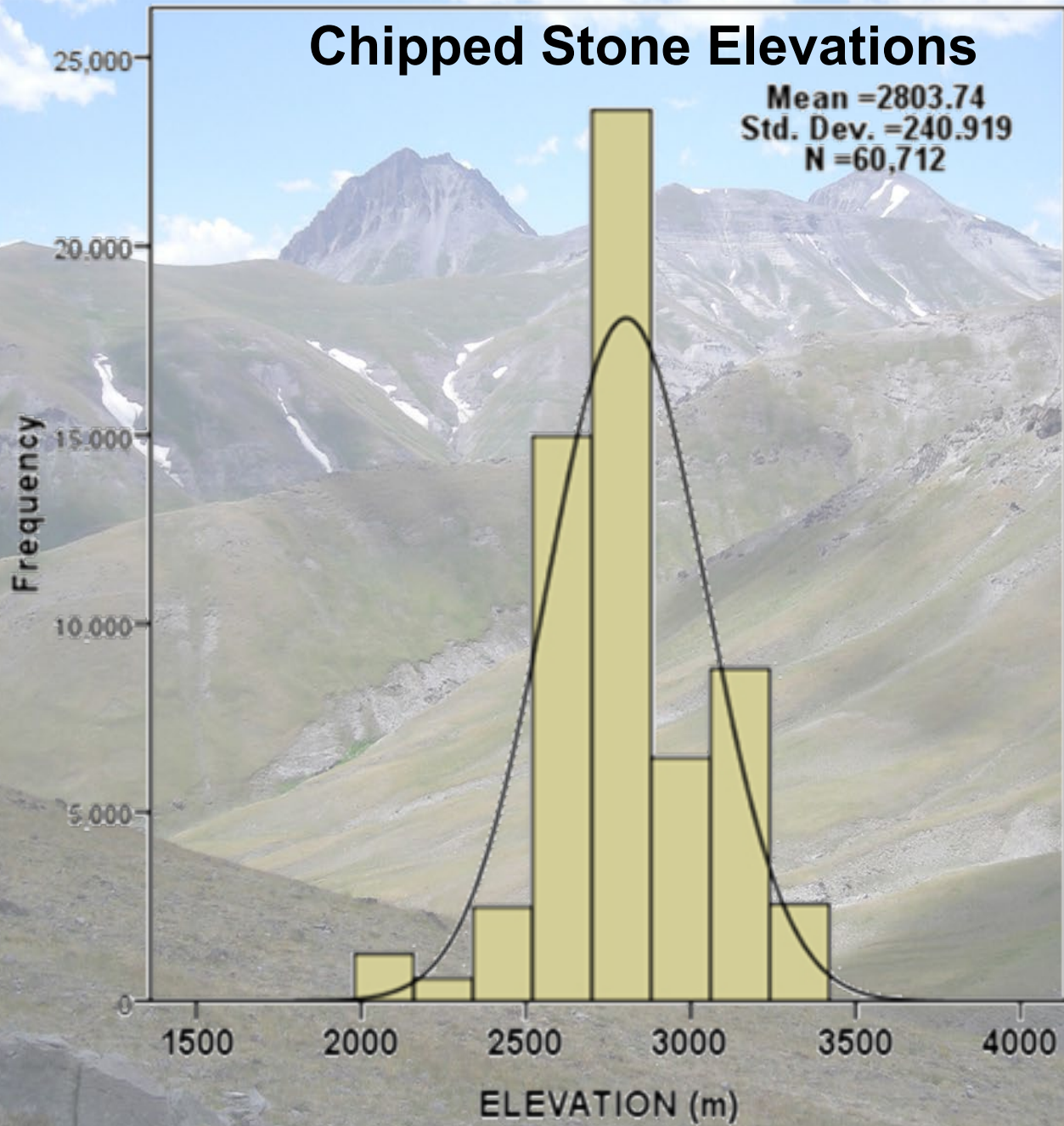
# Some Baseline Regional data

- assemblage data from 324 sites
- observations on >66,000 artifacts
- 614 morphologically dated points

# A Picture of the GRSLE area in Broad Brush Stokes



**What are the regional patterns?**

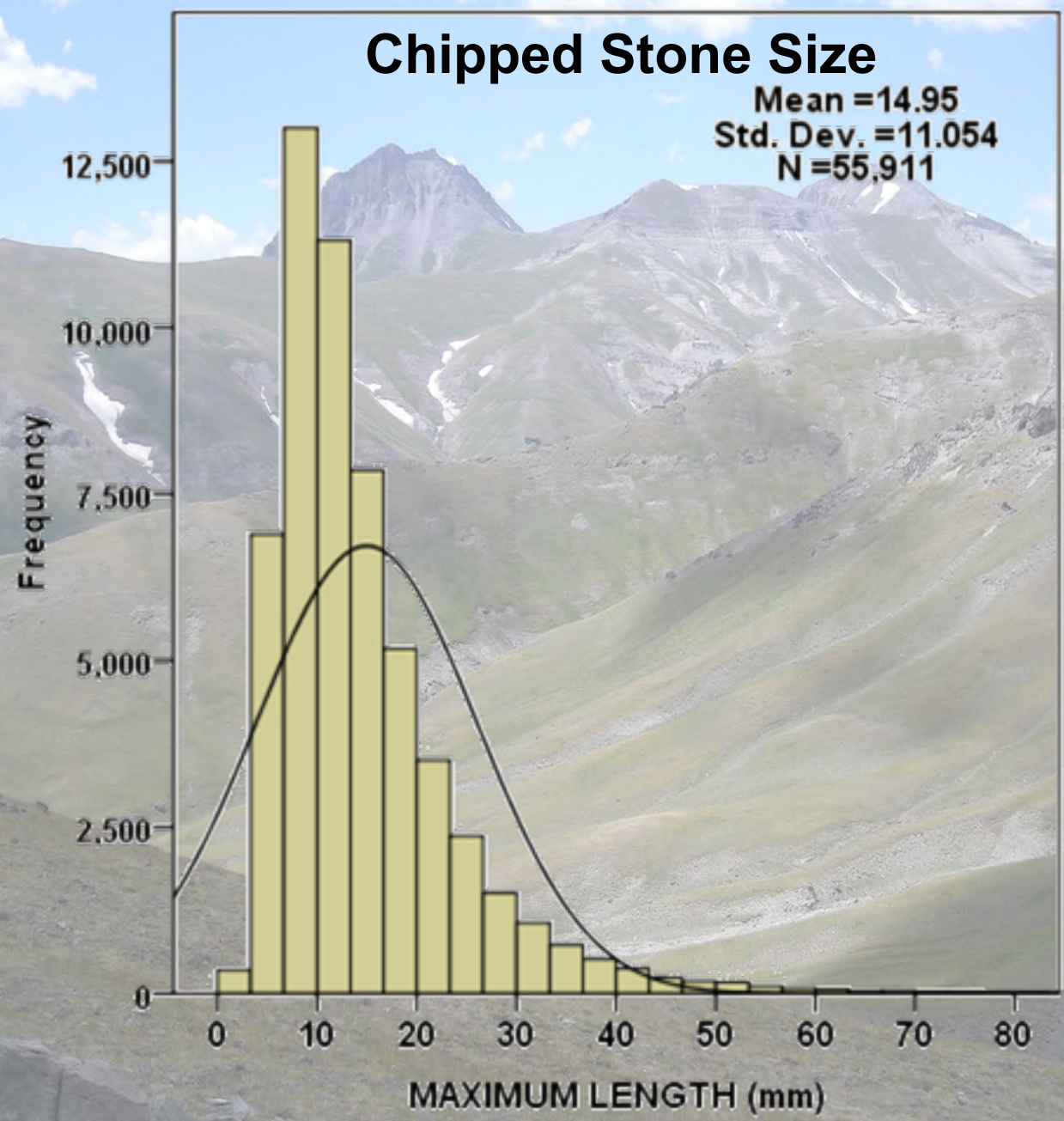




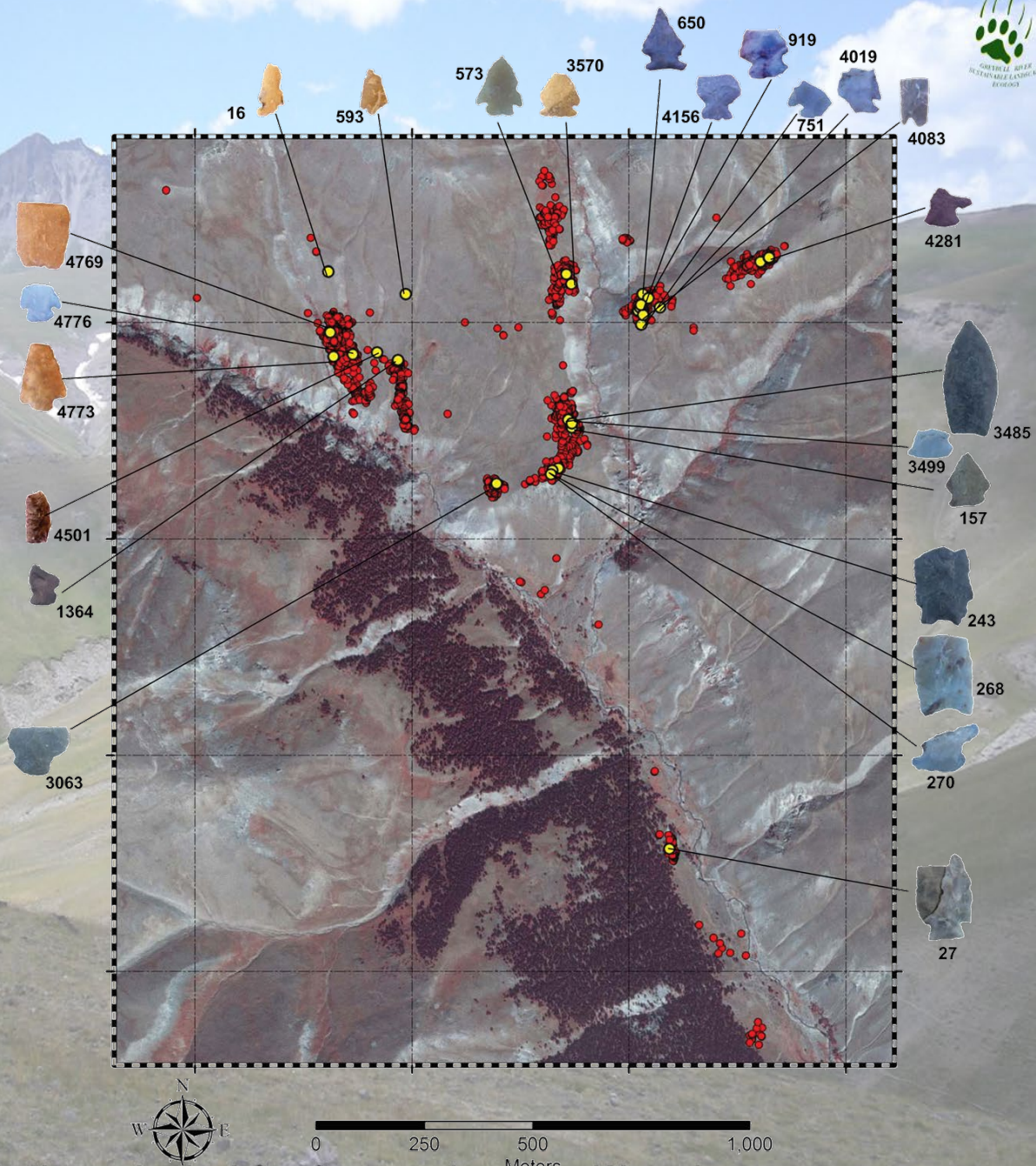
## Chipped Stone Sources

-  Local
-  Exotic

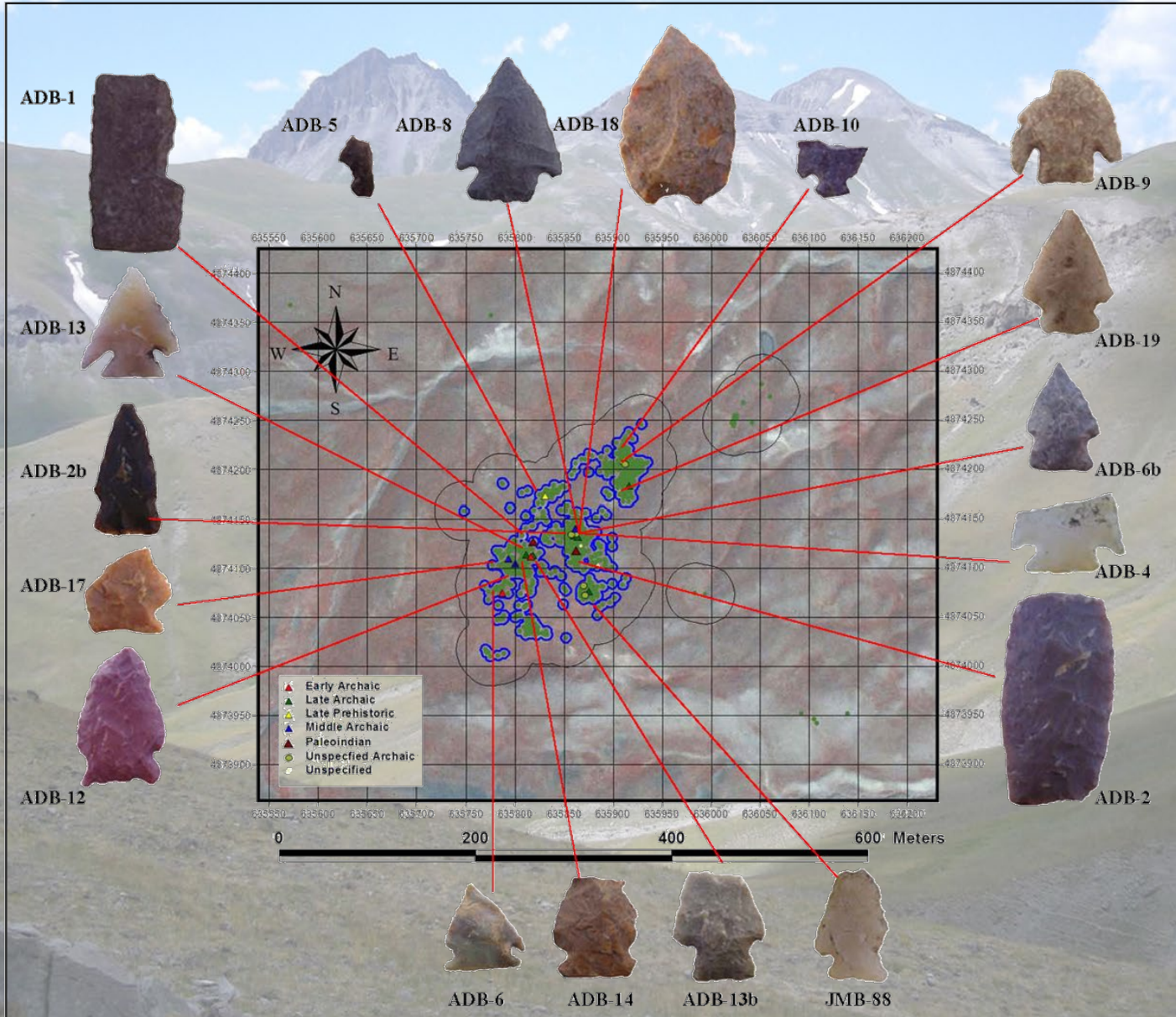
RAW MATERIAL	N	%
Basalt	125	0.2
Chert	30545	46.2
Chalcedony	5530	8.4
Dollar MTN Chert	2823	4.3
Dollar MTN Quartzite	5	0.0
Green Absaroka Chert	478	0.7
Obsidian	3843	5.8
Phosphoria Chert	408	0.6
Petrified Wood	1344	2.0
Quartzite	4168	6.3
Morrison Quartzite	870	1.3
Local Siltstone	9633	14.6
Unspecified Volcanic	128	0.2
Unspecified	6208	9.4
	66109	100

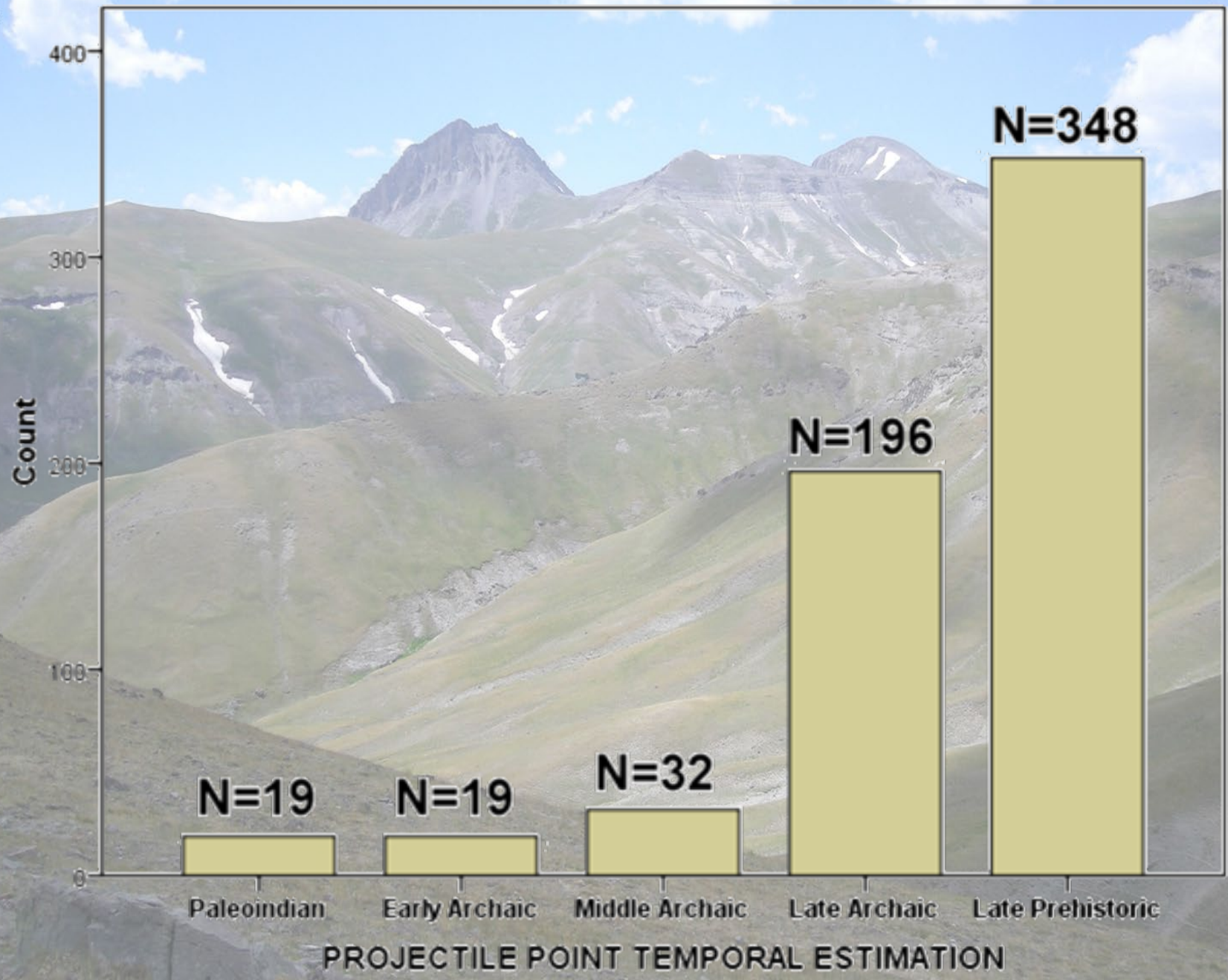


# Regional Patterns



# Large, Diverse Site Assemblages

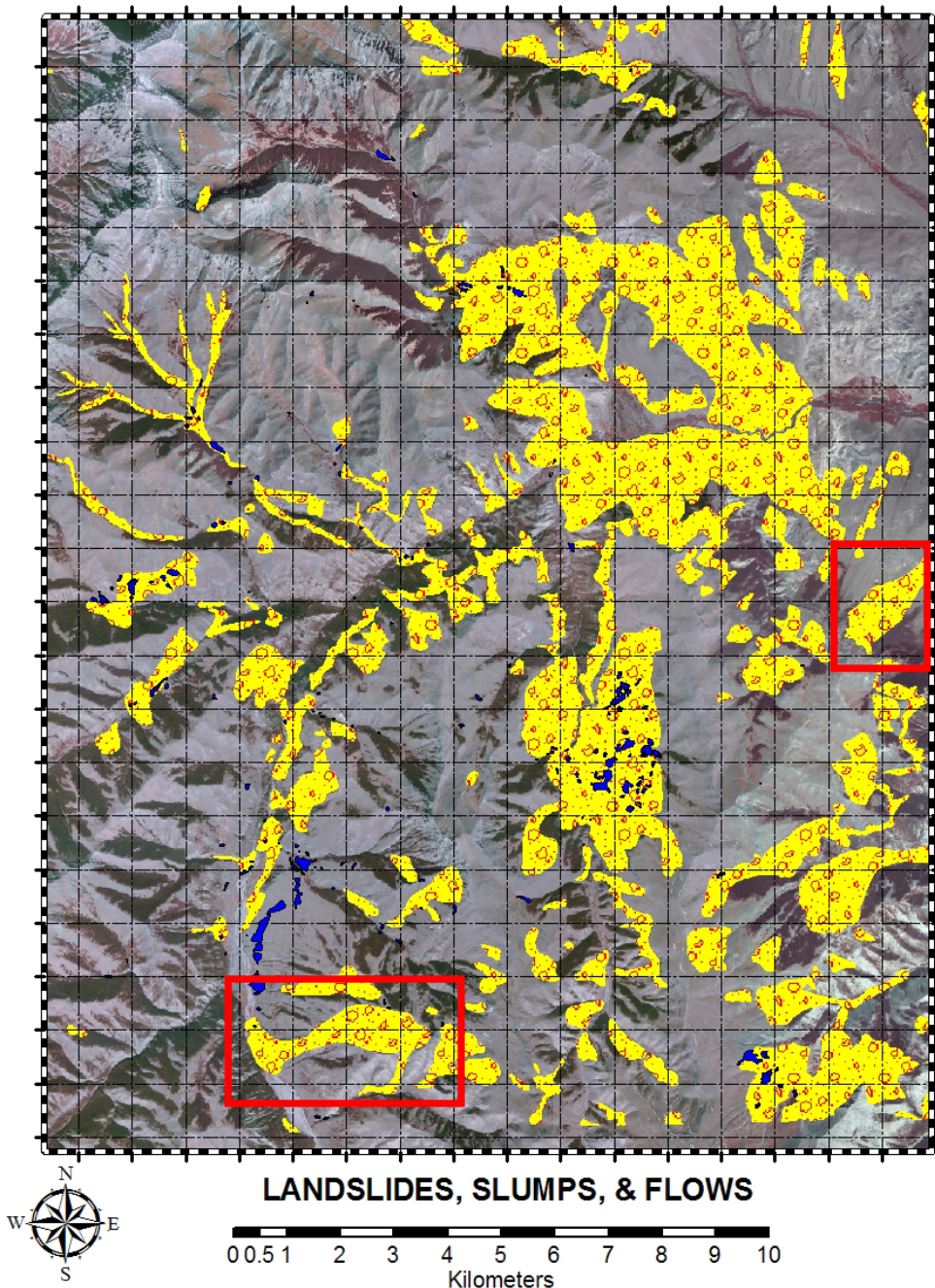




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# An Ever Changing Landscape

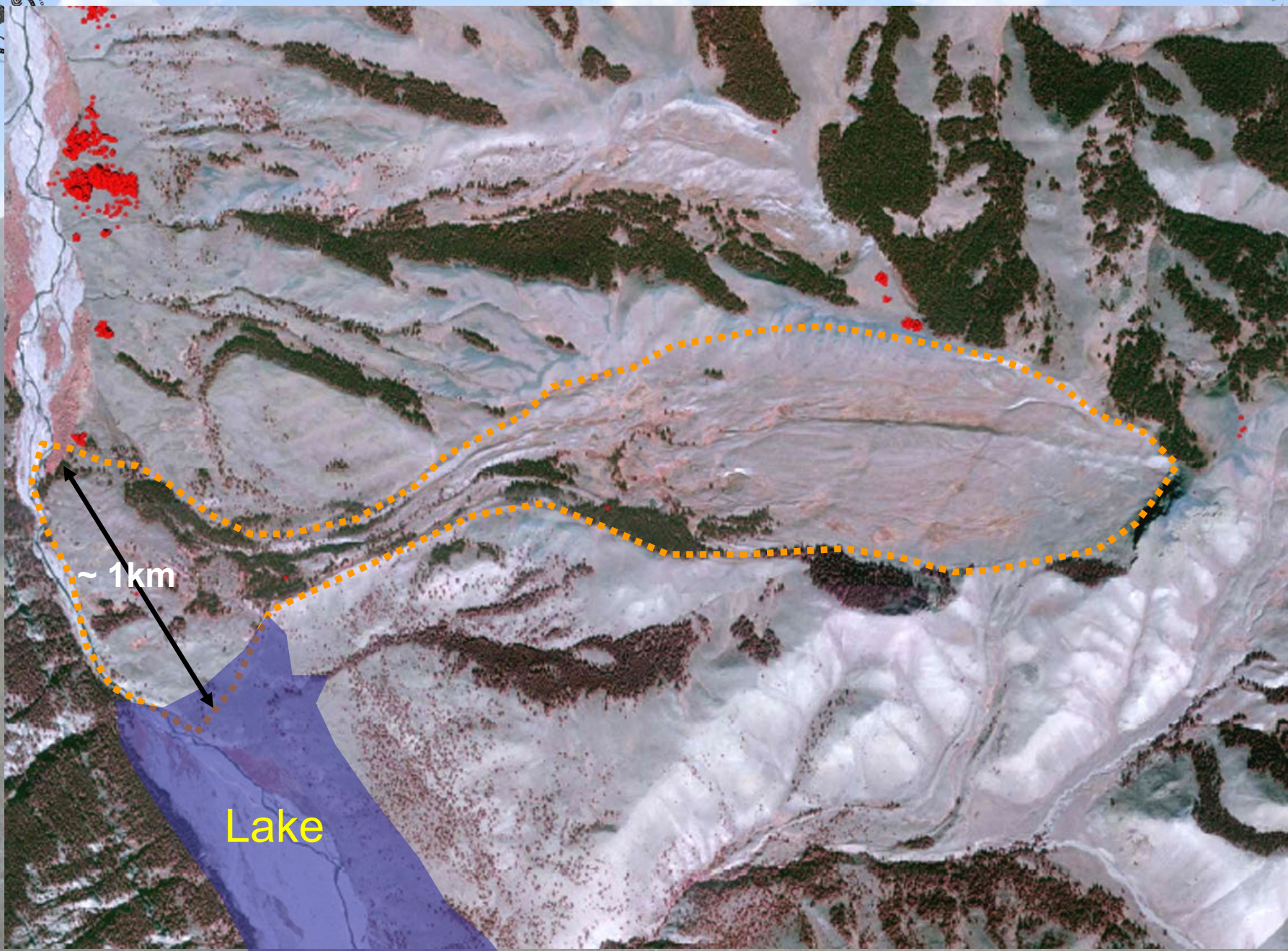


Ollie 2008



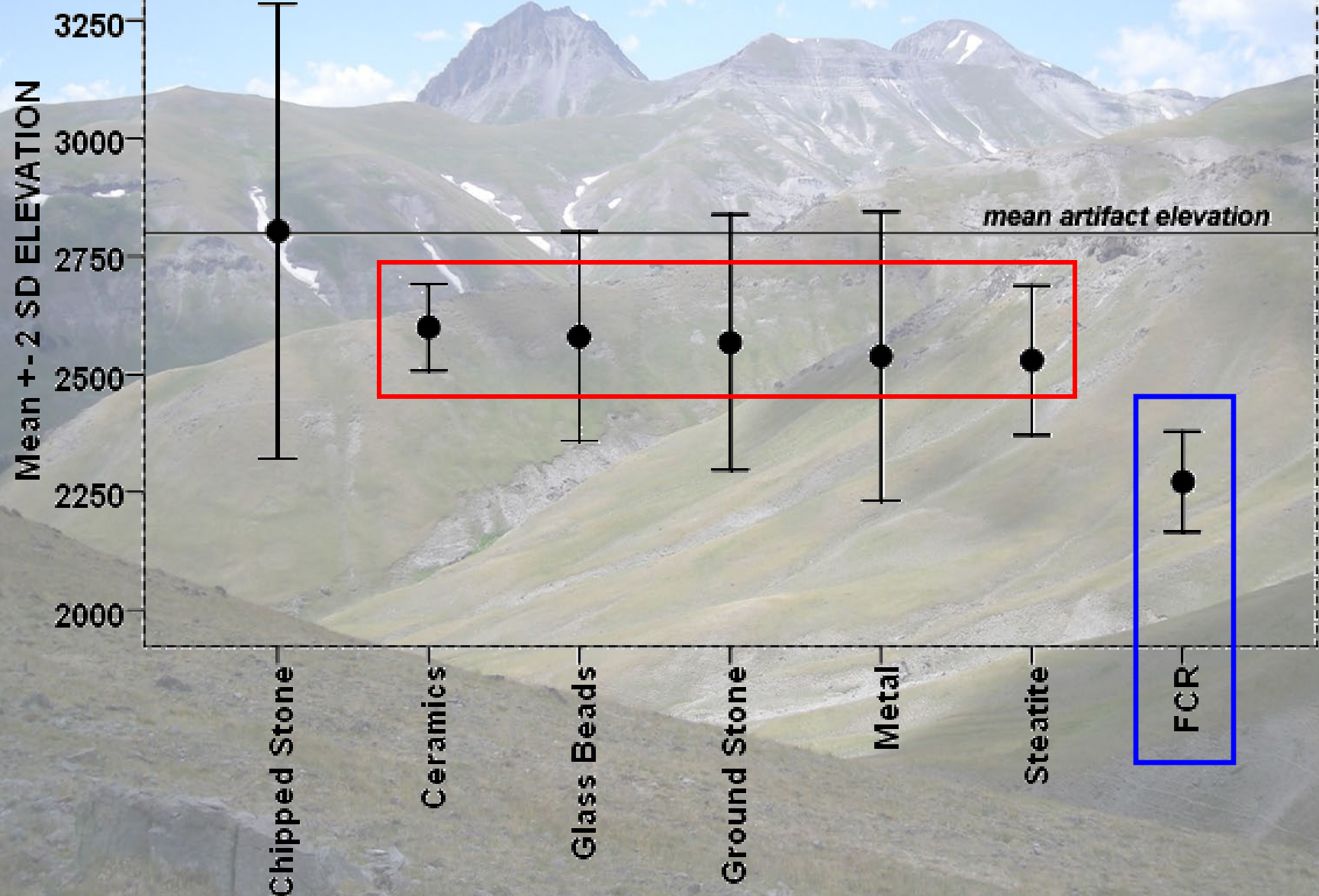


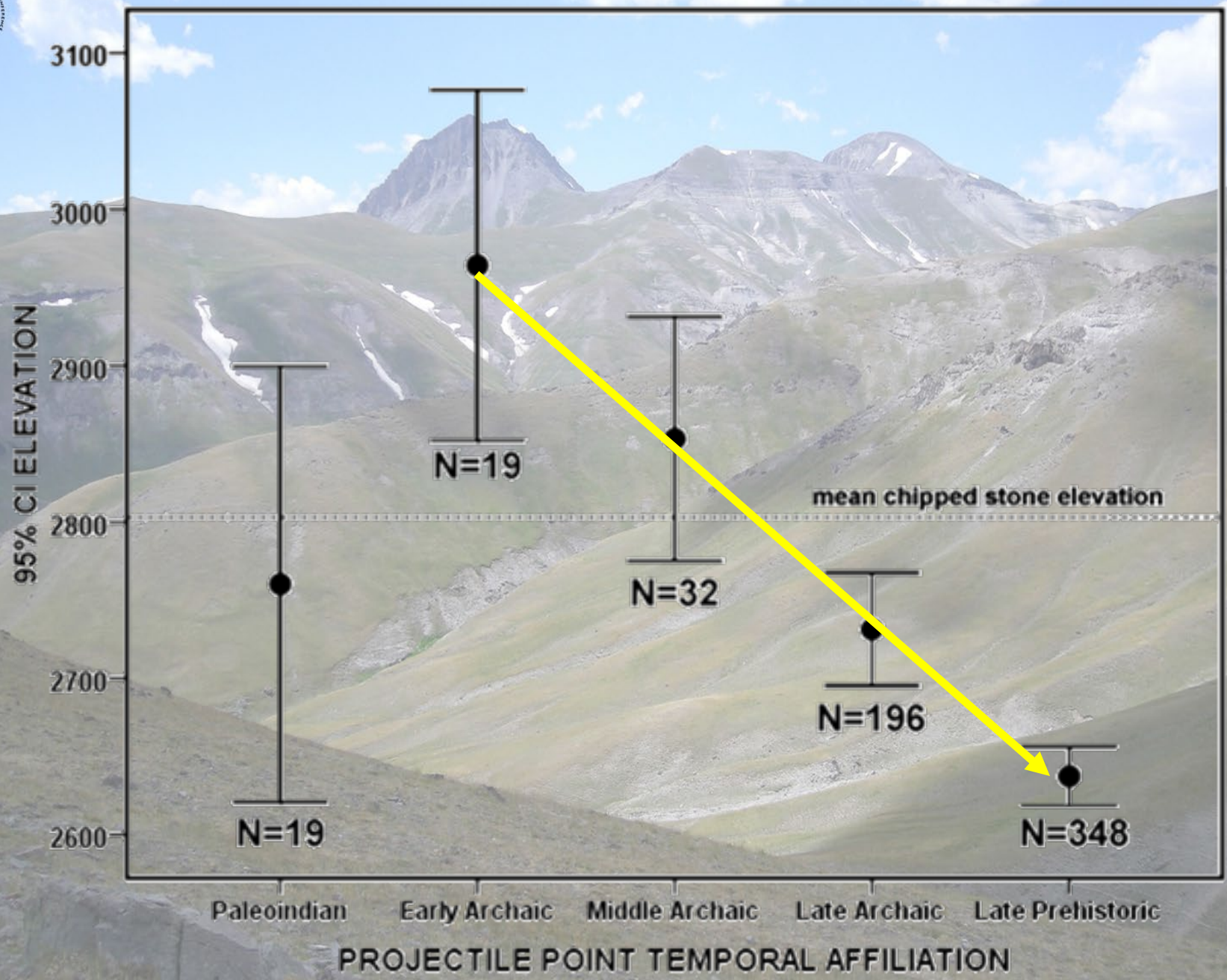
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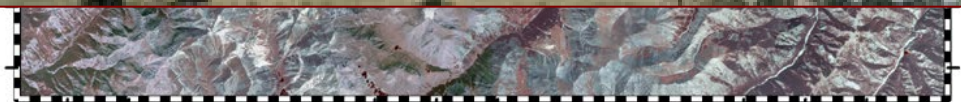
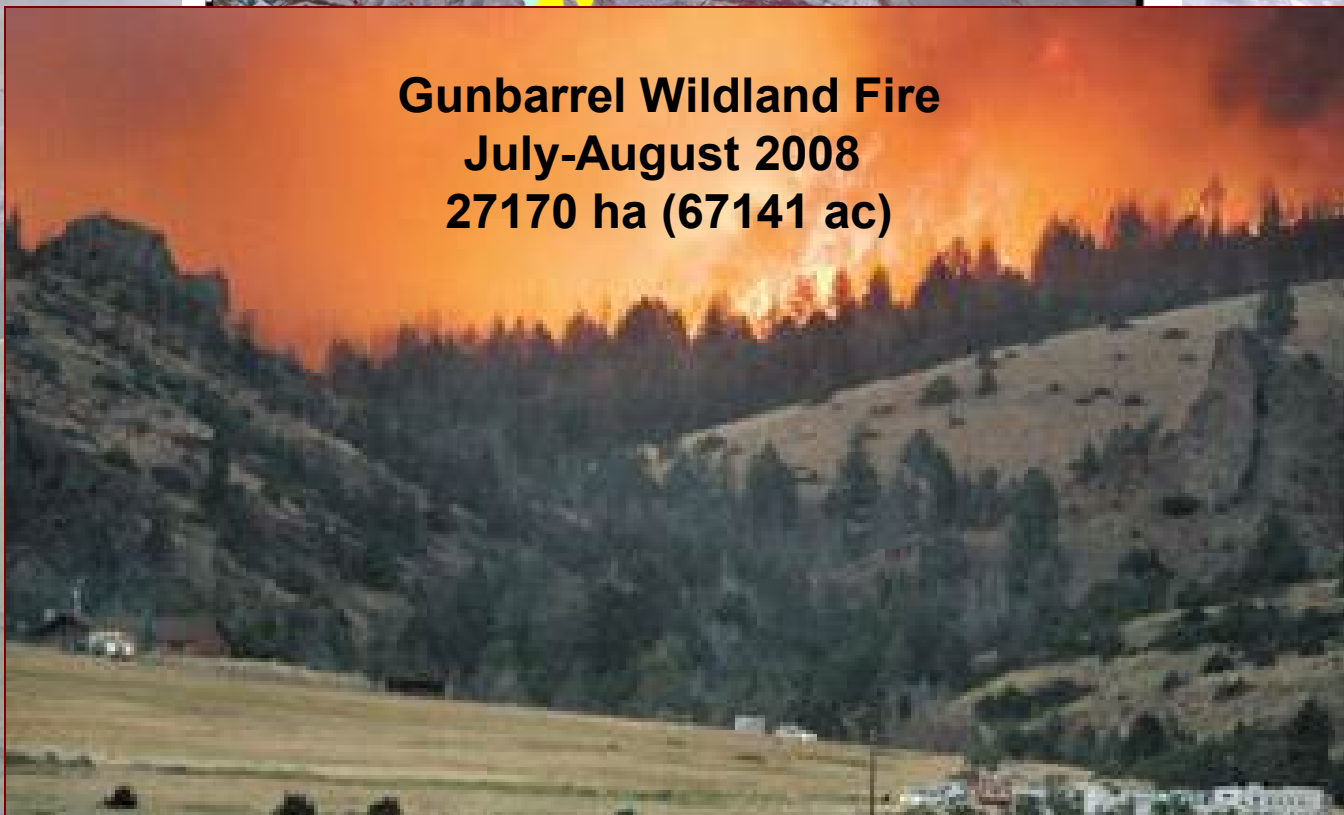
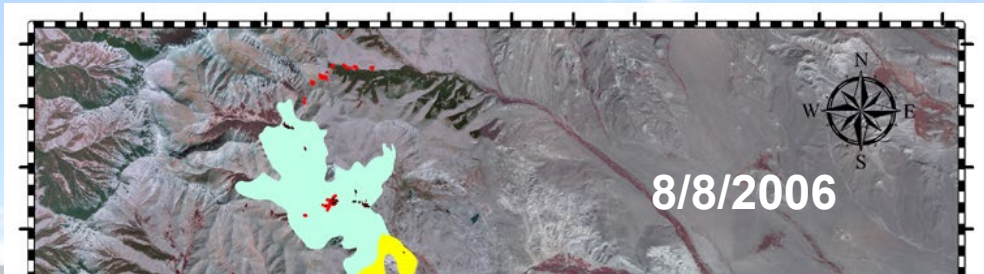
# Artifact Class







# Little Venus Fire June-August 2006



# FEATURES





# PARSING THE LATE PREHISTORIC

## Beginning to refine part of the picture

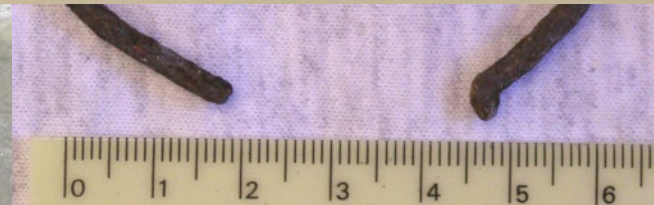
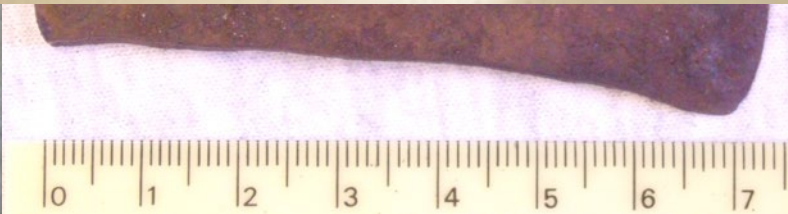
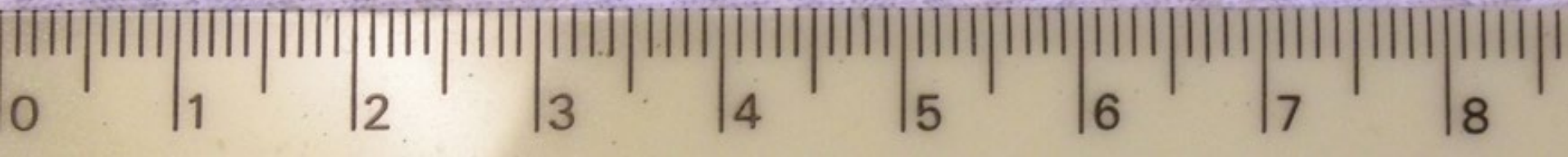




# METAL ARTIFACTS



## **48PA2749 metal arrowpoint production**



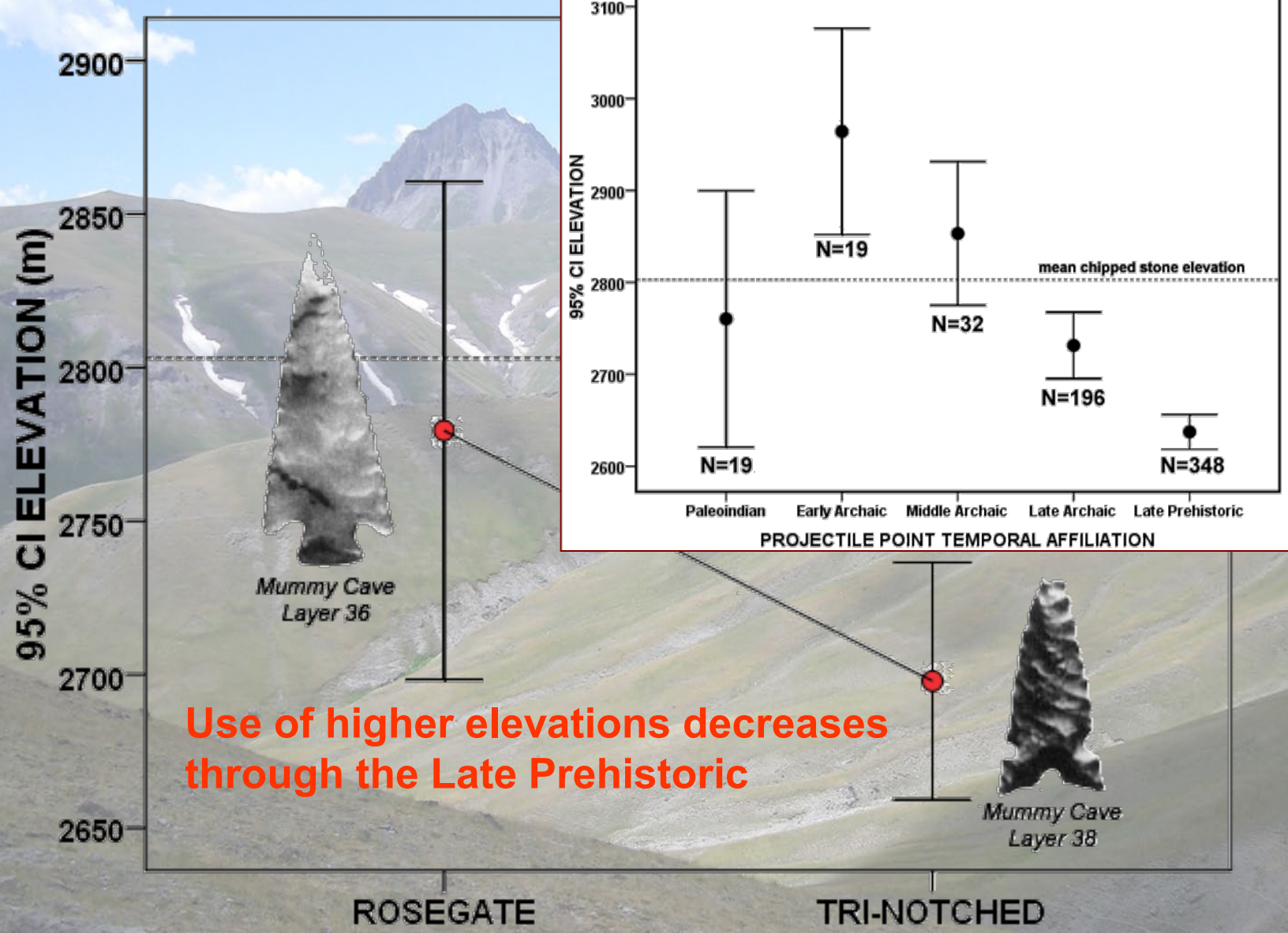
# CERAMICS

**3 sites  
4 vessels**



de Goods  
le Beads  
amics  
sites  
and 3  
in  
h.





**Use of higher elevations decreases through the Late Prehistoric**

**LATE PREHISTORIC POINT MORPHOLOGY**



		RAW MATERIAL		
MORPHOLOGY		CHERT	OBSIDIAN	Total
	Count	15	0	15
<b>Rosegate-like</b>	Expected Count	11	4	15
	Adjusted Residual	2.86	-2.86	
	Count	18	12	30
<b>Tri-notched</b>	Expected Count	22	8	30
	Adjusted Residual	-2.86	2.86	
<b>TOTAL</b>	Count	33	12	45
	Expected Count	33	12	45

**Use of obsidian increases through the Late Prehistoric**

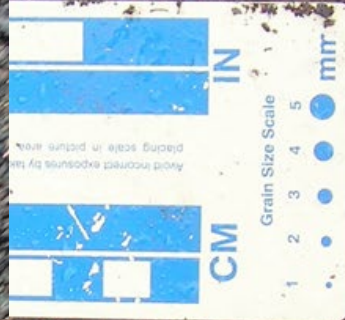
# Upper Piney Site



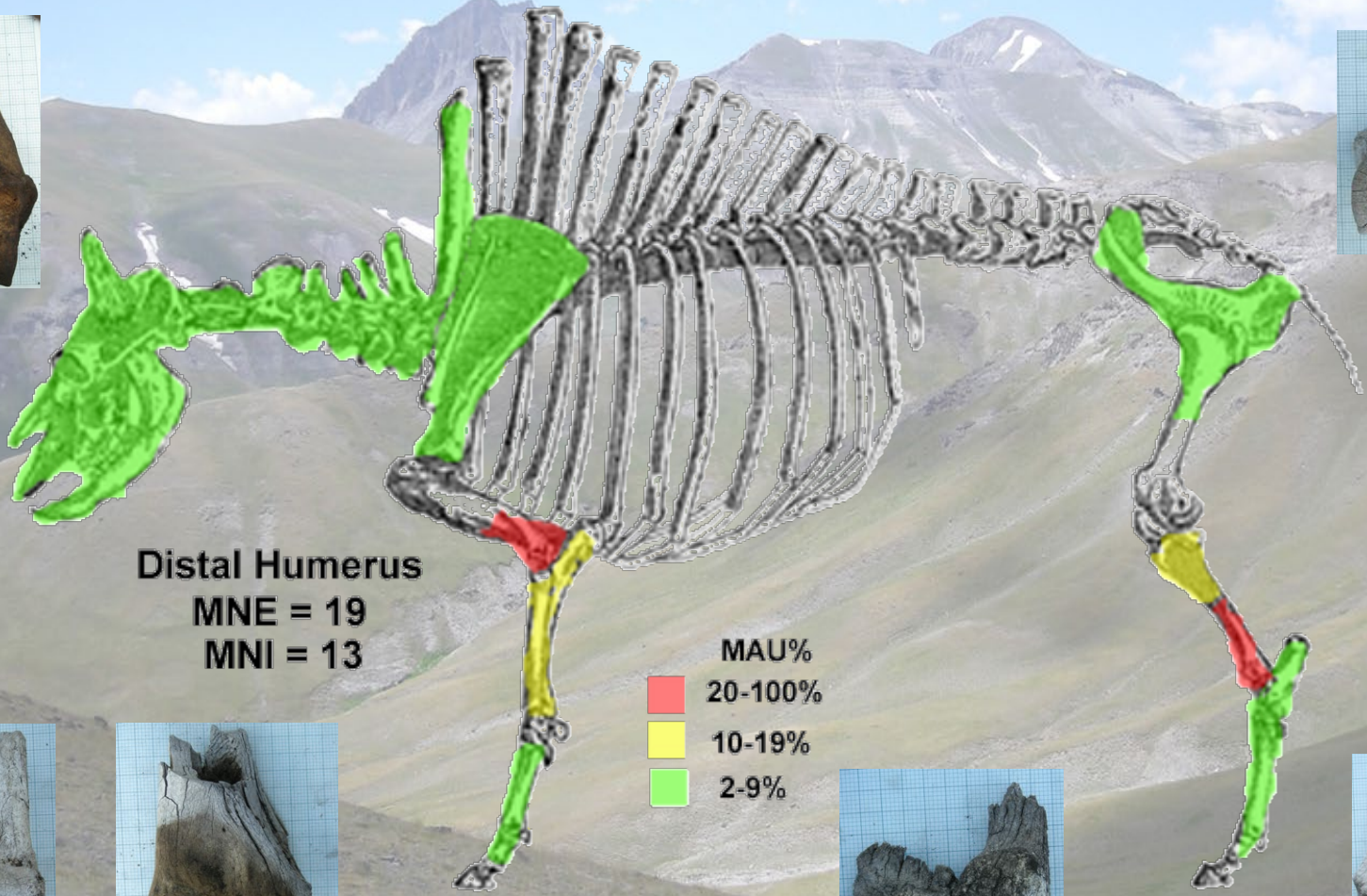


0      **FEATURE 3**      1  
meter

# Changes in Surface Visibility



# Protohistoric Bison Processing at 2500 m (8200 ft)



**Distal Humerus**  
MNE = 19  
MNI = 13

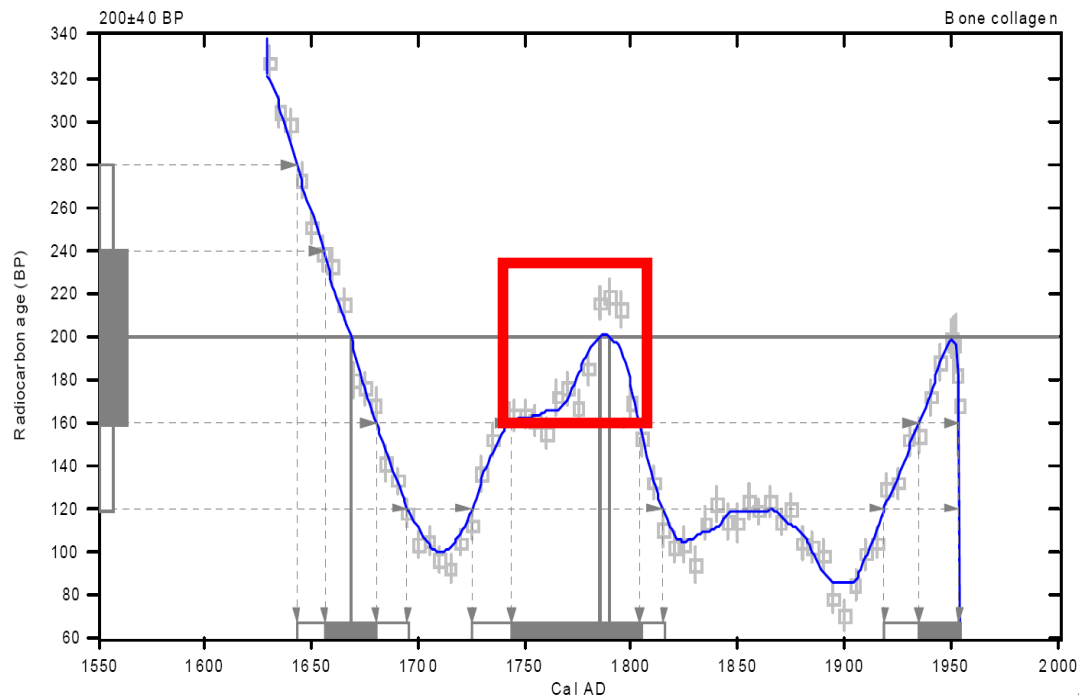
MAU%  
20-100%  
10-19%  
2-9%



# Upper Piney Creek Site

## FEATURES WITH MOSTLY BEADS STONE NE

- feature
- bead
- chipped stone



UTM EASTING

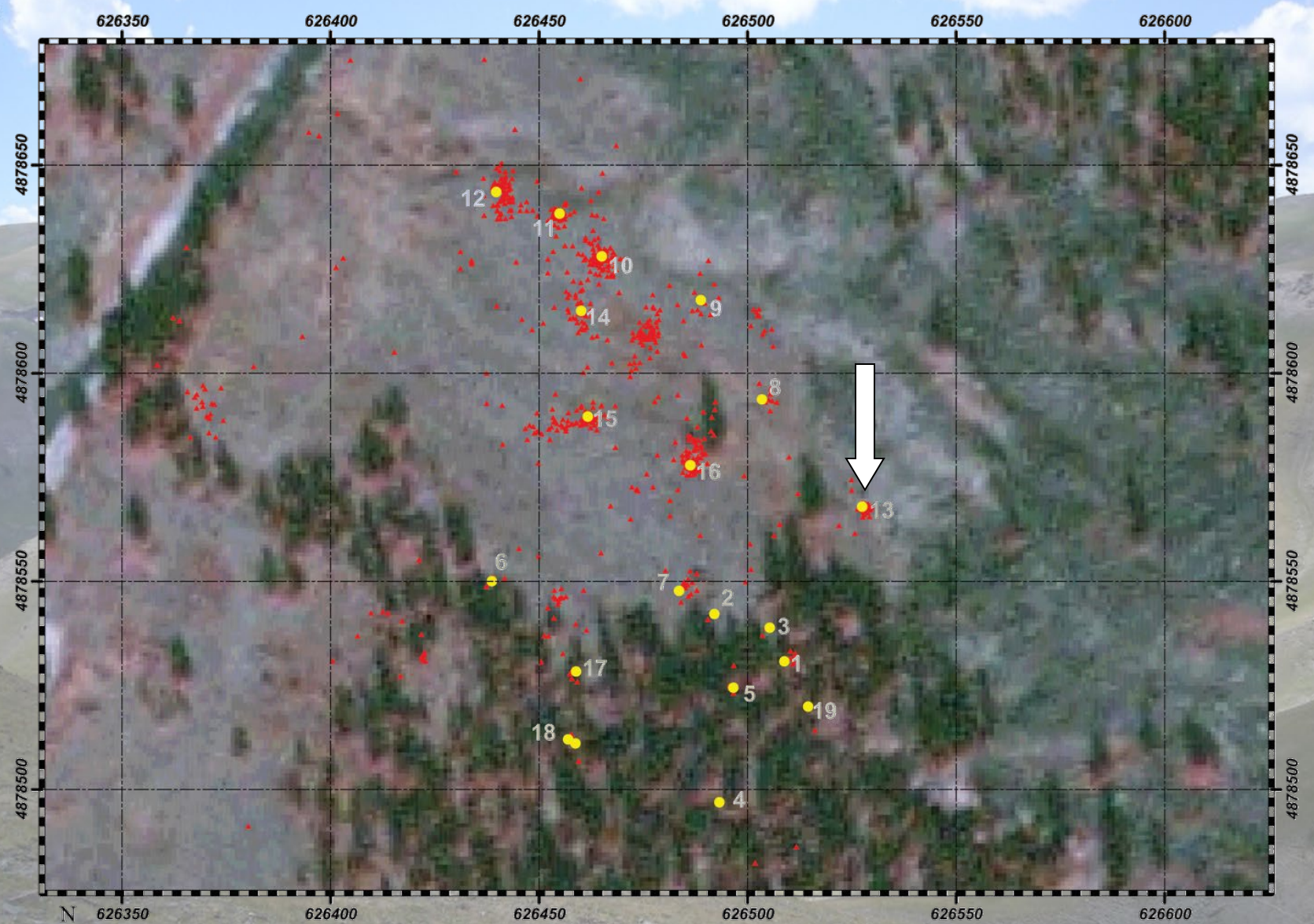




# Dooley Site



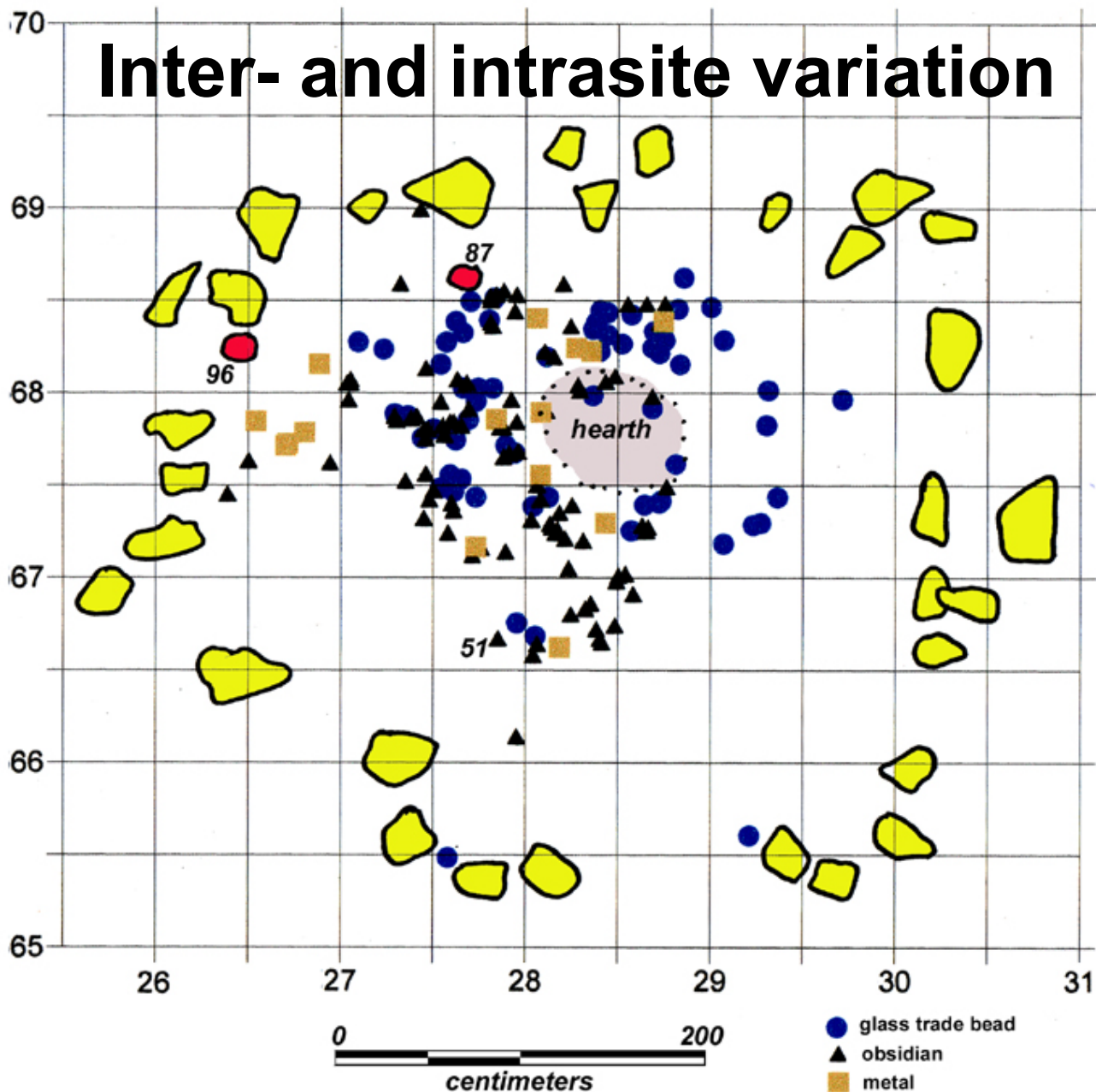
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**DOOLEY SITE FEATURES**

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# Inter- and intrasite variation





**Thanks to: Shoshone National Forest, residents of Meeteetse and especially to field crews.**



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