An Overview of the Pre-Contact Archaeology of the Lochsa River, North Central Idaho

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Bryce Danner

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Authorization to Submit Thesis

This thesis of Bryce Danner, submitted for the degree of Master of Arts with a major in Anthropology and titled "An Overview of the Pre-Contact Archaeology of the Lochsa River, North Central Idaho," has been reviewed in final form. Permission, as indicated by the signatures and dates given below, is now granted to submit final copies to the College of Graduate Studies for approval.

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Abstract

The Lochsa River, a tributary of the Clearwater River, is an important feature to the understanding of Pacific Northwest prehistory. Many journals and reports were made from the contact period to the 1970s; they detailed specific sites, but combining the data from these will provide a better comprehension of what the river means to the people that inhabited the region. Utilizing survey methodologies, studying past ethnographic accounts, and reanalyzing previous archaeological reports, this project focused on locating places occupied prior to the contact period. The latest fieldwork, conducted throughout the river corridor, found 10 new archaeological sites. Further research consisted of an interview with the Nez Perce Tribe in order to identify known uses of the area with the newly recorded sites. With this data, this paper attempts to identify the condition of archaeological sites and discuss where the research is now and where we should direct it in the future.

Acknowledgements

I would like to thank my committee for their support and guidance during this project. The help my major professor, Dr. R. Lee Sappington gave me throughout my project was much appreciated. He was also pivotal in getting me to apply to graduate school in the first place. I would like to thank Dr. Rodney Frey for his assistance helping me prepare for my interview. I thank Dr. Nick Sanyal for his constructive criticism of my thesis and being there through this process.

My thesis could not have been what it was without the help of Mr. Nakia Williamson. His guidance through the steps to applying for a tribal research permit was invaluable. Our interview together made this project what it was and a learning experience for me. I also thank the Nez Perce Tribal Executive Committee for accepting my permit.

I would like to thank everyone from the Nez Perce – Clearwater National Forests. I would not have had so much time to work on this without my supervisor, Cindy Schacher, who let me work on the project for several weeks. This project would never have been considered if Steve Lucas had never suggested it to me. Also, thanks for letting me use all the equipment from the warehouse.

Special thanks to all the people who helped with my field work. Especially Margaret Kirkeminde and Robbin Johnston for sacrificing their many summer weekends helping me. I would also like to thank the others who assisted me: Renae Campbell, Caroline Herritt, and Yuumi Danner. I really appreciate Glenn Caldwell for the illustrations he drew for my recorded artifacts.

Dedication

I would like to dedicate this thesis to my wonderful wife Yuumi, who kept me sane through this long two years, and who picked me back up when I did not want to do it anymore.

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Chapter 1:

Introduction

My path into archaeology began my second summer of college at Oregon State University. Primarily interested in history throughout my life, I mostly focused on historic archaeology. My field school was conducted at the historic Fort Yamhill in Oregon and I spent most of my time cleaning nails and bottle fragments in the lab. It was not until I received my first out-of-school job that my fascination with the cultural materials of indigenous people began to take hold. Working for the Bureau of Land Management, I had many chances to record and identify artifacts that spanned age ranges ending at the nineteenth century and dating as far back as 10,000 years prior. I was also fortunate to live near the obsidian source at Glass Buttes and began attempting, poorly, to replicate many of the artifacts I found while working. From then on, my interests were focused on understanding as much of the archaeology of indigenous peoples as I could.

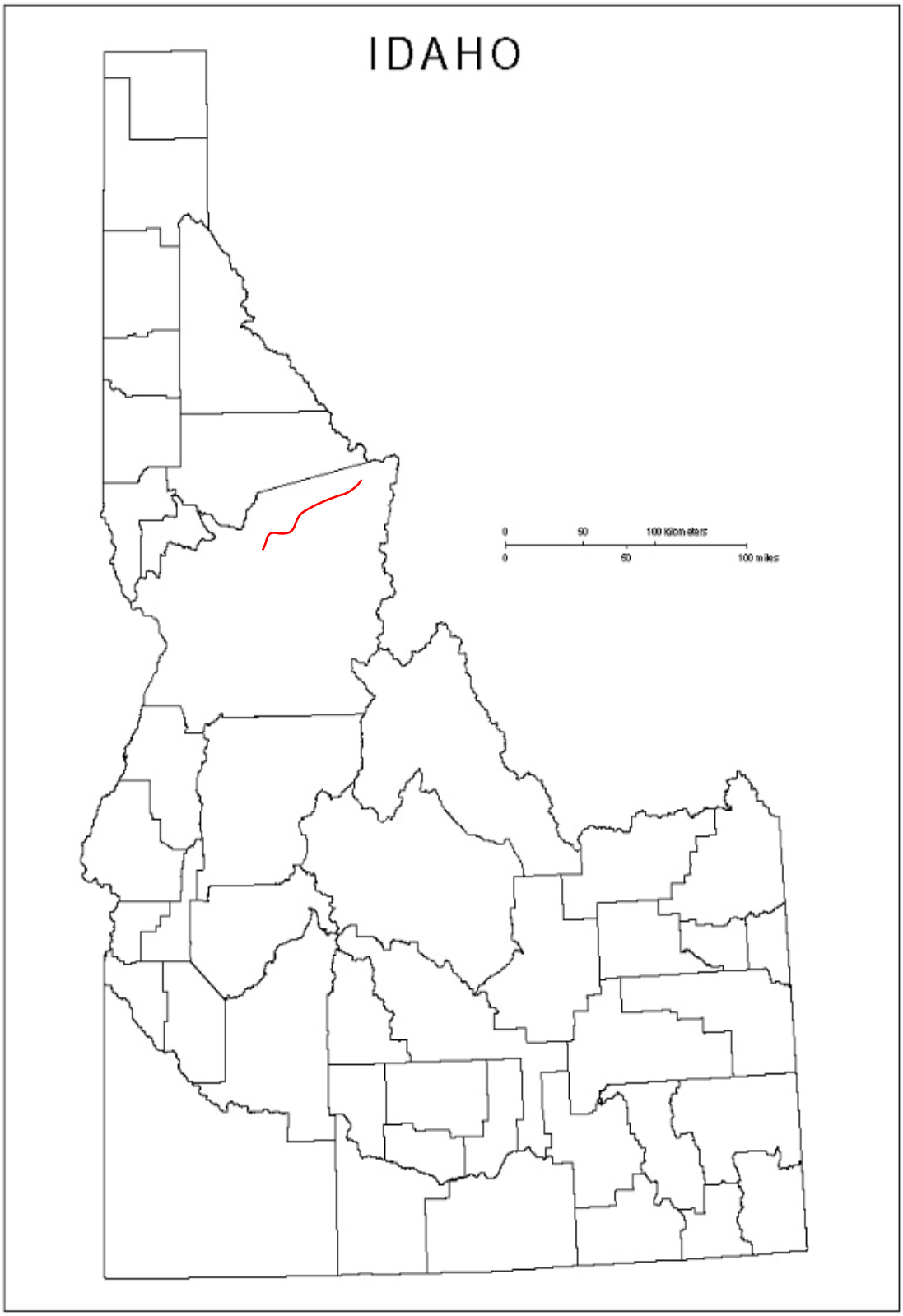


Figure 1. The Lochsa River (red line) within Idaho County, Idaho.

Background

This current research was first presented to me in the fall of 2014 when I began attending the University of Idaho. Having been a summer employee as an archaeological technician at the Nez Perce – Clearwater National Forests for the past two years, it was determined that the Lochsa River needed a more concise understanding of its pre-contact occupations. With my thesis in mind I began to consider my courses at school and how they could best work to further the research.

Archaeological methods for my project were centered around heavy survey followed by intensive recording of individual sites. These experiences along with background research could identify our best knowledge of the pre-contact archaeology of the Lochsa River. It quickly became apparent that in order to ethically study a group of people and their cultural materials, the most important step was to obtain the permission from those people. The Nez Perce Tribe whose traditional territory included the Lochsa River has a system to grant permission to researchers that takes into account the goals of the research and the possible effects that the project may have for the tribe. While applying for the permit for my archaeological research, I also wanted to understand the Nez Perce knowledge of the river and applied for an interview as well. It was my hope that the interview could gain a better understanding of the region and its many uses. This paper attempts to provide better understandings of the Lochsa River, not just through the current and previous archaeological studies of the river but also through the indigenous knowledge that has been passed down.

Theoretical Overview

The history of archaeological theory within the Lochsa River region is basically the same as that of the greater Clearwater cultural area, but it can be more thoroughly explained through others work (Sappington 1994). The beginning of theory in the Columbia Plateau came forth

around the 1950s during a period of major growth when large projects were undertaken across the west to record as many sites as possible before the rising dam waters would destroy them. During this time the important book *Method and Theory in American Archaeology* by Willey and Phillips (1958) promoted the characterization of cultural traits within timeframes. The Lochsa River avoided these early projects. No large-scale dam projects was planned for it, but these early classifications heavily determined what we now call the many cultural phases and periods within the Columbia Plateau.

Willey and Phillips (1958) spurred the later works of Leonhardy and Rice (1970), which created a series of dates for several perceived pre-contact traditions within the Lower Snake River and was redistributed to represent the entire Plateau. A refined classification was then utilized in *The Prehistory of the Clearwater Region, North Central Idaho* a classification that encompasses the Lochsa River and all parts of the Clearwater River region (Sappington 1994). The Lochsa River region itself has influenced the development of the regional chronology, with several excavations in the 1970s and 1980s (Benson 1979; Sappington and Carley 1989).

Research Questions

Much of the past research on the Lochsa River region were based on research questions that are a part of the greater Clearwater Prehistory today. This thesis attempts to determine how research should be focused in the future and what can be said about the region and cultural materials.

1. Where should future research be directed?
2. What do past archaeological research and the current fieldwork tell us about the Lochsa River region in greater detail?
3. What does ethnographic data tell us about the pre-contact river use?

Chapter Overview

This thesis contains six chapters describing in detail the known archaeology of the Lochsa River corridor. The first chapter presents background of this research: understanding the author's intent and plans for the research, the factors that were considered during preparation of the research, and what research questions were attempted to be answered from the thesis. Chapter 2 is an overview of the natural setting of the river looking at the dynamic factors that make the river what it is today and over the last 15,000 years. Chapter 3 introduces the culture that will be studied and explains past pre-contact archaeology, which has been done on the Nez Perce Tribe in the Clearwater River drainage. Chapter 4 is a description on all the known anthropological and archaeological research that occurred on the Lochsa River and outside research that is applicable for understanding the region. Chapter 5 details the field work commenced in 2016 and what was found. Chapter 6 analyzes the cultural materials of the Lochsa River and summarizes what we know and where to direct future research.

This thesis attempts to gain an understanding of the regional archaeology by interpreting its context with the landscape and the Nez Perce culture. Utilizing archaeology and ethnographic methods helps us see how the Nez Perce interacted with the landscape of this region throughout time. While little is still known of the area, this thesis should be the first source to direct future research in the Lochsa River region.

Chapter 2:

The River Landscape

The study area resides within the drainage of the Lochsa River. The Lochsa River is a sub-basin of the greater Clearwater River and major tributary for the Middle Fork of the Clearwater River. The river begins at the confluence of Colt Killed Creek and Crooked Creek at 3,512 feet in elevation, spanning 71 miles west to the southwest to where it meets the Selway River and forms the Middle Fork of the Clearwater River at 1,469 feet above sea level (Graham 1977:4). The Lochsa River sub-basin is characterized as a geologically dissected upland formed in the Clearwater and Bitterroot mountain ranges within the Northern Rocky Mountain physiographic province (McKee 1972:258). Elevations at the river to the top of the canyon are about 1,400 feet above sea level near the mouth of the river increasing to a high of 8,600 feet along the Bitterroot Divide (Bugosh 1999:1) Evidence of glaciation can still be seen along the canyon walls extending down to about 5,000 feet above sea level (Hash 1973:3).

The river canyon is characterized as a very steep rugged topography creating exaggerated differential relief patterns with narrow canyons and steep slopes dominating the river valley. Canyon walls generally face northern and southern aspects, giving the vegetation considerable variation on either side of the river. Although most of the canyon is characterized as steep with slopes ranging from 40 to 80 percent, a limited amount of rolling hills and small meadows are present above the upper margins of the canyon as well as along major side drainages (Hash 1973:3). The tributaries leading into the river have much gentler slopes ranging between 15 to 30 percent (Hooker 1972:8). There are 25 tributaries in total that feed into the Lochsa River (Bugosh 1999:19).

Figure 2. The Lochsa River meeting with the Selway, and forming the Middle Fork of the Clearwater River.

Figure 3. The headwaters of the Lochsa, beginning where Colt Killed Creek and Crooked Creek merge.

Geology

The Idaho Batholith makes up most of the geological setting of the Lochsa River. This geologic body is characterized by polymetamorphic metasediments, metaigneous rocks with diverse ages and lithologies (Morrison 1968:123). The Idaho Batholith is a large body of granitic intrusions that formed during the Cretaceous Period [145 - 63 million years ago (mya)], and now it dominates much of central Idaho (Alt and Hyndman 1989:101). It formed along with the massive folding and metamorphism of older schist and gneiss that formed when the area was still defined by shallow marine deposited sediments of sandstone and shale in the Precambrian (4700 - 600 mya). Drainage patterns and regional master streams were formed during the Mesozoic Era along areas of weaker sediments. The intensification of orogeny and faulting occurred in the Miocene Epoch (25 to 13 mya) forming the modern characteristics of the Bitterroot Mountains and the Rocky Mountain Range (Hash 1973:3). Glaciation during the Pleistocene Epoch (1.5 - 0.3 mya) was extensive along the canyon tops of the Lochsa River basin but, glaciers were unable to extend below 4,000 feet (Hash 1973:3). From the Pleistocene Epoch to present, geological activity of the Lochsa River region has been defined by deposition resulting from erosive factors within and above the canyon (Dingler 1981:23).

One interesting geological occurrence of the Lochsa River is the large concentration of geothermal springs set along it. There are at least thirteen springs dispersed throughout the river canyon, and they range in temperatures between 41º to 59º Celsius (Bugosh 1999:13). Some of the best known ones are Jerry Johnson Hot Springs, Colgate Licks, Weir Creek, and Stanley Hot Springs. These springs are spread across the landscape but the largest concentration of them occur in a cluster a few miles apart on either side of the river, found a few miles from Warm Springs Creek.

Landforms of the River

Specific morphology of a river is maintained by the climate shaping the discharge and load of water coming from upstream (Leopold 1994:9). Terraces can detail climatic changes in their morphology. A terrace is defined as "any long, narrow, relatively level or gently inclined surface, generally less broad than a plain bounded along one edge by a steeper descending slope and along the other by a steeper ascending slope; a large bench or step like ledge that breaks the continuity of a slope" often forming along a body of water (Neuendorf et al. 2011:665). These terraces constitute much of the habitable land along the river. Studying the terraces of a certain system may express something about how that system works and how it worked in the past. Morphological changes in western states can often be compared and shown to reflect many of the climatic shifts occurring since the Ice Age. Evidence for dry periods and cooler periods are seen as valley alluvium gets stripped away during dry periods and alluvium is deposited in wetter periods. The story is the same along the Lochsa River; climatic changes have created a series of landforms that have at least two terraces along it. For the most part, it is thought these terraces began to form around similar climatic trends as other areas in the west. Pre-contact sites along rivers like the Lochsa River are often found on these landforms. Understanding them can help us understand what environments these people were experiencing along it, possible time periods that the land may have been habituated, and how the characteristics of the river may have shaped habitation at these times.

The specifics of the Lochsa River and its hydrological dynamics create a deep canyon with sparse terraces (Bugosh 1999:1). These terraces vary in size and shape based on their positions from the source of the river. Near the headwaters of the river, the terraces are often much larger, ranging from a quarter mile to two miles across and contain the largest amount of flat land along the river with most bends in the river having a terrace along it. As the river

descends in elevation and it collects more water from the surrounding tributaries, the terraces are less frequent and smaller overall. By the time the river reaches the confluence with the Selway, landforms are smaller and contain less space between the river and the canyon wall.

Landforms are not just created from successive erosion and climatic changes. In many instances, the extreme slope of the canyon walls causes colluvial deposits and landslides to settle along the river. Landslides are known to occur along the river depositing soil and rocks that may build-up into their own landform, and it is thought that some of the sites at Boulder Creek are set on top of these old landslides (Benson et al. 1979:70). Upon these landforms, soils deposited and other terraces formed around them. These events are especially common along the Lochsa. The steep canyon walls and wet environment increase the chances that an upland landslide carries down to the river (Benson et al. 1979:70). These events can be seen in recent history. At No-See-Um Creek in 1995, a landslide formed in a small tributary of the creek carrying large boulders that blew out and over Highway 12 (see Figure 4), transporting 100,000 cubic yards of sediments into the river, changing its flow, and creating a new set of rapids (Bugosh 1999:20). The water sits a few feet higher than it did prior to the event; dead trees are seen along the river that died when their roots become submerged under the rising water. This small-scale example shows how landforms can be formed after a few of these events. Habitable land along the Lochsa River is mostly constrained to these two types of landforms, and their existence is primarily a factor from these occurrences.

Figure 4. A photo of No See Um Creek in 1995. (Photo given by Nick Gerhardt)

Climate History

To grasp the development of the prehistoric occupation of the river, it is crucial to understand how climatic variables changed and formed the flora and fauna systems located around the mountains of the Lochsa River is necessary. Glacial scarring and forming of features on the river show that at one time in the last 15,000 years the higher altitudes of the river basin were home to year round ice fluctuating as the seasons changed (Dingler 1981). As established in world prehistory, global temperatures were lower across the world during and towards the end of the Pleistocene (1.5 to 0.3 mya); the Clearwater and Bitterroot Mountains were no exception. As time passed, the world warmed to today's current temperatures with occasional intervals of increasing and decreasing of temperatures throughout (Brunelle and Whitlock 2002). Testing these lake bogs show the evolution of the river prior to and during human habitation as the global climate changes from the last ice age towards where we are today.

The prehistoric climate of the region surrounding the Clearwater Mountains has been studied through the sediment samples of three lakes and bogs (Mehringer 1977; Karsian 1995; Brunelle and Whitlock 2002). These lakes and bogs, due to their low flowing water sources, accumulate pollen and other detritus at the bottom of the lake bed. Testing sediments allows researchers to view pollen change through time. As pollen in the region changes, researchers can assume changes in climate; local ecology changes with the distributions of woodlands as climate shifts. An overview of the samples show evidence for many shifts in the climate and ecology of the Bitterroot and Clearwater Mountains prior to and post known human habitation of the region.

The three lakes studied, generally to the south and east of the Lochsa River, are upper elevation lakes in the Clearwater Range. Beginning in the 1970s, Lost Trail Pass is the earliest tested lake in the region and also the furthest from the study area. Lost Trail Pass is characterized as a bog formed by glacial movement, found along the crest of the Bitterroot Mountains at 2142 meters in elevation (Mehringer 1977:346). Collected samples date back between 12,000 to 15,000 calibrated years before present (BP) (Mehringer 1977:349; Brunelle and Whitlock 2002:314). A second sediment sample was taken from, another glacially formed water feature near the Bitterroot crest in Montana at Mary's Frog Pond at 1,753 meters in elevation, and is the the nearest lake sample taken to our project area (Karsian 1995). The sample has age ranges from 600 to 5600 years BP (Karsian 1995:17). The third and final sample was taken near the crest between the Red and Salmon rivers of northcentral Idaho (Brunelle and Whitlock 2002). The sample was taken at Burnt Knob Lake 2,250 meters in elevation containing the widest set of age ranges of the three samples for the last 14,000 years. These three sediment tests, while a small sample size, give a basic understanding of climatic shifts over much of the known human presence in the Clearwater Mountains.

Records of the region's prehistoric climate begin at 15,000 cal. years BP and continue to today's modern climate. From the Late-Glacial 16,000 cal. years BP to 11,000 years BP the sediments at Lost Trail Pass show that climate was expectedly colder than modern climates prior to 14,000 years BP. This was followed by an increase in summer temperatures while winter temperatures remained colder. Forest-like conditions can be seen returning as pine and fir trees begin establishing at Burnt Knob Lake and Lost Trail Pass. Landscapes at the time were subalpine parklands or meadows with glaciers at elevations of around 5,000 feet or higher. Overall, this period shows increasing summer temperatures while winter lows could be as cold as the glacial maximum, and a gradual receding of glaciers with advancing forests.

The Clearwater Mountains in the Early Holocene (11,000 – 7000 cal. years BP) continued to experience warm drier summers with long cold winters (Brunelle and Whitlock 2003:315). Fire frequency began to increase and reach higher levels then compared to today. As climatic conditions maintained generally drier year-round weather, pine trees and firs began to grow higher in elevation.

The Middle Holocene (6800-2500 cal. years BP) began with warmer summers and winters compared to temperatures related to the current climate. Evidence of warmer weather shrubs and trees are seen to be growing in higher elevations than previously and a steady rate of fires can be seen across the landscape. As climate continued to change, wetter conditions grew throughout the Pacific Northwest with conditions beginning to look more like todays.

The Late Holocene (2,500 cal. years BP– present) begins with the first signs of today's modern forest environment. The Medieval Warm Period (900 to 600 cal. years BP) sees a spike in fire frequency and then subsequently followed by the Little Ice Age where temperatures were lower until the nineteenth century. Throughout the Later Holocene, fire conditions are seen to decrease as effective moisture and colder climates are recognizable to today's norms.

Modern Climate

Historic weather records give direct recorded temperatures on the Lochsa River. These records begin only when the U.S. Forest Service started taking weather records at ranger stations across the region. Temperature and precipitation records have been maintained from two stations: Fenn Ranger Station (1948 to today) near the mouth of the Selway River adjacent to the Lochsa River and Powell Ranger Station (1962 to today) along the headwaters of the Lochsa River (Bugosh 1999:6).

The modern climate of the Lochsa River's lower elevations consists of mild wet winters and hot dry summers. Near elevations of 4,000 feet or higher, temperatures are low enough to make most precipitation snowfall, with summers being hot and dry. From 1999 and earlier, Powell Ranger Station's mean annual temperature is 5.94 ºC (42.7 ºF) and Fenn Ranger Station is 9.55 ºC (49.2 ºF). In January, minimum mean temperatures of the river were -9.44 ºC (15 ºF) to -5 ºC (23 ºF) degrees and the June maximum mean temperatures are 27.94 ºC (82.3 ºF) and 31.38ºC (88.5 ºF).

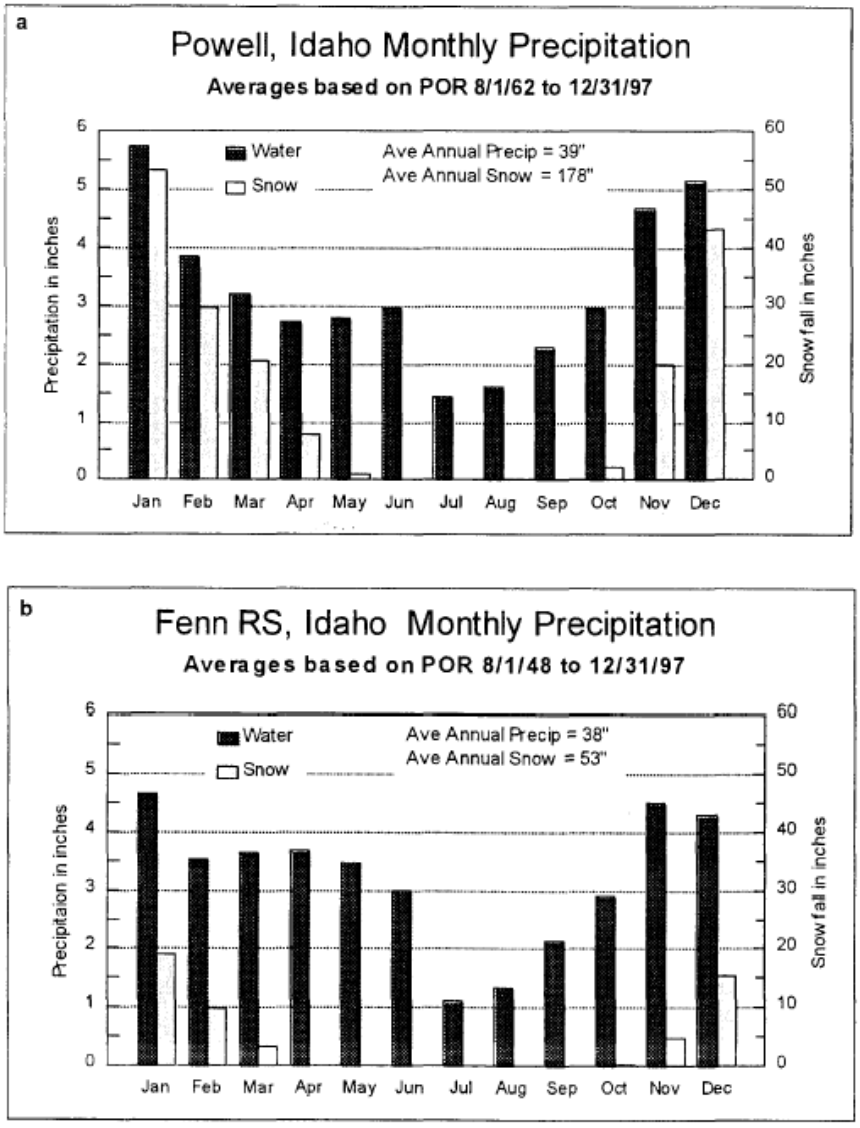


Figure 5: Two graphs showing the average temperatures taken at ranger stations near the two extremes of the river. (Benson 1999:11)

Soils

Soil descriptions have been described in most detail at the Boulder Creek Complex, where a soil specialist, Thomas Dechert of the University of Idaho, examined several test pits at the complex of sites (Benson et al. 1979:77-82). Overall the soils on the landforms at the Boulder Creek Complex are a mixture of volcanic ash with colluvial and/or alluvial materials. Mazama ash, labeled as a brown yellowish silt loam, was thought to have been found below 70 to 90 centimeters within the test pit in a few cases. Sappington and Carley (1989) have mapped

each soil horizon at Pete King Creek and Beaver Flat, two sites on the Lochsa River. Mazama ash was sampled at 40 to 50 centimeters below the surface at Beaver Flat, and analyzed by geologists at the University of Idaho, that resulted with radiocarbon dates that were a few thousand years older than the actual volcanic explosion, 7,000 to 6,600 years ago, which suggests there was a redeposition event sometime later.

Observations taken during fieldwork in 2016 suggests that most landform soil types consist of volcanic ash mixed with colluvial materials on top of sand and river cobbles. As one moves, further back into the landform towards the canyon slope, there is a general trend towards higher amounts of colluvial and decayed granite on top of bedrock. When closer to the river, ash tends to be the first to wash away and white granitic/gneiss sand is often the last mineral type found along the beach.

Vegetation

The Lochsa River corridor, along with the parts of the greater Northern Rockies, is unique for containing vegetation that is quite diverse and uncommon for an upland environment. This is in part due to the climate of the region that receives an inordinate amount of rainfall making the vegetation communities have similar characteristics to that of coastal and mountainous regions (Steele 1971:6; Roper 1970:3). The region contains four major vegetation zones along with three to seven distinct habitats found within each of the zones determined by factors such as precipitation, aspect, and soil type (Daubenmire and Daubenmire 1968).

The following are a summary of the vegetation communities along with the vegetation species existing within those communities as described from Roper (1970:50).

The *Pinus ponderosa* zone within the river corridor is the driest and warmest location, and contains six distinct habitat types (Daubenmire and Daubenmire 1968:7-18). The tree species within this zone are ponderosa pine (*Pinus ponderosa)* and black cottonwood (*Populus trichocarpa*);

tall shrubs consist of serviceberry (*Amalanchier alnifolia*), hawthorn (*Crataegus douglasii*), and chokecherry (*Prunus virginiana*); medium shrubs include white spiraea (*Spiraea betulifolia*) and snowberry (*Symphoricarpus albus*); the low shrub is Oregon grape (*Berberis aquifolium*); grasses consist of bluebunch wheatgrass (*Agropyron spicatum*) and sedge (*Carex geyeri*); there are fourteen species of forbs in this community that include yarrow (*Achillea millifolium*), sheep sorrel (*Rumex acetosella*), miner's lettuce (*Montia perfoliata*), and others.

The *Pseudotsuga menziesii* zone within the river corridor contains three distinct habitat types (Daubenmire and Daubenmire 1968:7-18). The tree species within this zone are western larch (*Larix occidentalis)*, lodgepole pine (*Pinus contorta*), Douglas fir (*Pseudotsuga menziesii*) and black cottonwood; tall shrubs consist of serviceberry, hawthorn, chokecherry, dwarf maple (*Acer glabrum*), red-osier dogwood (*Cornus stoloifera*), ocean spray (*Holodiscus discolor*), Souler willow (*Salix scouleriana*), and blue elderberry (*Sambucus cerulea*); medium shrubs include white spiraea, snowberry, buckbrush (*Ceanothus sanguineus*), mallow ninebark (*Physocarpus malvaceous*), rose (*Rosa gymnocarpa* and *R. nutkana*), and blackberry (*Rubus ursinus*); the low shrubs are Oregon grape, prince's pine (*Chimaphila umbellate*), and orange honeysuckle (*Lonicera ciliosa*); grasses consist of bluebunch wheatgrass, blue wild rye (*Elymus glauca*), sedge, and possibly bearded fescue; there are twenty four species of forbs in this community that include yarrow, sheep sorrel, miner's lettuce, aster (*Aster conspicuous*), fox fire (*Gilia aggregata*), golden pea (*Thermopsis montanus*) and others.

The *Thuja plicata – Tsuga heterophylla* zone within the river corridor is the most widespread within the Lochsa River, mostly along the Lower Lochsa. Most types of vegetation are located within this zone. The tree species within this zone are western larch, black cottonwood, grand fir (*Abies grandis*), red alder (*Alnus rubra*), western paper birch (*Betula paperifera*), western white pine (*Pinus monticola*), western yew (*Taxus brevifolia*), and western red cedar (*Thuja plicata*); a few of the thirteen species of tall shrubs consist of serviceberry, chokecherry, blue elderberry, and

mountain alder (*Alnus sinuata*); a few of the fourteen medium shrubs include swamp gooseberry (*Ribes lacustre*), huckleberry (*Vaccinium membranaceum*), rose, blackberry, and four other species; the low shrubs are Oregon grape, orange honeysuckle, and nine other species; grasses consist of narrow leaved brome (*Bromus vulgaris*), bluebunch wheatgrass, blue wild rye, fescue (*Festuca occidentalis* and *F. subulata*), and four other species; there are sixty-eight species of forbs in this community that include yarrow, sheep sorrel, miner's lettuce, aster, fox fire, golden pea, and others.

The *Picea engelmanni-Abies lasiocarpa-Tsuga mertensiana* zone, is found at the highest elevation of the Lochsa River region. Trees include western larch, lodgepole pine, and western white pine; tall shrubs include mountain alder, black-berried elder (*Sambucus racemosa*), and mountain ash (*Sorbus scopulins*); medium shrubs consist of swamp gooseberry, spiraea, and four other species; low shrubs are twin-flower (*Linnaea borealis*), wild beet (*Pyrola asarifolia*), and five other species. A single grass species, western fescue, is present; twenty-one species of forbs are found in the zone that include spotted coral root (*Corallorhiza maculata*), fox fire, and bluebell (*Mertensia paniculata*).

Historic Fires

The dry summer conditions with wet winters of the Lochsa River region, create a heavily forested landscape prone to forest fires by late summer (Finklin 1983). Northern Idaho's known largest fire occurred in 1833 destroying 1 million acres alone (Hooker 1972:1). Lewis and Clark even noted the immensity of the wildfires as they attempted to walk across the fallen trees and stumps of the burned regions in the Bitterroots. Notable historic fires within the sub-basin occurred in 1910, 1919, and 1934 and burned much of the surrounding landscape. Snags from these fires are still spotted throughout the burned areas, many of which prominently stand many feet over the tops of the new trees growing throughout. Twenty-five major fires have been

documented, dating from 1535 to 1928 AD, which were indicated by a study on fire history from Cook Mountain, a mountain set between the North Fork and the Lochsa River (Barret 1982:14). The Selway-Bitterroot Wilderness is an unmanaged fire landscape; fires are frequent and the vegetation reflects that. The vegetation of the wilderness is more diverse consisting of multiple climax types and include multiple habitat types (Daubenmire and Daubenmire 1968).

Forest fires have since been managed and are usually contained prior to becoming as big as fires of the past. Fires are still an important aspect to the wildlife as it creates forage for much of the large game (Hooker 1972:1). Certain regions are still left unmanaged to maintain a diverse ecosystem.

Fauna

Mammals

The Lochsa River sub-basin and its tributary streams reside within the Northern Rocky Mountain Biotic Area, a smaller southward extension of a much larger area to the north in southeastern British Columbia, northwest Montana, parts of northeast Washington, and the southernmost extent ending at the Salmon River (Davis 1939:30). The river corridor is important habitat for many large mammals, such as moose (*Alces alces*), mountain goat (*Oreamnos americanus*), black bear (*Ursus americanus*), mountain lion (*Felis concolor*), and bobcat (*Lynx rufus*) (Sappington and Carley 1989:7).

Birds

The Northern Rocky Mountain Biota contains many bird species, such as the western winter wren (*Nannus hiemalis pacificus*), thrush (*Ixoreus naevius*), western bluebird (*Sialia mexicana occidentalis*), chestnut backed chickadee (*Penthestes rufescens rufescens*), Grinnell mountain chickadee (*P. gambeli grinelli*), Bohemian waxwing (*Bombycilla garrula pallidiceps*), Vaux swift (*Chaetura vauxi*), and Merrill song sparrow (*Melospiza melodia merrilli*) (Davis 1939:31). During fieldwork undertaken in 2016, several birds have been documented within the corridor, such as an

unknown duck species, cormorant (*Phalacrocorax auritus*), Canada goose (*Branta canadensis*), great blue heron (*Ardea herodias*), ruffed grouse (*Bombasa umbellus*), red-tailed hawk (*Buteo jamaicensis*), and bald eagle (*Haliaeetus leucocephalus*).

Fish

The Lochsa River and its tributaries are home to, and spawning ground for several species of fish. Salmonid species include Chinook salmon (*Oncorhynchus tshawytschsa*), steelhead and rainbow trout (*Salmo gairdneri*), brook trout (*Salvelinus fontinalis*), bull trout (*Salvelinus confluentus*), cutthroat trout (*O. clarki*), and mountain whitefish (*Prosopium williamsoni*). Non-salmonid native fish species include northern squawfish (*Ptychochilus oregonensis*), largescale suckers (*Catostomus macroheilus*), pacific lamprey (*Entospenus tridentatus*), longnose dace (*Rhinichthys cataractae*), redside shiners (*Richardsonius balteatus*), and sculpins (*Cottus* spp.*)* (Bugosh 1999:16).

Elk and other large game on the Lochsa

The large fires that swept across the Northern Rockies at the beginning of the twentieth century functioned to create one of the largest elk herds in the United States. Wildland Fires created a large expanse of brushland across the mountains that were key to their immense population growth. Past excavations of pre-contact archaeology sites on the Lochsa River show that there is a higher acquisition of elk than deer while all other sites on the Clearwater have a larger number of deer compared to elk at least in the Late Archaic (Sappington and Carley 1989).

The licks on the Lochsa River have historically been used for hunting of ungulates. Licks are the concentration of dissolved minerals or clays beneficial to local game (Ayotte 2004:1). The geothermal springs of the Lochsa River area are known with place names like Colgate Licks. These licks are important to elk populations in the spring and summer usually as a method to

regain certain mineral deficiencies after the harsh temperate winters when big game are primarily consuming brush (Williams 1962:26; Ayotte 2004:2).

Historic Background

For the most part, historical developments of the Lochsa River corridor reflect the developments of much of Northern Idaho and the Pacific Northwest, but at a much smaller scale. Much of the regions early history was documented strictly because of the Northern Nez Perce Trail, a route used by the Nez Perce and other local tribes to access parts of the Bitterroots and to pass over the Bitterroot Divide. The trail went through parts of the Lochsa River, and much of the Euro-American settlers traveling west used the route.

Several books on Lochsa regional history have been written and should be mentioned. Bud Moore's, *The Lochsa Story* (1997) is probably the best book related to the region and describes most known history of the river. A book by Louis Hartig, *Lochsa: The Story of a Ranger District and its People in the Clearwater National Forest* (1988) is the most comprehensive history of the region and its developments by the U.S. Forest Service. Finally, Lynn and Dennis Baird's, *In Nez Perce Country* (2003), documents the journals and reports written by the people who traveled through the Bitterroots during the nineteenth and twentieth centuries. This history is a summary of the historical developments of the river beginning in 1805.

The first historic accounts of the Lochsa River were written in the journals of the Corps of Discovery on September 14, 1805 (Moulton 1988:205). They camped along the river for one night near its headwaters, before following a trail back up into the mountains, heading west towards the Pacific Northwest Coast. On their return trip they skipped the river corridor altogether staying on the ridgeline across the Bitterroot Mountains. Other early explorers traveled through the area, like David Thompson in 1812, briefly noted it but never walked along it (Baird and Baird 2003:17).

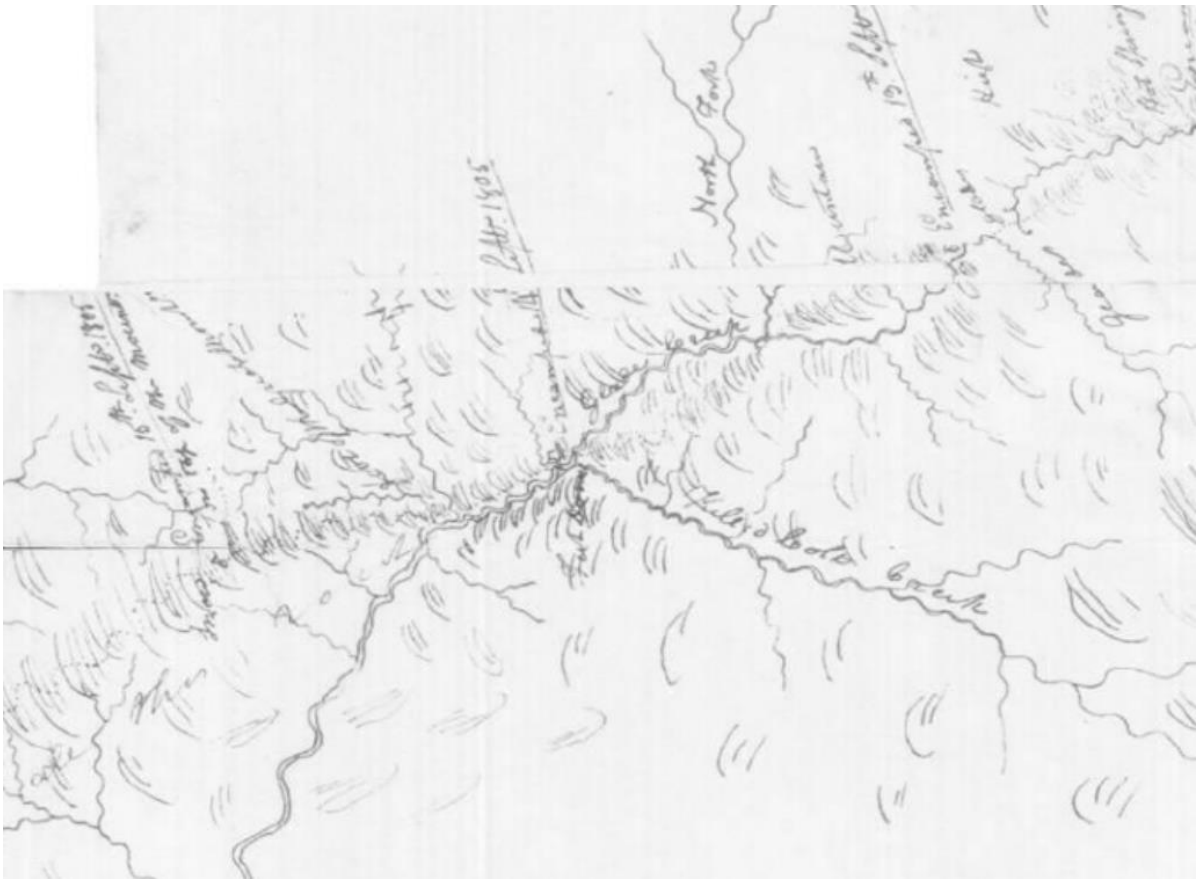


Figure 6. The first drawn map of the Lochsa River along its headwaters, drawn by William Clark in 1805. (Thwaites 2000)

As the Euro-American population of the Pacific Northwest increased, the Lochsa River for the most part was avoided. Northern Idaho during that time was settled by fur trappers, pioneers, and later prospectors. As what was happening in the rest of northern Idaho, growing non-indigenous populations from the newly formed United States and elsewhere created a shift in power. In 1863, after discord brought on by interactions between the United States and Tribes on the Plateau, Nez Perce tribal territory was ceded to the United States. The Lochsa River area, once a part of Nez Perce territory, now resided within the newly formed Idaho Territory (Beckham 1998:156).

Fur trapping during the early parts of the nineteenth century was the only development to have happened in the region for about the first 100 years following Lewis and Clark.

Prospecting did occur within the Lochsa River basin although not as large and populated as other regions had experienced in the Clearwater drainage in places such as Pierce and Orofino, Idaho. Driven by tales of lost Indian gold, the Lochsa saw a spike in population, but with little gold to show for it (Moore 1997:84).

Between 1854 and 1879 the Bitterroots Mountains underwent a rather detailed survey as routes would be accessed for the construction of the Northern Pacific Railroad (Baird and Baird 2003:139). One possible path was the route along the Lochsa River, following the path of Lewis and Clark, this route was surveyed by Captain John Mullan in 1854. The route was later abandoned for a more adequate one to the north. An attempt to build a wagon road across the route began in 1865, but this did not access the Lochsa region.

By the late nineteenth century the Lochsa River became encircled by a management boundary limiting the development and resource extraction occurring within it. Prior to the creation of the modern boundary, the Lochsa River was surrounded by the Bitterroot Forest Reserve, a large chunk of land surrounding much of forested northcentral Idaho and western Montana. In 1905 the U.S. Forest Service was created and the Lochsa River was included within the Bitterroot National Forest. Several ranger stations and other administrative buildings were constructed along the Lochsa River, such as Pete King Ranger Station, Lochsa Ranger Station, and Powell Ranger Station. There were several changes throughout the twentieth century, but the Lochsa River region remained within the boundary of the U.S. Forest Service.

In 1934 a road was finally constructed between Idaho and Montana in northcentral Idaho. The Lolo Motorway crossed much of the Clearwater Mountains then descended to Powell Ranger Station heading toward Montana (Baird and Baird 2003:249). The Lewis and Clark Highway or Highway 12, was built throughout the Lochsa River corridor in 1962

bypassing the Lolo Motorway. The highway made the Lochsa River the public's preferred travel route between Lewiston and Missoula (USDA 2004).

Today, the Lochsa River region is within the Nez Perce – Clearwater National Forests. Highway 12 allows thousands of people every year to recreate along the river. Several dozen campsites are found along this route and people are known to fish and raft the river in the summer time. The Lochsa Historical Ranger Station and Powell Ranger Station are the few remaining historic structures within the river corridor while many of the others have been destroyed or rotted away.

Chapter 3:

Clearwater People and Culture

The Lochsa River lies on the easternmost edge of traditional Nez Perce territory where it abuts the Salish territory to the east of the Bitterroot Range. The region was first described in 1891, drawn on a map by Billy Williams or *Kew-kew'-lu-yah*, a Nez Perce tribal member, marking the Nez Perce territory and many of the villages along it (Sappington et al. 1995:182). It has since been noted in several other works on Nez Perce territory (Spinden 1908; Curtis 1911; Schwede 1966; Slickpoo and Walker 1967). The Lochsa River makes up just a small portion of the Nez Perce territory, which spans across parts of modern day Idaho, Washington, and Oregon.

The Nez Perce are considered a Columbia Plateau culture through their traditions and location. This greater cultural area is located within the drainages of the Columbia and Fraser rivers and certain portions of the northern Great Basin (Walker 1998b:3). The culture area is also defined by its distinguished cultural traits, such as settlement along rivers, a diverse subsistence base of anadromous fish and extensive game, complex fishing technology related to those of groups on the northwest coast, mutual cross utilization of subsistence resources among the various groups comprising the populations of the area, an extensive network of trade through partnerships and large gatherings, political integration is limited to the village and band levels, a similar mythological structure centered around art styles, religious beliefs and practices focused on the vision quest, shamanism, life cycle observances, and seasonal celebrations of the annual subsistence cycle (Walker 1998b:3).

The Nez Perce cultural area is set within the Clearwater, Snake, and Salmon river drainages (Walker 1998a:420). Their language is in the Sahaptin language family, a common language family across the Southern Columbia Plateau. There are thought to be four major

bands of the Nez Perce people situated throughout the territory (Chalfant 1974). These bands locations were found along distinct places on the landscape. The closest band to the study area is the Ahsahka group which encompasses areas around Orofino and Kooskia (Chalfant 1974a:155). Alice Fletcher, described the divisions of twelve different groups, all based around a number of villages all under the name of a single band or a clan (Sappington et al. 1995:189).

Settlement

There are over 300 recorded settlements found within the Nez Perce territory (Schwede 1966; Shawley 1977; Sappington et al. 1995). Separated through elevation and stream size, settlements in the Nez Perce territory are categorized into two types of habitation sites. Villages are generally found below elevations of 1,500 feet, near the confluences of an intermediate and larger stream where root crops and fish are found within the immediate vicinity (Schwede 1966:9-16). Populations at these settlements often varied throughout the year. September through June were the most populous months, with a few people staying behind over the remainder of the year (Ames and Marshall 1981:30).

As the summer progressed, Nez Perce people would range out from the villages in order to gather abundant resources, such as fish, game, and plants, from around and outside their territory (Walker 1998a:420-421). Smaller settlements, found in mountainous regions and near smaller streams, were usually occupied at this time (Schwede 1966:14). These camps could be used for short periods and abandoned or were revisited and improved upon with equipment being stored for a later revisit (Ames and Marshall 1981:14).

Clearwater Culture

Considered as a part of the Columbia Plateau cultural area, the Clearwater region is also considered a distinctive cultural zone that can be delineated through the archaeological record (Sappington 1994:21). The Clearwater cultural area can be considered all parts of the Clearwater

River and its tributaries. The historic and ethnographic record of the Nez Perce Tribe demonstrates that their territory encompasses most, if not all, of the Clearwater River basin (Walker 1998a:420). Archaeological evidence of the regions earliest inhabitants begins circa, 10,000 years BP and continues from then on. The region's archaeological shifts follow a similar trajectory to that of the rest of the Plateau Culture but with diverse timeframes and cultural differences distinct to the region.

The Clearwater River is a diverse drainage that contains many types of landscapes, vegetation zones, and habitats (Daubenmire and Daubenmire 1968). The river mouth is located at the confluence of the Snake River near Lewiston, Idaho, and Clarkston, Washington, at an elevation of 740 feet above sea level. The main body of the Clearwater drains in a general western direction from the Bitterroot Divide towards the Columbia River. Much of the main body of the Clearwater River is arid and shares similar vegetation communities with rivers further south like the Snake and Salmon rivers. Further up, river arid landscapes become more sporadic until Kooskia, Idaho, when dense ponderosa and cedar woodlands are typical. The Lochsa River region shares a similar environment to the other easternmost Clearwater River tributaries that drain high up in the Bitterroot and Clearwater Mountain ranges.

Phases for Clearwater Archaeology

Scholarly understanding of the Clearwater River prehistory has expanded since the final excavation along the Lochsa River. Sappington (1994) released *The Prehistory of the Clearwater River Region, North Central Idaho,* which encompasses all known indigenous archaeological research in the Clearwater Basin and its tributaries up to 1994 and further detailed in *Clearwater River Region* (Sappington 1996). Phases are defined through their material culture, with large technological changes usually marking the transition. Phases mentioned here are modified from the Lower Snake River cultural typology (Leonhardy and Rice 1970). The Lochsa River region contains

several sites along it that were formative to the creation of the Clearwater River cultural typology.

The Early Prehistoric Period: Windust and Cascade Phases (circa 10,000 to 6,000 years BP)

The Early Prehistoric Period is the only period in the Clearwater region containing two phases within it. Both phases are based on few sites in the record and most artifacts are found out of context. When excavations were performed in the period both phases are always found co-occuring. The phases are likely both based around similar foraging models of wide range hunting and gathering across all topographic zones. This period shares the same cultural typologies with that in the Lower Snake River.

The Windust Phase is the first verified phase recorded on the Clearwater. The lithic technology of the Windust phase is characterized by large lanceolate (or oval knives) and numerous used flakes. Lithic materials predominantly utilized were cryptocrystalline silicates (CCS) as well as a limited amount of fine grained basalts. Faunal and other remains within Windust sites are diverse; people utilized multiple types of animal resources including large and small mammals. The Windust Phase sites are widespread across the Columbia Plateau and the northern Great Basin (Sappington 1994:97). Within the Clearwater region, Windust artifacts are often found out of context.

The Cascade Phase is the second oldest phase and is thought of as a continuation of the Windust Phase. It is associated with a warmer trending climate away from the last glacial period, and a dietary shift towards more plant based food. Two artifacts: the leaf shaped lanceolate projectile and edge ground cobble are characteristically synonymous with the Cascade phase. A later tradition of large side notched tools is found towards the end of the phase. Like Windust, the Cascade Phase has little evidence in the Clearwater drainage.

The Middle Prehistoric Period: The Hatwai Phase (circa 6,000 – 3,000 years BP)

This period only contains a single phase, the Hatwai Phase. More evidence for the Hatwai Phase, can be found within fewer sites along the main body of the Clearwater River than in upland environments. This phase is characterized by population aggregation into semi-subterranean pit house villages and intensification of the use of root crops and river clams, while hunting decreased. While the Cascade Phase along the lower Snake River extends to 4500 years BP and the Tucannon Phase dates from 4,500 to 2,500 years BP, the Hatwai Phase within the Clearwater is thought to exist within both phases suggesting the region began to move towards sedentism sooner.

The earliest recorded pit houses were excavated at the Hatwai site, dated to 5,900 years BP and generally older than much of the Columbia Plateau. Further intensification of house pit use at Hatwai did not occur until 4800 years BP with several more pit houses constructed, followed by another pause in construction lasting until 4000 years BP when intensification of construction continued for the rest of the Hatwai Phase.

The Hatwai phase's lithic technology appears to be cruder and less diagnostic than previous and later phases. Tools of the Tucannon Phase occurring along the lower Snake River, had a more defined lithic assemblage than the Hatwai Phase (Leonhardy and Rice 1970:11). Evidence for plant processing, ground stone implements like mortar and pestles is more apparent, and edge ground cobbles are found within houses. Faunal remains of the Hatwai Phase are described from only a few sites along the main body of the Clearwater River. Generally, the sites consist of a large collection of deer, a wide collection of many other mammal remains are found throughout. Fish remains are based on a few sites on the lower Clearwater River with a few implements showing up in the record, like net sinkers. Overall, the economic practices that appear to be occurring during the Hatwai Phase show a general trend

towards shorter range hunting and gathering and intensification of plants and fish, as people become more sedentary relying on nearby resources rather than highly mobile hunting and gathering that preceded in the Early Prehistoric.

The Late Prehistoric: The Ahsahka Phase (circa 3,000 to 500 years BP)

The Ahsahka Phase is the best dated phase in the archaeological record. It is associated with a growth of pit house villages and a heavy procurement of salmon and root plants. The phase is defined by two major cultural transitions: the transfer of hunting technology from atlatls to bows and arrows, and the acquisition of horses facilitating travel. Populations increase, and the use of upland summer camps were seen to increase. Throughout the Ahsahka Phase cultural materials become more diverse and specialized and an increase in the use of hunting and fishing from the Ahsahka Phase continues.

The lithic technology of the Ahsahka Phase is characterized as a general trend towards smaller projectiles, with a growth in the specialization of tool types. Furthermore, scrapers, lanceolate and pentagonal knives, large scraper-like implements, utilized spalls, net sinkers, hopper mortar bases, and pestles are all found within this phase. Projectile styles are often small corner-notched and side-notched arrowheads.

This phase appears to show a dependence on hunting medium to large game with a heavy reliance on deer throughout the region. An increase in elk acquisition is found in the upper Clearwater River, and elk is the primary mammal recorded at Pete King Creek. Smaller game and other larger mammals were also utilized but less frequently. Hunting traditions along with further acquisition of fish and root plants, show an even greater trend towards sedentism and the increased use of villages along the main body of the Clearwater River all the way up to Kooskia, Idaho.

The Protohistoric Period: The Kooskia Phase (circa 500 to 200 years BP)

The Kooskia Phase is the final phase associated with traditional stone implements and settlement patterns, along with introduced European cultural materials and livestock. This phase begins with the acquisition of the horse and continuing until around the time Euro-American explorers first documented the region and its people. This period met with many changes to the cultural materials and lifeways of the people living in the Clearwater region and across North America. Native groups began to supplement their supplies with trade goods from Euro-American traders. The use of horses changed the structural dynamics that existed within and between different groups. The introduction of European diseases drastically lowered indigenous population levels. War with the Shoshone to the south brought population decline to the southern extremities of the region. Lithic tools maintained similar technological aspects but were supplanted overtime by Euro-American trade goods.

Pit house structures were no longer in use by the time of Lewis and Clark, who noted the abandoned features. Large meadows and other areas favorable to horses became important habitation locations. People were more likely to concentrate into fewer locations along the main body of the Clearwater River abandoning several villages further up the river.

Chapter 4:

Indigenous Use of the Lochsa River

The Lochsa River has a long and complex history including some of the earliest historical documentation of indigenous cultures that have been done west of the Bitterroot Mountains. The region's historical record begins with the expedition of Lewis and Clark. This chapter explores what we currently know about the indigenous and anthropological knowledge of the people utilizing the region. Beginning with the first written encounter by Lewis and Clark on their journey west in 1805, the later accounts leaned toward ethnographic information collected by anthropologists and historians, such as Alice Fletcher, Madge Schwede, and Stephen Shawley, during the late nineteenth and twentieth century. The focus of the studies shifted toward archaeological reports and analyses from 1977 to 1991. This chapter includes all known journals, ethnographic documents, and archaeological reports written on, referred to, or containing information pertinent to understanding the indigenous history of the region. Furthermore, an interview with the Nez Perce Tribal Cultural Director, Nakia Williamson, was performed to understand the knowledge that has been maintained by the Nez Perce people. A compiled history of these studies allows us to learn how knowledge of the region has been formed.

Lewis and Clark

As the Corps of Discovery made their way down a trail that would eventually lead to the Lochsa River, they first stopped to rest along a major tributary to the river on September 14th 1805, and noted:

"…..I could see no fish, and the grass entirely eaten out by the horses, we proceeded on 2 miles & Encamped opposite a Small Island at the mouth of a branch on the right side of the river which is at the place 80 yards wide, Swift and Stoney, here we wer compelled to kill a Colt for our men and Selves to eat for the want

of meat & and we named the South fork Colt killed Creek, and this river we Call Flathead River" [Moulton 2005:205].

They stayed the night along the Lochsa River on the flat where Powell Ranger Station is now located, before heading out the next day. They walked along the river for about three miles and noted another indigenous site at what is now called Wendover Campground:

*"We set out early. the morning Cloudy and proceeded on Down the right Side of [*NB: *Koos koos kee] River over Steep points rockey & buschey as usial for 4 miles to an old Indian fishing place, here the road leaves the river to the left and assends a* mountain *winding in every direction to get up the Steep assents….* [Moulton 2005:205]*"*

Alice Fletcher and Billy Williams

As previously discussed, anthropological research related to the Lochsa River and its connection to the Nez Perce Tribe began with the work of Alice Fletcher. Already being a well-known anthropologist by that time, Fletcher came to the Clearwater region in 1889-1892 as a special agent of the United States government (Sappington et al. 1995:177). The Dawes Act of 1887 mandated the allotments of all tribal land to be given to private individuals. In order to facilitate efforts for imposing allotments on the Nez Perce, she arrived to study the Nez Perce Tribe to further the implementation of the law (Sappington et al. 1995:177). Fletcher noted the territory of the Nez Perce and several settlements located within it with the help of her informant "Billy" Williams (Sappington et al. 1995). With a map created by "Billy" Williams, they marked and described the locations of some 77 to 78 villages within the Nez Perce territory, in which he notes the Lochsa River (spelled "Laksah") (Sappington et al. 1995:182).

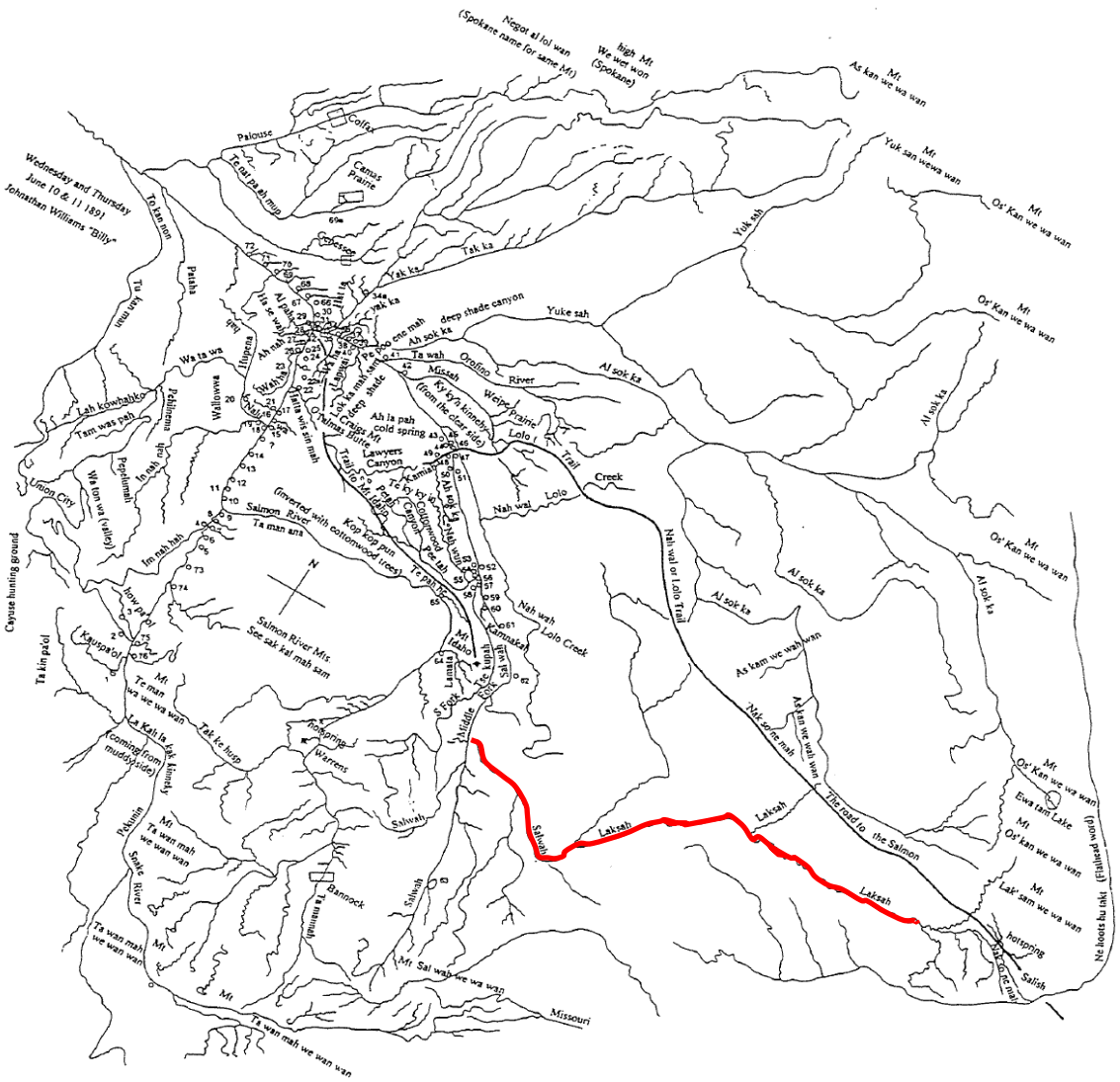


Figure 7: A map "Billy" Williams made for Fletcher, in 1891, showing the territory of the Nez Perce and its settlements (Sappington et al. 1995). The Lochsa River shown in red. Redrawn from source in 1995.

The Lochsa River region resided next to Region 12 or the "Sal-wah-poo" region (likely the origins of the name for the Selway River) of the Nez Perce territory (Sappington et al. 1995:80). This territory consists of all places beginning just a mile upriver from Kooskia near where the middle and southern forks of the Clearwater River come together and up the middle fork until the final settlement deep within the Bitterroot Mountains at the confluence of the Selway River and Bear Creek, Billy Williams called this place Ne'hu-lat-poe (Sappington et al.

1995:209). Settlements within the "Sal-wah-poo" group are relatively dispersed compared to others which are often closely confined to major tributaries.

It is unknown when most of the region in the Sal-wah'-poo group was abandoned. By the time Alice Fletcher acknowledged it, there was only a single village, Sits-ah'-lu-poo, that remained and it had been absorbed by Group 11, the Tsy-was-'poo (Sappington et al. 1995:208). When Fletcher visited Ne'hu-lat-poe, it had been overgrown by thick forest trees.

The Bitterroots in Ethnography

As described earlier, the Selway River was quite distinct as it contained a village several miles upriver from the rest of the main body of the Nez Perce Tribe. There are several accounts by Nez Perce people that describe this region, and speak of its importance (Baird et al. 2015:69-72). In one account of the people living in the Selway region given by Harry Wheeler, he also discusses people living near Bear Mountain, which is a tall peak on the south side of the Lochsa River.

This location, described by War Singer "Camille Williams," consisted of two villages: the first described as along Kakayohneme Creek (Three Forks of Moose Creek) and the second, being Nekeulaketh, found near Bear Creek (McWhorter 1952:4). According to War Singer, describing the Nez Perce people that lived there: *"These long ago Nez Perces used to come to Kamiah or Clearwater every year to trade for camas and kouse roots. Nearly all of them had blond hair and eyes of lighter color than black* [McWhorter 1952:4]*."* It appears that far up the Selway River where Billy Williams described the village near Bear Creek was also a second village near Moose Creek.

Harry Wheeler, an important Nez Perce religious and cultural leader, also describes this region at Moose Creek as the "Mat'ápo" or Upriver Band as described by Aoki (1979:72-73):

"They used to live at Moose Creek, where there must have been many Chinook salmon always every year, and hunting was a short distance away. There were many things to pick such as serviceberries and huckelberries.

In the same way there was Bear Mountain (Lixiwl) where they traveled around. Indians where there every year. There was hardly anything at Kamiah, and only a few Indians were at Kamiah."

"There were not many Indians, those who were up the Selway River. At Moose Creek [Qeqeyuxníme], there was a chief name Qehep Qi·wn (Old Man Bobcat) whose group had some Nez Perce and some Flathead intermingled. [Baird et al. 2015:72]

In another account described by Wheeler, he speaks of the end of the "Mat'ápo" group as they became aware of the Shoshone and Bannock Indians coming up from the south. They are told by people living at east Kamiah that they had better move south or possibly come under attack by the Shoshone. The Mat'ápo group packed up and moved out the next year moving on rafts down the Selway River, and landed just above present day Kooskia (Baird et al. 2015:76).

The Salish knew of the Lochsa River and greater Clearwater River as Ep Smłí or "It has Salmon" (Salish-Pend d'Oreille Culture Committee, & Elders Cultural Advisory Council 2005:60). The name derived from an oral history about Coyote attempting to take Salmon from Ep Smłí and bring it into Tmsmłí "No Salmon" (a name referring to Lolo Creek on the Montana side). Coyote inevitably lost the Salmon during the transition as he crossed the Bitterroots, forever leaving the lands of the Salish Tribe without spawning salmon in its rivers (Salish-Pend d'Oreille Culture Committee, & Elders Cultural Advisory Council 2005:55-56).

Later Anthropology

The Lochsa region had not been discussed for almost 80 years since Fletcher. A Master's thesis by Madge Schwede (1966) detailed over 300 ethnographically determined Nez Perce settlement names. The thesis included the name and location of a camp known to the Nez Perce

as *étp.ips:*, meaning human bones, located along Pete King Creek (Schwede 1966:29). The site would later be called *aat'pipseh* meaning "old bones" by Elmer Paul a Nez Perce informant, which is thought to be the more accurate version (Chance and Chance with Paul 1987). No other camps were named along the Lochsa River. A decade later a report written by Stephen Shawley (1977) on ethnographically mapped trail systems across the Nez Perce territory not only identified trail systems but also recorded villages and campsites located along them. Several maps on the Lochsa were illustrated showing how Nez Perce accessed the river corridor and certain camping spots prior to roads being constructed.

Interviewing Nakia Williamson, Nez Perce Cultural Resource Director

To deal with this lack of information, this thesis attempts to interpret the known sites of the Lochsa River with previous ethnographic data and from an interview performed during this research. This research attempts to identify how people accessed their locations, how people interacted within the river canyon, and how the locations of known sites and ethnographic use can be used to understand the use of the river over time.

The interview was initiated after the fieldwork from the prior summer, and performed with the Nez Perce Cultural Resource Director Nakia Williamson. The locations of the known indigenous habitation sites along the river were given to the tribe. Mr. Williamson subsequently looked over the data and applied the data to the known information along the river. The interview was then performed with the intent to understand Nez Perce accounts of the region. Mr. Williamson notes that a lot has changed for the Nez Perce, even prior to their treaty of 1855, related to their movements throughout their territory.

The interview began with a discussion of the river and its greater role to the Nez Perce subsistence within the Lochsa River corridor. The river region is and was utilized within the summer portion of the seasonal round. Also, an important hunting and fishing location for the

Nez Perce and where they camped ahead of foraging in the mountains. While the Lochsa River was primarily a summer camp region just downstream, there were several winter villages that the Nez Perce would utilize. More recently, people were known to hunt, even later into the winter along the lower portions of the river corridor when elk would come down from the mountains. The uplands above the river was where a lot of plant gathering for several types of food occurred. Medicinal plants were also gathered from the region and the river corridor was where a lot of them grew. While today anadromous fish are not as abundant, the Nez Perce would fish salmon in the region and still fish the area for trout.

Mr. Williamson describes one hunting technique people utilized along the river. A long time ago people traveled by trail up into the Lochsa Region, very high up for the purpose of hunting, and after the hunt they constructed rafts and traveled downriver to their settlements or camps. When hunting, the landscape was usually so thick with trees that the best locations for finding game was to hunt near mineral licks that the animals were known to hang around. People would just hide near the licks and wait for the game to come up. This was a much less exhaustive approach then when hunting in the forest where someone would have to walk over fallen trees and brush and then having to shoot their prey through the thick woodland.

The river also has spiritual importance to the Nez Perce. Just to the south of the Lochsa River along the ridgeline are an immense amount of glacially scarred mountains and lakes, called the Selway Crags, that a trail runs throughout. This trail is the Spirit or Tzaupa Trail, a term for the face of a spirit or ghost [Tzaupawa]. The portion of the Tzaupa Trail within the Crags region is where many young Nez Perce men would go to undergo their visionary experience [weyekin], as well as learning their way through the mountains. While the Crags and other mountain regions were a place of importance for the Nez Perce, the river landscape was also where they

experienced this weyekin. In one situation a young man experienced his weyekin at Pete King Creek.

A very popular account to the Nez Perce occurred further up at what is called [Petakotsa], or Jerry Johnson Hot Springs on the Lochsa River. To the Nez Perce Petakotsa is known to have beings living named [Peopeomats] within the warmer hot springs. At this place a man by the name of [Toomsiloo], a powerful medicine man, had an encounter with a snake. A very large snake that came up from the water of the hot springs while the medicine man was there.

Cultural Resource Management and the Beginning of Archaeology

Cultural Resource Management laws in the later twentieth century created the legal requirement for archaeological resource protection across federal land. This was true as well on the Lochsa River since it resides mostly within federal land. The Forest Service became required by law to document cultural resources being impacted by their developments. As the river canyon already held Highway 12 and several areas developed for camping and parking, a lot of the pre-contact sites were already disturbed by previous impacts. The first archaeological investigation on the river by Forest Service was in the 1970s. They mainly focused on recording and updating anything that could have impacted the area. Archaeological analysis was usually approached through the University of Idaho and Washington State University, and several excavations were funded by the U.S. Forest Service and the Idaho Transportation Department.

Archaeological Investigations of the Wilderness Gateway Recreation Area, Clearwater National Forest, Idaho Ruthann Knudson and Robert Lee Sappington (1977)

The first report written on the Lochsa was on the Boulder Creek Complex, a cluster of four sites dispersed across a large river bar where the current Wilderness Gateway Campground is located. Archaeologists from the University of Idaho and the Unites States Forest Service

wanted a better understanding of the Northern Idaho Mountains. As cultural materials were found in the Wilderness Gateway Campground, University of Idaho archaeologists sought funds for excavations and recording of the Wilderness Gateway area.

The complex of sites sits on either side of the Lochsa River where two river bars are located relatively close together. The river bars are set along the south banks of the river and sit within a relatively wide bend in the Lochsa valley, creating larger and flatter landforms. The landform is set high above the water line at 3 to 5 meters followed by another abrupt terrace increasing 12 to 15 meters that gradually increases until reaching approximately 30-meter-high plateau. Through the southern bar, it runs into Boulder Creek before it drains into the Lochsa River. The northern river bar has no creek or drainage running through or near it.

The sites within this complex are described overall as one major habitation site with three smaller short-term sites nearby. Excavations occurred at two of the sites with five 1 by 1 or 1 by 2 meter test pits. At the time the size of the complex was said to be larger than many other known on the Upper Clearwater region. Disturbance of these sites were moderate; two sites took most of the damage and three received small amounts of disturbances from road, trail, and campground construction. Artifacts located during surface collection numbered 2094 in total within the complex and consisted of stone materials. Diagnostic artifacts from the surface all relate to the Ahsahka Phase, dating between 1300 and 1700 AD.

While this small excavation did not say much as to the lifeways of people inhabiting the river, it did note that there were large habitations occurring through the mountainous regions of the Clearwater. As the entire bar has not been tested further, further testing may discover a larger complex of sites than previously recorded. Excavations in the following summer appeared more intensive locating new sites and identifying a large timespan that the Lochsa was inhabited.

A Preliminary Outline of the Cultural Resources of the Wilderness Gateway Recreation Report, Clearwater National Forest, Idaho. Michael P. Benson, Ruthanne Knudson, Thomas Dechert, and Richard C. Waldbauer (1979)

A second report of the Boulder Creek complex was written two years later. This report consisted of a synthesis of investigations from the previously written report and more intensive excavations that occurred in 1978. The Forest Service was interested in the expansion of existing campgrounds creating new structures and roads that would cause significant disturbance to possible archaeological sites. During this time, two sites were excavated due to the highly predictable damage from the construction. The new investigations brought the age of regional occupation further back than previous excavations indicated. In addition, they led researchers to understand vitrophyre as a resource. This tool stone was sourced somewhere within the river basin and likely procured from somewhere nearby. During the investigations one new site (10IH879) was located and tested.

Excavations at these two sites were more intensive than testing from the previous year. Thirty-six test units were placed at three sites and test augers were set where construction would possibly destroy cultural materials. Cultural materials tended to be clustered at sites, and very little was found in auger units outside of sites. Test units were excavated to culturally sterile river gravels in 1 by 1 meter units. General observations on artifact distribution in the sites showed that most test pits contained cultural materials right up to just before sterile river gravels. Artifact distributions showed that most artifacts were densest at 20 to 50 centimeters below ground. Analysis of the artifacts excavated showed occupations over a wide time period; diagnostic artifacts ranged between earliest from the Cascade Phase to the latest from the last phase prior to the proto-historic/historic times. Within the Cascade Phase diagnostic tools, lanceolate and large side-notched style projectile were dominant. The analysis demonstrates that indigenous

people were using the mountainous regions of the Northern Rockies as far back as 6000 years BP.

Archaeological Investigations at Eight Locations Along the Lochsa River, North Central Idaho. Robert Lee Sappington and Caroline D. Carley (1986)

A project by Idaho Transportation Department on Highway 12 created a need to perform necessary investigations into the sites that may be damaged through further expansion of the highway. Nine places along the river were chosen as sensitive to possible improvements. Not all of these locations had pre-contact components, and one location was later determined to not actually be a site.

One site recorded as 10IH1650, near Waw'aalamnime Creek was deemed not likely to be impacted by the project, so it was not thoroughly tested. The site is considered a relatively significant concentration of artifacts. Three one meter test pits were excavated, and three tools were found with many debitage flakes. While the evidence is minimal, a lack of debitage concentrations, the level of tool repair rather than primary workshop, with evidence of hunting in the area suggests that the area was occupied as a camp where food was acquired.

Archaeological Investigations at The Beaver Flat and Pete King Creek Sites, Lochsa River, North Central Idaho. Robert Lee Sappington and Caroline D. Carley (1989)

As a continuation of work from the previous report, this project centered on more in-depth archaeological investigations on two sites that were significant and likely to contain substantial pre-contact occupations. The Pete King Creek and Beaver Flat sites are located on the north side of the Lochsa River and are both along riverside alluvial landforms. During June and July of 1988, the sites were intensively excavated in response to Highway 12 improvements. The archaeological investigations were done by University of Idaho archaeologists.

The Beaver Flat site consisted of intensive excavations of sixteen 1 by 2 and 2

by 2 meter test units situated at intervals of 20 meters or less along a 220-meter area. The excavation of a Windust point gave the site the earliest known date on the Lochsa River from 10,000 to 8,000 BP. Debitage and tools excavated at the site revealed that the area was a lithic workshop of local vitrophyre. A variety of 28 lithic tools and cores consisting of granite, vitrophyre, chert, and basalt artifacts were excavated as well. The most concentrated type of artifact was the biface blank. Three diagnostic projectile type points were excavated dating between the Windust and later Cascade Phases. By far, the most used lithic type was vitrophyre consisting of 83.4% of the assemblage. Debitage showing the evidence of mostly early stage reduction and little late stage reduction suggests the site was used for the creation of biface blanks and then transported out of the area. Fire-cracked rock was a major component of the site, but led to little analysis. Faunal remains were collected but only located through flotation analysis as they were too small to be recovered normally. Several features were excavated, mostly consisting of rock hearths and a single burned post. The post had a carbon date of 4,060 ± 70 years BP and found in the same stratum as a lanceolate point and a uniface.

Pete King Creek site is located just up the Lochsa River near the confluence with the Selway River. The site is located next to Pete King Creek and where it runs into the Lochsa River. Pete King Creek site has an abundance of lithic materials along with faunal remains and bone tools. Lithic tools were well decorticated and abundant in the record. Thirty corner-notched projectile points were discovered, a type of tool abundant in the Late Archaic. Several non-diagnostic uniface tools and cores were also recorded at the site. Debitage consisted of mostly late stage reduction flakes, performed during the late stages of tool creation and refurbishment.

Artifacts found at the Pete King Creek site suggested the area was used as a campsite staged for expedient and late stage tool creation within the Ahsahka Phase. Extensive hearth

features with carbon dated charcoal suggest long term camping occurred here from 2800 to 310 BP. The debitage in this area shows the opposite characteristics to that of Beaver Flat where the last stages of tool reduction were more common. Hearth features and faunal remains were abundant, suggesting it served as a staging area for summer resource gathering.

Results of Archaeological Test Excavations at Four Sites in the Vicinity of Powell, Idaho, for the Clearwater National Forest. Robert Lee Sappington (1992)

A final series of excavations occurred at four sites around Powell, Idaho, in 1991. Only one diagnostic late prehistoric projectile was found and some debitage. Excavations were minimal and did not do much to further the knowledge of the pre-contact history of the Lochsa River.

Chapter 5:
2016 Fieldwork

Preparation for fieldwork undergone in 2016 began with applying for permits from both the U.S. Forest Service and the Nez Perce Tribe. The Nez Perce – Clearwater National Forests required an "Application for Permit for Archaeological Investigations," which is reviewed by the Heritage Program Manager and signed by the Forest Supervisor. Although it wasn't required, the permit from the Nez Perce Tribe informed them what the project would be doing and that it would be ethically performed. It also permitted an interview with the Nez Perce Cultural Resource Director. The Nez Perce Tribal Research Permit was accepted by the Nez Perce Tribal Executive Committee.

Project Goals

The archaeological resources of the Lochsa River corridor have yet to have a detailed field reconnaissance report. The nature of this project was to examine archaeological resources that are located along the Lochsa River corridor and to identify any unrecorded pre-contact sites that have yet to be recorded. The project took place in the summer of 2016 and finished in the fall of 2016. A detailed survey across all parts of the river was conducted, that looked at nearly all unsurveyed landforms on the river. The project was also meant to do subsurface testing of all recorded sites, but in some cases it was obstructed by certain safety issues and time factors. By the end of the project nine new sites were recorded and one was updated.

Methods

In order to identify sites over a wide range of the river, a number of surveys took place throughout landforms along the river corridor. These were followed by shovel probes if the soil was thought to have depth. Excavated artifacts were bagged and cataloged, any artifacts found on the surface will be left in place and recorded, unless diagnostic. Diagnostic artifacts were

recorded and collected.

Survey took place on land deemed probable to have pre-contact occupations, and that has not been surveyed in past cultural resource surveys. This was considered to be all land along the Lochsa River that have slopes at or under 20 percent, and is located on reachable land. Much of the land was not conducive to above ground survey due to the heavy vegetation and ground cover; much of it was not surveyed. During the fieldwork, it became easier to walk along the beach and look for artifacts that may have eroded from the cut bank. Once the artifacts were found further testing would occur.

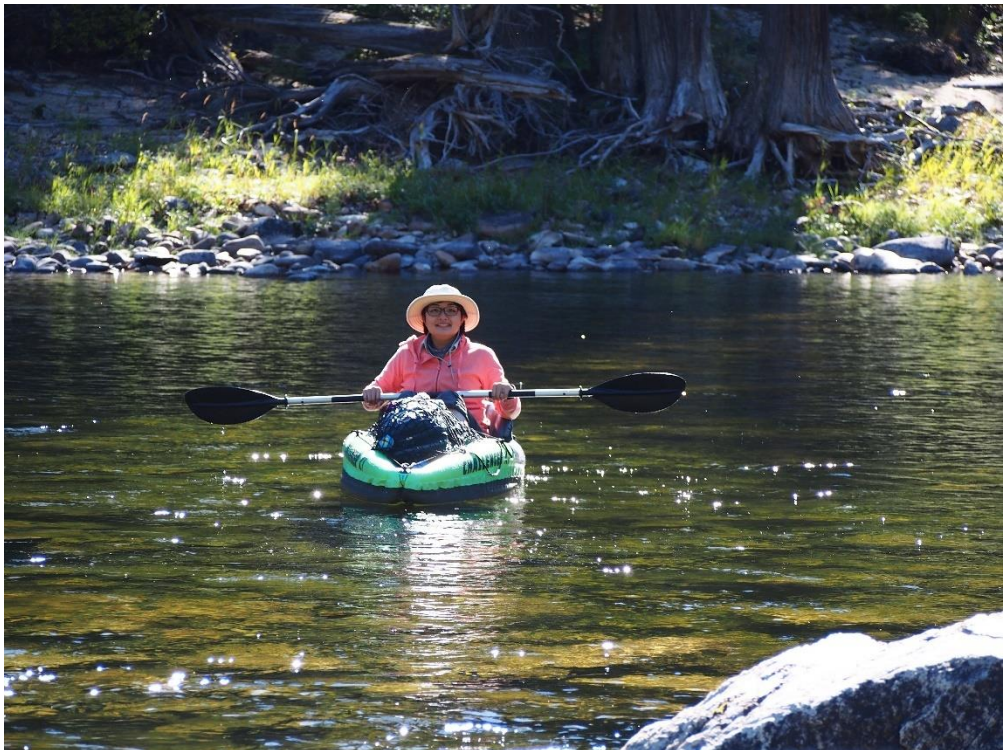


Figure 8. Access to certain parts of the river required a boat for much of the summer and fall.

Originally, a maximum of ten sites were to be tested during the project. By the end of the project, only seven sites had any subsurface testing and three were not tested. Shovel probes were based on the amount needed to determine site dimensions. Sites were tested with a shovel probe, and soil was sifted through 1/8-inch wire screen. A minimum of six probes were dug to

ascertain a pre-contact occupation and a maximum of ten probes were dug for ascertaining site dimensions on the surface. Probes consisted of holes dug no more than 0.50 meters wide, and depth was based from the final cultural layer. Levels were marked every 10 centimeters and excavation extended to levels with sterile soil or river gravels. Any features located through survey and contained subsurface cultural materials, such as house pit depressions, were not tested.

Figure 9. A smaller screen was necessary to easily transport across the river.

Each site was given a datum of a 10-inch spike nail placed somewhere near or within the site boundary. Each area tested was mapped from that datum by meter intervals. In case an artifact is collected was be measured from the datum to maintain its original location. The datum remained at sites post excavation for future visits.

All testing was conducted with trowels and shovels. Test holes were numbered and measured from the datum. When the site boundary was determined or the number of shovel probes reached ten the subsurface testing ended. In most cases shovel probes never reached the

maximum number, and the site was usually found across the entire landform.

Figure 10. Shovel probe example.

Site Disturbance

While aspects of the river corridor remain undisturbed from human developments occurring throughout the last century, the river channel and the land along it has been affected most notably by Highway 12 construction. It appears that the construction left the southern side of the river valley untouched, significant modification and use of the southern side of the river occurred throughout the highway's construction. Furthermore, several other developments have occurred prior to and after the highway construction that helps to understand the impacts to the river's archaeological record.

Figure 11. Highway 12 construction in the 1940's (U.S. Forest Service).

Highway 12, or the Lewis and Clark Highway, was constructed over several decades through the Lochsa River canyon, beginning in 1920s and continuously being constructed until 1962 (Space 1980). The highway has been built across almost every terrace on the north side of the river and into several cliff faces. In a few cases, the river channel's bend is so extreme that the highway is built over the top of the channel blocking the river. Thus, a new channel is created to allow the river to maintain its course. In addition, when the highway was built out into the river, along steep cliffs, an equal portion must be removed from the other side (Nick Gearhardt, personal communication 2016). While the highway itself leaves a high degree of destruction to the landscape, these additional construction techniques cause more damage than initially assumed.

During the fieldwork in 2016, several landforms on the south side of the river showed attempts to clear the soil in order to construct the highway across it but the construction

eventually ended. A lot of these terraces have the faint appearance of an ancient river bed running through them, in reality these are an attempt by people constructing Highway 12 to create a newer river through the terrace and building the road through it.

One of the sites recorded show the indirect effects that highway construction had on it. BT-Site-6, a site set on a landform immediately upstream from a large portion of a river channel that was rerouted (see Figure 12). The water behind this construction rose and washed much of the site onto the beach. There are several parts of the river that were rerouted like this and similar effects probably occurred.

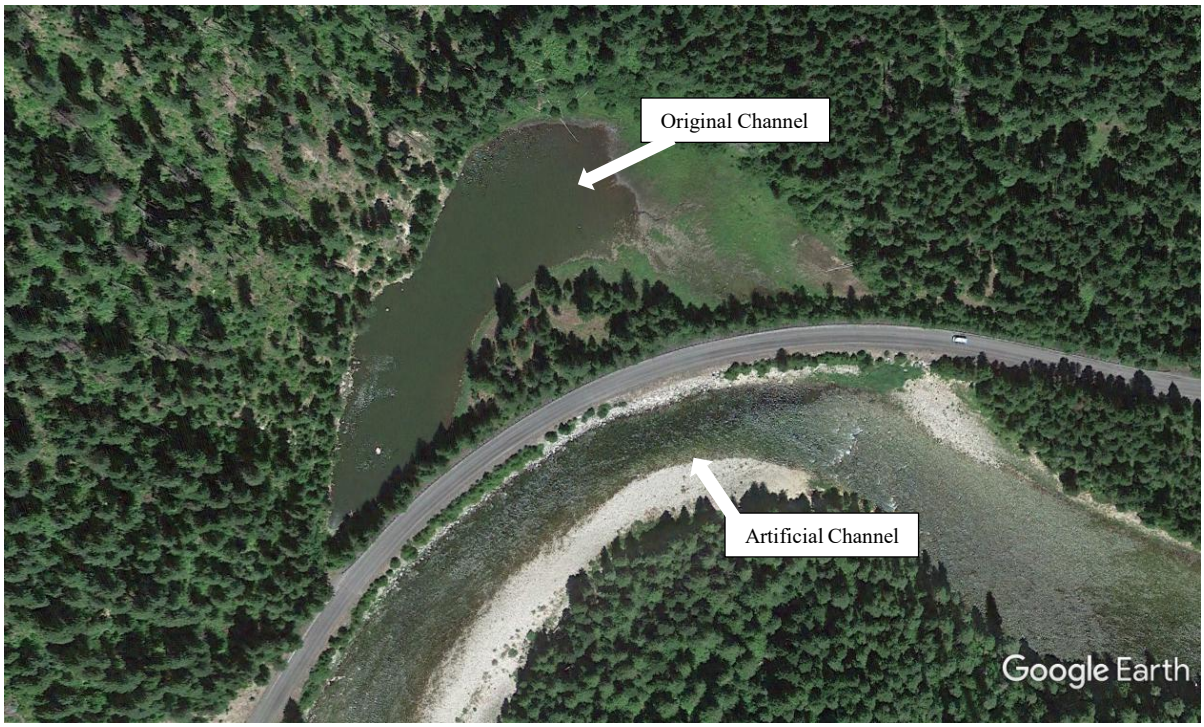


Figure 12. A view of the river, showing Highway 12, near mile marker 141, cut across the natural channel of the river. The current channel to the south of the highway is likely totally artificial or a widened portion of a smaller stream.

In an earlier archaeological report, an interview with several Forest Service personnel who worked in the Lochsa area prior to highway construction noted that the terrace across from Boulder Creek (10IH798) was, at one time, the most archaeologically abundant site of any in that area (Benson et al. 1979:57). Employees mentioned seeing a large assortment of

archaeological materials on the surface and in the soil. The terrace was eventually used as a borrow source for road construction and the artifacts were removed. There are several examples of this occurring during the highway construction. Areas not directly affected by the highway construction were disturbed in order to get materials from local sources (see Figure 13). Survey along the south side of the river revealed at least one historic road construction site, where the ground in some places was completely capped by a layer of asphalt. A quarry pit was also found nearby and old equipment was dispersed around it.

Figure 13. A flat on the south side of the river that was used for local rock in highway construction.

Residential development has occurred at both ends of the river. Near the mouth, the small town of Lowell is found along the first ¼ mile of the river with a small population of less than twenty people. The headwater of the river contains the community of Powell, originally a Forest Service administrative area. The land around Powell now has several Forest Service and

non-Forest Service residences and the Lochsa Lodge, a restaurant with several recreational cabins. Disturbances from these communities are minimal but their positions along large flats near major tributaries suggest that significant sites were likely impacted.

Campgrounds are another major development. The types of campground along the river are separated into managed and dispersed campgrounds. Campers can camp wherever they would like on public land and often do so in areas along the highway. These dispersed camps lack any formal development; it is often just a flat area compacted by vehicle use. Soil disturbance by campground use is caused by the occasional privy hole and soil compaction. More formal camps are managed by Forest Service personnel. They are heavily used areas that require construction to manage the large numbers of people coming through. Although the construction is destructive, any modern campground construction since the late 70's has been overseen by archaeologists. Campground development may continue as recreation demand increases.

The Lochsa River canyon landscape has endured more modifications than initially perceived. Highway 12, while thought to impact its immediate location, has damaged archaeological materials across much of the river and brought more impacts as people used the highway to recreate. There are several dozen campgrounds throughout the river mostly on the north that have continuous effects to the region. Furthermore, ground-disturbing impacts continue to occur in many Forest Service managed areas. As populations increase, the need to further develop the river corridor will likely be suggested. The south side of the river while having been impacted during highway construction, will endure fewer disturbances into the future.

Post Fieldwork Review

The Lochsa River's environment made it hard to access certain parts of the river at the

beginning of the summer. The river's flow was fast and the current was deadly for a good amount of the summer making it impractical to cross the river until early July. Fieldwork was delayed until mid-July when snow runoff had decreased and the river level dropped several feet. When the rivers speed slowed and water dropped, the Lochsa became easily accessible and fieldwork began along the north side of the river.

Early into the fieldwork it soon became clear that surveying at 30 meter intervals (as is the required survey technique for most projects) was not effective in the timescale that the project was to be finished. Landforms rarely showed signs of the site on undisturbed surfaces and landforms would take more than a day to survey in some instances. The most effective form of site detection was to locate disturbed areas and identify cultural materials in those soils; the most helpful areas to examine were the eroded out edges of landforms along the river that were exposed to the high water, areas of recent human disturbance, and tree roots. While effective, this method cannot find all sites in areas that were surveyed. Future projects should consider doing subsurface testing during preliminary survey.

When artifacts were found in the initial survey, the area near the artifact were surveyed for other evidence. All artifacts found on the surface were documented and all collected artifacts were mapped from a datum point. After recording surface artifacts shovel probes were placed away from the areas with surface artifacts to identify how far the site extends passed exposed cultural materials. Two of the sites located in the pre-testing fieldwork were found in hard to reach areas and it was decided that a cumbersome screen and shovel would be too difficult and dangerous to take across the river.

In order to save time and restrict damage to subsurface materials, shovel probes were often placed as little as possible and using the natural shape of the landform to decide boundaries to the site. In several places, when a shovel probe found materials near a continuous

steep slope above twenty percent, it would be assumed that the site boundary contoured that slope without actually shovel testing the hillside. Other assumptions are that if there are absent cultural materials past two shovel probes in a direction that the occupation ends and that no further testing is needed, and if the probe digs over a meter without finding cultural materials or the river rock the probe would end. In total nine new sites were found and one previously recorded sites was revisited and updated with detailed site descriptions. The rest of this chapter discusses the site descriptions for all the sites recorded in 2016. For a detailed artifact list, see Appendix A. All site maps are found in Appendix B.

Site Descriptions

BT-Site-1 – Bear Mountain Flat

The site is set out on a single terraced flat on the north side of the Lochsa River across from Bear Mountain Creek. The cut bank of the flat is eroding onto the beach with several artifacts noted along it. The site primarily consists of several hundred pieces of fire cracked rock (FCR), with small amounts of lithic debitage and a worked stone tool. There is a hearth feature eroding from the cut bank. No probes or excavations have been placed at this site but the fact that FCR is densely spread over the length of the beach suggests that prehistoric materials are likely found in undisturbed soils over much of the flat.

Figure 14: BT-Site-1 Overview

The flat is a large single terraced landform found on the west side of the Lochsa River. There are no streams or minor tributaries that are found next to it. The flat is 320 meters along the river and 200 meters from the river's edge to where the canyon wall begins. The vegetation community is a fir woodland with a huckleberry and bear grass understory.

A large soil profile can be seen along the beach where the soil sits about 5 to 6 feet above the river rock where FCR is seen eroding from the side (see Figure 15). Debitage consist of local river rock and smaller amounts of fine grained basalts or argillite materials. One cobble core and several flakes taken from local material, show that local stone was utilized extensively. A unifacially flaked river cobble is found along the cut bank likely having only been exposed to the surface in the last couple seasons. One hearth feature was seen eroding from the cut bank; it is unknown if it represents a pre-contact or historic occupation.

Figure 15: The cut bank set back on the beach. The soils can be 6 feet higher than the beach in some areas.

The area has been used as a camping spot for some time with an abandoned road coming off Highway 12 and heading to the river that has since been blocked by the Forest Service. A large constructed flat is located on the south side of the site that was used in the past for camping. The concentrations of FCR on the beach likely represent occupations from the pre-contact to modern eras with modern and historic campfire rings spread around the site. An

abandoned dirt road coming off Highway 12 is constructed over a small portion of the flat.

Figure 16. A hearth (Feature 1) feature eroding from the cut bank.

Artifact 1 - A unifacially flaked river cobble – The tool has been flaked on the wider side creating a crude blade while the narrow end appears to have more of a bashing brake (see Figure 17). The tool was found lying in the rocks next to the bank.

Feature 1 – A hearth eroding out of the cutbank and partially exposed from the surface (see Figure 16). Consists of heavy amounts of FCR and other river cobbles that appear heat treated. The hearth measures 5 feet across by 4 feet wide.

Figure 17. A unifacially flaked river cobble (Artifact 1).

BT-Site-2 – Ginger Creek (10IH446)

This is a pre-contact archaeology site on a flat downstream of Ginger Creek. It is a previously recorded site from the 1960s (10IH446). A few shovel probes revealed that the flat contains a dense assortment of lithic material, FCR, and one piece of bone. While the site or the land around it appears to have been significantly damaged from highway construction, there is a segment that has been protected from those impacts.

Figure 18. BT-Site-2 Overview.

The site is found along a flat just south of Ginger Creek, and west of the Lochsa River.

The flat is a long single terraced landform that follows the river as it makes a large meandering loop through the canyon. The landform measures 600 meters along the river and extends 130 meters from the river's edge to the canyon wall. The vegetation is an old growth cedar woodland with an understory of huckleberry and fern.

The beach in certain places have dispersed FCR approximately 1 fragment per meter squared. The place is currently used as a dispersed campsite with several fire rings around the beach. The FCR is probably partially modern, historic, and pre-contact in nature. No artifacts other than FCR were found on the surface. A fallen tree created a root wad that exposed several obsidian flakes in the exposed dirt. Shovel probes began just off the beach in the soft sand heading southeast. To the north and northwest of the site was a large parking flat constructed just off the highway and likely covering some of the site.

First recorded in the 1960s, this site was described as scatter of pre-contact tools along a creek confluence. The described creek has been rerouted to drain into an abandoned portion of the river, and the part of the site recorded in the 1960s has been covered by highway fill as this portion of the highway has been expanded outwards. Shovel probes also revealed that the ground has been heavily modified to the south and southeast of the site from highway construction in the 1950s, where soils are heavily mixed and compacted. A portion of the river downstream from this flat has also been rerouted to allow the highway to pass over it.

BT-Site-3 – Old Ford

This site consists of artifacts exposed in a small sandy exposure along the river. The area appears to have been heavily modified by historic impacts and much of the ground is covered in river cobbles, possibly placed there during highway construction. The only pre-contact artifacts are found on a small beach in the middle of the landform. The place was meant to be revisited for subsurface testing, but could not be done due to the rising water level. A topographic map shows a historic trail through this area and where the river can be forded, thus the name.

Figure 19. BT-Site-3 Overview.

The landform is a long but narrow flat on the south side of the Lochsa River. It has two terraces. Both of which are rather rocky and clear of trees. The length of the flat is 410 meters and is 50 meters wide. A little sandy beach about 10 meters long by 20 meters wide can be found near where the first terrace meets the second terrace. Have been used quite often to camp historically as well as prior to contact.

Artifacts consist of a small scatter of FCR, cobble flakes, a flaked vitrophyre pebble (see Figure 20), and a basalt flake. The artifacts were found in the sand and the terrace above it may have been too modified to still contain an occupation. There should be testing on the flat in the future to be certain.

Site disturbance likely occurred across the flat. Soils are very gravely and river rock is found just below the surface. Vegetation can barely grow on the surface, most plants look invasive, or grow on disturbed land. It is unknown why the flat was disturbed, but it is probably related to the construction of the highway.

Figure 20. A flaked vitrophyre pebble with a glassy interior. Scale in cm.

BT-Site-4 – Dutch Creek

This site is a pre-contact scatter of FCR eroding from the beach along the southern end of a boulder-strewn terrace although nothing else was recorded. The site could not be revisited for shovel probes due to the difficulty of reaching it. Historic impacts affected the flat as a lot of the trees are fairly recent and the soil appears disturbed in some areas.

Figure 21. BT-Site-4 Overview.

The landform the site is located on is found south of Dutch Creek beginning where the creek drains into the Lochsa River. The creek is found on the southeast side of the river and has a large flow creating a massive field of boulders and rapids where it drains in. It creates a deep pool downstream of the creek and along the landform where the site is. The landform itself is found on the east side of the river it runs 570 meters along the river and 80 meters from the river's edge to the beginning of the canyon wall. The vegetation community is set within a cedar and fir woodland, bracken fern dominating the ground cover, and there are several species of

invasive plant throughout.

The site is only found along the western most part of the flat in the only area where a sandy beach can be found along the river. A large concentration of FCR is found along the beach and there may be a few washed out hearths that have eroded out over time. The beach extends back about 25 meters but artifacts are only seen in the first 5 meters from the river.

The flat appears to have had some type of human-caused disturbance along it. The tree cover is only a few decades old, and the surface is covered in invasive plant species signifying. It is unknown why the flat was modified and to what extent.

BT-Site-5 – Colgate Licks

This pre-contact and historic site is located west of Colgate Licks, in a modern Forest Service campground. Surface artifacts consist mostly of debitage and FCR. A single orange seed bead was found on the surface next to several cryptocrystalline silicate (CCS) flakes, but is probably historic or modern. Shovel probes reveal a prehistoric occupation across the entire flat. Construction from Highway 12 and the campground have damaged the site.

Figure 22. BT-Site-5 Overview.

The site spans across a two-terraced flat along the northeast side of the Lochsa River. The lowest terrace is found at the northern half of the landform, and it runs about 70 meters. The second terrace is about 1 meter higher and makes up the southern end of the flat, and it is 65 meters in length.

The surface in the impacted area of the site shows artifacts eroding out of the ground in several camp areas on the upper terrace. The upper terrace seems to have the most artifacts

while the lower terrace reveals just a few in the shovel probes and none on the surface. Lithic debitage consists of cryptocrystalline silicates, obsidian, vitrophyre, argillite, basalt, and chalcedony. A single orange seed bead found amongst the surface flakes has a late historic or modern appearance rather than something that was traded in protohistoric or early historic times (see Figure 23).

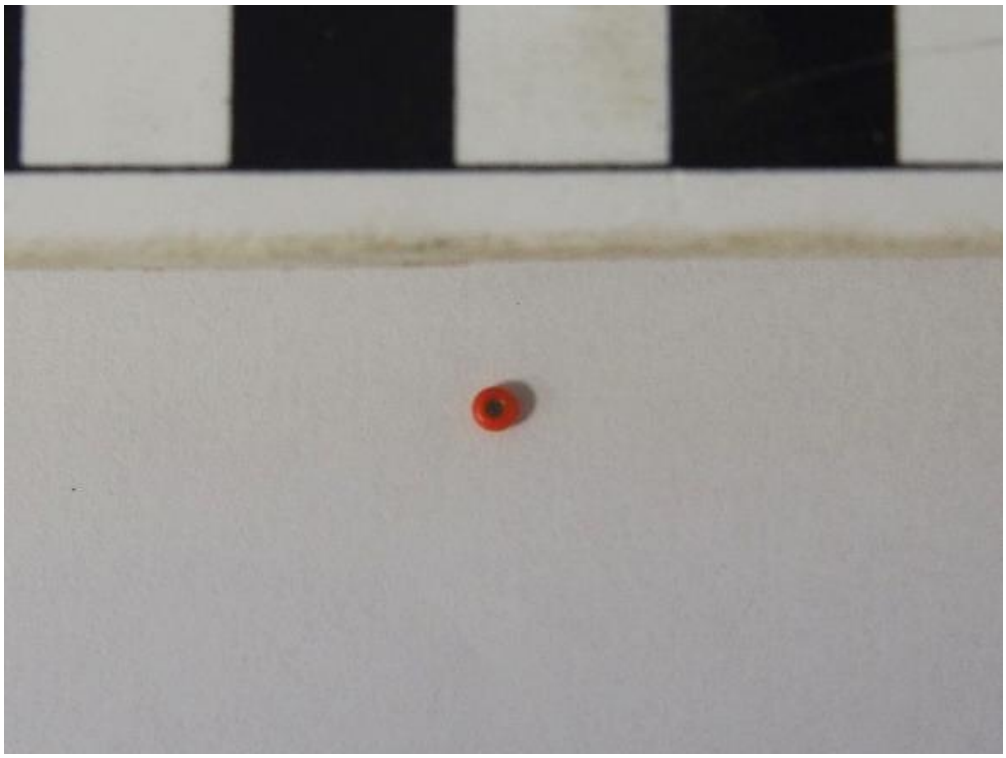


Figure 23. An orange seed bead.

A Forest Service campground is also located on the landform and has likely disturbed much of the flat. Shovel probes show that most camp areas have a heavy layer of modern and historic FCR in the first several centimeters of soil followed by several centimeters of heavily compacted soil with lithic debitage. While much of the ground has been heavily compacted there may still be a few spots along the margins that contain undisturbed soils. It is unknown how much the landform has been disturbed by construction of the campground but soil

compaction is the most noticeable impact. The site should be more thoroughly investigated in the future to assess its damage.

BT-Site-6 – Ginger Flat

This site is a pre-contact camp that appears to be heavily eroded out of the cut bank along a flat of the south side of the Lochsa River. The site is primarily found eroding out of the southwest side of the first terrace and can be seen in a 200-meter-long segment beginning from the far east end of the landform. Several hundred artifacts are spread along the flood plain, mostly consisting of FCR and cobble flakes. Cobble tools are the next most common artifact. The site appears to be a butchering and processing camp due to the high density of butchering tools, cutting flakes, and hearth features found along it, which was most heavily utilized during the early to middle prehistoric.

Figure 24. BT-Site-6 Overview.

The flat consists of two terraces with the first located about 1 meter higher than the floodplain and the second is set about three to four meters back from the first and around 2 meters higher. The flat protrudes out into the river corridor extending from the mountain slope

240 meters to the river and is about 530 meters wide. There is no known fresh water source found on this side of the river, although the opposite side has two small creeks.

This site is the only recorded site along the river that has an abnormally high abundance of diagnostic projectile points with approximately six tools recorded. These tools appear to range from early to middle prehistoric eras (circa 10,000 to 3000 years BP). Most projectiles have been modified into cutting utensils after their initial use and were later abandoned. Three large deteriorated fragments of what appears to be mammalian bone are also on the beach. Several hearths appear to be eroding out onto the floodplain. Most appear as a deflated circular formation of FCR and river cobbles. While most features are disturbed, there is at least one still in the soil.

Multiple shovel probes were placed in both terraces where the soil has yet eroded with both showing evidence of use although mostly restricted to the northern part of the site. The site boundary was extended further to the south based on artifacts along the beach, but shovel probes had already been performed. Further analysis along this part of the site needs to be performed to have a better understanding of the site boundary.

The area seems to have had very little impact from direct modern or historic use. The heavy erosion suggests the terrace once extended further out into the river. The likely reason for this is the historic highway construction about a quarter mile down river was placed across the channel. It restricted this portion to where the water immediately behind it had backed up and washed away the soil.

Feature Descriptions:

Feature 1: A hearth feature that has eroded out onto the beach (see Figure 25). The feature consists of a mound of river cobble and FCR. The feature measures 2 meters across by 1.5 meters wide by 0.2 meters wide.

Feature 2: A hearth feature that is just barely sticking out of the top of the surface (see Figure 26). The feature is found at the very northern end of the site boundary. The part of the feature exposed measures 0.25 meter across by 0.25 meters wide by 0.1 meters high.

Artifact Descriptions:

Several tools were recorded at this site. Six of which are diagnostic projectiles and have been collected for further analysis. There was at least one perforator/drill, a projectile base, and one chalcedony tool fragment that were also recorded but not collected. Several cobble tools were found many of which were not recorded because they could have been FCR, or naturally modified, and may have taken several days to verify and record all of them. A larger effort should be taken to record the rest of these in the future. The site was revisited after a large rain and several new artifacts were found coming out of the sand at several places.

Figure 25. BT-Site-6 Feature 1.

Figure 26. BT-Site-6 Feature 2.

Figure 27. Projectiles found at BT-Site-6. (a)Artifact 1, (b)Artifact 2, (c)Artifact 3, and (d) Artifact 4.

a

b

Figure 28. Projectiles found at BT-Site-6. (a)Artifact 5 and (b)Artifact 6.

a

b

Figure 29. Artifacts from BT-Site-6. (a)Artifact 7 and (b)Artifact 8.

Figure 30. A pestle (Artifact 9) from BT-Site-6.

a

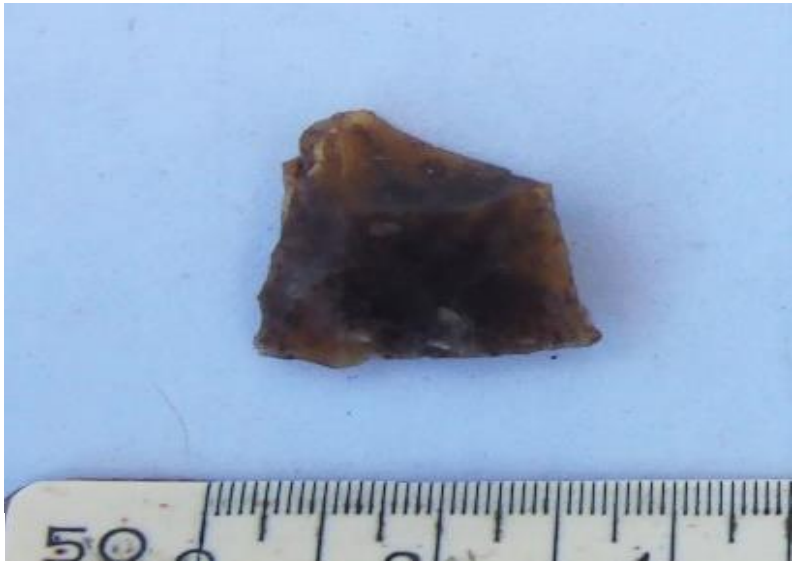
b

c

d

Figure 31. Artifacts from BT-Site-6. (a)Artifact 10, (b)Artifact 11, (c)Artifact 12, and (d)Artifact 13.

a



b

c

Figure 32. Artifacts from BT-Site-6. (a)Artifact 14, (b)Artifact 15, (c)Artifact 16.

Artifact 1: A corner-notched projectile with a missing tip (see Figure 27(a)). One of the blade margins, which has been dramatically reduced compared to the other appears to have been used as a cutting implement after its original use as a projectile. The projectile fits into the Elko or Hatwai Eared style, which is most prominent in the Middle Prehistoric.

Artifact 2: A stemmed projectile that appears to have had some use damage before being discarded (see Figure 27(b)). The material is a basalt material with tiny white inclusions. This projectile does not have a known diagnostic style.

Artifact 3: A large stemmed projectile made from argillite (see Figure 27(c)). It has been heavily reworked to use as cutting tool. The blade was likely much longer before being reworked, and both margins were convex. One side of the projectile is relatively unflaked and shows that the tool was created from a flake blank rather than a biface. This tool represents a projectile from the Windust Phase or Early Prehistoric Period.

Artifact 4: A corner- or side-notched projectile made from green opal (see Figure 27(d)). The projectile is missing much of its blade and parts of its base are broken off. The tool is undiagnostic but looks like it could be a large side notched projectile from the Cascade Phase or a corner-notched projectile from the Hatwai Phase.

Artifact 5: This projectile best represents a large side-notched tool (see Figure 28(a)). The blade has long concave margins with a small stem that has two miniscule side indentations and an offset concave base. The tool has the appearance of having been reworked, and may have been much larger throughout its use. The material consists of a rough basalt.

Artifact 6: This tool is a small stemmed projectile made from a light orange chalcedony (see Figure 28(b)). It is mostly complete with a small break along the base. The blade is

convex with a straight stem and with noticeable basal grinding. The material has most likely been heat treated. Tools of this style are representative of the Windust Phase.

Artifact 7: A fractured pestle with one worked edge and another broken edge (see Figure 29(a)).

Artifact 8: A unifacially flaked cobble tool (see Figure 29(b)).

Artifact 9: A pestle with a broken edge and one worn edge, made from a river cobble (see Figure 30).

Artifact 10: A complete pestle made from a river cobble (see Figure 31(a)).

Artifact 11: A unifacially flaked cobble blank (see Figure 31(b)).

Artifact 12: A fragmented anvil stone (see Figure 31(c)). Two fragments were recorded, but only accounts for about 1/3 of the tool.

Artifact 13: A small quartz crystal cobble with bifacially removed flakes along one side (see Figure 31(d)). The tool is crudely made with a single blade about 2 cm long.

Artifact 14: A large cobble core, of a semi glassy material. Several flakes removed from it are found within a close vicinity around the tool.

Artifact 15: A perforator or drill, that has been made from the blade of an argillite projectile, the base has been broken off (see Figure 32(a)).

Artifact 16: The base of a CCS projectile point (see Figure 32(b)). The base looks like a projectile from a large corner-notched point.

Artifact 17: A scatter of extremely deteriorated faunal remains (see Figure 32(c)). There are three fragments.

BT-Site-7 – Pete King Flat

The flat opposite of Pete King Creek and the closest documented site to the mouth of the river consists of a single terraced flat above the Lochsa River. Artifacts consist of debitage, FCR, and a single unifacially flaked cobble. Surface debitage is seen eroding out of a tall cut bank, possibly 3 meters tall. The flat also shows evidence for a historic occupation, with a placer pit and cut cedar tree stumps.

The terrace sits high over the river, about 4 meters, and extends back into the mountain side 125 meters and is about 225 meters wide. The beach is one of the thinnest, only 1 meter long before hitting the cut bank. The edges of the terrace has small creeks/seeps that drain out on either extreme of the flat. As shovel probes were placed further into the back of the flat soils turned into a very silty loam with very little sand, until about twenty meters from the slope when soils became a much harder clay and silt soil.

Figure 33. BT-Site-7 Site Overview.

Cultural materials on the surface of the site are primarily found eroding from the cut bank, with artifacts left intact. Shovel probes revealed that the site is located widely over the flat and it appears to dissipate as the elevation increases dramatically towards the back and sides of the flat. Excavations revealed primarily assorted lithic flakes, mostly argillite, chalcedony, and obsidian. One unifacially flaked cobble tool is found along the cut bank. The site survey was unable to locate any diagnostic tools although artifacts from nearby Pete King Creek contained diagnostic tools from the Late Archaic Period.

Figure 34. Artifact 1 from BT-Site-7.

Site disturbance is relegated to the historic era with several cut old growth tree stumps and at least one placer pit disbursed over the landform. There was notable terraforming of the edge of the terrace from construction of Highway 12. A layer of sand and river rocks looks to have been placed within the first ten yards of the terrace, and shovel probes reveal a layer of intact soil under a rocky sand layer. This may explain why the terrace has such an extreme slope,

about 80%, along the river.

Artifact 1: A unifacially flaked cobble (see Figure 34). The tool has a wide blade, and has a gentle slope.

BT-Site-8 – Hearth Camp

This is a pre-contact and historic archaeological site found on a landform upriver from Colgate Licks. The site consists of a large field of FCR along a beach with three exposed hearths and a unifacially flaked river rock. Shovel probes on the terrace revealed a dispersed lithic scatter consisting of a small number of CCS and FCR. The area also contains a historic and modern campground with hundreds of pieces of FCR and at least one historic fur trapping scar on a tree; however, no definitive pre-contact artifacts were found near this component of the site. Highway construction may have covered some of the site where it was constructed.

Figure 35. BT-Site-8 Site Overview.

The landform is a two-terraced flat on the northwestern side of the Lochsa River. The river in this area is relatively fast with a few rapids along it. The flat is about 116 meters wide by 400 meters long. The lowest terrace is set on the northern end of the flat and is only a little higher than the beach. The second terrace is another 3 meters higher but it is unknown how

much has been modified from highway construction. The beach area is mostly a river cobble field with a small strip of sand separating the first terrace and the site.

Figure 36. BT-Site-8 Site Overview.

The site has three pre-contact era features that seem to be hearths. The hearths are found in a row along the terrace over a twenty-meter area, slightly eroded from the bank. Fragments of FCR are dispersed throughout the three features and strewn around the beach. The hearths are rather interesting; they have not washed away and appear as they would in the soil unlike other exposed features. Their construction appears to be a ring of large cobbles and boulders with smaller pebbles and cobbles laid within it, and ovular in shape.

The beach is strewn with river rock intermingled with a heavy amount of FCR. A single unifacially flaked cobble is found on the beach alongside a cobble core. Shovel probes reveal pre-contact artifacts on the lower terrace. Shovel probes on the upper terrace contained a lot of FCR, but was found within a modern dispersed campground. The second terrace also contained

a single historic fur trapping martin set, suggesting the flat has been used into the Historic Period.

BT-Site-9 – Handy Creek

This site is a pre-contact camp found between Handy Creek to the north and Rye Patch Creek to the south, and is on the southeast side of the river. The landform has been slightly modified in the Historic Period. The modification has caused this portion of the flat to erode, causing several artifacts and features to be exposed, such as two hearth features and a mortar base. At the very northern end of the landform is a sandbar between a sheer cliff face and the river. Several dozen pieces of FCR are set on the sand along with several types of lithic debitage.

Figure 37. A broken mortar base (Artifact 1).

The flat runs 460 meters along the beach, and is 75 meters wide from the canyon slope to the river. The flat only contains one terrace, and the canyon wall behind is steep enough that slumping is quite common along the back of the terrace. The vegetation is a thick cedar and fir woodland with ground cover at zero percent visibility. The area where trees have been cleared is

covered in poison oak, and other plants that grow in disturbed areas. Many of the trees are likely more than 100 years or older suggesting the area was not burned over by the major fires from the beginning of the century. A small seep or stream runs at the very southern end of the landform.

Along the northern end of the beach there appears to be a collapsed rock shelter. The feature consists of a pile of jagged boulders along a beach away from the river and along the cliff. The cliff face behind it shows that the rocks came off a semicircular, three to four meter high rock wall, that appears to have been hollowed out by the river. Around the shelter there are a large concentration of artifacts immediately in front of the boulders and in at least one occasion found underneath the boulders. This is the only possible rock shelter recorded along the Lochsa River.

Figure 38. The remains of a possible collapsed rock shelter at BT-Site-9.

Shovel probes reveal large concentrations of debitage across the site with a diverse array

of different lithic types. Debitage consists of argillite, CCS, jasper, obsidian, basalt, chalcedony, and cobble flakes, with the majority consisting of argillite. There appears to be higher quantities of artifacts at the southern half of the site. Shovel Probe 1 had a single unifacially flaked flake tool fragment.

Surface artifacts are found only along the northern end of the flat where the ground has been somewhat modified and along the beach. Several flakes were recorded on the surface, FCR, and a broken anvil stone. The historic occupation suggests that FCR is likely historic as well as from the Pre-Contact Era.

The historic occupation appears to be found throughout the landform but is most apparent along the sites northern end. The historic occupation consists of at least four depressions, a cleared flat, barbed wire fencing, two blazed trees, and a hearth. Artifacts consist of wire nails, burned bone, glass, bullet casings, and sheet metal fragments. Site disturbance is entirely from this historic occupation.

Artifact 1: An anvil stone that has broken into 7 fragments, found on the surface of the site (see Figure 37). The rock is a large river cobble with a flat working surface.

Figure 39. BT-Site-9 Overview.

BT-Site-10 – Wendover Flat

The flat is a large single terraced landform on the opposite side of the river from Wendover Creek. This flat is the one that Lewis and Clark traveled down and mentioned as an old Indian fishing place. The site may represent a single use occupation as it doesn't range more than a few meters across, and artifacts are quite diffuse, although there may be other occupations like this across the flat.

Figure 40. BT-Site-10 Overview; from the river looking south.

The flat is a long and skinny landform, with a very thin soil layer, on the south side of the river. It almost appears like it was once an island along the river before the water level dropped. A channel is seen running along the back of the flat in between it and the canyon wall. Since the water level has changed, the channel is now a very brushy and rocky water hole.

The area had been heavily surveyed with only one unifacially flaked cobble tool and some FCR found eroding from the side cut onto the floodplain. A series of shovel probes near the tool revealed a small number of lithic flakes and FCR in a single probe just up from where the cobble tool was found.

Figure 41. Artifact 1 from BT-Site-10.

While the area appeared to suffer very little disturbance from the modern or historic eras, a large swath of the site appeared to be heavily disturbed from a beaver den. The den consisted of over a dozen holes in and around the site vicinity coming out of the cut bank and up to about 3 meters back on the flat. Water erosion also seems to have affected the site.

Artifact 1: A unifacially flaked cobble tool (see Figure 41). The tool has a pronounced beak along the blade.

Chapter 6:

Pre-Contact Material Culture of the Lochsa River

This chapter explores pre-contact cultural materials found within the Lochsa River corridor and analyzes what they tell us about how the river was utilized. The majority of the materials collected and analyzed from the region come from three major projects. The Boulder Creek Complex, Pete King Creek, and Beaver Flat have undergone the most elaborate excavations along the river. Along with analysis of previous reports, this section combines the data from the most recent 2016 fieldwork and ethnographic research in an attempt to expand our knowledge of the Lochsa River in pre-contact eras.

Lithics

Lithic artifacts found in the region are more abundant than any other artifact type. This is primarily due to its ability to last longer than other types of artifacts and its heavy use in many day to day situations. Lithic artifacts range from debitage, flaked tools, and fire cracked rock (FCR). These artifacts are known to be brought into the river corridor from elsewhere, or manufactured along the river from a local source.

Sources

Lithic materials are not common within the Bitterroot Range, but knowledge of source locations show that many other lithics were brought into the region. Sources known to exist along the Lochsa River are rare but there is at least one confirmed place found near Fish Creek that has a known lithic quarry, where vitrophyre and quartz crystal were known to occur. There may be other quarries in other parts of the Lochsa River, but they have not been identified. Other materials such as argillite, a very fine grained basalt-like material, is probably the most common lithic artifact material found along the river. Quarries of argillite are found in several places along and in the mountains above the Middle Fork of the Clearwater River.

Obsidian artifacts found around the lower Clearwater River are virtually absent. While that may be the case for much of the Clearwater River region, larger amounts have been found around the Lochsa River and the Middle Fork of the Clearwater near Kooskia, Idaho. Obsidian debitage recovered from Kooskia have been sourced to Timber Butte, an obsidian source found to the north of Boise, Idaho (Sappington 1984). Sappington (1994:323) suggest that this can be linked to interregional trade coming up through the South Fork of the Clearwater River. Obsidian found within the Lochsa River corridor may in fact be linked to similar trade from Timber Butte.

Vitrophyre is a resource found within the Lochsa River canyon. It is known to exist on the north side of the Lochsa River, in the slopes above Fish Creek. Almost all sites have been recorded with it on the Lochsa River, and river pebbles of it have been found in the river. This material is known to have been used at the Beaver Flat site and the Boulder Flat Complex to create bifaces and transported elsewhere, by people living during the Windust Phase, and likely used throughout prehistory. Another local material is quartz crystal, it is most notable at Boulder Flat, and to a lesser extent at Beaver Flat. Sources for this resource are thought to exist along fish creek where the vitrophyre source is coming from, but in a much smaller amount.

Debitage

Debitage includes the remnants of rock generated from the creation, repair, and use of stone tools, and can be utilized as a tool itself. This artifact type is often found across all sites and consists of many diverse stone types. It was the most frequent artifact recovered during the subsurface testing in 2016 and consists of the most diverse types of materials found along the river.

Debitage collected during the 2016 fieldwork ranged from a variety of local and exotic stone. These consisted of vitrophyre, CCS, basalt, argillite, obsidian, chalcedony, quartz crystal,

and local river cobble. Local materials like basalt, argillite, river cobble, vitrophyre, and quartz crystal, were found in much larger quantities and ranged from large to small. Exotic stone debitage, such as obsidian and chalcedony, are often smaller in size. This is due to their distance to their source location. Exotic debitage is more than likely to have been transported in tool form, a prepared blank to be repaired, or finished along the banks of the Lochsa River, while local sources were likely created on the spot to complete a task.

At Beaver Flat, a large concentration of locally procured vitrophyre was brought to the site and manufactured into biface blanks at the site (Sappington and Carley 1989:34). Debitage at the site consisted of several hundred pieces showing evidence of primary cortex reduction. Cortex is the outer layer of rock that has become weathered over time. It is less desired because it can break easier than the rest of the rock, and thus it is usually removed early on in tool production. As the rock begins to be manufactured into a tool, the amount of cortex found on the debitage would reduce until there is none or very little. Beaver Flat shows evidence that the site had similar functions to that of a quarry, where tool stone is removed from its natural setting and manufactured into transportable materials that can be modified into whatever tool will be needed. Debitage containing larger amounts of cortex suggests that pieces were formed from local sources to be transported elsewhere. This could also be verified by the 21 vitrophyre preforms dispersed throughout the flat. While there was no known source of unmodified vitrophyre in the area, nearby sites like the Boulder Creek Complex had similar assemblages and may suggest that a local stone was transported from some nearby vitrophyre source to be formed into transportable cobble materials.

When looking at the debitage of Pete King Creek a different type of occupation can be differentiated from Beaver Flat. Over three thousand individual pieces of debitage were recorded with many different types of stone used from exotic and local sources (Sappington and

Carley 1989:88). The sites debitage was determined to primarily be placed with a later stage reduction process. Late stage debitage is characterized by its smaller flakes and less cortex than earlier stage tool manufacture, usually created from the final manufacturing process to a tool. The site was used as a place to manufacture or repair tools in the final stages of tool creation, the Pete King Cree area served more of a purpose for hunting and gathering where tools are being brought to perform a task.

Debitage analysis used in this way tells us about how the Lochsa River region has been utilized across the landscape. While only a few areas have had the large amount of testing required for this analysis, what was uncovered can help to distinguish other sites in the region. Very little analysis of debitage was utilized for the 2016 fieldwork, this was due to the small samples recorded.

Cores

Cores are the discarded rocks that had been utilized for making flakes. Within the river corridor, cores are usually picked from the local river rock and this technology is an easy way to make a quick blade. There are two types of cores identified in the Lochsa River corridor: those that are utilized from their source when needed and those that are curated and carried along to be utilized later (Sappington and Carley 1989:71-74). Curated cores are usually of a more desirable material like chert and abandoned far later in the reduction process. Expedient use cores consist of less desirable material such as granite, metamorphic, and quartzite, and tend to be abandoned far earlier into the reduction process. There were few cores recovered in 2016, and past excavations have recorded several. Cores are thought to be quite prominent across most pre-contact sites and phases in the Lochsa River and greater Clearwater River drainage.

Figure 42. An example of two types of cores found at BT-Site-6. Left: A large cobble core with few flakes removed from it. Right: A smaller spent cobble made from a fine-grained material.

Lithic Tools

Lithic tools are well represented in the archaeological record of the Lochsa River region. Previous excavations have revealed many lithic tools that were either transported here or created from local materials. There have also been many recorded during smaller cultural resource projects along the river adding to the local knowledge. Lithic tools are able to reveal many things about the use of a site. Most can determine the methods by which people procured and dealt with resources. A few tools like projectiles are sometimes able to be diagnostically categorized into age ranges when compared to other similarly dated tools from around the region.

The 2016 fieldwork recorded several different types of lithic tools during survey. The most well represented across the different sites were unifacially flaked cobble tools, a tool created from river cobbles usually flaked on one side to create a cutting or chopping edge. BT-Site-6 (Ginger Flat) contained the broadest and densest set of tools discovered in the season with a variety of tools including projectiles, pestles, unifacially flaked cobbles, drills, and ground stone.

Cobble Tools

Cobble tools are diverse lithic implements created from alluvial cobble. These rocks, usually expedient use tools, are known for their quick production being manufactured as needed rather than being curated for future use. They are not as often to be carried far from where they were initially produced. They can be utilized with little manufacture as an anvil tool or hammerstone, or have it made into an edge to create a cutting or chopping surface. Cobble tools are the most abundant type of tool found in the 2016 fieldwork and documented in all major previous projects. In the 2016 fieldwork, a total of 11 cobble tools were noted throughout all sites. Within this category unifacially flaked cobble tools are the most noted stone tool found across all sites. Pestles and anvil stones were also identified.

The tradition of the flaked cobble ranges throughout the prehistory of North America, and is quite abundant wherever they are used (Mattson 1984:5). Characteristically the flaked cobble found within the Clearwater usually resembles a peripherally flaked cobble with only one side worked. Mattson (1984:5) suggests that these tools are abundant within the Clearwater region due to their wood working function, and disarticulation of bone during animal processing. Mattson identifies cobble tools, throughout the Clearwater River and along the North Fork. The morphological characteristics of cobble tools as they increase in elevation, up into the North Fork appear to become larger in size (Mattson 1984:91). Furthermore, cobble tools along the North Fork have more variability. Mattson suggests that as environmental conditions changed, so to were the type of tool needed. For the most part the Lochsa River cobble tools have similar morphological characteristics to the ones from the North Fork.

A single bifacially flaked quartz crystal nodule was recorded at BT-Site-6. Flaked along a single edge, the tool resembles a crude scraper or chopping tool. While quartz crystal debitage is found throughout many previous excavations this represents the first quartz crystal tool to have

been recorded in the river corridor. Large amounts of quartz crystal tools have been found along the North Fork at sites like Weitas Creek and Kelly Forks.

Figure 43. A broken anvil stone found at BT-Site-9.

Flake Tools

Flake tools are a common occurrence on the river and have been found in all excavations along the river. Only one was found in 2016 in a single shovel probe at BT-Site 9. These tools are modified flakes that have notable retouching along their margins. Flake tools are found through all pre-contact eras.

Fire Cracked Rock

Fire-cracked rock (FCR) is the most abundant modified stone found along the beach. It is mostly a product of the broken material that is used in hearths or other rock features. As a rock is heated it expands and contracts until it breaks and is then discarded. Rock used in the creation of FCR is always of a local source, and most likely from river rock as it is the most

abundant. FCR can often be the easiest indicator of a site, due to the large amounts of it found along the river edge. While FCR is very abundant, there is very little analysis that can be done to these types of artifacts other than noting their existence.

Faunal Remains

Faunal remains are generally scarce within the region. The acidic nature of the soils and other factors can disintegrate bone faster than within drier portions of the Clearwater drainage. Cultural factors like the extraction of marrow, can also help in the destruction of identifiable bones. The site with the most faunal remnants discovered, along the Lochsa River is Pete King Creek. This area appeared to be most heavily used during the Late Prehistoric Period, where bone remnants have not had the chance to disintegrate quite as much as at other points along the river. A total of 28 identified specimens were recovered with twenty-five being identified as elk, two specimens were deer, and one identified as black bear (Chadez 2015:89). There was very little discovered in other projects, and only four undiagnostic fragments were discovered during the 2016 fieldwork.

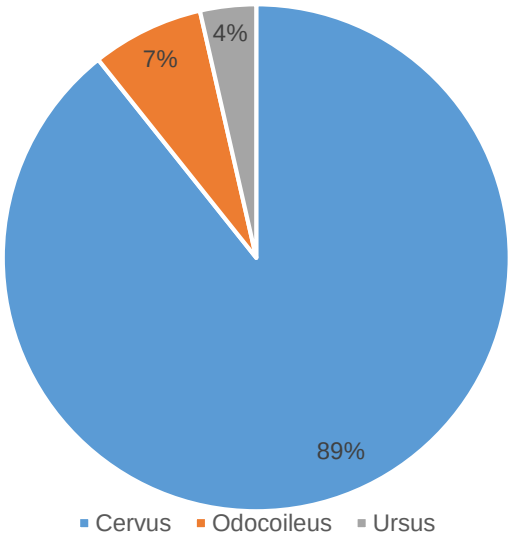


Figure 44. Pete King Creek - Percentage of Identified Large Mammal Specimens.

Pete King Creek compared to sites within the Clearwater and Lower Snake River regions

has a higher than normal percentage of elk to deer, when compared to other sites within the study area. Future research may find that elk acquisition was important across the Lochsa River corridor as it has been in historic and modern times. As previously discussed, ethnographic evidence shows the Pete King Creek region was used to hunt elk by the Nez Perce, into historic and modern times.

Features

Very few pre-contact indigenous structures are found to exist along the Lochsa River. This is related to the area being a seasonal camping area; sites lacked the development of villages and the need for long term use. Most documented features on the river are related to the procurement and cooking of food.

The earliest accounts of features on the Lochsa are a description by Lewis and Clark of a fishing weir, just up the creek from the Lochsa River's main body, when resting along Colt Killed Creek. Weir Creek, a tributary of the river, while unproven, may have also been named after a fishing weir noted along the creek when the area was first mapped, alternatively the geyser baths that have been constructed along it were confused for weirs. Weirs consist of a multitude of types of construction, but are basically a method for constraining and trapping fish into a central area for easy procurement. In past archaeological reports, most pre-contact features recorded were hearth features. In 1986 a single burned post was excavated at the Beaver Flat site. The feature was carbon dated to 4060 ± 70 years BP. Archaeologically, the most noted feature is the hearth which can still be seen on the surface in many places. The only other feature was a possible collapsed rockshelter.

Hearths are the most easily identifiable, as a large concentration of rocks with several pieces of FCR found within it and surrounding it. In the soil they can sometimes be seen just sticking over the surface as a small pile of rocks, or seen eroding out of a bank in profile. During

the 2016 survey, there were at least eight hearths recorded. Hearths have been used in all known eras into modern time and are undateable through diagnostic criteria unless excavated. Several recorded hearths along the river may have also been historic.

A possible collapsed rock shelter is the only new type of feature found in the Lochsa region that was recorded in 2016, and is the only known rock shelter along the Lochsa River. Consisting of a pile of boulders along a beach away from the Lochsa it has a large concentration of artifacts immediately in front of the boulders and in some cases, found underneath the boulders. The feature is set along a short cliff face that extends down to the river side. The boulders appear to have fallen from an eight to ten-foot-high rock wall, which was hollowed out from the river.

Cultural Periods and Phases

Cultural typologies on the Lochsa River have often been placed within the Leonhardy and Rice (1970) Lower Snake River typology. The river will now be placed under the Clearwater River typology. While it is common to define usage of the river to phases defined by the Clearwater and Lower Snake River typologies it should be noted that the region has also been placed within the cultural typologies of Southwest Montana (Greiser 1984).

Early Prehistoric Period (circa 10,000 to 6000 years BP):

The earliest known occupation of the Lochsa River region begins with evidence of use in the Windust Phase, a Western Stemmed tradition that arose across the Pacific Northwest and surrounding areas. Windust technology in the Clearwater and Snake Rivers are thought have occurred between 10,000 to 8,000 years ago (Rice 1972; Sappington 1994). This technology is known for its shouldered lanceolate tools. Three sites along the river have projectiles that are Windust style. Boulder Creek and Beaver Flat two sites found within the same components of Cascade Phase tools, and the other was found out of context.

The first tool thought to relate to the Windust Phase was found at the Boulder Creek Complex in 1979. The tool consisted of a broken base fragment with a noticeable blade and shoulder. While of a Windust style this tool was thought to have been placed here during the Cascade Phase, possibly having been reutilized sometime after its manufacturing date (Benson et al. 1979). A complete Windust stemmed excavated at Beaver Flat was found in sediments along with a Cascade point. During the 2016 fieldwork, another Windust style stemmed projectile was found eroded out onto a beach near several other flaked tools. Another projectile at the site has similar characteristics.

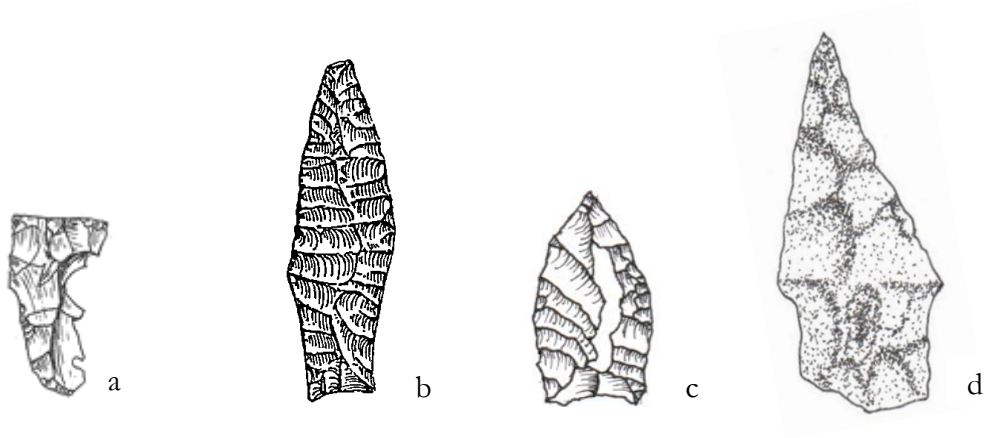


Figure 45. Assorted Windust Phase projectiles found at three different sites across the Lochsa River. 1:1 scale. Tools have been recovered at the Boulder Creek Complex (a), Beaver Flat (b), and Ginger Flat (c, d).

The later stemmed tradition, the Cascade Phase is found in at least two sites along the river. The Cascade Phase is characterized by a style of leaf shaped projectiles or knifes that exist throughout the phase. Another type of projectile, the large side notched projectile, occurred towards the end of Cascade Phase postdating the Mazama ash layer (Bense 1972). Excavations at and around Boulder Creek Complex show the largest evidence of Cascade technology along the river, with both leaf points and large side-notched projectile. There was one projectile found at Ginger Flat that was representative of the large side-notched type.

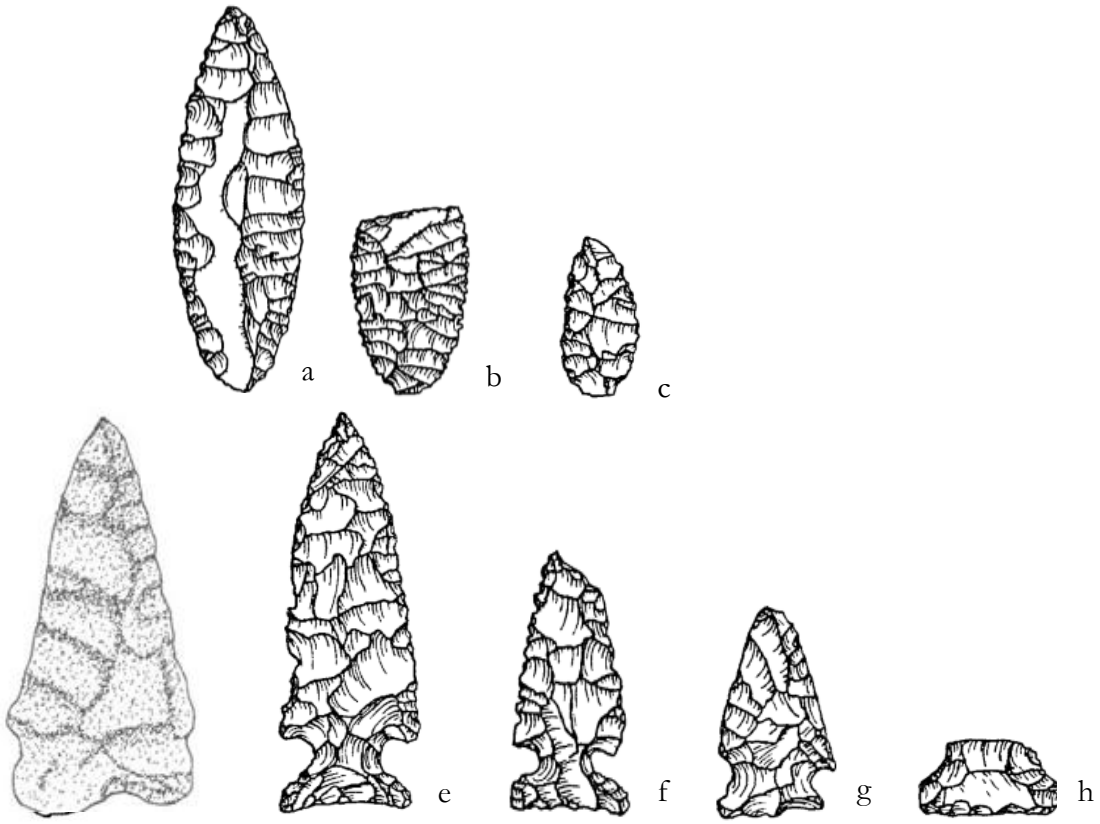


Figure 46. An assortment of Cascade Phase projectiles recovered at Beaver Flat (a, b, & g), the Boulder Creek Complex (c, e, f, & h), and Ginger Flat (d). Cascade lanceolate points on top with side-notched projectiles on the bottom. 1:1 scale.

The Early Prehistoric Period appear to be most populous in the middle portions of the river, beginning at Beaver Flat, and ending somewhere above Weir Creek. As previously discussed, Early Prehistoric groups were highly mobile and regions like this were likely utilized often, while places higher into the mountains may have been covered by receding glaciers during this time. Evidence of use along the river show that Early Prehistoric sites are heavily in use as workshops for the manufacture of flaked tools. There appears to be another occupation of Early Prehistoric people residing 25 kilometers upriver at Ginger Flat. This area appears to have been used strictly for the processing and hunting of animals.

The prehistoric timeline of this period is defined mostly by the discovery of diagnostic projectiles. While this gives us some idea of the age ranges the region was occupied it does little

to give an accurate date of the river's occupation. The excavated Windust point from Beaver Flat was located below the Mazama ash layer which can be dated to prior than 6,600 years BP.

Middle Prehistoric Period (circa 6000 to 3000 years BP)

Few diagnostic cultural materials of the Middle Prehistoric Period have been recovered along the Lochsa River. Carbon dating at Beaver Flat has shown that people were present by this time but few diagnostic tools have been recovered. Excavations at Beaver Flat uncovered artifacts and features that represent the Middle Prehistoric Period. Three radiocarbon dates show a range of use from 4060 to 2780 years BP. For the most part little is known of the Middle Prehistoric other than at Hatwai. This is possibly due to sedentism, as people settled in permanent houses along the river they may not have been as populous in the upper elevations of the drainage, until populations increased enough that people ranged further out during the Late Prehistoric. There is also a switch to the importance of processing plant food over hunting, so diagnostic projectiles are not as abundant.

A single projectile found at Ginger Flat (BT-Site-6) was recovered during fieldwork. Diagnostic artifacts such as this date within the Hatwai Phase, around 5,000 to 3,000 years ago. More work should be done to discern the use of the Lochsa River during the Middle Prehistoric, but it appears to have been used primarily for the use of hunting.

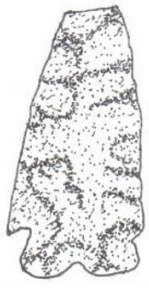


Figure 47. A Middle Prehistoric projectile found at Ginger Flat.

Late Prehistoric Period (circa 3000 to 500 years BP)

Artifacts from the Late Prehistoric period likely spans the length of the river, with a more concentrated population near the mouth. Pete King Creek is the best represented site in the region for this period. Excavations further up river has also shown evidence of use during the period at the Boulder Creek Complex, Waw'aalamnime Creek, and at Powell Ranger Station, but in much smaller amounts.

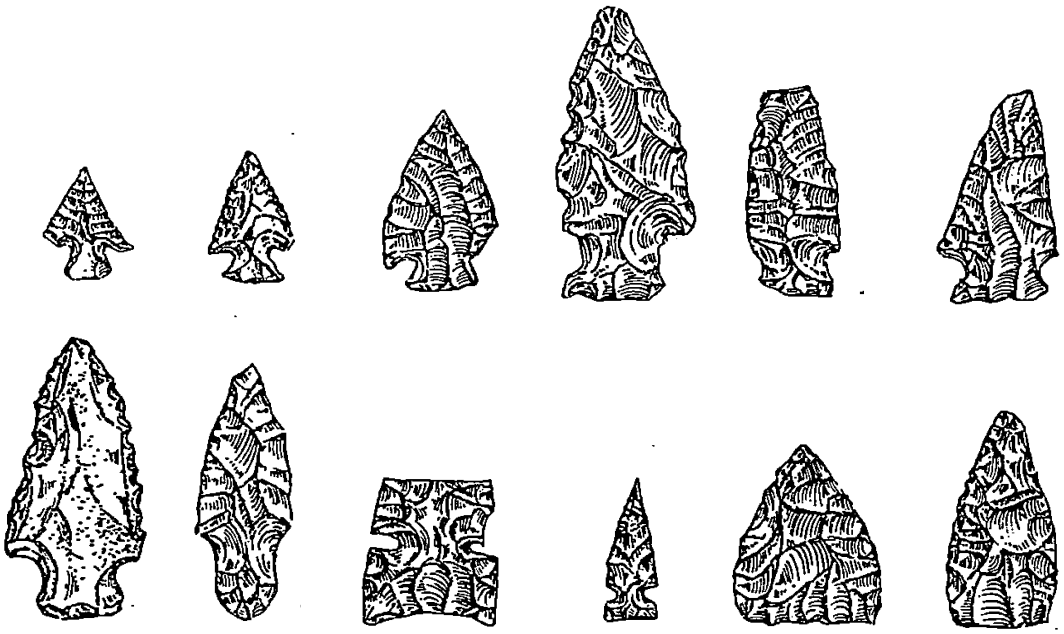


Figure 48. A sample of Late Prehistoric projectiles recorded at Pete King Creek. 1:1 scale. (Sappington and Carley 1989:58-60).

Protohistoric Period (circa 500 to 200 years BP)

No known artifacts related to the Protohistoric have been found along the Lochsa River. While Lewis and Clark saw, the area being used by indigenous people at the tail end of the protohistoric period, little has been recovered or documented elsewhere. It is known that the Selway River had been largely depopulated with the abandonment of the village at Bear Creek due to territorial disputes with Shoshone groups to the south, suggesting the Lochsa may have also been depopulated to some unknown extent affected by these larger events. One small glass

seed bead was found amongst a lithic scatter during the 2016 fieldwork, but is likely representative of a historic or modern occupation on top a pre-contact occupation.

Summary

While much of the archaeological prehistory of the Lochsa River is still unknown, this paper hopefully expands upon the region. The archaeological record of the river shows that the region was possibly inhabited from as early as 10,000 years to the present day. The expedition of Lewis and Clark ended the Pre-Contact Era when they walked down it in 1805. The pre-contact archaeology is found throughout the river. Ethnographic knowledge has also helped understand the region and its influence on the Nez Perce people.

1. Nine new archaeological sites have been discovered. These sites are widespread throughout the river corridor.
2. The regions' archaeological record has been damaged by several impacts that have happened over the last century. Several landforms along the river were impacted by the construction of Highway 12. While this is the case, there are still many landforms with relatively good preservation.
3. The ethnographic record of the region is quite complex and the regions use is well documented. Nez Perce accounts of the river document in what way people inhabited the region.
4. Several new insights have led to the discovery of a new area of pre-contact use. While boundaries of the region are poorly defined, it is in the general area beginning near Indian Grave Creek to an undetermined point, perhaps near Waw'aalamnime Creek. Springs at Weir Creek, Jerry Johnson Hot Springs, Colgate Licks, and probably other less well-known places define this region. Elk and other large game are known to inhabit these regions to ingest the minerals the springs bring up on a regular basis. This

behavior was known by the Nez Perce who have accounts of hunting near the springs to exploit the increased amount of game. Furthermore, prehistoric artifacts were found at the Ginger Flat site (BT-Site-6) that show characteristics of the Windust Phase and later phases. These have a general date range from 10,000 to 3,000 years BP. These artifacts also show a heavier evidence of use for butchering after their initial use as projectiles compared to artifacts from other sites. These lines of evidence suggest that there may be a correlation between historic and modern accounts of a specialized hunting strategy that could extend back 10,000 years.

Further research is required to understand the extent of this tradition and what other benefits this region may have had. Faunal remains in the earliest phases within the Clearwater River are not as well documented. A concentration of hunting, found near the hot springs may have created an extensive faunal assemblage through several phases.

Much like along the rest of the Clearwater River, extensive damage has occurred to the pre-contact archaeological record along the Lochsa River. While this is the case, there is still tremendous amounts of information that can be learned from this area that can grant us further knowledge of the area and surrounding areas. The sites discovered during the research for this thesis and in past reports can and have driven research questions.

From where the two creeks form to create the Lochsa River several large landforms exist, containing evidence for indigenous camps along it. From historic accounts it is known that the area was used to fish by indigenous peoples, as one made their way through the mountains. Past excavations and recent fieldwork has shown that these encampments are likely relatively smaller in size to other camps downstream and due to their position in the upper portions of the region are one of the lesser populated portions of the river corridor. Research has still been

very small in this area and needs to go further into describing it.

As one travels further downstream, reaching Jerry Johnson Hot Springs and extending past Weir Creek, there appears to be an increase in the use of the river. Oral histories demonstrate the area is known and considered important to the culture of the Nez Perce. The geothermal springs in the area are known as good places to hunt larger game in high quantities. Archaeology of the region demonstrates that this tradition likely ranges back more than 8000 years, with a site that contains a Western Stemmed tradition. Future research could reveal so much more about the use of this region.

Continuing to the Fish and Boulder creek drainage, there are several flats that show the utilization and curation of stone tools manufactured from a nearby source of vitrophyre. Evidence suggests this area likely served as a source of stone tools that may have been distributed throughout the Clearwater drainage. This activity likely began in the Early Prehistoric and occurred throughout prehistory.

The next region is a long stretch of steep canyon that likely restricted any type of access between the upper and lower portions. No sites have been found along the canyon's small riverside flats and there was likely very little reason to attempt to travel through it. Geological features such as this canyon show that the river corridor was likely accessed most easily through the network of trails that ran up the ridges of the river corridor, likely avoiding certain spots altogether.

As one leaves the canyon, the last stretch of river is a relatively calm part. Several landforms were likely utilized as summer camps along this stretch. The best-known site is Aat'pipseh or Pete King Creek. People who stayed here prepared for hunting and gathering important food and medicine. Two other precontract sites were recorded in this area during the

2016 fieldwork, while they were not likely as utilized as Pete King Creek they had been heavily utilized.

References

Alt, David D. and Donald W. Hyndman
1989 *Roadside Geology of Idaho*. Mountain Press, Missoula.

Ames, Kenneth M. and Allan G. Marshall
1981 Villages, Demography, and Subsistence Intensification on the Southern Columbia Plateau. *North American Archaeologist* 2:25-52.

Ayotte, Jeremy B.
2004 *Ecological Importance of Licks to Four Ungulate Species in North-Central British Columbia*. M.S. thesis, Department of Natural Resources and Environmental Studies, University of Northern British Columbia, Prince George.

Baird, Dennis, Diane Mallikan, and W.R. Swaggerty
2015 *Encounters with the People: Written and Oral Accounts of Nez Perce Life to 1858*. WSU Press, Pullman.

Baird, Lynn and Dennis Baird
2003 *In Nez Perce Country: Accounts of the Bitterroots and the Clearwater after Lewis and Clark*. University of Idaho Library, Moscow.

Beckham, Stephen D.
1998 History Since 1846. In *Handbook of North American Indians*, edited by Deward E. Walker Jr.. 10:149-173. Smithsonian Institution, Washington D.C..

Bense, Judith A.
1972 *The Cascade Effect: A Study in the Effect of the Altithermal on a Cultural System*. Ph.D. dissertation, Department of Anthropology, University of Washington, Pullman

Benson, Michael P., Ruthann Knudson, Thomas Dechert, and Richard C. Waldbauer
1979 A Preliminary Outline of the Cultural Resources of the Wilderness Gateway Recreation Area, Clearwater National Forest, Idaho. *University of Idaho Anthropological Research Manuscript Series* No. 56.

Brunelle, Andrea, and Cathy Whitlock
2002 Postglacial fire, vegetation, and climate history in the Clearwater Range, Northern Idaho, USA. *Quaternary Research* 60:307-318.

Bugosh, Nicholas
1999 *Lochsa River Subbasin Assessment*. Idaho Division of Environmental Quality. Boise, Idaho.

Chadez, Jenifer
2015 *The Holocene Occurrence and Exploitation of Mammals in the Clearwater and Lower Snake River Regions of Idaho*. M.A. thesis, Department of Anthropology, University of Idaho.

Chalfant, Stuart A.
1974 Aboriginal Territory of the Nez Perce Indians. In *Nez Perce Indians*, edited by David Agee Horr, pp. 25-163. Garland, New York.

Chance, David H. and Jennifer V. Chance, with Elmer Paul
1987 A Review of the Archaeology of Nez Perce Country. Alfred W. Bowers Laboratory of Anthropology, *University of Idaho, Letter Report,* No. 88-11. Moscow.

Curtis, Edward S.
1911 *The North American Indians*, Vol. 8. Plimpton Press, Norwood Massachusetts.

Davis, Ray J.
1939 *Flora of Idaho*. WM. C. Brown, Dubuque.

Daubenmire, R., and Jean B. Daubenmire
1968 Forest Vegetation of Eastern Washington and Northern Idaho. Washington Agricultural Experiment Station, Technical Bulletin 60.

Dingler, Craig M.
1981 *Reconnaissance Glacial Geology of the Selway – Bitterroot Wilderness and Surrounding Lower Elevations, Idaho and Montana.* M.S. thesis, Department of Geology, University of Idaho.

Finklin, Arnold I.
1983 *Weather and Climate of the Selway Bitterroot Wilderness.* University Press of Idaho, Moscow.

Graham, Patrick J.
1977 *Juvenile Steelhead Trout Densities in the Lochsa and Selway River Drainages.* M.S. thesis, Department of Fisheries, University of Idaho.

Greiser, Sally T.
1984 Projectile Point Chronologies of Southwestern Montana. *Archaeology in Montana* 25:35-51

Hartig, Louis F.
1988 *Lochsa: The Story of a Ranger District and its People in the Clearwater National Forest.* Kendall/Hunt Publishing, Dubuque.

Hash, Howard S.
1973 *Movements and Food Habits of the Lochsa Elk.* M.S. thesis, Department of Wildlife Management, University of Idaho.

Hooker, Larry L.
1972 *Effects of Prescribed Burning on Soils and Vegetation of Seral Brush Communities in the Lochsa River Region of Northern Idaho.* M.S. thesis, Department of Range Management, University of Idaho.

Karsian, Anne E.
1995 *A 6,800-Year Vegetation and Fire History in the Bitterroot Mountain Range, Montana.* M.S. thesis, Department of Forestry, University of Montana.

Knudson, Ruthann and Robert Lee Sappington
1977 *Archaeological Investigation of the Wilderness Gateway Recreation Area, Clearwater National Forest, Idaho.* Anthropological Research Manuscript Series No. 41. University of Idaho, Moscow.

Leopold, Luna B.
1994 *A View of the River.* Harvard University Press, Cambridge.

Leonhardy, Frank C. and David G. Rice
1970 A Proposed Culture Typology for the Lower Snake River Region, Southeastern Washington. *Northwest Anthropological Research Notes,* 4(1):1-29.

Mattson, Daniel M.
1984 *The Occurrence of Peripherally-Flaked Cobble Tools in the Clearwater River Valley, North-Central Idaho.* M.A. thesis, Department of Anthropology, University of Idaho, Moscow.

McKee, Bates
1972 *Cascadia: The Geologic Evolution of the Pacific Northwest.* McGraw-Hill, New York.

McWhorter, Lucullus V.
1952 *Hear Me My Chiefs: Nez Perce Legend and History.* Caxton, Caldwell, Idaho.

Mehringer Jr., Peter J, Stephen F. Arno, and Kenneth L. Petersen
1977 Postglacial History of Lost Trail Pass Bog, Bitterroot Mountains, Montana. *Arctic and Alpine Research* 9(4):345-368

Moore, Bud
1997 *The Lochsa Story: Land Ethics in the Bitterroot Mountains.* Mountain Press, Missoula.

Moulton, Gary E.
1988 *The Journals of the Lewis and Clark Expidition,* Volume 5. University of Nebraska Press, Lincoln.

Neuendorf, Klaus K.E., James P. Mehl Jr., and Julia A. Jackson
2011 *Glossary of Geology 5th ed.* American Geosciences Institute, Alexandria, Virginia.

Rice, David G.
1972 *The Windust Phase in Lower Snake River Region Prehistory.* Washington State University Laboratory of Anthropology Report of Investigations No. 50. Pullman

Roper, Laren A.
1970 *Some Aspects of Synecology of Cornus nuttallii in Northern Idaho.* Master's thesis. Department of Forest Science, University of Idaho. Moscow.

Salish-Pend d'Oreille Culture Committee, and Elders Cultural Advisory Council
2005 *The Salish People and the Lewis and Clark Expedition.* University of Nebraska Press, Lincoln.

Sappington, Robert L.
1984 Procurement Without Quarry Production: Examples from Southwestern Idaho. In *Prehistoric Quarries and Lithic Production*, edited by Jonathan Ericson and Barbara A. Purdy, pp. 23-24. Cambridge University, Cambridge.

1992a An Assessment of Potential Cultural Resources in the Vicinity of the Proposed Drain Field and Host Camp at Wilderness Gateway, Clearwater National Forest, Idaho. Alfred W. Bowers Laboratory of Anthropology*, Letter Report* No. 92-1. University of Idaho, Moscow.

1992b Results of Archaeological Test Excavations at Four Sites in the Vicinity of Powell, Idaho, for the Clearwater National Forest. Alfred W. Bowers Laboratory of Anthropology, *Letter Report* No. 92-3. University of Idaho, Moscow

1994 *The Prehistory of the Clearwater River Region*. Ph.D. dissertation. Department of Anthropology, Washington State University, Pullman.

1996 Clearwater River Region. In an O*verview of Cultural Resources in the Snake River Basin: Prehistory and Environments*, edited by Kenneth C. Reid. Northwest Anthropological Research Notes, 30(1-2):116-166.

Sappington, Robert L. and Caroline D. Carley
1986 Archaeological Investigations at Eight Locations A long the Lochsa River, North Central Idaho. Alfred W. Bowers Laboratory of Anthropology, *Letter Report* No. 86-8. University of Idaho, Moscow.

1989 Archaeological Investigations at the Beaver Flat and Pete King Creek Sites, Lochsa River, North Central Idaho. *University of Idaho Anthropological Reports*, No. 89.

Sappington, Robert L., Caroline D. Carley, Kenneth. C. Reid, and James D. Gallison
1995 Alice Cunningham Fletcher's "The Nez Perce Country". *Northwest Anthropological Research Notes* 29(2):177-220.

Sappington, Robert L., Ray L. Tracy, and Robbin Johnston
1990 An Assessment of Potential Cultural Resource in the Vicinity of the Proposed Pavilion at Wilderness Gateway, Clearwater National Forest, Idaho. Alfred W. Bowers Laboratory of Anthropology, *Letter Report* No. 90-12. University of Idaho, Moscow.

Schwede, Madge L.
1966 *An ecological study of Nez Perce settlement patterns.* Master's Thesis. Department of Anthropology. Washington State University, Pullman.

Shawley, Stephen D.
1977 *Nez Perce Trails.* University of Idaho, Anthropological Research Manuscript Series, No. 44.

Slickpoo, Allen P. Sr., and Deward E. Walker Jr.
1973 *Noon Nee-Me-Poo (We, the Nez Perces).* Nez Perce Tribe, Lapwai.

Space, Ralph S.
1980 *The Clearwater Story: A History of the Clearwater National Forest.* Missoula, Forest Service.

Spinden, Herbert J.
1908 The Nez Perce Indians. *Memoirs of the American Anthropological Association*. Kraus Reprint, 1964

Steele, Robert W.
1971 *Red Alder Habitats in Clearwater County, Idaho*. Master's thesis. Department of Forest Science, University of Idaho. Moscow.

Thwaites, Rueben G.
2000 *Atlas Accompanying the Original Journals of the Lewis and Clark Expedition*. Digital Scanning, North Scituate.

U.S. Department of Agriculture
2004 *Highway 12: A Long and Winding Road.* USDA, Washington D.C.

Walker, Deward E. Jr.
1998a Nez Perce. In *Handbook of North American Indians*, edited by Deward E. Walker Jr. 12:420-438. Smithsonian Institution, Washington D.C..

Walker, Deward E. Jr.
1998b Introduction. In *Handbook of North American Indians*, edited by Deward E. Walker Jr. 1:1-7. Smithsonian Institutions, Washington D.C..

Williams, Richard T.
1962 *The Significance of Salt and Natural Licks in Elk Management.* M.S. thesis, Department of Forestry, University of Idaho, Moscow.

Willey, Gordon R. and Philip Phillips
1958 *Method and Theory in American Archaeology.* The University of Chicago, Chicago.

Appendix A
Artifact Descriptions

BT-Site-1 Artifact Descriptions										
Item amount	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface Artifacts										
	Fire Cracked Rock	River Cobble		na	na					4 pieces per meter squared along the beach
3	Lithic Flake	Argillite		Interior	No	>3 cm				not measured in the field
8	Lithic Flake	River Cobble		Exterior	No	<3cm				not measured in the field
3	Lithic Flake	River Cobble		Interior	No	<3cm				not measured in the field
2	Lithic Flake	River Cobble		Interior	No	>3cm				not measured in the field
1	Flaked Cobble	River Cobble	Complete	na	Yes					Unifacial
1	Cobble Core									

BT-Site-2 Artifact Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface Artifacts										
	Fire Cracked Rock	River Cobble								0.1 per meter squared on the beach
Shovel Probe 1 – Sterile – 1.5 meters north of datum (Depth = 50 cm)										
Shovel Probe 2 – Sterile – 5.5 meters north of datum (Depth = 20 cm)										
Shovel Probe 3 – 15 meter meters north of datum (Depth = 38 cm)										
1	Bone Fragment		Fragile						0.2	
2	Lithic Flake	Basalt	Shatter	Interior	no	0.3	0.3	0.1	0.1	
3	Lithic Flake	Obsidian	Complete	Interior	no	0.3	0.3	0.1	0.1	Pressure Flake
4	Lithic Flake	Obsidian	Complete	Interior	no	0.3	0.3	0.1	0.1	Pressure Flake
5	Lithic Flake	CCS	Complete	Interior	possibly	1.2	0.93	0.2	0.4	Biface Reduction
Shovel Probe 4 – 19 meters north of datum (Depth = 60 cm)										
1	Lithic Flake	Basalt	Dorsal	Exterior	possibly	3.6	2.2	0.5	3.1	Cobble Flake
2	Lithic Flake	Basalt	Complete	Interior	no	1.4	1	0.1	0.2	
3	Lithic Flake	Basalt	Dorsal	Interior	no	1.2	0.7	0.1	0.1	
4	Lithic Flake	Basalt	Complete	Interior	no	1.2	0.8	0.1	0.1	
5	Lithic Flake	Basalt	Dorsal	Interior	no	0.6	0.4	0.1	0.1	
6	Lithic Flake	Basalt	Shatter	Interior	no	0.9	0.4	0.2	0.1	
7	Lithic Flake	Basalt	Complete	Interior	no	0.6	0.4	0.1	0.1	Pressure Flake
8	Lithic Flake	Argillite	Proximal	Interior	no	0.9	0.9	0.2	0.1	
9	Lithic Flake	Obsidian	Complete	Interior	no	0.6	0.5	0.1	0.1	Pressure Flake
10	Lithic Flake	Chert	Dorsal	Interior	no	1.2	0.4	0.2	0.1	
11	Fire Cracked Rock	River Cobble							300	
12	Fire Cracked Rock	River Cobble							194.2	

13	Fire Cracked Rock	River Cobble							104	
14	Fire Cracked Rock	River Cobble							100	
15	Fire Cracked Rock	River Cobble							36.5	
Shovel Probe 5 – 24 meters north of datum (Depth = 70 cm)										
1	Lithic Flake	CCS	Dorsal	Interior	Possibly	2.2	1.2	0.9	0.7	
2	Lithic Flake	CCS	Complete	Interior	no	0.3	0.3	0.1	0.1	Pressure Flake
3	Lithic Flake	CCS	Complete	Interior	no	0.3	0.3	0.1	0.1	Pressure Flake
4	Lithic Flake	Chert	Complete	Interior	no	0.6	0.6	0.1	0.1	Pressure Flake
5	Lithic Flake	Obsidian	Complete	Interior	no	0.5	0.2	0.1	0.1	Pressure Flake
6	Lithic Flake	Obsidian	Complete	Interior	no	0.2	0.1	0.1	0.1	Pressure Flake
7	Lithic Flake	Cobble Basalt	Complete	Exterior	no	2.1	1.7	1.02	1.5	
8	Lithic Flake	Basalt	Complete	Interior	no	0.8	0.7	0.1	0.1	Pressure Flake
9	Lithic Flake	Basalt	Complete	Interior	no	0.85	0.75	0.1	0.1	Pressure Flake
10	Lithic Flake	Basalt	Complete	Exterior	no	0.8	0.65	0.2	0.1	Pressure Flake
11	Lithic Flake	Basalt	Complete	Interior	no	0.2	0.2	0.1	0.1	Pressure Flake
12	Lithic Flake	Basalt	Complete	Exterior	no	1	0.6	0.3	0.2	Pressure Flake
13	Lithic Flake	Basalt	Complete	Interior	no	0.95	0.4	0.1	0.1	Pressure Flake
14	Lithic Flake	Basalt	Dorsal	Interior	no	0.7	0.6	0.1	0.1	
15	Fire Cracked Rock	River cobble	FCR						23.8	
Shovel Probe 6 – 89 meter north by 135 meters west of datum (Depth = 64 cm)										
	Fire Cracked Rock	River Cobble							43	
Shovel Probe 7 – Sterile – 126 meters north by 145 meters west of datum (Depth = 67 cm)										
Shovel Probe 8 – Sterile – 198 meters north by 312 meters west of datum (Depth = 79 cm)										
Shovel Probe 9 – Sterile – 45 meters north by 130 meters west of datum (Depth = 68 cm)										
Root Wad – 45 meters north by 65 meters west of datum										

1	Lithic Flake	Obsidian	Complete	Interior		> 3				Not collected
2	Lithic Flake	Obsidian	Complete	Interior		> 3				Not collected
3	Lithic Flake	Obsidian	Complete	Interior		> 3				Not collected

BT-Site-3 Artifact Descriptions										
Amount	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
12	FCR	River Cobble								1 per meter squared on the beach
1	modified pebble	unknown								possibly vitrophyre
3	lithic flake	River Cobble				< 3				
1	lithic flake	Basalt				< 3				
1	hammerstone	River Cobble								worked along central point

BT-Site-4 Artifacts Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface										
	Fire Cracked Rock	River Cobble	NA	NA	NA	NA	NA	NA	NA	5 fragments per square meter

BT-Site-5 – Artifact Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface										
Artifact 1	Seed Bead	Orange Glass	Complete						0.1	collected
2	Lithic Flake	CCS		interior		>3cm				
3	Lithic Flake	CCS		interior		>3cm				
4	Lithic Flake	CCS		interior		>3cm				
5	Lithic Flake	Vitrophyre		interior		>3cm				
6	Lithic Flake	Vitrophyre		interior		>3cm				
7	Lithic Flake	Vitrophyre		interior		>3cm				
8	Lithic Flake	Vitrophyre		interior		<=3cm				
9	Lithic Flake	CCS		interior		<=3cm				
10	Lithic Flake	Obsidian		interior		>3cm				Pressure Flake
Shovel Probe 1										
1	Lithic Flake	Obsidian	Dorsal	Interior	no	0.85	0.55	0.12	0.1	
2	Lithic Flake	Obsidian	Complete	Interior	no	0.5	0.42	0.1	0.1	Pressure Flake
3	Lithic Flake	Obsidian	Dorsal	Interior	no	0.72	0.55	0.14	0.1	
4	Lithic Flake	Argillite	Broken Margins	Interior	no	1.23	0.81	0.25	0.3	
5	Lithic Flake	Basalt	Complete	Interior	no	0.62	0.39	0.1	0.1	Pressure Flake
6	Lithic Flake	Basalt	Complete	Interior	no	0.82	0.76	0.29	0.2	Pressure Flake
7	Lithic Flake	Chalcedony	Ventral	Interior	no	1.2	0.81	0.2	0.2	
8	Lithic Flake	CCS	Complete	Interior	no	1.3	1.1	0.25	0.3	
9	Lithic Flake	Vitrophyre	Dorsal	Interior	no	0.55	0.5	0.1	0.1	
Shovel Probe 2										

1	Lithic Flake	Obsidian	Complete	Interior	no	0.5	0.4	0.1	0.1	Pressure Flake
2	Lithic Flake	Cobble Flake	Complete	Exterior	no	1.03	0.7	0.2	0.2	
3	FCR	River Cobble							250	
4	FCR	River Cobble							99.5	
5	FCR	River Cobble							311.9	
6	FCR	River Cobble							218.3	
7	FCR	River Cobble							15.8	
8	FCR	River Cobble							1.8	
9	FCR	River Cobble							3.9	
10	FCR	River Cobble							0.3	
Shovel Probe 3										
1	Lithic Flake	Chalcedony	Complete	Interior	no	0.3	0.2	0.1	0.1	Pressure Flake
2	Lithic Flake	Chalcedony	Complete	Interior	no	0.5	0.3	0.1	0.1	
2	FCR								0.2	
3	FCR								0.2	

BT-Site-6 Artifact Descriptions								
Item No.	Length (cm)	Width (cm)	Thickness (cm)	Neck Width (cm)	Material	Condition	Base Type	Style
Surface Diagnostic Tools (Collected)								
Artifact 1	4.175	2.15	0.51	1.58	Basalt	Broken Tip	Eared	Elko Eared
Artifact 2	2.94	1.9	0.5	1.32	Basalt	Broken Margin	Stemmed	
Artifact 3	6.1	2.58	1	2.17	Argillite	Complete	Stemmed	
Artifact 4	2.67	1.5	0.75	1.24	Opal	Broken Tip	Eared	
Artifact 5	6.16	3.05	0.73	2.72	Basalt	Complete	Stemmed	
Artifact 6	3.22	1.65	0.64	1.47	Chalcedony	Complete	Stemmed	Windust

Item No.	Artifact Type	Material	Condition	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface Cobble Tools								
Artifact 7	Pestle	River Cobble	Broken Edge	35	34	6.5		Figure # _333
Artifact 8	Unifacially flaked cobble	River Cobble	Complete	43	18	5		Figure # _340
Artifact 9	Pestle	River Cobble	Broken Edge	36	15	11		Figure # _344
Artifact10	Pestle	River Cobble	Complete	40	16	16		Figure # _346
Artifact 11	Chopper	River Cobble	Complete	19.75	16.5	6		Figure # _347
Artifact 12	Anvil Stone	River Cobble	Fragmented- 2 pieces					Figure # _357
Artifact 13	Cutting Tool	Quartz Crystal	Complete					Bifacially flaked nodule with one cutting edge

Item	Artifact Type	Material	Condition	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Miscellaneous Surface Artifacts								
Artifact 14	Core	River Cobble		40	36	36	-	Boulder- several debitage flakes of the same material can be seen around it.
Artifact 15	Drill/Perforator	Argillite		6.7	3.2	0.7	-	Tool is likely modified from a projectile blade.
Artifact 16	Projectile	CCS	Broken at neck	3	2.4	0.3	-	Orange and black color, neck width: 2.3 cm. Snap Fracture
Artifact 17	Faunal Remains	Bone	Greatly Deteriorated					Appear to be the remains of a large mammal – 2 fragments
	FCR	River Cobble						Found along the beach in 5 fragments per square meter.

Surface Debitage			
Amount	Material	Interior/Exterior	Length (cm)
2	Vitrophyre	Interior	< 3
3	Vitrophyre	Interior	> 3
2	River Cobble	Exterior	< 3
11	River Cobble	Interior	< 3
1	Chalcedony	Interior	> 3
2	CCS	Exterior	< 3
4	River Cobble	Interior	> 3
15	River Cobble	Exterior	< 3
2	River Cobble	Exterior	> 3
4	River Cobble	Exterior	> 3
1	Basalt	Interior	> 3

Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Shovel Probe 1										
1	Lithic Flake	Basalt	Complete	Interior		2	1.7	0.8	0.2	
2	Lithic Flake	Basalt		Interior		0.8	0.63	.08	0.1	
3	FCR	River Cobble							1.2	
Shovel Probe 2										
1	Lithic Flake	CCS	Dorsal	Interior		1.42	0.71	0.1	0.2	
2	Lithic Flake	CCS	Complete	Interior	Yes	2.54	1.5	0.55	0.5	
3	Lithic Flake	CCS	Dorsal	Interior		0.87	0.71	0.2	0.1	
4	Lithic Flake	CCS	Complete	Interior		1.03	0.47	0.1	0.1	
5	Lithic Flake	CCS	Complete	Interior		0.95	0.55	0.1	0.1	
6	FCR	River Cobble							3	
7	FCR	River Cobble							2	
8	Lithic Flake	Argillite	Complete	Interior		0.9	0.8	0.1	0.1	

BT-Site-7 Artifact Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface										
1	Uniface cobble	River Cobble	Complete	NA	Yes					
2	Lithic Flake	Basalt	NA	Interior	Yes	< 3cm				6 in 3X3 meter area
3	Lithic	Basalt	NA	Interior	Yes					Purple opaque
4	Fire Cracked Rock	River Cobble	NA	NA						½ artifact per square meter
Shovel Probe 1										
1	Lithic Flake	Argillite	Dorsal	Interior	no	1.4	1.1	0.1	0.1	
2	Lithic Flake	Argillite	Complete	Exterior	no	1.7	0.68	0.25	0.25	
3	Lithic Flake	Argillite	Dorsal	Interior	no	0.76	0.6	0.1	0.1	
4	Lithic Flake	Argillite	Dorsal	Interior	no	0.62	0.43	0.1	0.1	
5	Lithic Flake	Argillite	Dorsal	Interior	no	0.93	0.36	0.1	0.1	
6	Lithic Flake	Argillite	Dorsal	Interior	no	0.56	0.45	0.1	0.1	
7	Lithic Flake	Argillite	Dorsal	Interior	no	0.3	0.3	0.1	0.1	
8	Lithic Flake	Chert	Complete	Interior	no	1.1	0.71	0.25	0.1	
9	Lithic Flake	CCS	Complete	Interior	no	0.96	0.63	0.12	0.1	Red Pressure Flake
10	Lithic Flake	CCS	Complete	Interior	no	0.59	0.5	0.1	0.1	Red Pressure Flake
11	Lithic Flake	CCS	Ventral	Interior	no	0.3	0.3	0.1	0.1	Orange
12	Lithic Flake	CCS		Interior	no	0.3	0.3	0.1	0.1	Purple
13	Bone		Fragment						0.1	
Shovel Probe 2										
1	Lithic Flake	Argillite	Complete	Interior	no	3.12	1.22	0.88	0.8	
2	Lithic Flake	Argillite	Ventral	Interior	no	2.49	1.3	0.29	0.8	
3	Lithic Flake	Argillite	Dorsal	Interior	no	0.96	0.89	0.13	0.2	

4	Lithic Flake	Argillite	Complete	Interior	no	0.8	0.49	0.15	0.1	
5	Lithic Flake	Argillite	Dorsal	Interior	no	0.82	0.68	0.1	0.1	
Shovel Probe 4										
1	Lithic Flake	Argillite	Complete	Exterior	no	3.1	0.9	0.5	1.4	
2	Lithic Flake	Argillite	Dorsal	Interior	no	2.2	1.05	0.45	0.6	
3	Lithic Flake	Argillite	Complete	Exterior	no	1.1	0.6	0.49	0.1	
4	Lithic Flake	Argillite	Complete	Interior	no	0.85	0.85	0.1	0.1	
5	Lithic Flake	Argillite	Complete	Interior	no	0.72	0.5	0.15	0.1	
6	Lithic Flake	Chalcedony	Shatter	Interior	no	0.4	0.3	0.3	0.1	
7	Lithic Flake	CCS	Dorsal	Interior	no	0.98	0.79	0.15	0.2	Yellow
8	Lithic Flake	CCS	Complete	Interior	no	0.7	0.58	0.1	0.2	Orange
Shovel Probe 5										
1	Lithic Flake	Chalcedony	Complete	Interior	no	0.85	0.71	0.16	0.1	
2	Lithic Flake	Chalcedony	Complete	Exterior	no	1.95	1.45	0.6	1	
3	Lithic Flake	Chalcedony	Complete	Interior	no	1.6	0.63	0.15	0.3	
4	Lithic Flake	CCS	Complete	Interior	no	0.7	0.56	0.1	0.1	Orange
5	Lithic Flake	Argillite	Dorsal	Interior	no	0.85	0.65	0.1	0.1	
6	Lithic Flake	Obsidian	Complete	Interior	no	0.64	0.47	0.1	0.1	Pressure Flake
7	Lithic Flake	Obsidian	Ventral	Interior	no	0.5	0.35	0.1	0.1	Pressure Flake
8	Lithic Flake	Obsidian	Dorsal	Interior	no	0.6	0.35	0.1	0.1	Pressure Flake
9	Lithic Flake	Obsidian	Dorsal	Interior	no	0.3	0.3	0.1	0.1	Pressure Flake
Shovel Probe 6										
1	Lithic Flake	Argillite	Complete	Interior	no	2.65	2.1	0.3	1.5	
2	Lithic Flake	Argillite	Dorsal	Interior	no	0.97	0.72	0.1	0.4	

BT-Site-8 Artifact Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface										
Artifact 1	Unifacially flaked cobble	River Cobble				24	16	9	-	Beaked
Artifact 2	Cobble Core	River Cobble								Flaked river cobble
	Fire Cracked Rock	River Cobble	-	-	-	-	-	--	-	4 artifacts per meter squared along the beach
Shovel Probe 1										
1	Fire Cracked Rock	River Cobble							3.3	
2	Fire Cracked Rock	River Cobble							126.2	
Shovel Probe 2										
1	Lithic Flake	CCS	Complete	Interior	no	1.58	1.15	0.19	0.2	
2	Lithic Flake	CCS	Complete	Interior	no	0.81	0.5	0.11	0.1	Pressure Flake
3	Fire Cracked Rock	River Cobble							10.4	
4	Fire Cracked Rock	River Cobble							4.5	
5	Fire Cracked Rock	River Cobble							4.3	
6	Fire Cracked Rock	River Cobble							1	
7	Fire Cracked Rock	River Cobble							1.9	

BT-Site-9 Artifact Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface										
1	Anvil stone	River Cobble	Broken	-		-	-	-	-	Figure #. 7 major fragments
2	Burned Bone	Bone	Burned			-	-	-	-	Likely Historic 12+ fragments
3	Cobble Core	River Cobble	Complete			18	15.6	4	-	granitic
4	Lithic Flake	Chalcedony		Interior		< 3	-	-	-	
5	Lithic Flake	CCS		Interior		< 3	-	-	-	Biface Reduction
6	Lithic Flake	River Cobble		Exterior		< 3	-	-	-	
Shovel Probe 1										
1	Lithic Flake	Argillite	Dorsal	Interior	no	1.3	0.45	0.12	0.2	
2	Lithic Flake	Argillite	Complete	Interior	no	1.12	0.73	0.15	0.1	
3	Lithic Flake	Argillite	Dorsal	Interior	no	0.95	0.46	0.1	0.1	
4	Lithic Flake	Argillite	Ventral	Interior	no	0.65	0.5	0.1	0.1	
5	Lithic Flake	Jasper	Complete	Interior	yes	3.23	1.5	0.1	1.9	unifacially flaked along margin
6	Lithic Flake	Jasper	Complete	Interior	no	1	0.69	0.15	0.1	
Shovel Probe 2										
1	sheet metal	Iron	Rusted fragment			2.61	2.28	0.1	0.7	
Shovel Probe 3										
1	Fire Cracked Rock	River Cobble							11.9	
2	Fire Cracked Rock	River Cobble							7.8	
3	Fire Cracked Rock	River Cobble							3.2	
4	Fire Cracked Rock	River Cobble							4	
5	Lithic Flake	Argillite	Complete	Interior	no	1.42	1.06	0.3	0.3	
6	Lithic Flake	Jasper	Complete	Interior	no	0.82	0.54	0.12	0.1	Pressure Flake

7	Lithic Flake	Chalcedony	Complete	Interior	no	0.95	0.77	0.12	0.2	Pressure Flake
8	Lithic Flake	Chalcedony	Complete	Interior	no	1.33	1.09	0.25	0.3	
9	Lithic Flake	Basalt	Complete	Interior	no	1.81	1.14	0.92	0.5	
10	Lithic Flake	Argillite	Complete	Interior	no	0.5	0.3	0.1	0.1	
11	Lithic Flake	Argillite	Complete	Interior	no	0.3	0.3	0.1	0.1	
Shovel Probe 4										
1	Lithic Flake	Argillite	Complete	Interior	yes	1.78	1.2	0.28	0.2	
2	Lithic Flake	Argillite	Complete	Interior	no	2.5	1.51	0.3	0.6	
3	Lithic Flake	Argillite	Complete	Interior	yes	2.21	1.1	0.2	0.4	
4	Lithic Flake	Argillite	Dorsal	Interior	no	1.48	0.52	0.3	0.2	
5	Lithic Flake	Argillite	Ventral	Interior	no	1.5	0.95	0.2	0.2	
6	Lithic Flake	Argillite	Complete	Interior	no	1.06	0.95	0.15	0.2	
7	Lithic Flake	Argillite	Dorsal	Interior	no	1.1	0.76	0.15	0.1	
8	Lithic Flake	Argillite	Dorsal	Interior	no	1.2	0.86	0.1	0.1	
9	Lithic Flake	Argillite	Dorsal	Interior	no	0.4	0.3	0.1	0.1	
10	Lithic Flake	Argillite	Ventral	Interior	no	0.89	0.59	0.1	0.1	
11	Lithic Flake	Argillite	Ventral	Interior	no	0.5	0.3	0.1	0.1	
12	Lithic Flake	Argillite	Dorsal	Interior	no	0.4	0.25	0.1	0.1	
13	Lithic Flake	Argillite	Dorsal	Interior	no	0.35	0.15	0.1	0.1	
14	Lithic Flake	Argillite	Dorsal	Interior	no	0.25	0.25	0.1	0.1	
15	Lithic Flake	Chalcedony	Ventral	Interior	no	1.1	0.92	0.15	0.1	
16	Lithic Flake	Chert	Dorsal	Exterior	no	1.29	1.05	2.75	0.1	
17	Lithic Flake	Chalcedony	Ventral	Interior	no	0.8	0.4	0.12	0.1	
18	Lithic Flake	Chalcedony	Ventral	Interior	no	0.8	0.5	0.12	0.1	
19	Lithic Flake	Chalcedony	Ventral	Interior	no	0.4	0.3	0.15	0.1	
20	Lithic Flake	Obsidian	Dorsal	Interior	no	0.6	0.4	0.1	0.1	
21	Fire Cracked Rock	River Cobble							33	
22	Fire Cracked Rock	River Cobble							66.4	
23	Fire Cracked Rock	River Cobble							55	
24	Fire Cracked Rock	River Cobble							23	

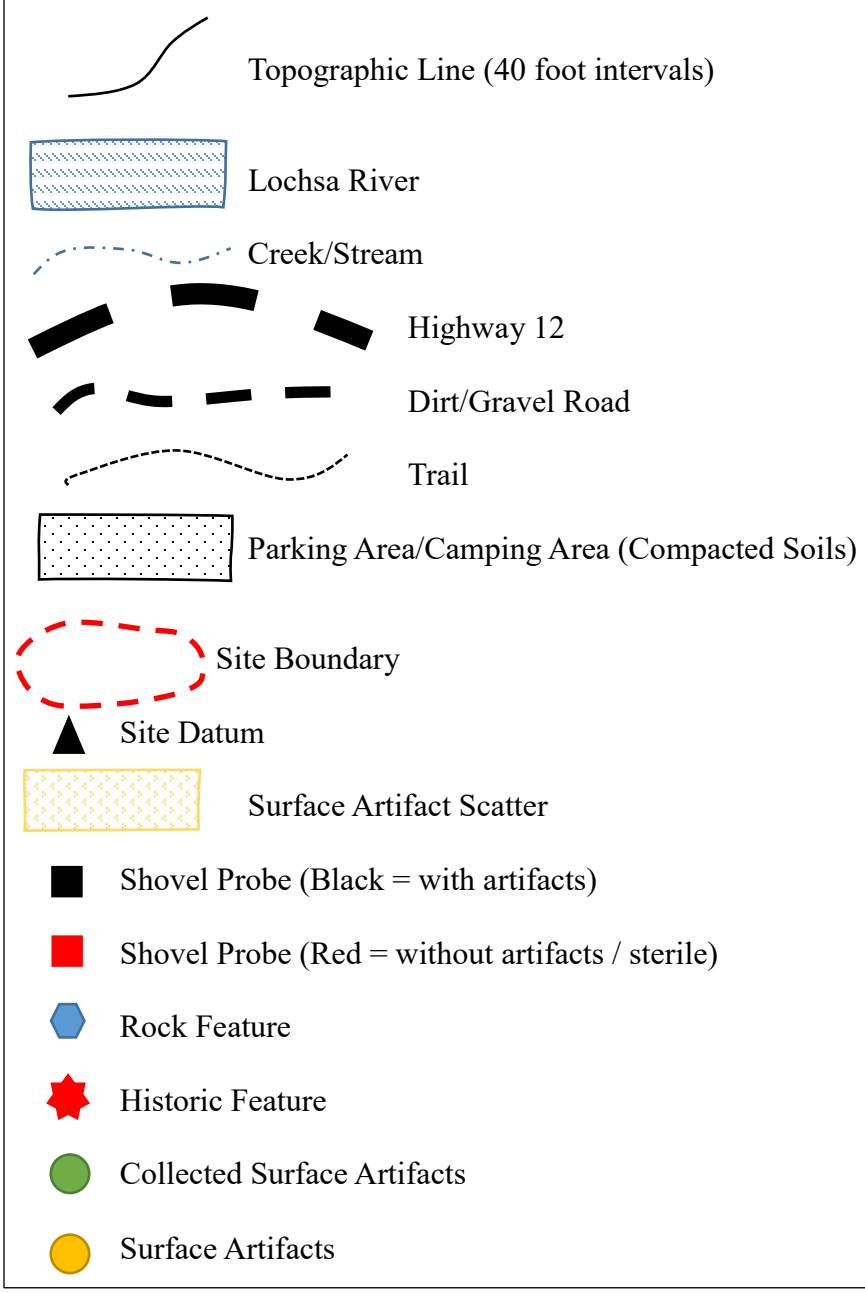
25	Fire Cracked Rock	River Cobble							7.1	
26	Fire Cracked Rock	River Cobble							5	
27	Fire Cracked Rock	River Cobble							2.8	
28	Fire Cracked Rock	River Cobble							3.2	
29	Fire Cracked Rock	River Cobble							2.2	
30	Fire Cracked Rock	River Cobble							1.6	
31	Fire Cracked Rock	River Cobble							1.3	
32	Fire Cracked Rock	River Cobble							1	
33	Fire Cracked Rock	River Cobble							0.7	
34	Fire Cracked Rock	River Cobble							0.5	
Shovel Probe 5										
1	Lithic Flake	Argillite	Complete	Exterior	no	4.32	1.1	0.72	2	
2	Lithic Flake	Argillite	Dorsal	Interior	possibly	2.96	1.96	0.25	1	
3	Lithic Flake	Argillite	Ventral	Interior	no	1.55	0.98	0.21	0.3	
4	Lithic Flake	Argillite	Dorsal	Interior	no	1.08	1.22	0.15	0.15	
5	Lithic Flake	Argillite								

BT-Site-10 Artifact Descriptions										
Item	Artifact Type	Material	Condition	Interior/Exterior	Utility	Length (cm)	Width (cm)	Thickness (cm)	Weight (grams)	Comments
Surface 1										
Artifact 1	Unifacially Flaked Cobble	River Cobble				13.5	12.5	4	-	Figure #
2	FCR	River Cobble								2 fragments
Shovel Probe 1										
1	Lithic Flake	Obsidian	Broken	Interior	no	0.3	0.3	0.1	0.1	
2	Lithic Flake	Chert	Broken	Interior	no	0.3	0.3	0.1	0.1	
3	Fire Cracked Rock	River Cobble							0.5	
4	Lithic Flake	Vitrophyre								Lost

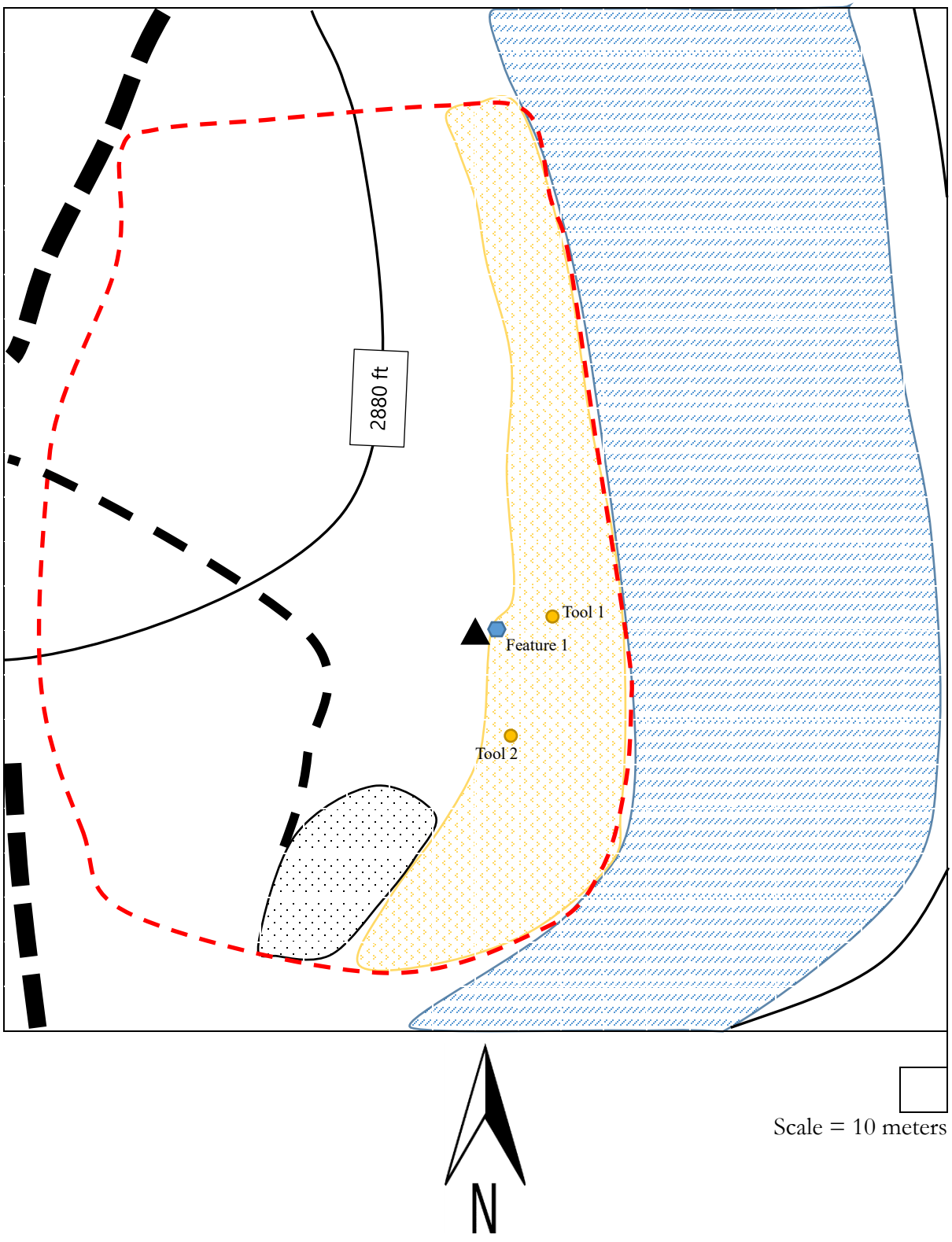
Appendix B:

Site Maps

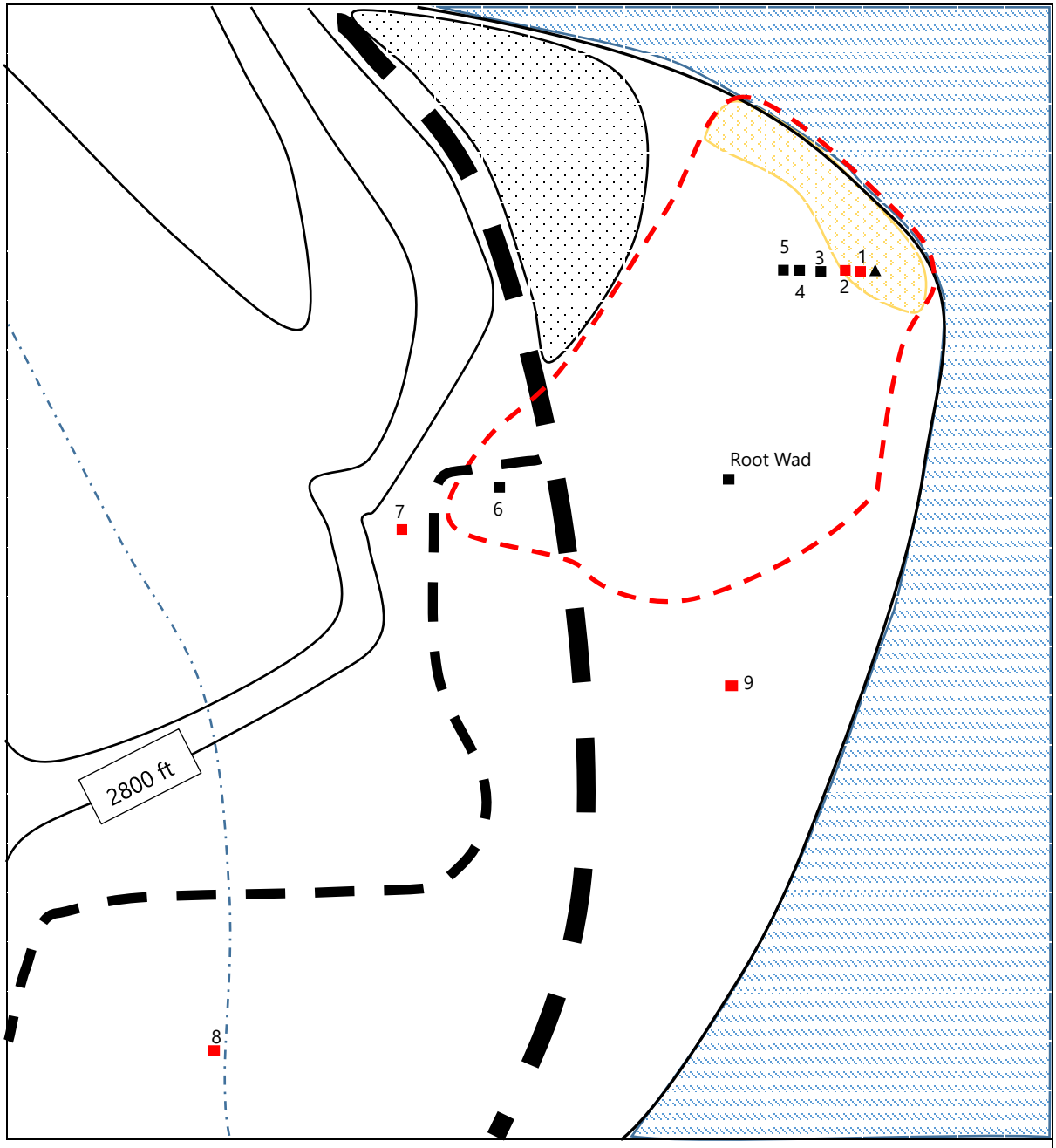
Site Map Legend



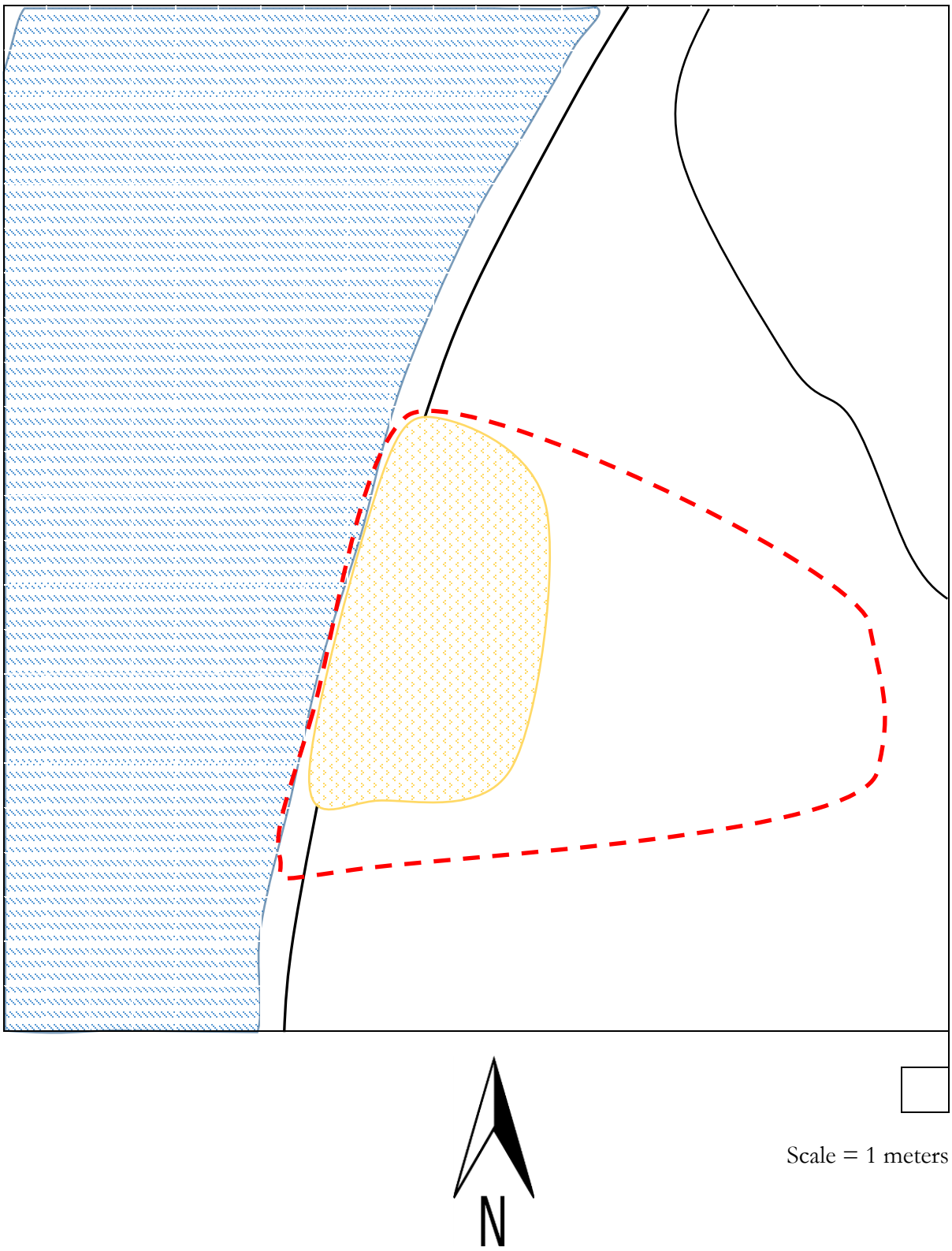
Site Map		
BT-Site-1 – Bear Mountain Flat	T. 36N R. 12E section 9	01/03/2017



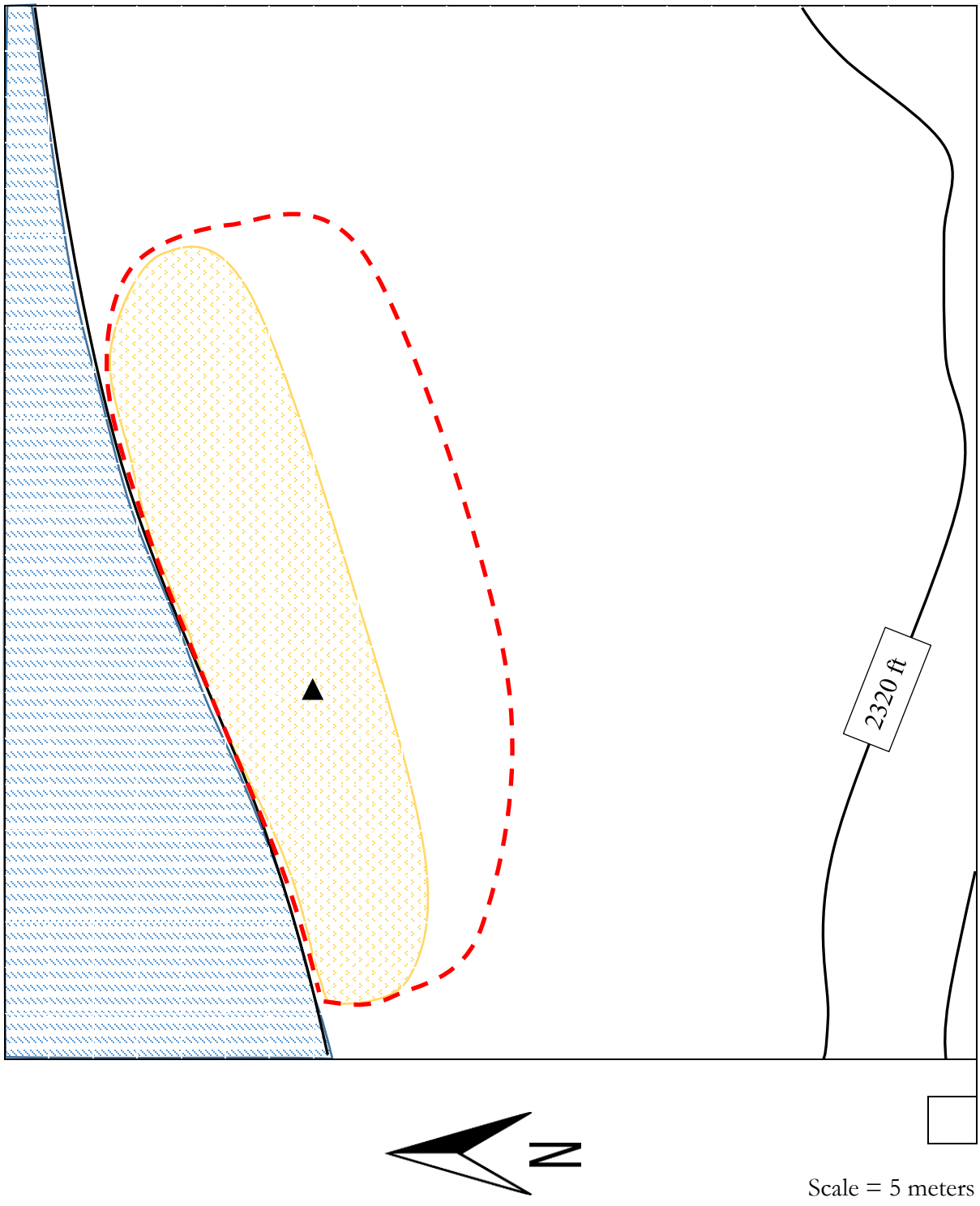
Site Map		
BT-Site-2 –Ginger Creek (10IH446)	T. 36N R. 11Esection 14	01/04/2017



Site Map		
BT-Site-3 – Old Ford	T. 35N R. 10E section 10	01/04/2017



Site Map		
BT-Site-4 – Dutch Creek	T. 35N R. 10E section 8 & 17	01/14/2017



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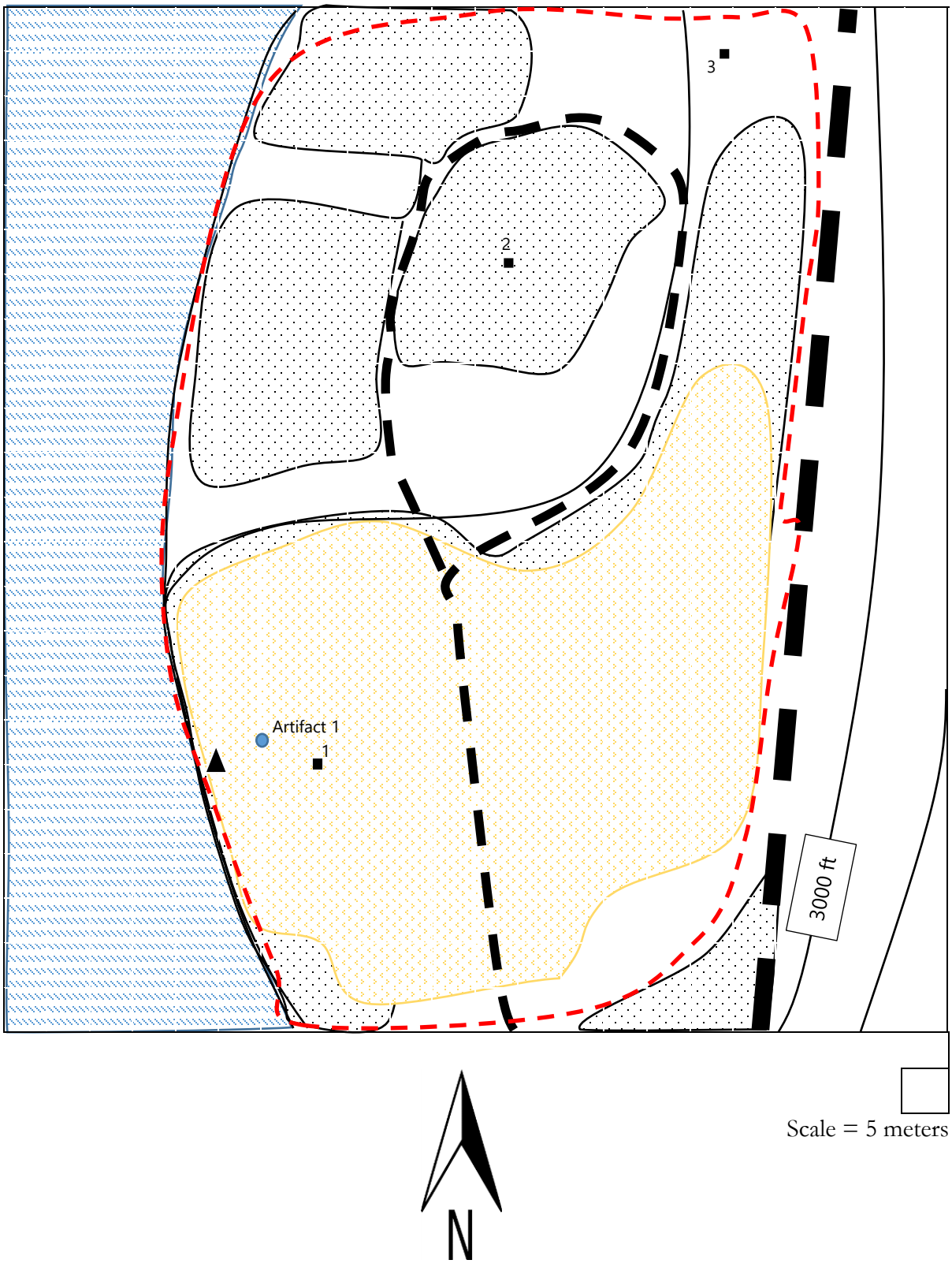
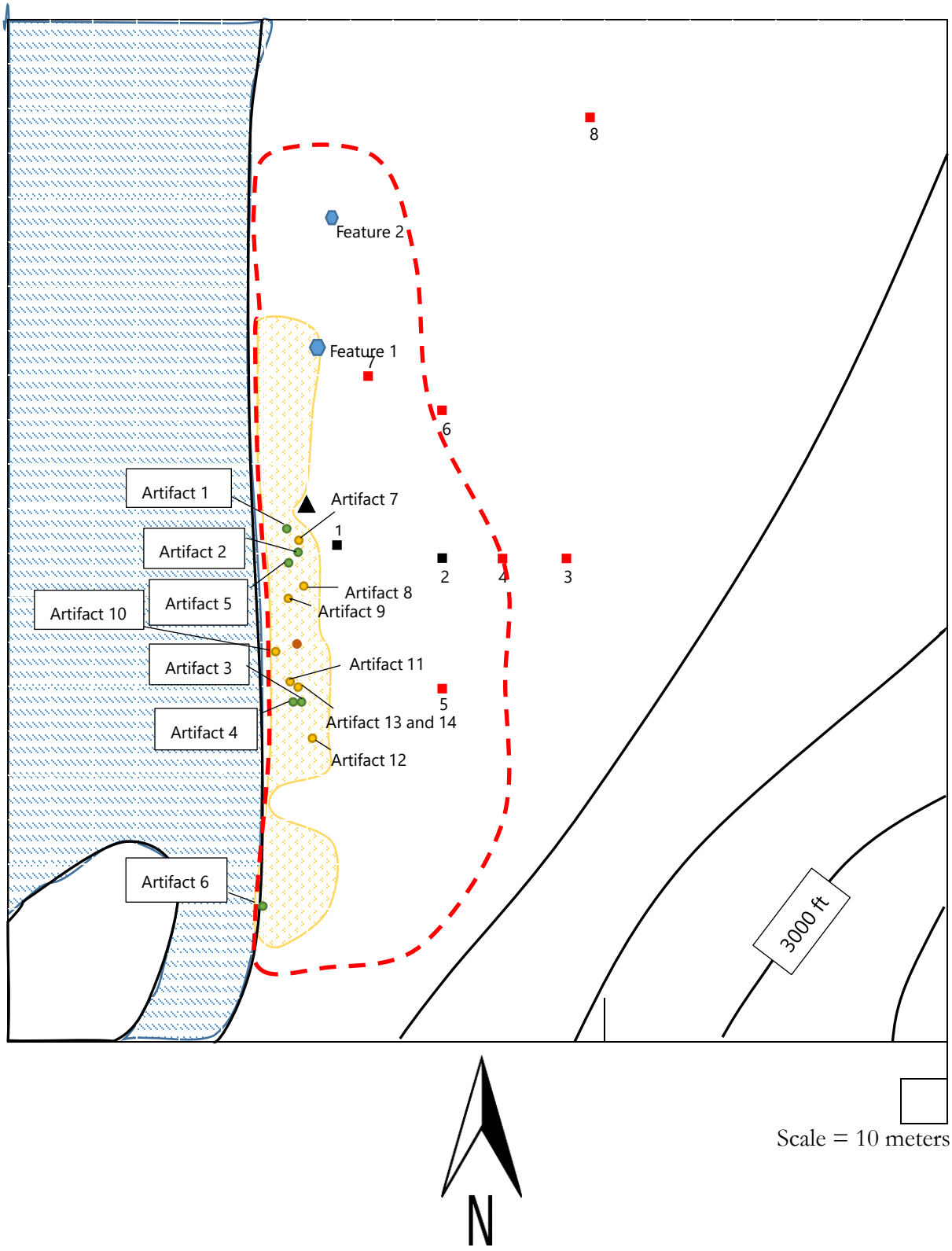
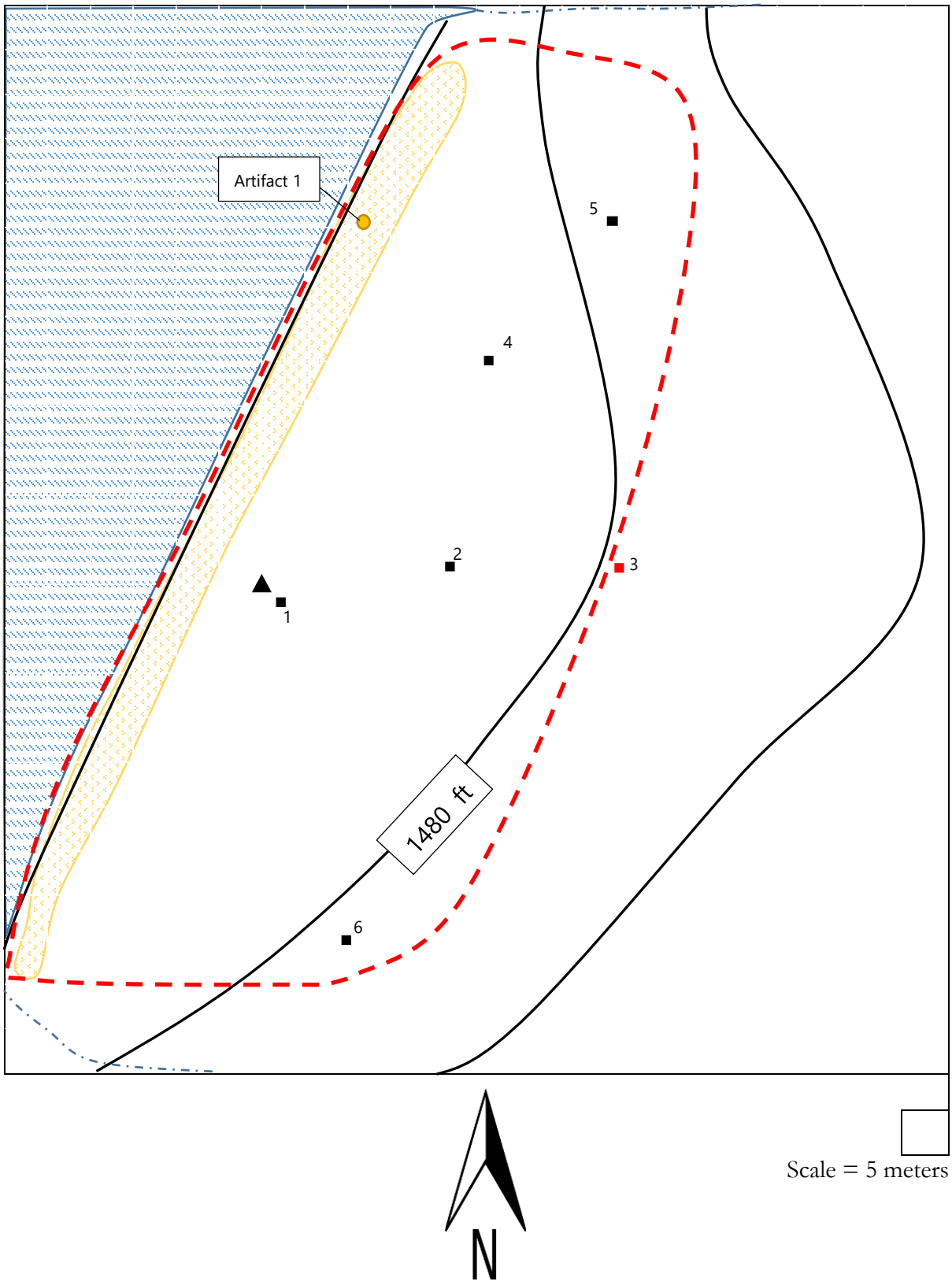
Site Map		
BT-Site-5 – Colgate Licks	T. 36N R. 12E sections 10 & 15	01/07/2016



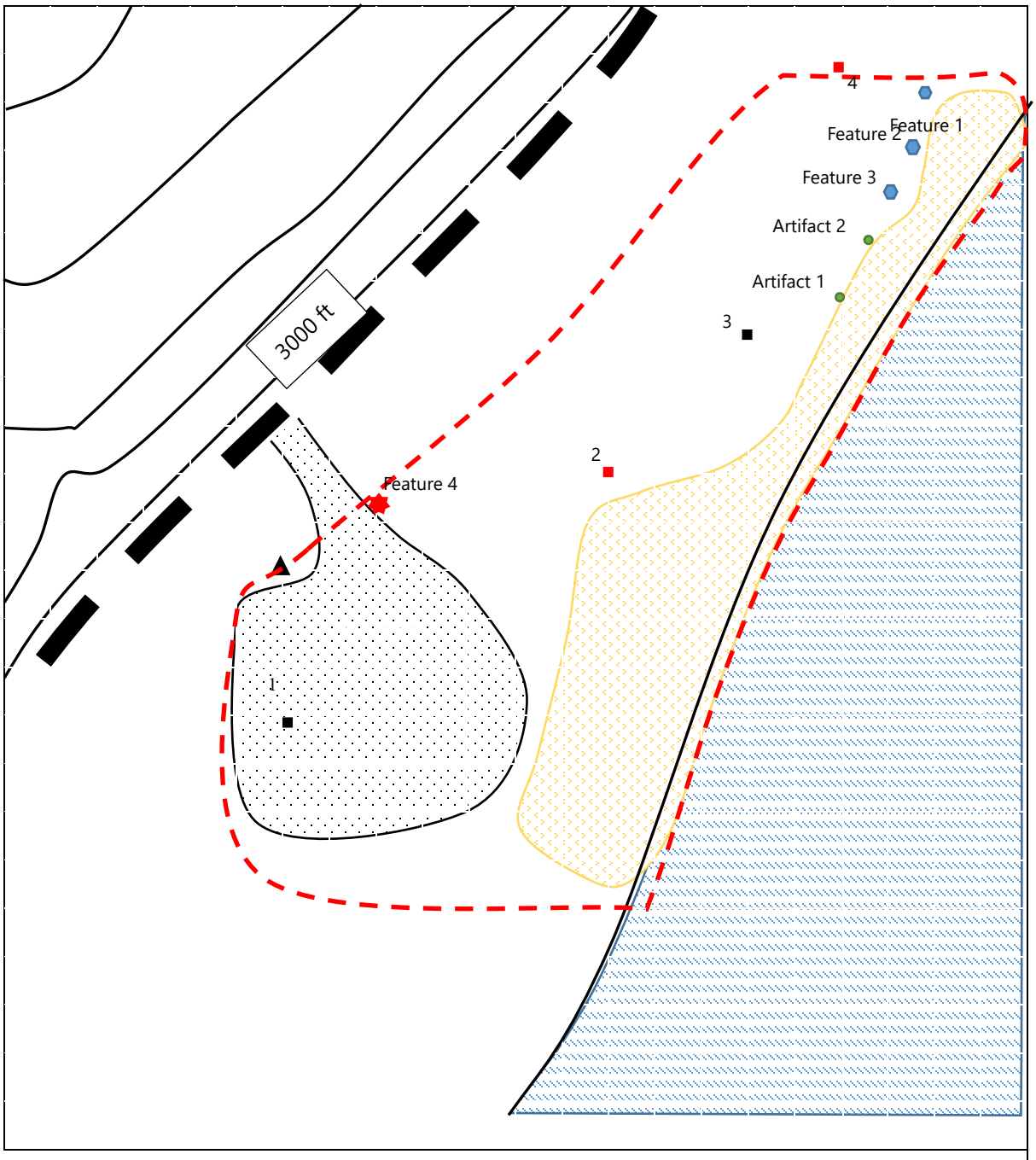
Site Map		
BT-Site-6 – Ginger Flat	T. 36N R. 11E section 14	01/07/2017



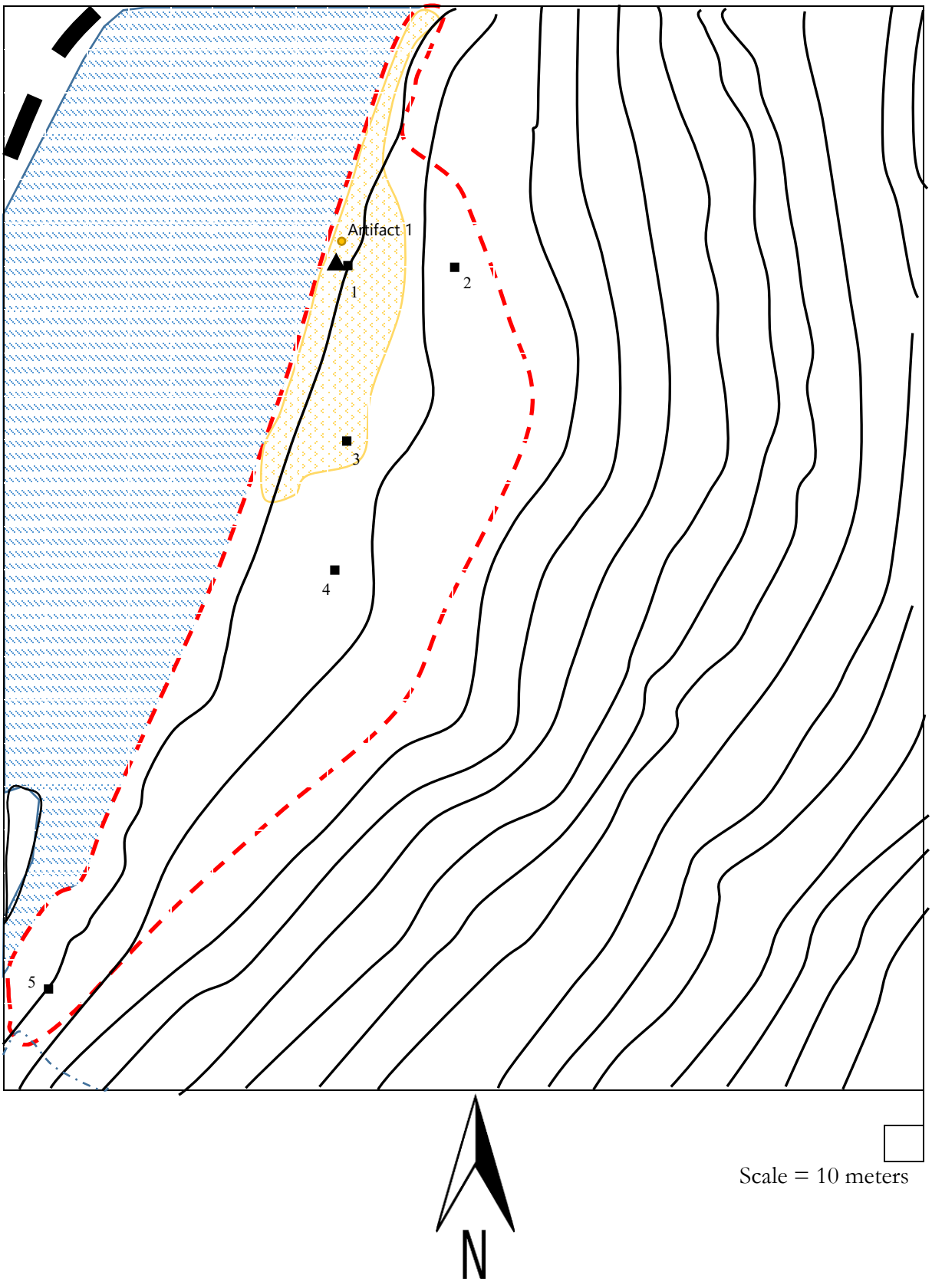
Site Map		
BT-Site-7 – Pete King Flat	T. 33N R. 7E section 33	1/11/2017



Site Map		
BT-Site-8 – Hearth Camp	T. 36N R. 12E section 14	1/12/2017



Site Map		
BT-Site-9 – Handy Creek	T. 33N R. 7E sections 22 & 23	01/12/2017



Site Map		
BT-Site-10 – Wendover Flat	T. 37N R. 13E section 35	01/13/2017