Walking the Line: Spatial Patterns of Artifact Distribution in Alpine Environments

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 natural or human processes impact the present-day discovery of archaeological artifacts. Overlapping the GIS 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 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 too snowy is too persistent to allow for the growth of trees at 2nd above its altitude. The site, 48PA2874, was found by Dr. Todd and Becky Thomas in the summer of 2006. 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 discovered an area, which encompassed the site 48PA2874. In addition to the survey and artifact recording, field school students conducted several test excavation uting within site 48PA2874.

Methods

The survey area measured 1700 m to east to west and 600 m from north to south, giving a total area of 102 hectares. The names of the proposed survey area were marked with 50. All the enclosed area was then surveyed at 2.5 km per hour at 3 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 7-8 team of 10 people working 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 wasn't located or only one in a larger cluster of artifacts. All the artifacts were then examined and their characteristics (artifact type, completeness, material type, color, measurement, etc. as their GPS coordinates were recorded in handheld computers). Depending on the density of artifacts in an area, clusters were assigned a site number or described as isolated finds.

After data collection was complete, all files were compiled. Using the GIS 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, temporally numbered 06-006, 06-006, and 06-006, had more density distributed artifacts than the general survey area encompassing 48PA2874. This was not as high density as 48PA2874.

With as many 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 06, hypothesizing about its use, and understand the role of site 48PA2874.

Analysis

The artifacts found at site 48PA2874 were overwhelmingly flakes (75%), and utilized flakes (15%), as well as projectile points. Projectile points made up only 1% of the artifacts. A total of 2426 artifacts were found, 24 of which were projectile points, and 22 of which were bifaces of varying sizes (accounting for almost 1% of artifacts).

The artifacts found at site 06-006 were also mostly flakes (77.5%) and utilized flakes (18.5%), as well as projectile points. There was a slightly lower percentage of projectile points (2%). A total of 233 artifacts were found, 5 of which were projectile points and 1 of which was a biface (Stage 3).

The artifacts found scattered throughout the survey site, without being clustered together somewhat more varied in terms of artifact types. Flakes (52.8%) and utilized flakes (18.4%) 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; 3% were cores; and 1% were scrapers. A total of 97 artifacts were found, of which 62 were projectile points and 6 were bifaces of some stage.

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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 environments restrict the archaeological evidence further; hence the duration of occupation is less in these kinds of seasonal sites than in year-round sites. This study suggests that understanding the nature of archaeological environments, specifically: infiltration to hunting seasonality and climate changes over time.