

Anwen Fredriksen
 Colorado State University
 Department of Anthropology
 anwen.fredriksen.colostate.edu

Abstract

The distribution of archaeological artifacts across a landscape is indicative of both natural and human processes at work over time. Both the natural movement of sediment and the deliberate human choice of location for habitation or working tools contribute to the patterns of where artifacts are found today. In the mountains of the Greybull River drainage system in Northwestern Wyoming are several sites with varying densities of artifact distribution. After conducting five-meter spaced surveys, patterns of artifact locations became clear.

By plotting artifacts and comparing their distribution with the geographic formations present in the area, the goal is to determine to which degree either human or natural processes impact the present-day discovery of archaeological artifacts. Overlaying the GPS plots of artifacts on detailed topographic maps of natural land formations clearly expresses the predictably differential distribution of human artifacts.

This study aims to understand the observed patterns of artifact location in relation to their setting in the landscape, accounting for geomorphic events, animal impacts, and human actors, past and present, affecting the locations at which artifacts are found on the landscape of today. The setting for this study is particularly useful for collecting data because of the low impact humans have had on it in recent decades, because of the range of geographic features on the landscape, and because of the great number and variety of artifacts recorded.

Introduction

The area studied was located in Northwestern Wyoming. Located above the tree line, the area is considered alpine, meaning it is too cold or snowfall is too persistent to allow for the growth of trees at and above its altitude. The main site, 48PA2874, was found by Dr. Todd and Becky Thomas in the summer of 2004. The following summer, site 48PA2874 was surveyed and recorded in detail by the 2005 field school students. In the summer of 2006, the new class of field school students surveyed a larger area, which encompassed site 48PA2874. In addition to the survey and artifact recording, field school students conducted several test excavation units within site 48PA2874.

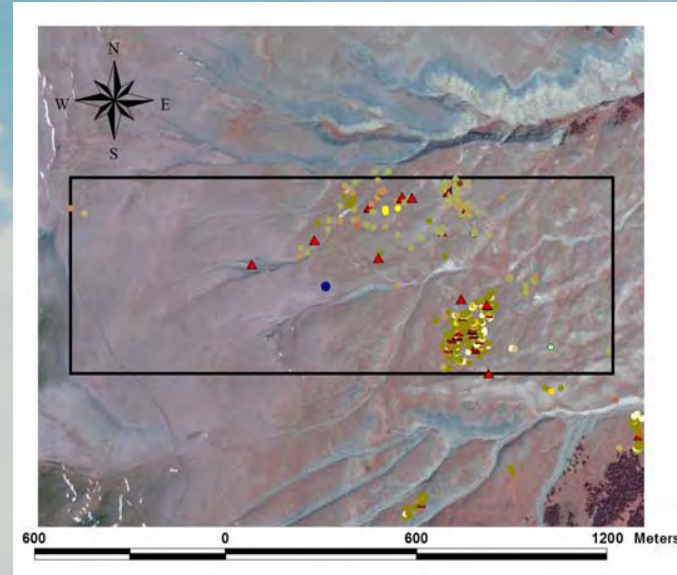


Methods

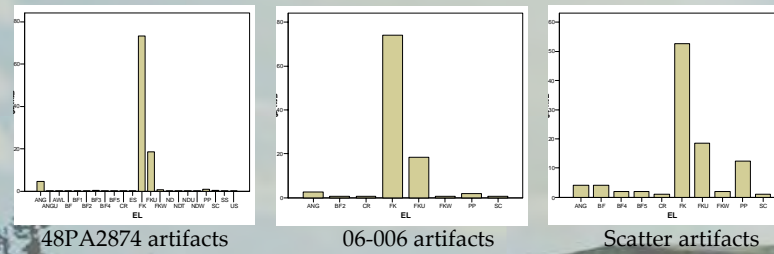
The survey area measured 1700 m from east to west and 600 m from north to south, giving a total area of 102 hectares. The corners of the proposed survey area were marked with pin-flags. All the enclosed area was then surveyed at 2 km per hour speed at 5-meter spacing between individuals surveying. Artifacts found during this survey were marked with red pin-flags and their GPS coordinates were recorded. It would have taken 7.5 transects of 15 people surveying to complete the area, but crew numbers varied, so more transects were conducted. Upon completing the entire survey, each of the artifacts were revisited, and non-systematic surveys were conducted around them to determine if the artifact was isolated or only one in a larger cluster of artifacts. All the artifacts were then examined and their characteristics (artifact type, completeness, material type, color, measurements) as well as their GPS coordinates were recorded in hand-held computers. Depending on the density of artifacts over an area, clusters were assigned a site number or described as isolated finds.

After data collection was complete, all files were compiled. Using the GPS data, each artifact could be mapped over a topographic map of the survey area. The site 48PA2874 contained the highest density of artifacts. Smaller sites, temporarily numbered 06-005, 06-006, and 06-007, had more densely distributed artifacts than the general survey area (excluding 48PA2874), but was not as high density as 48PA2874.

With so multiple attributes for each artifact, there was potential to create a number of maps, highlighting different characteristics. By analyzing the artifact statistics, the goal was to better describe the nature of site 006, hypothesize about its use, and understand the role of site 48PA2874.



Map illustrating survey area and element (artifact type)
 Projectile points are indicated by red triangles;
 stage-five bifaces are indicated by blue circles.



Code	ANG	BF	CR	FK	PP	SC
Artifact	Angular Debris	Biface	Core	Flake	Projectile Point	Scraper

Analysis

The artifacts found at site 48PA2874 were overwhelmingly flakes (73.1%) and utilized flakes (18.7%), as well as angular debris (4.6%). Projectile points made up only 1% of the artifacts. A total of 2492 artifacts were found, 24 of which were projectile points, and 22 of which were bifaces of some stage (comprising almost 1% of artifacts).

The artifacts found at site 06-006 were also mostly flakes (74.2%), utilized flakes (18.5%), and angular debris (2.6%). There were a slightly greater percentage of projectile points (2%). A total of 151 artifacts were found, 3 of which were projectile points and 1 of which was a biface (stage 2).

The artifacts found scattered throughout the survey site, without being clustered together into a delineated site, were more varied in terms of artifact types. Flakes (52.6%) and utilized flakes (18.6%) still predominated, but not as heavily. A surprising 12.4% of artifacts were projectile points; 4.1% were angular debris; 4.1% were bifaces; 2.1% were stage 4 bifaces; 2.1% were stage 5 bifaces; 1% was cores; and 1% was scrapers. A total of 97 artifacts were found, of which 12 were projectile points and 8 were bifaces of some stage.



Crew out on the mountain conducting 5-meter spaced survey

Conclusions

The contrasts in artifact composition artifact clusters and scatters can be interpreted as differences in landscape use patterns. Site 48PA2874, with a majority of its artifacts being lithic flakes of some kind, is most likely the site of tool production and retouching. Based on the area's repeated use as a work site, was also very likely an occupation site. Because of its challenging alpine climate, it was probably occupied as seasonal variations allowed.

Site 06-006 appears to be very similar in composition of artifact types as 48PA2874, although smaller in scale. It was composed of mainly lithic flakes, similarly suggesting tool making and retouching processes. Its smaller size may reflect fewer seasons of occupation.

The remaining artifact scatter was notably different from the two areas delineated as sites. Although the numbers of isolated artifacts were lower as a whole, the frequencies of complete or large tools were much higher. The scattered artifacts were thus more likely deposited in place in the process of being used. Projectile points may have been lost during the hunt; bifaces may have been dropped at butchering sites; and flakes were deposited in random isolation possibly during tool retouching out on hunting expeditions.

Further Research

Keeping in mind the arbitrary nature of site definition, are there methods for understanding the prehistoric land use of archaeological sites? The unique challenges posed by alpine sites restrict the archaeological evidence further, because the duration of occupation is less in these kinds of seasonal sites than in year-round occupation sites. Further research could be conducted to understand more about the nature of alpine environment sites, specifically in relation to hunting seasonality and climate changes over time.



Projectile points found and recorded in the 2006 field season
 Photos by Lawrence C. Todd

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Field students analyzing artifacts in the field around site 48PA2874