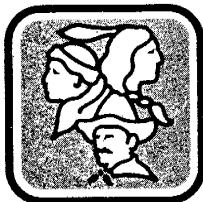
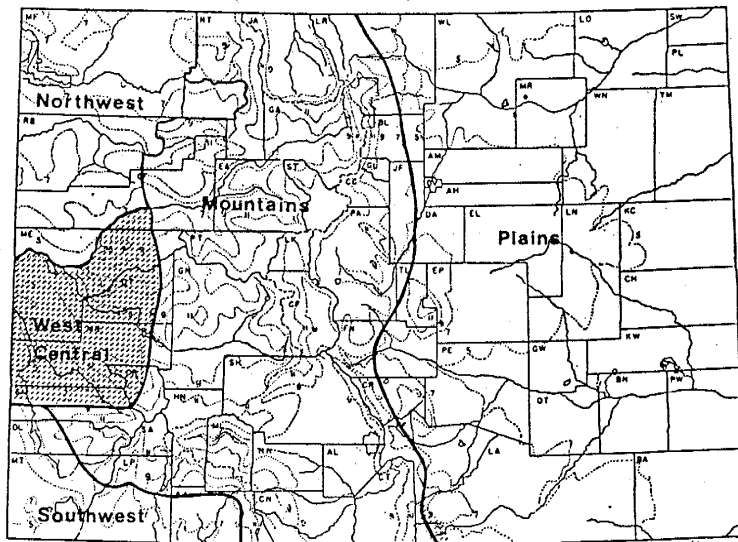


WEST CENTRAL COLORADO PREHISTORIC CONTEXT

by

Alan D. Reed



COLORADO
HISTORICAL
SOCIETY

WEST CENTRAL COLORADO PREHISTORIC CONTEXT
REGIONAL RESEARCH DESIGN

by

Alan D. Reed

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Colorado Historical Society
1300 Broadway
Denver, Colorado 80203

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PREFACE

The Office of Archaeology and Historic Preservation of the Colorado Historical Society has produced this set of reports summarizing and evaluating the known prehistory in the State of Colorado.

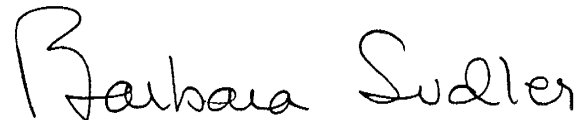
These reports present the varied cultural histories of the five distinctive physiographic regions in the State: the Plains, the Mountains, the Northwest, the West Central, and the Southwest regions, and these reports span each region's known cultural history from the earliest prehistoric period up to the historic Native American populations.

Each volume presents an introduction to a region, its geographical and environmental setting, as well as a definition of the report organization, site types, and cultural terms. The focus of each region's report is the major cultural groups which includes their cultural history, lifeways, and cultural processes. The nature of the archaeological evidence in each region is also carefully evaluated.

The overall purpose of these reports is to provide a background for the current archaeological knowledge in Colorado, and to give research direction towards the protection and preservation of archaeological resources in Colorado. These reports can provide guidance for state and federally mandated cultural resource management, as well as direction for pure research.

The development of these reports is a direct outcome of the "RP-3" (Resource Protection Planning Process) effort led by OAHF archaeologist Judi Halasi, to whom we are indebted for her two years of hard work. The Colorado Council of Professional Archaeologists, Paul Nickens, President, also strongly supported this project and shared with each author the results of CCPA's Regional Research Design efforts of 1979-1981. This in turn had roots in both State Archaeologist Bruce Rippeteau's 1977 Statewide Prehistoric Overview and Colorado State University archaeologist Elizabeth Morris's 1978 Plains Conference Symposium on Colorado Archaeology.

We hope that these volumes will stimulate an awareness of, and appreciation for, the fragile archaeological resources of Colorado, and for the tedious and difficult science required to investigate, evaluate, and interpret the evidences of our past Coloradans and their worlds.



Barbara Sudler
President
State Historic Preservation Officer

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FOREWORD

This document is the Final Report for the West-Central Prehistoric Context research design project. It has been prepared under contract (Contract No. 83-046-00-AR) between the State Historical Society and Nickens and Associates.

The purpose of this manuscript is to describe the culture history of the aboriginal occupation of West-Central Colorado, evaluate the quality of the data base, and to define appropriate research problems. This will hopefully provide direction for future archaeological investigations, and will aid in assessing the research potential of archaeological sites. Some of the interpretations herein presented may not be shared by all other archaeologists. If this document inspires published critiques, especially in regional archaeological journals, then our understanding of the region's prehistory will surely be furthered.

Many archaeologists have contributed to this effort, and their help is appreciated. Many of the research problems were originally identified by members of the Colorado Council of Professional Archaeologists (CCPA) Regional Research Design committee. Some even volunteered their time and energy to prepare papers on aspects of the CCPA research design project; the efforts of Harley Armstrong, Kim Kreutzer, Kendall Miller and Brian O'Neil are acknowledged. Federal archaeologists John Crouch, Julie Euchner, Polly Hammer, Douglas Scott, and Paul Williams were most cooperative and provided access to site files and manuscripts. Finally, special thanks are due the reviewers of this report. Thomas Babcock, Linda Gregonis, Polly Hammer, Curtis Martin, Brian O'Neil, Paul Nickens, Douglas Scott, and Laura Viola provided helpful comments and criticisms of a draft version of this report. As is evident from these acknowledgments, quite a large number of people have expended considerable effort in the production of this manuscript. This is particularly appropriate for a report of this nature. It is hoped that many archaeologists will continue to be concerned with the research design, so that it will constantly evolve and change as our data base expands and our understanding of the aboriginal occupation of West-Central Colorado grows.

Alan D. Reed

1.0 Regional Framework. In this section the geographic area encompassed by the West-Central Colorado study region is described, and the cultural units archaeologically defined for that area are enumerated.

1.1 Definition of the Project Area. The boundaries demarcating the West-Central study region are physiographic, political and cultural in nature. As shown in Figure 1, the western boundary is the Colorado/Utah state line. The southern boundary is formed by the northern limit of the Anasazi culture, presently assumed to be an east to west oriented line passing through the town of Slickrock at the base of Joe Davis Hill in the Disappointment Valley westward to the Utah border and eastward to the San Miguel and San Juan Mountains that form the headwaters of the San Miguel and Uncompahgre Rivers. The eastern boundary of the study area follows the eastern limit of the Colorado Plateau physiographic province, where the Colorado Plateau meets the Southern Rocky Mountain physiographic province (Hunt 1967). The study area's northern boundary follows the Colorado River, as it extends from the Utah border eastward to the town of New Castle, where the river passes up into the mountain province through the Grand Hogback.

The West-Central study region, being situated on the Colorado Plateau, is characterized by relatively high elevations, extensive horizontal sedimentary rock formations, dissected to form mesas and canyons, and a semiarid climate. Two extensive topographic features dominate the area--the Grand Mesa and the Uncompahgre Plateau. The Grand Mesa is a large flat-top mountain in the northeastern portion of the study area that in places exceeds 11,000 feet (3353 m) in elevation. It is oriented east to west, and is capped by Tertiary-aged igneous material. Southwest of Grand Mesa is the Uncompahgre Plateau. The Uncompahgre Plateau is oriented northwest to southeast, and attains an elevation of 10,000 feet (3048 m) at its southern extreme. The Grand Mesa and the Uncompahgre Plateau are drained by the Uncompahgre, Gunnison, San Miguel and Colorado Rivers and their tributaries. The major rivers form in many places broad valleys of relatively low elevation, which are warmer and drier than the uplands. These major river valleys represent present and probably past human population centers and routes of travel. Southwest of the Uncompahgre Plateau is a series of northwest-trending anticlines, with sandstone and shale formations overlying salt and gypsum formations. The low density and high plasticity of the salt and gypsum strata have resulted in various geologic contortions, forming long fault valleys such as Gypsum Valley and Paradox Valley (Chronic and Chronic 1972).

In short, the environment in the West-Central study area is diverse. Comparatively warm and dry lowlands, covered by desert shrubs, are not distant from the cooler and moister pinyon/juniper woodlands and alpine forests covering the flanks and summits of the Uncompahgre Plateau, Grand Mesa, and Southern Rocky Mountains. Fauna is abundant, and, while precipitation is variable, streams and rivers draining the high elevations are numerous.

1.2 Cultural Units. For descriptive and heuristic purposes, archaeologists have developed a taxonomic scheme with which to structure the culture history of prehistoric peoples. Some taxa in this framework, such as stages, traditions, and phases, refer to similarities in lifeways, as

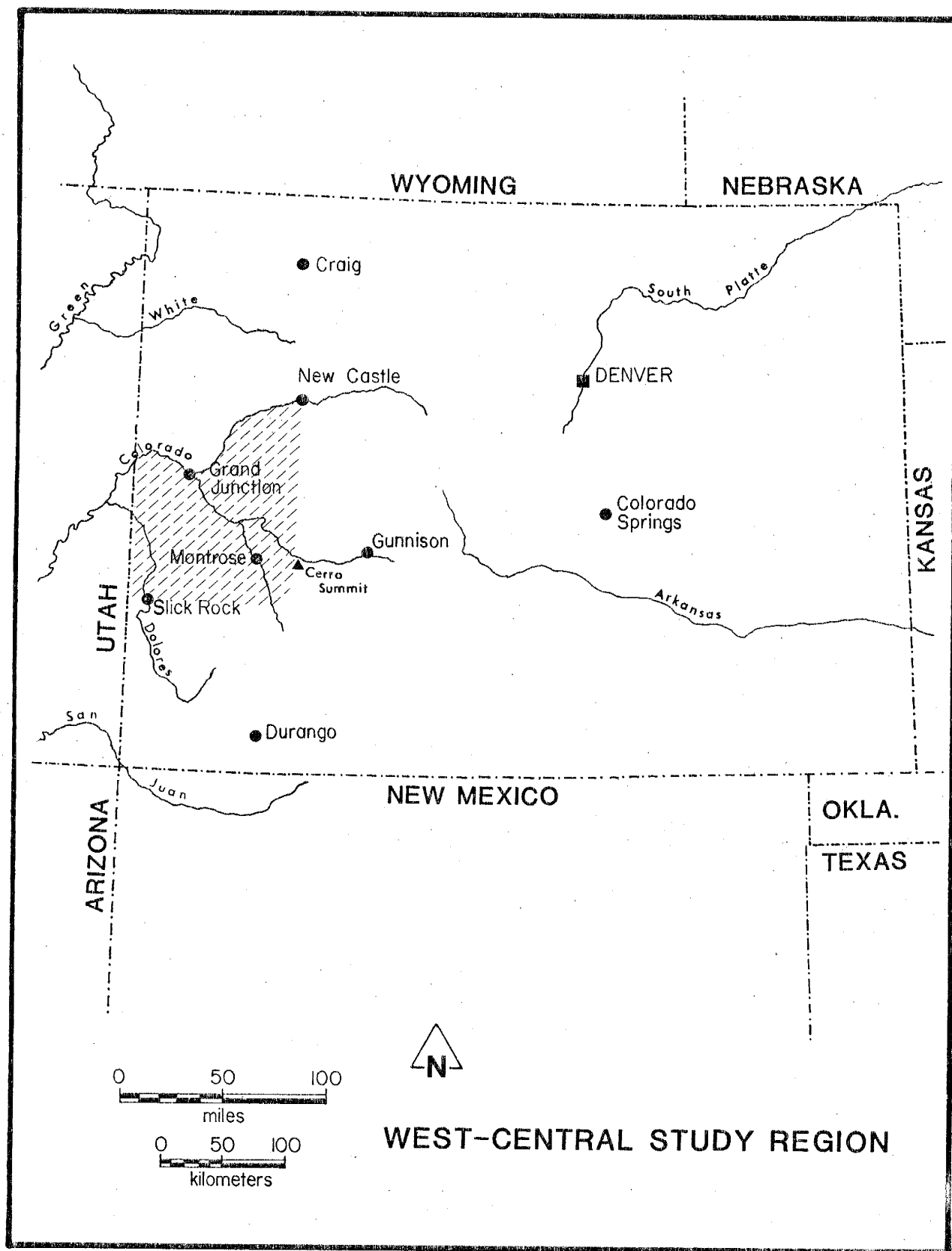


Figure 1. Map of Colorado showing the location of the West-Central Region.

evinced by similarities in material culture and settlement/subsistence systems. The aforementioned taxa are hierarchical in nature, referring to archaeological manifestations that are increasingly restricted temporally and geographically.

This manuscript will be organized by "cultural unit," which can be defined as the most specific lifeway taxonomic unit that can be archaeologically defined in a region. Some regions, such as southwestern Colorado, have been extensively investigated archaeologically, permitting the use of fine-grained taxa, such as phases, as the unit of discussion and analysis. Other areas, such as West-Central Colorado, have received much less archaeological attention, requiring that broader taxa, such as stages and traditions, be utilized. Only five cultural units can be identified in West-Central Colorado based upon present data. They are enumerated below.

1.2.1 Paleo-Indian Stage. Although archaeological evidence of a Pre-Clovis Period is extremely rare in North America and is presently absent in West-Central Colorado, it appears that peoples representative of the Paleo-Indian Stage were the first to inhabit the region. Evidence of this big-game hunting adaptation is presently found in the form of projectile points occurring as isolated artifacts or on sites with later cultural materials. The stage probably extends from approximately 10,000 to 5500 B.C.

1.2.2 Archaic Stage. As terminal Pleistocene environmental conditions were supplanted by those more similar to today's, the big-game hunting adaptation of the Paleo-Indians was replaced by one emphasizing plant collection and processing and the hunting of a wider variety of smaller fauna. Human populations evidently grew, as sites attributed to the Archaic Stage are quite numerous. The Archaic lifeway was quite enduring in West-Central Colorado, ranging from approximately 5500 B.C. to A.D. 500.

1.2.3 Formative Stage. Following A.D. 1, there occurred an important shift in the economic adaptations of prehistoric peoples in the northern Colorado Plateau. Cultigens became an important source of food, and ceramics and substantial habitation structures appeared. Traditions such as the Anasazi in southwestern Colorado and the Fremont of Utah and northwestern Colorado flourished in many areas. In West-Central Colorado, however, there is scattered evidence of cultigens, masonry structures, and ceramics, but these are rather rare, and often evince styles of architecture and types of artifacts discordant with typical Anasazi or Fremont sites. Consequently, the cultural unit describing those few sites with cultigens, masonry structures and ceramics will simply be termed the Formative Stage, making no assumptions as to cultural affiliation. The degree to which the prehistoric peoples of West-Central Colorado conformed to a Formative Stage lifeway is presently not well understood. Present indications are, however, that the transition from an Archaic Stage lifeway to a Formative Stage lifeway may not have been as complete as compared to other contemporary groups of the northern Colorado Plateau. Present data suggests that the Formative Stage dates between A.D. 500 and 1200 in West-Central Colorado.

1.2.4. Proto-Historic/Historic Stage. Following the disappearance of the Formative lifeway from West-Central Colorado, human adaptation evidently reverted to that similar to the Archaic Stage. Some archaeologists suggest that the term "Post-Formative Archaic Stage" might in fact be a more appropriate term for this stage. Most of the data obtained so far for this stage concerns the Ute Tradition. The Ute evidently entered the region between A.D. 1200 and 1400, based on linguistic and archaeological evidence. The Ute were expelled from West-Central Colorado by 1881.

1.2.5 Euro-American Tradition. Euro-Americans first entered the project area in 1776, as part of the Dominguez-Escalante Expedition. Subsequent decades saw limited use of West-Central Colorado by Euro-Americans; utilization became intense only after the gold rush to western Colorado in the 1850s, and the removal of the Utes in the early 1880s. This tradition will not be discussed in this report.

2.0 Definition of Taxa and Terms. Prior to discussing the various cultural units identified in West-Central Colorado in detail, it may be beneficial to define key taxonomic units. There exists in the archaeological literature of the region considerable variation in how these terms are used, often making comparisons of archaeological data difficult.

2.1 Spatial and Material Culture Definitions.

2.1.1 Spatial Units.

2.1.1.1 Isolated find (IF). An isolated find may be defined as one or very few artifacts, which are not thought to represent a location of patterned human activity. An archaeologist must use careful judgement in designating an isolated find, and must consider geologic factors such as erosion and deposition of soils, and the types and density of the artifacts represented. Since isolated finds seldom receive much management consideration, it is prudent to be conservative in the use of this designation, to minimize the likelihood that significant buried cultural resources, barely exposed by erosion, are lost.

2.1.1.2 Site. The term "site" refers to locations at which there are sufficient artifacts and features to indicate patterned human activity. As with isolated finds, field judgements must be made concerning the appropriateness of the designation; these judgements should consider that sites are the minimal operational unit to receive full consideration by land managing agencies. As Willey and Phillips (1958) point out, sites may vary greatly in size.

2.1.1.3 Locality. Willey and Phillips (1958:18) define localities as a spatial unit slightly larger than a site, but which is generally "not larger than the space that might be occupied by a single community or local group." Within a locality, at any given time, the cultural groups found therein will display complete cultural homogeneity (Willey and Phillips 1958). A locality may therefore be quite variable in size, ranging from a single site to a district of uncertain dimensions (*ibid.*), comprised of many sites.

2.1.1.4 Region. A region is geographically more expansive than a locality, often coinciding with physiographic features. It commonly covers an area "occupied by a social unit larger than the community, a unit to which we may with extreme trepidation apply the term 'tribe' or 'society'." (Willey and Phillips 1958:19). Regions have their own set of archaeological problems. The lands in West-Central Colorado under study here are appropriately classified as a region.

2.1.1.5 Area. This is a very large spatial unit, which may generally correspond to the concept of "culture area" used by ethnographers. The American Southwest, for example, may be considered an area.

2.1.2 Site typology. The classification of sites into types is invaluable for the analysis and management of large bodies of site data. There are primarily two approaches in the designation of site type, each

with its own advantages and disadvantages. One approach considers strictly site attributes, and the other infers site function on the basis of those attributes. A single site may therefore be classified as a "lithic scatter" or as a "limited activity area," depending on the approach used. The two approaches are discussed below.

2.1.2.1 Descriptive types. As the term implies, descriptive site types reflect the physical attributes observable on a site. To classify a site strictly according to its observable attributes has the advantage of being easily duplicated by other archaeologists, as it makes no inferences concerning past human behaviors. A site either has certain attributes or it has not. In discerning past human adaptations on a regional basis, however, it is necessary to determine the manner in which people were utilizing their environment. Whether people established long-term campsites and intensively exploited the region or whether they merely established short term campsites oriented for short term resource procurement is important in culture history reconstructions. Descriptive site typologies do not address these questions.

For descriptive site types to be meaningful, they must focus upon either very general attributes that many sites are likely to share, or upon attributes critical to specific research problems. They are by design labels, for quick reference, and cannot address all site attributes. To concern a wide range of attributes would result in a most cumbersome site typology. In this writer's view, for example, it matters little in determining a descriptive site type whether ground stone is present on a lithic scatter, but the presence of ceramics should certainly be reflected in designating site type. Twelve descriptive site types are presented below. The types were identified via a site file search conducted at the various land managing agencies in the project area.

2.1.2.1.1 Open Lithic Scatters. Sites in this category are comprised of chipped and ground stone artifacts. Lithic scatters may possess hearths. These sites are not protected by natural overhangs.

2.1.2.1.2 Sherd and Lithic Scatters. These open sites yield chipped and ground stone artifacts in association with one or more potsherds.

2.1.2.1.3 Rock Art. Rock art in West-Central Colorado consists of petroglyphs and pictographs. Rock art is frequently found with no association of artifacts or structures. On occasion, however, it is found in possible association with artifact scatters; in these cases, the type Rock Art should be used in conjunction with the other appropriate site type.

2.1.2.1.4 Rockshelter. This type includes sites with a scatter of lithic artifacts situated under a natural overhang. They may possess hearths and other small features.

2.1.2.1.5 Rockshelter with Ceramics. This type is the same as a Sherd and Lithic Scatter, only is situated under a natural overhang.

2.1.2.1.6 Rockshelter with Rock Art. This site type evinces sheltered cultural deposits and artifacts in apparent association with rock art.

2.1.2.1.7 Rockshelter with Masonry. A few rockshelters in the project area contain masonry walls. These appear to function as retaining walls, room dividers or bases for brush structures. They are not complex, and do not form rooms or granaries.

2.1.2.1.8 Masonry Structure. There exists primarily three types of masonry structures in West-Central Colorado. The most prevalent type is comprised of small circular structures, measuring approximately 2 to 4 m in diameter and standing less than a meter high. These structures are found singly or in small numbers, at scattered locations throughout the project area. The other type is rectangular in configuration. Structures of this type also have low walls, and generally measure approximately 3 m by 4 m. While this type too has a broad distribution, rectangular structures with contiguous rooms are confined to the West End of Montrose County. These sites appear generally similar to pueblos, as evinced by names such as Cottonwood Pueblo and Tabeguache Pueblo. The final type is comprised of small semicircular stone structures that may have functioned to conceal a hunter from his quarry. This site type is poorly represented.

2.1.2.1.9 Wickiups. Wickiup sites have standing or collapsed brush structures, often in association with a scatter of artifacts. They consist of a conical superstructure of poles, and usually stand 1.5 m to 2 m in height and are approximately 2 m to 3 m in diameter. Some wickiups are free-standing and others incorporated a living tree for support.

2.1.2.1.10 Tree Platforms. These are actual platforms, built in trees of poles and brush. Some are located near game trails, suggesting that they were used in large game hunting. They are extremely scarce; most of the documentation for these sites was collected in the 1930s (Huscher and Huscher n.d.).

2.1.2.1.11 Brush Fences. This site type is poorly represented in West-Central Colorado. Evidence for this type is recorded in the Huscher's 1939 field notes (Huscher and Huscher n.d.); they indicate that these brush fences may have been used in driving large game animals.

2.1.2.1.12 Sweat Lodges. This site type is also poorly represented in West-Central Colorado. It consists of small conical huts, perhaps 1 to 2 m in diameter and 1 m in height, and may be associated with external burned rock concentrations. Sweat lodges have been observed on the Uncompahgre Plateau by some archaeologists (e.g. Thomas Babcock and Douglas Scott, personal communications).

2.1.2.2 Functional site types. This site typology goes beyond the mere description of important site attributes and attempts to classify sites on the basis of their role in prehistoric life. Functional site types are commonly used in West-Central Colorado, but there is quite a variation in the criteria employed for classification. One functional group, including kill sites, hunting blinds, and quarries, represents

extractive task sites, at which people gather and process specific raw resources for subsequent utilization, but do not engage in the full gamut of domestic activities. Another functional group includes sites that served as habitation locales. Habitation sites are settlements which Chang (1962:29) defines as "any place occupied by one or more individuals for one or more nights, for any purpose that falls within the ordinary, expected, and predictable round of activities of the society in question." Such activities may include the preparation and consumption of foodstuffs and the manufacture of tools. Habitation sites are often a central place from which hunting or collecting parties emanate to engage in extractive tasks. Ceremonial sites may also be considered a functional group, but to date, none have been identified in West-Central Colorado.

The distribution of extractive-task sites and habitation sites differs. The former site type will likely be situated either at the location of the exploited resource or at a location nearby, perhaps one offering a vista overlooking the desired resource. Decisions regarding placement of habitation sites, on the other hand, are more likely to take into consideration other factors than the distribution of a single resource. Factors may include gentleness of slope, quality of shelter, and propinquity of fuel, water, and a variety of food resources. Artifact assemblages are also likely to vary between the two functional groups. Extractive-task sites likely will contain fewer tool types than habitation sites, the tool types being dependent upon the type of resource being collected. Habitation sites are likely to possess a more diverse artifact inventory, one which includes relatively immobile artifacts such as manos and metates. Habitation sites are also more likely to possess features such as fire-hearths.

Toll (1977), in his thesis on the archaeology of the Dolores River in West-Central Colorado, devised a polythetic model for distinguishing habitation sites from extractive-task or limited activity sites, requiring that a site display a number of attributes in order to be confidently classified. Toll (1977:46) selected the following attributes as indicative of habitation sites, and required the possession of at least three for group membership: prepared tools, ground stone, fire, flat area, overhang, structure, or ceramics. Other schemes have considered some of the above criteria, in addition to flake length, diversity of tool types, and site size (Burgess et al. 1980).

It is not considered appropriate to herein suggest a specific method for determining functional site types. The methods discussed are useful, but surely do not represent the ultimate in means of discerning this important facet of prehistoric human behavior.

2.1.2.3 Application of typologies. Efforts should be made to apply both descriptive and functional site types to any site under investigation. Descriptive types should be consistent with regional taxa. Functional types should be asserted to provide insight into site use, but the criteria employed should be expressed. Consideration of functional types should include those types formulated by the Colorado Preservation Office for the Cultural Resources Database.

2.1.3 Social Space.

2.1.3.1 Activity area. An activity area is a specific location where an individual or a small number of people conducted a certain task or a sequence of related tasks. Activity areas occur within sites.

2.1.3.2 Site territory. This area is defined as "the territory surrounding a site which is exploited habitually by the inhabitants of a site" (Higgs and Jarman 1975:8). For hunting and gathering groups, the site territory is usually an area which lies within a two-hour walk from the site (ibid.). The site territory is differentiated from the "site catchment" which is the total area from which the contents of a site have been derived. It also differs from a locality, in that it is exclusive of other sites.

2.1.3.3 Annual territory. The combination of site territories exploited by a band during a year comprises its annual territory. Bands move within an annual territory on a seasonal basis, in accordance with the availability of certain desired resources. In cultures of rather simple social organization, annual territories of differing bands probably overlapped somewhat.

2.1.4 Material culture (artifacts). An artifact is an item that has been deliberately modified, either through a manufacturing process or by actual use for a specific purpose (Eddy et al. 1983). The term includes both prepared tools and flakes, the latter perhaps representing waste, but which still shows specific attributes resulting from intentional modification. Stone brought into an archaeological context but not modified, and other similar materials, such as plant parts, scrap animal bones and pollen, are regarded as "ecofacts."

2.1.4.1 In situ artifacts. Artifacts left in their original context are particularly important, as they can provide important data concerning the activities areas at a site.

2.1.4.2 Assemblage. An archaeological assemblage refers to the total artifact inventory of a specific culture unit within a site. Archaeologists typically recover only a sample of an assemblage, due to destruction of perishable materials, erosion, and sampling of subsurface deposits.

2.1.5 Material culture (architecture). Prehistoric architectural sites are uncommon in West-Central Colorado. Nearly all are surface structures, in the form of circular or rectangular masonry structures or brush wickiups. Pit structures and sweat lodges may also be present, but published accounts are presently not available.

2.1.5.1 Circular masonry structures. These structures are the most common in the project area. They are built of unmodified sandstone blocks, and usually measure three to six meters in diameter. Wall height seldom exceeds one meter; this and the general paucity of rubble has led to the assumption that original wall heights were quite low, providing support for a horizontal pole roof. Interior features are

infrequent, consisting primarily of firehearths. They usually occur singly or in small numbers.

2.1.5.2 Rectangular masonry structures. Less common than circular masonry structures, rectangular masonry structures appear to have a similar geographic distribution, sometimes occurring on the same site as their circular counterparts. Rectangular masonry structures infrequently consist of a series of contiguous rooms. These latter, pueblo-like structures appear to be confined to the southwestern portion of the project area in western Montrose and possibly San Miguel Counties. Excavated rectangular structures, such as Tabeguache Pueblo (Hurst 1946) and Cottonwood Pueblo (Hurst 1948) appear to have low walls, possibly not exceeding 1.2 m in height (Hurst 1948). Floor features are not common, perhaps consisting of unlined firehearths. Rooms measure up to 3 m by 6 m (Hurst 1948).

2.1.5.3 Pit structures. Subterranean or partially subterranean dwellings are reported from three locations in West-Central Colorado. One reported pithouse was excavated at 5MN191, the Paradox Valley Site (Kasper 1977), but has never been adequately documented. A "possible" pithouse which was recorded by the University of Colorado in a 1963 inventory of the Colorado National Monument evidently consists of a depression with no associated artifacts. The Grand River Institute has recently excavated a pit structure near Battlement Mesa. The structure is circular, and measures 4 m in diameter and 80 cm in depth. It has a central roof support post and a central firepit (Curtis Martin, personal communication).

2.1.5.4 Wickiups. Wickiups are brush habitation structures. They typically measure approximately 2 m in diameter and stand 1.5 to 2 m high. Boughs and possibly other materials were placed over a pole superstructure, which is usually conical in shape. Interior firehearths and juniper bark bedding are sometimes present, as are extramural hearths.

2.1.5.5 Miscellaneous structures. Included in this category are sweat lodges, brush tree platforms, game-drive fences, hand and toe holds pecked into cliff faces, and hunting blinds. These structures are very uncommon in West-Central Colorado.

2.1.5.6 Features. Features are man-made non-portable artifacts. They frequently are items such as hearths, cists, or burial pits that can occur within larger structures. They usually have specific functions.

2.2 Synthetic Units. The synthetic units employed by archaeologists to structure archaeological data are described below. The terms and their definitions are primarily based upon Willey and Phillips' (1958) scheme, and are presented here to facilitate consistency of use in future archaeological manuscripts.

2.2.1 Stage. A stage is a synthetic unit implying similarity of cultural content over a very broad area, incorporating many local and regional sequences. It implies general similarities in lifeways and the material culture utilized in the execution of those lifeways; it does not imply temporal contemporaneity. A stage may appear or disappear from

one region or area at a different time than in another. Stages identified in West-Central Colorado include the Paleo-Indian, Archaic, Formative, and a Post-Formative Archaic or Proto-historic/Historic Stage.

2.2.2 Tradition. Willey and Phillips (1958:37) define tradition as "a (primarily) temporal continuity represented by persistent configurations in single technologies or other systems of related forms." This definition emphasizes persistence or evolution of certain archaeological traits through time, in a geographically limited area. Traditions are commonly divided into phases to mark plateaus in cultural change. The only prehistoric tradition identified in West-Central Colorado at present is the Ute Tradition. Other traditions are likely to be defined for the region as the data base grows.

2.2.3 Phase. A phase is a synthetic unit which denotes a considerable similarity of cultural content, occurring in a limited geographical space and in a brief period of time. Definition of phases requires a strong regional data base. Phase sequences have been developed for West-Central Colorado; their usefulness will be discussed in subsequent portions of this manuscript.

2.2.4 Period. Periods are units of time. No similarity in cultural content or geographical space is implied in the use of this term.

2.2.5 Component. This term refers to a single unit of very small temporal span, representing the activities of a single cultural group within a single site. Sites may have multiple components, if stratified or if discrete horizontal concentrations, representing temporally and/or culturally different occupations, are present.

2.3 Lifeway Descriptors.

2.3.1 Settlement/Subsistence Patterns. These patterns are quite complex, being intimately related to social organization, technology, and other systems comprising culture. They refer to the manner in which economically important resources are procured, whether through seasonal wanderings from maturing resource to maturing resource, or through sedentary villages, from which procurement forays emanate. The study of settlement and subsistence patterns provides important diachronic and synchronic data, which permit the development of cultural ecological models of human adaptation in the region. These models are in turn important in the study of culture process.

2.3.2 Technology. Technology may be defined as a complex of learned behavior from which arises material culture. Since material culture comprises the bulk of recovered archaeological data, its study is of great importance to archaeologists. Technological items, as Eddy et al. (1983) point out, provide a shield between people and their natural environment, in the form of tools, shelter, clothing, and ceremonial objects. The material culture of a group is closely tied to other cultural systems such as social organization and settlement/subsistence systems.

2.3.3 Demography. The quantitative study of human populations, gener-

ally in terms of group composition, distribution, and population levels, is subsumed under this topic. Synchronic and diachronic demographic fluctuations, and their relationship to changing environmental conditions, are of major concern in West-Central Colorado.

2.3.4 Social Organization. The study of the social organization of prehistoric cultures in West-Central Colorado is generally limited to analysis of political organization and residential social groupings. Other aspects of social organization, such as religious organization and economic social organization, are not major topics due to the rather simple nature of social organization characteristic of the project area's prehistoric inhabitants.

2.3.5 Inter-Regional Interactions. There exists considerable evidence that the prehistoric inhabitants of West-Central Colorado had contact with peoples from other regions. This contact may have been in the form of trade, interaction as a result of fluid group membership which is characteristic of band level social organization, or actual population movements. Much of the data indicative of foreign relations is in the form of seemingly anomolous rock art styles and ceramic types manufactured hundreds of miles distant.

3.0 Cultural Units

3.1 Paleo-Indian Stage. 10,000 B.C. to 5500 B.C.

3.1.1 Paleo-Indian Culture History. The date of man's first entry into the New World has long been a topic of considerable debate among archaeologists. Some, such as MacNeish (1976) have concluded that human occupation of the New World may have begun approximately $70,000 \pm 30,000$ years ago. While scientists analyze MacNeish's and others hypotheses, it is certain that sites of such antiquity are extremely rare, and that it was not until the end of the Pleistocene at approximately 11,000 B.C. that humans occupied the western United States in appreciable numbers. The body of archaeological data pertaining to the early, so-called Pre-Clovis Period appears to be slowly growing, however, so perhaps components attributable to the period may someday be identified in West-Central Colorado.

The Paleo-Indian Stage is well established in archaeological literature. Much research has been directed at sites dating to the stage, which has permitted the identification of traditions, and in some cases, even finer synthetic units. Three traditions have been identified in the Paleo-Indian Stage in the western United States; these are the Llano or Clovis Tradition, the Folsom Tradition, and the Plano Tradition. They all represent human adaptations to terminal Pleistocene environments, with an apparent emphasis upon large game procurement.

The earliest of the three traditions is the Llano Tradition. It is characterized by a unique type of lanceolate, fluted projectile point, known as the Clovis point. Clovis points have been found in association with the remains of mammoth at several sites, suggesting that these huge beasts may have comprised a significant portion of the diet. Radiocarbon dates suggest that the Llano Tradition spanned between 10,000 and 9,000 B.C.

The Llano Tradition was in turn supplanted by the Folsom Tradition. The Folsom Tradition has been dated between approximately 9000 to 7000 B.C. Sites attributed to the Folsom Tradition are more numerous and evidence a wider geographic distribution than Llano Tradition sites. Folsom assemblages have been discovered in association with now extinct forms of bison, suggesting subsistence emphasis on large herd animals. Particularly diagnostic of Folsom Tradition assemblages are Folsom projectile points, which are characteristically finely crafted, fluted lanceolate points.

Subsequent to the Folsom Tradition is the Plano Tradition, the third and final manifestation of the Paleo-Indian Stage. Projectile point styles produced during the Plano Tradition show more regional variation and typological differentiation. All types are, however, lanceolate in form, and show a high degree of craftsmanship. Plano Tradition projectile points have been found in association with forms of modern fauna, such as antelope and bison. Plano tradition sites have been dated between 7000 and 5500 B.C.

3.1.2 Paleo-Indian Lifeway. The Paleo-Indian Stage represents an

efficient and enduring adaptation to terminal Pleistocene environments. Cool and possibly moist conditions, characterizing the Pleistocene Epoch and the Wisconsin Age, began to give way to warmer and dryer conditions approximating modern conditions. According to Martin and Mehringer (1965), this change transpired in a relatively brief period of time, and resulted in shifts in vegetation zones and possibly in the extinction of certain forms of Pleistocene fauna. While the species of flora and fauna exploited by the Paleo-Indians may have changed through time, basic life-ways apparently remained rather stable. Groups were organized at the band level, and evidently practiced transhumance, moving throughout an annual territory exploiting maturing resources. Large game appears to have been a major exploited resource, although plants were undoubtedly an important part of the diet as well. The material culture reflects the mobile, big-game hunting lifestyle of the Paleo-Indians; tool kits are generally suited for animal killing and processing, and habitation structures are uncommon or unknown. Shelters of some sort were no doubt constructed, however, as such are virtually biological necessities in temperate regions, but were probably made of brush and used on a short term basis.

3.1.3 The Paleo-Indian Stage in West-Central Colorado. There are presently only hints of the existence of Paleo-Indian components in West-Central Colorado. These include limited but definite reported surface finds of projectile points diagnostic of each of the three Paleo-Indian traditions. To date, however, no definite Paleo-Indian components have been identified. The Paleo-Indian artifacts identified in West-Central Colorado are all projectile points. Some may occur as isolated finds, but most have been discovered on sites yielding Archaic Stage assemblages. Buckles (1971) and others believe that later groups may have collected and utilized Paleo-Indian artifacts, thereby introducing them into later assemblages. If ethnographic accounts of historic Indian scavenging prehistoric artifacts can be extrapolated, this explanation is quite credible.

Presently, 38 Paleo-Indian projectile points have been reported in West-Central Colorado. Two Clovis projectile points have been discovered in the region; one south of Crawford near the eastern boundary of the project area (Carpenter et al. 1976) and another by an amateur near Carpenter Ridge (Gleichman et al. 1982). Folsom projectile points are somewhat more abundant. Steward (1933) reports a Folsom point discovery near Grand Junction; Huscher (1939) describes two from the Uncompahgre Plateau, and Wormington (1955) reports of one being found south of Montrose near Colona. In addition, Buckles (1971) reports finding two fluted lanceolate projectile points that may resemble Folsom projectile points. Plano projectile points are still more numerous. Table 1 presents the quantity and types of Plano Tradition projectile points reported in the region. Site 5ME699, not listed in the table, is also reported to have yielded Plano projectile points but the quantities and types are not known.

While the sample of Paleo-Indian artifacts is quite small, it appears that they are distributed throughout much of the region. High elevations,

TABLE 1
 REPORTED PLANO PROJECTILE POINTS
 FROM WEST-CENTRAL COLORADO

Reference	Type	Quantity
Babcock 1981	Agate Basin	1
Buckles 1971	Agate Basin	6
	Meserve	2
	Scottsbluff	4
	Midland	1
	Plainview	3
	BLM Site Files (J. Crouch)	Agate Basin
Gleichman and Legard 1977	Agate Basin	1
Hibbets et al. 1979	Jimmy Allen	2
	Midland	1
Hurst 1944	"Yuma"	3
Klesert and Webster 1981	Angostura	1
Martin 1977	Hell Gap	1
	Jimmy Allen	1
	Unidentified	1
Total		<u>29</u>

such as atop Grand Mesa and the Uncompahgre Plateau, have yet to yield Paleo-Indian artifacts, but this may be due to the small amount of investigation in these areas. It is also possible that those areas were inaccessible due to snow and ice cover. If any concentration can be identified with present data, it is along the Gunnison River. This concentration becomes especially apparent if Paleo-Indian finds in the Rocky Mountain region are also considered. Paleo-Indian Stage artifacts have been found in considerable numbers near the Gunnison River between Cerro Summit and Gunnison (Gooding 1979; Reed and Scott 1982; Stiger 1977), suggesting the possibility that the river may have served as a corridor for travel during prehistoric times.

While no definite Paleo-Indian Stage components have been discovered in West-Central Colorado, it is possible that such finds will be made in the future. The number of out-of-context Paleo-Indian projectile points found in the region suggests that later groups did not have great difficulty in collecting them for their purposes. Further, it is possible that certain desirable species of Pleistocene megafauna were present in West-Central Colorado. Harold Cook (1930) reports the discovery of mammoth and bison in Pleistocene gravel deposits near Cerro Summit, approximately 17 miles east of Montrose. Mammoth remains have also been reported near Fruita (Armstrong 1982) and in Cowboy Cave in Utah (Jennings 1980).

3.1.4 Evaluation of Data Base

3.1.4.1 Quantity and Quality of Research Pertaining to the Paleo-Indian Stage. Since no Paleo-Indian components have been identified in

West-Central Colorado, research has been limited to the interpretation of the out-of-original-context finds. These analyses have generally been of high caliber, as archaeologists have realized the importance of their finds and have properly utilized comparative references. In general, the finds reported in the 1940s and 1950s are somewhat less useful today than more recent accounts, as types such as Hurst's (1944) "Yuma" points have been subsumed by other types and provenience information was less thoroughly recorded. Few archaeologists have attempted more than careful description of their Paleo-Indian finds, although Hurst (1944) presents an evolutionary sequence tracing the development of "Yuma" points into Archaic Stage types. Few archaeologists are now likely to agree with Hurst's scheme.

3.1.4.2 Physical Condition of Resources. Apparently all of the Paleo-Indian projectile points found in West-Central Colorado by archaeologists have been collected and curated. Until Paleo-Indian components can be positively identified, nothing can be said about the resources' physical condition.

3.1.4.3 Research Problems

3.1.4.3.1 Paleo-Indian occupation. As mentioned above, no archaeological components attributable to the Paleo-Indian Stage have yet been discovered in West-Central Colorado. The primary research question, then, is whether Paleo-Indian peoples actually occupied the region, or whether their artifacts were carried into the region by later cultural groups. The presence of Paleo-Indian peoples in West-Central Colorado is suggested by the discovery of a substantial number of Paleo-Indian projectile points, albeit in later archaeological contexts, and by the possibility that mammoth and bison may have inhabited the region. If the stage is indeed represented in the region, however, the occupation was probably not intensive. Not only are Paleo-Indian sites absent in West-Central Colorado, but they are extremely scarce on the whole of the northern Colorado Plateau (Jennings 1978).

Questions concerning the presence of Paleo-Indian components in the project area can only be answered by additional survey and excavation. Geomorphologic studies may also be valuable in identifying deposits of the appropriate age that may contain Paleo-Indian materials.

3.1.4.3.2 Paleoenvironment. Analysis of the environment between 10,000 and 5500 B.C. has not occurred in the West-Central region. This line of research may provide insights into why Paleo-Indian components are so scarce. Paleoenvironmental research for the period between 10,000 and 5500 B.C. can be conducted in non-cultural deposits. Archaeological components often provide charcoal for radiocarbon dating of strata, but other, non-cultural materials can be substituted.

3.1.4.4 Important resources. To determine the nature of the utilization of West-Central Colorado by Paleo-Indian Stage peoples, it is paramount that sites yielding Paleo-Indian artifacts or dates be preserved or excavated to determine the presence or absence of a Paleo-Indian component. Presently, all unexcavated sites with Paleo-Indian artifacts should be considered very important resources.

3.2 Archaic Stage. 5500 B.C. to A.D. 1

3.2.1 Archaic Stage Culture History. At approximately 5500 B.C., an apparent shift in cultural adaptations occurred in the New World, evidently in response to changing climatic conditions. By this date, terminal Pleistocene environments had been supplanted by environments similar to today's. In terms of subsistence, the shift represented a trend away from reliance upon big game towards a more diversified economy. Floral, and in some areas, aquatic resources became increasingly utilized, as evinced by the greater numbers of grinding stones discovered in archaeological sites post-dating 6000 B.C. and by the appearance of large shell middens at coastal sites (Cohen 1977). The shift, to what is termed the Archaic Stage, constituted a more intensive and efficient utilization of space. Populations evidently increased (Cohen 1977), and annual territories probably reduced in size as a result of the changing demographic situation and the more intensive subsistence strategy. The increasingly intensive utilization of land and resources resulted in greater regional variation, as material culture and social organization adapted to local environments.

Various synthetic units have been developed by archaeologists in response to growing awareness of areal variation of Archaic Stage manifestations. Those that have been applied to the archaeological literature of West-Central Colorado or that may be applicable on the basis of similarities in technology or settlement/subsistence patterns are herein discussed. That a rather large number of schemes may be applicable is a reflection of the present state of the regional data base.

One of the first synthetic units developed in response to awareness of areal variation of Archaic manifestations was the Desert Culture (Jennings and Norbeck 1955). The Desert Culture was used to describe similarities of archaeological data collected at Archaic Stage sites scattered throughout the arid west. It referred to a general lifeway in which a wide spectrum of plants and animal resources were exploited (Jennings 1978). The technology of the Desert Culture reflected the wide economic spectrum and non-sedentary lifestyle; characteristic artifacts include basketry, cordage, fur cloth, woven sandals, atlatls and darts, a wide variety of small projectile points, chipped stone knives, flat and basin millingstones, one-handed manos, digging sticks, wooden clubs, tubular pipes, shell beads, firedrills and hearths, and a variety of bone and antler tools (Nickens and Hull 1982:141).

Soon after the Desert Culture was defined, regional variants of the Desert Culture were posited. Irwin-Williams (1967) identified the "Picosa" or "Elementary Southwestern Culture" in southwestern Colorado, southeastern Utah, and portions of New Mexico, Arizona, Nevada and California as an adaptation similar to the Desert Culture, but distinct in terms of an early presence of cultigens and some artifact types. The Picosa was considered a predecessor to the Anasazi, Mogollon and Hohokam Formative traditions. A few years later, Irwin-Williams (1973) developed the Oshara Tradition as a synthetic unit to describe the Archaic Stage manifestations in the Four Corners area. Definition of the Oshara Tradition was based primarily upon data collected on surveys and limited

test excavations in northwestern New Mexico, but is commonly thought to have extended into portions of southwestern Colorado. Reed (1981), for example, suggests that the Oshara Tradition may be recognized in the headwaters of the Rio Grande River near Creede. Presently, few if any archaeologists suggest that Archaic Stage sites in West-Central Colorado are affiliated with the Oshara Tradition. Physical proximity of the Oshara Tradition culture area and West-Central Colorado, similarities in some projectile point types, and the lack of analyses focusing upon differentiating Archaic Stage artifact assemblages and settlement/subsistence patterns between the two areas makes it prudent to consider the Oshara Tradition in this discussion of the region's culture history.

Irwin-Williams' (1973) Oshara Tradition phase sequences concern the entire Archaic Stage. The first two phases of the Oshara Tradition are the Jay Phase (5500 to 4800 B.C.) and the Bajada Phase (4800 to 3200 B.C.). The material culture associated with these phases is so distinctive from the Paleo-Indian tool assemblages that Irwin-Williams (1973:4) discounts any generic relationship between the two. The Jay and the Bajada Phases were characterized by a subsistence pattern based on extensive foraging and hunting, and a relatively small population. Following the Bajada Phase is the San Jose Phase (3000 B.C. to 1800 B.C.), which is marked by an increase in the effective moisture in the Southwest. This phase is characterized by changes in settlement and subsistence patterns, allowing for a more intensive and systematic exploration of resources. Population is believed to have increased during the San Jose phase. The Armijo Phase (1800 B.C. to 800 B.C.) succeeded the San Jose Phase, and witnessed additional changes in land use patterns, as maize agriculture was introduced, although on a limited basis, into the subsistence pattern. The exploitation of maize permitted enough food surplus to permit seasonal population aggregations, which in turn facilitated the development of various social interaction spheres. The En Medio Phase (800 B.C. to A.D. 400) and subsequent phases of the Oshara Tradition mark the full transition from an Archaic lifestyle to the sedentary lifestyle of the Anasazi. The En Medio Phase incorporates the Basketmaker II Period of the Anasazi culture and marks the transition to the Formative Stage.

Perhaps more pertinent to West-Central Colorado is a phase sequence developed by Schroedl (1976) for the northern Colorado Plateau. Schroedl developed his phase sequence after analysis of excavated archaeological data and associated radiocarbon determinations. While a few Colorado sites are included in his discussion, Schroedl (1976) concentrates primarily upon sites in Utah, inexplicably ignoring Buckles (1971) major efforts on the Uncompahgre Plateau.

Schroedl divides the Archaic Tradition of the northern Colorado Plateau into four phases. The first of these, spanning from 6300 B.C. to 4200 B.C., is the Black Knoll Phase. The Black Knoll Phase is represented at such sites as Sudden Shelter, Cowboy Cave, Joe's Valley Alcove, and possibly Hell's Midden and Deluge Shelter (Schroedl 1976:57). The Pinto Basin projectile points characterize the early portions of the Black Knoll Phase, although Elko series projectile points, Northern Side-notched and Bitterroot Side-notched projectile points appear later in the phase.

Schroedl (1976:61) suggests that the Black Knoll Phase may be divisible into two subphases, with the Pinto point types being associated with the first subphase and the corner- and side-notched point types being associated with the later subphase. The first subphase is thought to date prior to 5200 B.C. and to have been characterized by a small human population. Schroedl (ibid.:61) posits a dramatic increase in population during the latter subphase.

The Castle Valley Phase replaces the Black Knoll Phase, dating between 4200 B.C. and 2500 B.C. This phase is characterized by certain styles of lanceolate projectile points, such as the Humboldt series, as well as Hawken Side-notched, Sudden Side-notched, and Rocker Base Side-notched types. Slab-lined firepits are thought to have come into use during this phase. Schroedl posits that the climate during the Castle Valley Phase was dryer than the preceding and ensuing phases--a factor that had substantial impact upon the human population. According to Schroedl (1976:63), the Castle Valley Phase evinces the lowest population levels on the Colorado Plateau during the Archaic Tradition. It should be noted, however, that the phase is clearly represented at only one site (Schroedl 1976:63).

The Castle Valley Phase was in turn replaced by the Green River Phase. The Green River Phase dates between 2500 B.C. and 1300 B.C. Projectile point types common to this phase include Gypsum points, San Rafael Side-notched points, Duncan and Hannah points, and McKean Lanceolate points.

The Dirty Devil Phase comprises the final phase in Schroedl's scheme. This phase is thought to date between 1300 B.C. and A.D. 400. Some assemblages excavated at sites in western Montrose County are placed in the Dirty Devil Phase, namely Cottonwood Cave, Tabeguache Caves I and II, and Dolores Cave. Projectile points of the Elko series and later various arrow point types are found on sites dating to this phase. Corn is reported from numerous Dirty Devil Phase sites.

There has been considerable effort expended in attempting to develop synthetic units for West-Central Colorado, based upon data collected within the region. Between 1937 and 1952, the Denver Museum of Natural History and the University of Colorado conducted excavations at four rockshelters located on the northeastern slope of the Uncompahgre Plateau. These excavations were conducted and reported by H.M. Wormington and Robert H. Lister. On the basis of these excavations, Wormington and Lister (1956) defined the Uncompahgre Complex, which was considered to be a regional variant of the Desert Culture. The Uncompahgre Complex as defined by Wormington and Lister (1956) was characterized by a great variety of projectile points, with arrow points appearing at an early date and being contemporaneous with dart points. Three tool types were thought to be unique to the Uncompahgre Complex: an adze-like scraper, a large and partially polished stone object of unknown function, and a particular style of scraping tool, termed an "Uncompahgre Scraper" (ibid.:78). No temporal framework was developed for the Uncompahgre Complex.

William G. Buckles redefined and refined the concept of the Uncompahgre Complex as a result of fieldwork performed between 1961 and 1963 as part of the Ute Prehistory Project (Buckles 1971). Buckles investigated 75 prehistoric sites on the Uncompahgre Plateau west of Montrose, 39 of which were excavated to one degree or another. Buckles defined the complex in terms that essentially parallel Clark's (1968) technocomplex paradigm. According to Clark (1968:232), a technocomplex can be defined as "a group of cultures characterized by assemblages sharing a polythetic range but differing specific types of the same general families of artifact types, shared as a widely diffused and interlinked response to common factors in environment, economy, and technology." As implied by the term "polythetic" above, each individual site in a specific technocomplex possesses a large number of attributes displayed by the site population as a whole, and no single attribute would suffice for membership, as in a monothetic model (cf. Williams et al. 1973:219). The technocomplex model can be seen in Buckles' writing concerning the cultural groups possibly represented by the Uncompahgre Complex. Buckles (1971:1183) writes:

The term cultural is used here in a broad sense which is in reference to the recognition of patterned archaeological phenomena which are presumed to be the results of patterned behavior acquired and transmitted among peoples of indeterminate yet related groups. The relationships cannot be defined in genetic or linguistic terms but only in patterns of tool making and using, choices of sites, adaptations to the environment, and other systematic relationships which are distinctive and unbroken by the occurrences of differing patterns which would have been interpreted to represent different cultural entities. The level of specificity of cultures is broad and equivalent perhaps to that which might have been shared between a number of ethnic groups who lived in a historical culture area and made similar adaptations to the facets of the environment by utilizing similar technology.

Buckles, then, views the Uncompahgre Complex as a series of cultural adaptations to life on the Uncompahgre Plateau, made similar by common environmental, social, and technological constraints. Buckles' criteria for membership in the Uncompahgre Complex include both qualitative and quantitative factors. The relative frequency of various artifact types is just as important as the actual types of artifacts represented; in fact, Buckles doubts that any specific tool type found on the Uncompahgre Plateau is unique to the area. The three "unique" artifact types purported by Wormington and Lister (1956) to be diagnostic of the Uncompahgre Complex are thought by Buckles to have a relatively wide distribution. Buckles believes that even certain artifact types, such as his "Uncompahgre Flake tools" which characterize the complex, are likely not limited to the area.

Buckles utilized data obtained from the analysis of the tool assemblages excavated from 15 sites to construct a phase sequence. Eight phases and four distinct tool assemblages not placed into the various phases were defined, spanning a possible eight thousand years of occupation. Unfortunately, only two chronometric dates are tied into the phase

sequence, these being two radiocarbon dates associated with two tool assemblages. The sequence is admittedly incomplete and is based primarily upon the correlation of cultural strata between sites and extrapolations from sites to others in areas adjacent to the Uncompahgre Plateau (ibid.: 1349). The tool assemblages associated with the various phases are thought to be similar, indicating cultural stability through time (ibid.: 1189). While subsequent work in the region by other archaeologists has done little to better establish Buckles' phase sequence, it still is commonly used and so will be herein discussed.

The earliest tool assemblage in Buckles' scheme is the Buttermilk Assemblage. It is classified as an assemblage rather than as a phase because of scant temporal indications and because of the possibility that the assemblage may have been redeposited by stream activity. The assemblage is defined on the basis of data excavated from a single, stratified site. Artifacts are generally similar to those associated with later phases, with the exception of a single Midland projectile point. Points of this type are usually considered representative of a late Paleo-Indian occupation. The Buttermilk Assemblage is tentatively dated between 8000 B.C. and 3000 B.C. The Monitor Mesa Phase followed the Buttermilk Assemblage, dating between 3500 B.C. and 1500 B.C. This phase is rather poorly defined, and is based upon two diagnostic projectile points and a relatively high frequency of tools with platforms, flake tools, borers, and end scrapers (ibid.:1293). The projectile points are similar to Gypsum and Pinto Basin types defined elsewhere.

Partially contemporaneous with the Monitor Mesa Phase is the Shavano Phase. The Shavano Phase is tentatively dated between 3500 B.C. and 1000 B.C. Uncompahgre Flake Tools are absent in the tool assemblages characterizing this phase. Projectile points tend to be of the stemmed varieties.

The Roubideau Phase is largely contemporaneous with the Shavano Phase, dating between 3000 B.C. and 500 B.C. A single radiocarbon date is associated with the excavated material representing the Roubideau phase, indicating an occupation at 745 B.C. \pm 180. In addition to possessing unique frequencies of various artifact types, the phase is also marked by "Roubideau" projectile points. These projectile points are large and have low side notches. The subsequent Horse Fly Phase is also chronometrically dated. A date of 150 B.C. \pm 220 was obtained from a radiocarbon sample collected in a firepit. The phase is thought to have spanned from 500 B.C. to A.D. 1. It is marked by a diversity of projectile point types and, like the other assemblages, by a unique frequency of various artifact classes. The Horse Fly Phase was supplanted by the Dry Creek Phase, which endured from approximately A.D. 1 to A.D. 700. No radiocarbon dates are associated with the Dry Creek Phase, however. The phase occupies the same time span as the Ironstone Phase, primarily on the basis of projectile point similarities. Large corner-notched and stemmed dart points are common in the Dry Creek and Ironstone phases. Again, the relative frequency of artifact types is the primary criterion for distinguishing these phases. Level 2 at 5MN55 is another of the tool assemblages not placed into the phase sequence. The assemblage is closely related to the succeeding Coal Creek Phase and is characterized by arrow points rather than dart points, and possibly small amounts of ceramics. The assemblage is thought to date

between A.D. 700 and A.D. 1100. The Coal Creek Phase (A.D. 700 to A.D. 1300) marks the introduction of the bow and arrow into the Uncompahgre Complex, as small, corner-notched projectile points replace the larger dart points. The Coal Creek Phase reflects the influences of sedentary, horticultural groups to the west and south, in the form of small amounts of corn and walnuts found at a few sites, and in rock art motifs. Buckles considers the outside influences to be "token" ones, however, that did not substantially alter the technological and subsistence adaptations of the Uncompahgre Plateau peoples (ibid.:1308). The Camel Back Phase (A.D. 1300 to A.D. 1500) is represented by a relatively high frequency of certain types of knives and scrapers, and small corner-notched arrow points. The Camel Back Phase is roughly contemporaneous with an assemblage obtained in Level 2 (5MN40), which is thought to date between A.D. 1300 and A.D. 1880. The Level 2 assemblage evinces a general absence of large flake tools that characterize the Uncompahgre Complex. Small corner and side-notched arrow points, the latter of a type identified with Ute culture, are present in this assemblage. The Escalante Phase is the final prehistoric phase identified by Buckles. This phase includes archaeological materials and features associated with the historic Ute, such as Uncompahgre Brown Ware ceramics, Desert Side-Notched projectile points, wickiups, and tree platforms. The Escalante Phase spans between A.D. 1500 and A.D. 1880.

Various papers concerning the archaeology of western Colorado employ the cultural sequence developed for the northwestern Plains. While the Great Plains constitute an entirely different physiographic province, the relative propinquity of the Plains to western Colorado and the similarity in certain artifact types and perhaps settlement/subsistence patterns suggest that use of the Plains scheme may not be entirely unjustifiable.

The Archaic Tradition on the Plains can be divided into three periods, termed the Early, Middle and Late Plains Archaic. The Early Plains Archaic dates from approximately 5700 B.C. to 3000 B.C., and is represented by Large Side-notched projectile point types. This period overlaps with the Altithermal, and possibly represents a concentration of peoples in the foothill and mountain areas (Frison 1978).

The ensuing Middle Plains Archaic Period spans between approximately 3000 B.C. and 1500 B.C. Improved climatic conditions may have led to occupation of previously hostile environments, such as the open plains and intermontane basins. Frison (1978) suggests an increased reliance upon vegetal foodstuffs during the Middle Plains Period. Projectile points associated with the McKean Complex appear in this period, as do Duncan, Hannah and Mallory points.

The Late Plains Archaic spans between approximately 1500 B.C. and A.D. 400. McKean Complex materials are replaced by large corner-notched dart points, such as the Pelican Lake point.

Other regional variants of the Archaic Stage have been suggested for western Colorado and eastern Utah, but these, such as E.B. Renaud's (1944) Rio Grande Culture, Honea's (1969) Rio Grande Complex, and Hunt's

and Tanner's (1960) Moab and La Sal Complexes, are outside of the boundaries of the project area, and are overshadowed in the literature by the cultural sequences discussed above.

The temporal relationships of the phase sequences presented above are illustrated in Figure 2.

3.2.2 Archaic Stage Lifeway. The lifeway characterizing the Archaic Stage was generally similar to that developed in the Paleo-Indian Stage, but reflected different environmental conditions and probable higher population densities. The environment evidently was similar to that of present days, with similar floral, faunal and hydrological resources, in approximately the same geographic distribution. Present data (e.g. Reed and Nickens 1980) suggests that environmental stability characterized the period encompassed by the Archaic Stage; it is questionable, therefore, whether Antev's Altithermal model is applicable in the region.

Archaic Stage peoples on the Colorado Plateau were apparently quite mobile, moving within annual territories in a patterned manner based upon the seasonal availability of certain food resources. People probably occupied base camps from one day to several weeks, from which short-term hunting and gathering trips emanated. Base camps were probably relocated when desired resources were partially depleted in the site territory and higher concentrations of these resources or new, more desirable resources were detected or anticipated elsewhere.

Archaic Stage groups were apparently organized at the band level. Social organization may have increased in complexity, through time, however, in response to alleged population increases (Reed and Scott 1982).

Considering the topography of West-Central Colorado, it is likely that annual territories were oriented along drainage systems, incorporating a broad range of elevations. Low valleys, especially in the pinyon and juniper zones, may have served as wintering areas. There, temperatures are comparatively warm and snow depth levels are not excessive. These areas also provide winter habitat for large game animals. During the spring, bands may have moved into higher elevations, following the retreat of large game animals and the appearance of desired plant resources. The highest elevations are free of snow for only a few months out of the year, so exploitation of these areas must have occurred during the summer months. Vertical movement during the course of the year permits taking advantage of periodicity of resources. As Wright (1978) points out, floral resources mature increasingly late in the year as elevations increase, permitting prehistoric peoples to time their ascent to coincide with the maturation of desired resources.

The material culture associated with Archaic Stage sites in West-Central Colorado reflects the non-sedentary, hunting and gathering lifestyle of these peoples. Habitation structures are very rare. The only definite Archaic habitation structure is 5GF126, a pit structure. While the report of this site is presently unavailable, it is feasible that the structure represents winter quarters. Brush structures similar to wickiups have been reported at Archaic sites east of the region in Gunnison

	Schroedl's Archaic Sequence	Irwin-Williams' Oshara Tradition	Frison's Great Plains Sequence	Buckles' Uncompahgre Complex		
1881				Level 2 5MN40	Camel Back	Escalante
1000		Sky Village & Loma Alta Trujillo		Lv.2,5MN55	Coal Creek	
				Dry Creek	Ironstone	
AD BC		En Medio		Horsefly		
1000	Dirty Devil		Late Plains Archaic			
		Armijo		Roubideau		
2000	Green River		Middle Plains Archaic		Monitor Mesa	Shavano
		San Jose				
3000	Castle Valley		Early Plains Archaic			
		Bajada				
4000						
5000	Black Knoll	Jay		Buttermilk		
6000						

Figure 2. The temporal relationships of phase sequences possibly applicable to West Central Colorado's Archaic Stage.

County (e.g. Black 1980; Mueller and Stiger 1981), and it is likely that similar structures were common in the project area.

3.2.3 Archaic Stage in West-Central Colorado. Sites attributable to the Archaic Stage outnumber sites affiliated with the other cultural units in West-Central Colorado. This may be due to population increases in the region over the Paleo-Indian Stage, and because the Archaic Stage spans approximately five millennia, far longer than subsequent cultural units. Archaic Stage sites in West-Central Colorado typically occur as open lithic scatters or rockshelters.

Archaic Stage sites in West-Central Colorado have yielded a variety of stone, bone, antler, and plant artifacts. No ceramics are associated with the Archaic Stage in the region. Stone artifacts are the most abundant, as artifacts made of perishable materials tend to survive only in well-protected rockshelters. Common stone tools include end- and side-scrapers, drills, knives, preforms or bifaces, choppers, projectile points, manos and grinding slabs. The tool categories changed little through time. Frequencies of tool types may have changed (Buckles 1971), but most appear to have been manufactured over the millennia with little morphological variation. Projectile point styles may have been more sensitive to culture change than other common tool categories, and so are commonly used as "index fossils" in archaeological analysis. Common projectile point types found on Archaic Stage sites in West-Central Colorado include Large Corner-notched points, Large Side-notched points, Stemmed Indented Base points, Large Side-notched Indented Base points, Contracting Stemmed points, and Stemmed Square-base points. These point types were suitable for use on a dart, which was propelled by an atlatl. Arrow points, specifically Small Corner-notched points, may have appeared near the end of the Archaic Stage. Such a projectile point was found in a cultural stratum at the DeBeque Rockshelter, which was dated to 610 B.C. \pm 190 (Reed and Nickens 1980). Arrow points are generally uncommon until approximately A.D. 500, in the Formative Stage.

3.2.4 Evaluation of Data Base

3.2.4.1 Quantity and Quality of the Data Base. The majority of prehistoric sites in West-Central Colorado appear to be affiliated with the Archaic Stage, so the data base for this culture unit is quite large. It must be noted, however, that refinement of the culture unit into phases or other smaller synthetic units is highly desirable. As more specific culture units are identified as a consequence of additional archaeological research, significant data gaps may be exposed.

Since Archaic Stage sites appear to outnumber sites affiliated with other stages in West-Central Colorado, the majority of archaeological literature focuses upon this culture unit. The quality of analysis is varied. Wormington and Lister (1956) and Buckles (1971) have undertaken the most ambitious investigations. Wormington and Lister conducted extensive excavations in an area that was previously almost unknown to the archaeological community. Their work resulted in the definition of the Uncompahgre Complex, a regional variant of the Desert Culture, and a report that was of excellent quality for its day and that still is quite

useful to archaeologists (Wormington and Lister 1956). Buckles' (1971) work on the Ute Prehistory Project immensely expanded the data base for the region. Buckles attempted to trace the roots of Ute culture in the region and produced a report that provides descriptions of 75 investigated sites and their associated material culture, a thorough treatise on the rock art of the region, and a proposed cultural sequence. Buckles' (1971) work remains the basic reference for archaeologists in the region. The primary shortcoming of Buckles' work concerns the proposed phase sequence. The sequence is tied to only two radiocarbon dates, which limits its credibility somewhat. Further, it is difficult to place newly recorded sites into Buckles' phase sequence. Buckles' scheme properly considers the contents of an entire archaeological assemblage and the relative frequencies of tool types in determining phase affiliation, but does not present his criteria in a "cookbook" fashion to permit easy comparisons by other archaeologists. These shortcomings do not reflect on the overall quality of Buckles' (1971) investigations, however, as his concern was the analysis of the data he collected.

Archaeologists have misused Buckles' (1971) dissertation to some extent. Archaeologists frequently compare only projectile points recovered at various sites in the region to those in Buckles' (1971) collection to derive dates and phase affiliation for sites. This is risky since Buckles' phase sequence is tied to so few chronometric dates, and because only a single artifact category, projectile points, is considered instead of the entire assemblage.

Projectile point typologies are too casually used to determine site age and cultural affiliation in other ways, as well. Given the absence of a well-dated projectile point sequence for West-Central Colorado, archaeologists frequently refer to the literature of other regions for comparative purposes. This is quite proper and necessary. Unfortunately, however, archaeologists all too often suggest that the dates of point types in other regions are quite similar to the dates of points in West-Central Colorado, and sometimes even imply that the cultural groups are the same. Plains or Great Basin cultures influence or occupation may be posited, instead of realizing that many projectile point types have a very broad geographical distribution, spanning many cultural groups, and were manufactured over long periods of time.

3.2.4.2 Physical Condition of Resources. The physical condition of Archaic sites varies according to site type. Open lithic scatters generally are in good condition, although a high percentage have probably had surface artifacts removed by non-archaeologists. Rockshelters, on the other hand, are not only commonly surface collected, but frequently have been vandalized as well. Evidence of pothunting is present at an estimated 75 percent of the rockshelter sites. In some cases, pothunting has resulted in the complete destruction of buried cultural strata. The loss of scientific data is profound. Single and multiple component rockshelters are probably the single most important type of Archaic site type, as they may yield perishable and non-perishable artifacts, organic material suitable for dating and subsistence analysis, and paleoenvironmental data.

Vandalism has also affected the quality of data on Archaic Stage rock art. Rock art panels are often defaced by graffiti or bullet holes. Unintentional damage is also done by chalking petroglyphs or by enhancing pictographs. The rate of loss of rock art panels appears to be less than that of culture-bearing rockshelters.

3.2.4.3 Research Problems.

3.2.4.3.1 Relationship of the Archaic to the Paleo-Indian Stage. The transition from the Paleo-Indian Stage to the Archaic Stage is poorly understood. Two general possibilities exist: 1) the Archaic lifestyle may have developed in situ from a Paleo-Indian lifestyle; or 2) West-Central Colorado may have been slightly utilized by Paleo-Indian peoples and was subsequently occupied by Archaic immigrants. Irwin-Williams (1973) writes that in the area occupied by the Oshara Tradition, early Archaic Stage assemblages are sufficiently different from Paleo-Indian Stage assemblages to discount cultural continuity. The applicability of her observations to West-Central Colorado is questionable, however. This research problem can be addressed by identification and analysis of Paleo-Indian or early Archaic sites in the region.

3.2.4.3.2 Definition of more specific culture units. There are presently several phase and period sequences used in regional literature to divide the Archaic Stage into smaller synthetic units. These include Buckles' (1971) Uncompahgre Complex phase sequence, Schroedl's (1976) phase sequence for the northern Colorado Plateau, the Early, Middle and Late periods defined on the Great Plains, and, to a lesser extent, Irwin-Williams' (1973) Oshara Tradition phases. All have their problems. The Oshara Tradition was defined from archaeological data collected in a rather limited geographic area in northwestern New Mexico. Its extent into southwestern Colorado, much less West-Central Colorado, has yet to be convincingly demonstrated. The Plains period scheme may even be less applicable. The Great Plains physiographic province is at least a couple of hundred miles east of the project area, and is separated by the rugged Southern Rocky Mountains. Influence from the Plains may be detected in analysis of northern Colorado Plateau assemblages, but it presently seems rather radical to imply the cultural continuity implicit in utilizing Plains taxonomy. Schroedl's sequence has the advantage of being based on data collected in the same physiographic province as West-Central Colorado, and is also based on numerous radiocarbon dates. The scheme's limitations, however, are that few sites in the project area were considered in its definition, and that insufficient data are presented for placement of new assemblages in the sequence. One must rely primarily upon chronometric dates for phase designation, but this violates the concept of phase as a unit implying similar cultural content. Buckles' (1971) phase sequence certainly reflects regional data, but is based on too few chronometric dates. Additional excavation is necessary to refine a regional phase sequence. The resulting scheme should be associated with numerous chronometric dates, and should identify key changes in technology or settlement/subsistence practices.

3.2.4.3.3 Projectile point sequence. A well-dated, regional

projectile point sequence would be invaluable for future research. To date, there have been too few excavations that have yielded projectile points in association with chronometric dates to produce a sample of sufficient size to facilitate accurate temporal inferences of any point types.

3.2.4.3.4 Continuity of occupation. Considerable attention has been given to breaks in the radiocarbon record from sites on the northern Colorado Plateau in recent years. These gaps have led some (e.g. Benedict and Olson 1978; Holmer 1978; and Schroedl 1976) to identify hiatuses in the occupation of the area -- times in which populations either abandoned the area or were substantially reduced. Holmer (1978:75), citing evidence gathered at a few Colorado Plateau and Great Basin Archaic sites, identifies one major hiatus, occurring between approximately 4200 and 3000 B.C. Schroedl (1976:24), in his analysis of the Archaic Stage on the northeastern Colorado Plateau, identifies three distinct breaks in occupation, occurring at 9000 to 7000 B.C., 4000 to 3000 B.C., and 1000 to 500 B.C. Benedict (1979:180) concluded that there exists hiatuses or population declines at 5000 to 4500 B.C. and at 4000 to 3500 B.C. Citing similar data, these three authors appear to agree on a hiatus spanning from approximately 4000 to 3000 B.C., dates which coincide with Antevs' (1955) Altithermal period, thought to represent a period of warm and dry climatic conditions.

Radiocarbon dates collected in West-Central Colorado do not appear to support the hiatuses mentioned above. As Figure 3 illustrates, radiocarbon dates collected at sites in West-Central Colorado imply a continuous rather than interrupted occupation. Possible gaps do exist at approximately 2000 B.C. and 4300 B.C. but these may be the result of sampling error. That the West-Central Colorado dates do not support others alleged hiatuses suggests that either the hiatuses are invalid, due to procedural or sampling error, or that the project area may have functioned as a haven for peoples driven out of other portions of the northern Colorado Plateau, presumably by deteriorating environmental conditions. The latter explanation may be the most viable, if paleoenvironmental stability characterized the region during the Archaic Stage (see Reed and Nickens 1980). Populations in the hard-hit Great Basin and adjacent areas of the Colorado Plateau may have migrated towards the more moist mountain ranges, as Benedict and Olson (1978) assert for the Rocky Mountains, and towards the adjacent portions of the Colorado Plateau. It is also possible that few immigrants actually entered the project area in response to deteriorating climatic conditions, but that the indigenous populations were adequately supported through time by the stable environment.

The question of continuity of occupation in the region can be addressed by additional excavations. Efforts should especially focus upon sites thought to date between 4000 and 3000 years, the period of a possible hiatus, and sites dating to 2000 B.C. and 4300 B.C., where regional radiocarbon data gaps exist.

3.2.4.3.5 Paleoenvironment. Additional paleoenvironmental research is needed for the time encompassed by the Archaic Stage. Large

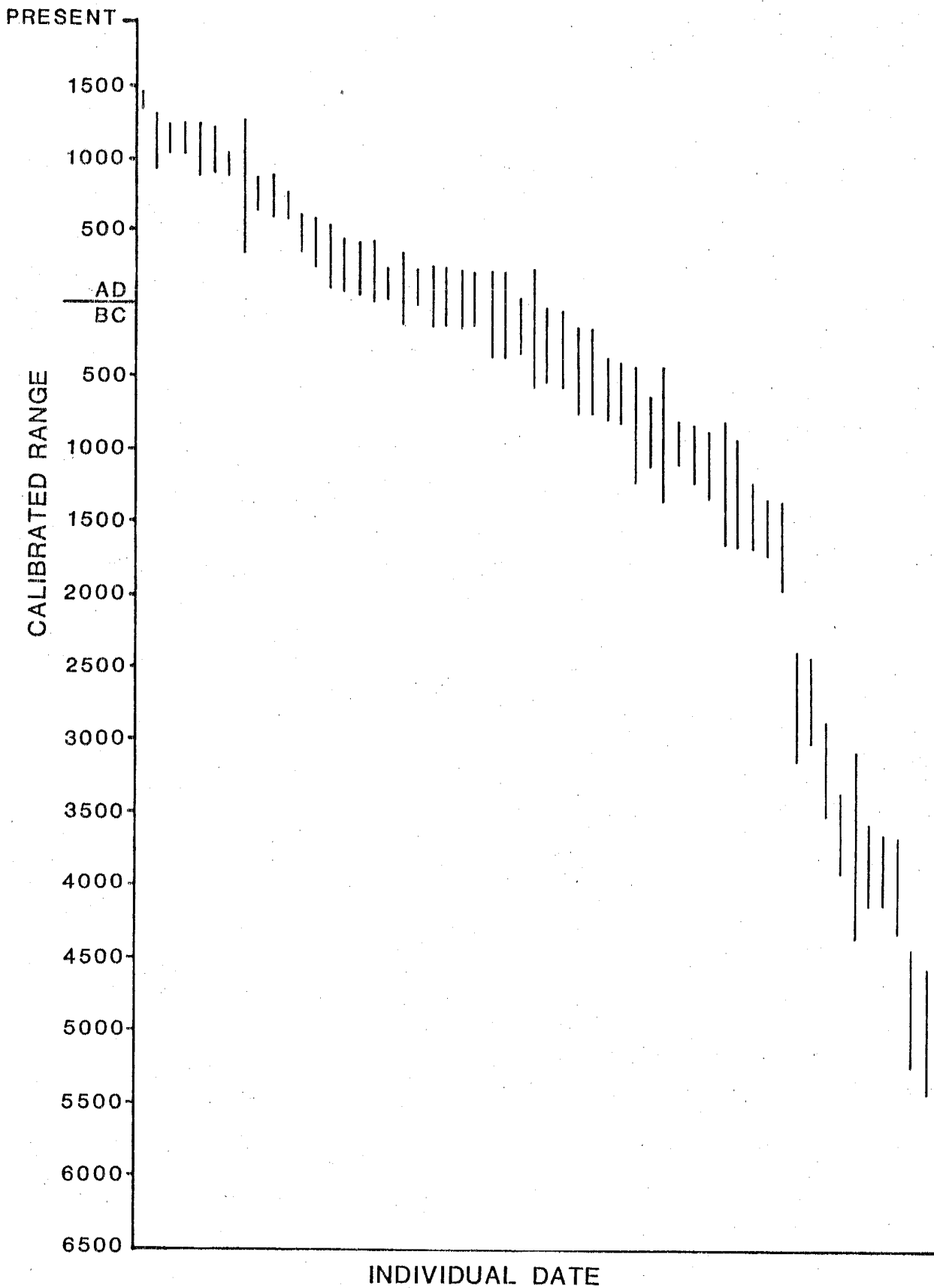


FIGURE 3. CALIBRATED RANGE OF RADIOCARBON DATES FROM SITES IN WEST CENTRAL COLORADO

scale excavation projects should include studies of palynology, tree-rings, malachology, macroflora, fauna, and soils to provide additional data for paleoenvironmental reconstructions.

3.2.4.3.6 Effects of increasing population densities. Populations appear to have generally increased during the Archaic Stage (Cohen 1977; Irwin-Williams 1973; Schroedl 1976). Inspection of the distribution of radiocarbon dates collected in West-Central Colorado (Fig. 3) tends to support this trend, although sampling error and/or less thorough detection of early sites as a result of geologic factors may skew the picture. If populations did increase through time, then the cultural adaptations to the increased stress may be detected in the archaeological record. Shifts in subsistence strategies may have occurred through time, reflecting increased reliance on resources requiring greater expenditures of energy to collect and process. Such a shift might be reflected in technology and settlement patterns, as well as by detailed floral and faunal analysis.

3.2.4.4 Important Resources. Sites with the potential to yield a variety of artifact types, subsistence data, and paleoenvironmental data in association with materials suitable for chronometric dating are especially important. Rockshelter sites frequently have the greatest potential to yield these types of data, but open sites with features may also provide these data. Archaic Stage habitation structures and rock art should also be regarded as particularly important resources.

3.3 Formative Stage

3.3.1 Formative Stage Culture History. Willey and Phillips (1948: 146) define the Formative Stage on the basis of "the presence of agriculture, or any other subsistence economy of comparable effectiveness, and by the successful integration of such an economy into well-established sedentary village life." On the Colorado Plateau and in the Great Basin, the Formative Stage is represented primarily by the Anasazi, Mogollon, Hohokam and Fremont Traditions. These groups raised corn, beans, and squash to supplement foodstuffs procured by hunting and gathering. They manufactured discrete types of ceramics, and lived in masonry or jacal surface structures or pithouses. On the northern Colorado Plateau, the Formative lifeway appeared at approximately A.D. 1, and flourished until the end of the 13th century.

3.3.2 Formative Stage Lifeway. Many aspects of the lifeways of Formative Stage peoples in West-Central Colorado are poorly understood. Much of the previous research conducted at Formative Stage sites has operated under the assumption that the sites were representative of the Anasazi or Fremont Traditions, whose lifeways are rather well known, rather than considering the possibility that another, as yet undefined tradition, is represented. Little attention, consequently, has been paid to lifeway descriptors such as settlement patterns and social organization.

Some lifeway patterns, however, can be tentatively identified. Corn and possibly squash were apparently utilized by Formative Stage peoples. While the importance of these crops in the overall economy has yet to be

determined, the small quantities usually found suggests that hunting and gathering, rather than horticulture, was the critical subsistence activity. Masonry surface structures and caves were inhabited. Villages comprised of multiple structures have been recorded (Crane 1978). The organization and layout of these structures on village sites suggests that groups were organized at the band level. Lithic artifact categories manufactured were generally similar to those characteristic of the Archaic Stage. The bow and arrow appears to have been widely accepted by this time, however, as some Small Corner-notched projectile points are commonly found on these sites. Ceramics were used, but it is presently questionable whether they were manufactured in the region. Ceramic types found on these sites are generally regarded as trade items, as a wide variety are represented. Actual sherd counts are quite low.

3.3.3 Formative Stage Sites in West-Central Colorado. That there are Formative Stage sites in West-Central Colorado has been recognized at least since the early 1930s, when the Woodburys conducted one of the first archaeological inventories in the project area (Woodbury and Woodbury 1932). They reported the presence of sixteen "Pueblo" ruins and several circular walls in the West Paradox Valley in western Montrose County. Test excavation of one of the "Pueblo" ruins exposed a small block of rectangular, contiguous rooms, and a small collection of Pueblo I or Pueblo II ceramics (Woodbury and Woodbury 1932).

Interest in the stone structures of West-Central Colorado was especially great during the 1940s. Huscher and Huscher (1943) investigated numerous stone structures in a broad area in West-Central Colorado. Scores of structures, primarily circular in shape, were recorded by the Huschers, and some were excavated. C.T. Hurst also conducted major investigations in West-Central Colorado; several large cave sites and two "Pueblos" were excavated and described (Hurst 1940, 1941, 1942, 1946, 1948). The cave sites yielded evidence of corn, yucca, sandals, and Large Corner-notched projectile points, and the masonry surface "Pueblos" yielded Small Corner-notched projectile points and Anasazi ceramics. These and subsequent investigations established the presence of sites in West-Central Colorado with attributes characteristic of Formative Stage cultural development. These attributes are primarily in the form of cultigens, ceramics, and masonry habitation structures, and are discussed below.

3.3.3.1 Cultigens. Evidence of cultigens is relatively rare in archaeological contexts in West-Central Colorado. Site yielding cultigens are scattered throughout the region, in the lower elevations. Nearly all of the finds are corn, but two sites, Tabeguache Cave II (Hurst 1943) and 50R243 (Buckles n.d.) have yielded squash remains. Whether these finds represent domestic or wild varieties of squash is unknown. Sites yielding cultigens are listed below in Table 2. Sites with unburned specimens discovered on lithic scatters have been eliminated from the list due to the low probability that the plant parts are prehistoric (Linda Scott, personal communication). Some reports of cultigens found on the surface of open sites make no mention whether they are carbonized or not; these sites are included.

TABLE 2
SITES WITH CULTIGENS

<u>Delta County</u>	<u>Mesa County</u>	<u>Montrose County</u>		<u>Ouray County</u>
5DT2	5ME45	5MN367	Cottonwood Pueblo	5OR243
	5ME164	5MN368	Dolores Cave	
	5ME1545	5MN517	HMF-3	
	5ME3693	5MN652	Tabeguache Cave I	
	5ME3908	5MN653		
	C2-2	5MN654		
	Little Park Caves	5MN813		
	Roth Cave	5MN1100		

3.3.3.2 Structures. Remains of masonry structures are somewhat more common than sites with cultigens. Fifty-three have been recorded to date in West-Central Colorado. In general, the distribution of masonry structures approximates that of sites possessing cultigens, but perhaps are somewhat more concentrated in western Montrose County. Some of these open sites, such as the Weimer Ranch sites, yield evidence of cultigens; many, however, were investigated prior to the development of palynology and macrofloral analysis in archaeology and so apparently lack cultigens.

Primarily two forms of stone habitation structures exist: rectangular structures and circular stone structures. Rectangular structures appear to be the less common of the two varieties. They measure approximately 3 by 4 meters, and often lack associated surface artifacts (Reed and Scott 1980). Rectangular structures are relatively more common on the western slopes of the Uncompahgre Plateau. In this area, both isolated rooms and "pueblo ruins" are found (Toll 1975; Gleichman et al. 1982). The "pueblo ruins," such as Cottonwood Pueblo (Hurst 1947) and Tabeguache Pueblo (Hurst 1946) near Nucla, and Site No. 2 in the Paradox Valley (Woodbury and Woodbury 1932), consist of a series of contiguous rectangular rooms forming a room-block. Cottonwood Pueblo is comprised of four "houses" of aligned rooms, enclosing a central quadrangle. Hurst (1947) estimates that the walls of the structure did not exceed four feet in height, considering the amount of rock present. The quality of masonry in these "pueblos" is generally rather crude. Floor features are not reported, although mention is made of a doorway in the eastern walls of Woodbury's Site No. 2. Artifacts found in association with these structures include Small Corner-notched arrowpoints, one-hand manos, and small quantities of Anasazi ceramics.

The artifact assemblages associated with the circular stone structures are quite similar, including similar styles of projectile points (Huscher and Huscher 1943), manos, and ceramics (Crane 1978; Hurst 1946 and 1947; Woodbury and Woodbury 1932). Circular stone structures generally consist of single rooms measuring 3 to 6 meters in diameter. The masonry is generally crude and definite coursing of stone is rare. Walls are low. Huscher and Huscher (1943) estimate that the masonry originally stood only 3 to 4 feet high. Floor features consist primarily of single large, unlined firepits,

located near the center of the structure. "Villages" of circular stone structures occur in the western portion of Montrose County (see Huscher and Huscher 1943); Crane (1978), for example, estimates that as many as 30 such structures are present at Weimer Ranch. She points out, however, that the contemporaneity and function of all of these structures have not been determined.

Circular stone structures are present in smaller numbers in the Gunnison River drainage on the eastern side of the Uncompahgre Plateau. They generally occur as isolated houses. Along the lower Gunnison River, in Mesa County, the Huschers (1943:25) report finding circular stone structures "on almost every little point of rock, or every alluvial cone thrusting out onto the canyon floors." The Huschers (1943:25) add that in structural detail and in material culture recovered, the sites along the eastern slope of the Uncompahgre Plateau seem identical with those found along the San Miguel and Lower Dolores Rivers in western Montrose County.

3.3.3.3 Ceramics. Perhaps the most important observation that can be made about Formative Stage ceramics in West-Central Colorado is that they are scarce. Less than one thousand have apparently been recovered to date, a total far less than one might expect to recover from an average pueblo site in the Anasazi culture area. The ceramics are overwhelmingly of Anasazi origin. Twenty-five sites are reported with Anasazi ceramics, as compared to four sites with Fremont types. One find of Woodland pottery is also reported (Buckles 1971). An additional 12 sites have been recorded that have unidentified ceramic types. The Huschers (1943) report that of 166 sherds recovered from stone structures on the Uncompahgre Plateau and along the San Miguel mesa rim, all but one were of known Puebloan types. The majority of these were utility wares, characterized by neck bands or neck coils dating to the Pueblo I to Pueblo II transition (Huscher and Huscher 1943).

The ceramic types represented are quite diverse. Table 3 presents the types identified, and, when possible, their quantities. Some of the sherds listed in the table are in private collections, but have been identified by professional archaeologists. Also, it should be noted that some of the identifications are tenuous. Some were typed several decades ago into types no longer recognized. A greater problem, however, concerns the apparent inexperience of some of the archaeologists doing the analysis.

3.3.3.4 Cultural Affiliation. Attempts were made by early researchers such as Hurst and the Huschers to determine the cultural affiliation of the apparent Formative Stage sites in West-Central Colorado. The Huschers (1943) argued that the circular stone structures were of Athapaskan origin. Most archaeologists of the 1930s and 1940s, reflecting the biases toward the Southwestern Formative cultures prevalent in the profession during the time, generally accepted the notion of an Anasazi occupation in portions of West-Central Colorado. Masonry structures, some with rectangular, contiguous rooms and many with Puebloan ceramics, were cited as proof for an Anasazi occupation, in conjunction with cave sites yielding corn caches. Further, a continuity of Anasazi culture could be traced to some extent, as there appeared to be evidence of Basketmaker II and Pueblo I or II Period occupations. Cave sites such as Cottonwood Cave, Tabeguache Caves I and II,

and Dolores Cave yielded corn, generally lacked ceramics, and often possessed artifacts such as yucca sandals. The finds in these caves compared reasonably well with other cave sites ascribed to the Basketmaker II culture in the west and southwest (e.g. Nusbaum 1922). Evidence of a Basketmaker III Period occupation was lacking, however. Hurst (1948:6) writes:

In 1945, Tabeguache Pueblo was excavated (Hurst 1946) and it proved to be of the peripheral Pueblo I-II type and contemporaneous with Mancos Black-on-White times. Dolores Cave... was dug out in 1946 (Hurst 1947). The deposits in this cave ranged from Basketmaker II times to the early modern period. Nowhere have we found any trace of Basket Maker III structures. It may be that they do not exist in the region, or if they do that their form is so different from the classic pattern that they will need careful study when found in order to interpret them for what they may be. If they do not exist, it may mean that the Basket Maker culture gradually evolved without passing through a definite pit house stage in central and western Montrose County.

TABLE 3
FORMATIVE STAGE CERAMIC TYPES
IDENTIFIED IN WEST-CENTRAL COLORADO

<u>Anasazi Types</u>			
<u>Type</u>	<u>Quantity</u>	<u>Type</u>	<u>Quantity</u>
Lino Gray	-	Gallup B/W	8
Chapin Gray	16	McElmo B/W	3
Moccasin Gray	17	Flagstaff B/W	1
Mancos Gray	6	Kayenta B/W	1
Exuberant Corrugated	-	Mesa Verde B/W	1
Mancos Corrugated	6	Wide Ruin B/W	1
"Chinle Corrugated"	-	San Francisco Red	1
Tusayon Corrugated	1	Deadmans B/R	1
Mesa Verde Corrugated	1	Sunset Red	1
Jeddito Corrugated	-	Wingate B/R	-
Chapin B/W	5	Abajo Polychrome	1
Cortez B/W	17	St. Johns Polychrome	2
Piedra B/W	4	Jeddito B/Y	-
Mancos B/W	25	Unidentified Puebloan	379
<u>Fremont Types</u>			
<u>Type</u>	<u>Quantity</u>	<u>Type</u>	<u>Quantity</u>
Great Salt Lake Gray	1	Emery Gray	58
Uinta Gray	2	Emery Corrugated	30

Recent archaeological investigations in West-Central Colorado have produced no firm evidence of Basketmaker III manifestations. Further, this research has not supported the Anasazi cultural affiliation of Formative Stage sites, as once posited for the area (e.g., Schroeder 1964). Whereas the general adaptive strategies represented at such sites as Cottonwood, Tabeguache I and II, and Dolores Caves may have been similar to the Basketmaker II culture, no Basketmaker II surface structures, such as those found in the Durango area (see Morris and Burgh 1954; Reed and Kainer 1978) have been discovered. The later stone structures lack key architectural features such as kivas and high walls, and have far too few ceramics to represent a typical Anasazi site. Certain artifact types, such as manos, vary considerably from contemporaneous Anasazi sites. In short, architectural and artifactual variation seems too great to support the presence of a bona fide Anasazi occupation of the project area.

If the Formative Stage sites in West-Central Colorado are not considered Anasazi, then it follows that they be compared and contrasted to the other recognized Formative Stage culture in the area: the Fremont.

Investigation of prehistoric sites yielding evidence of Formative Stage subsistence and settlement patterns began in the area north of the limits of Anasazi culture prior to 1900. There, primarily in Utah, sites possessing substantial masonry habitation structures, ceramics, and evidence of corn horticulture were discovered and explored. Certain items, such as stone balls, moccasins, calcite pottery tempering, ornate clay figurines, one-rod-and-bundle basketry, certain ceramic vessel forms, surface manipulated ceramics, and metates with a secondary depression or shelf were recognized as being unique to the region (Jennings 1978:156). Many archaeologists, however, focused primarily on the similarities of the Formative Stage manifestations in Utah and the Anasazi culture area to the south, and did not recognize northern sites as representing a distinct culture. The area was classified as the "Northern Periphery" of the Anasazi culture, representing an extension, though somewhat diluted, of the Anasazi culture.

The Fremont culture was defined by Morss (1931) a good many years after the initiation of archaeological research of the Formative Stage sites in Utah. The definition recognized the unique attributes of the culture, and dismissed as an "integral part of the main stream of Southwestern development" (Morss 1931) the Fremont Culture. While influences emanating from the Anasazi culture area were recognized, the Fremont culture was considered distinctive.

As the Fremont culture data base expanded through the years, regional variations in material culture, architecture and, more recently, subsistence patterns were noted. Marwitt (1970), utilizing a trait-list approach, defined five Fremont variants (Fig. 4). The regional variants are: the Uinta Fremont of the Uinta Basin of northeastern Utah and northwestern Colorado; the San Rafael Fremont of east-central Utah; the Great Salt Lake Fremont of northern Utah; the Sevier Fremont of west-central Utah; and the Parowan Fremont of southwestern Utah. While dates for the various regional variants differ, they generally range from A.D. 400 to 1350.

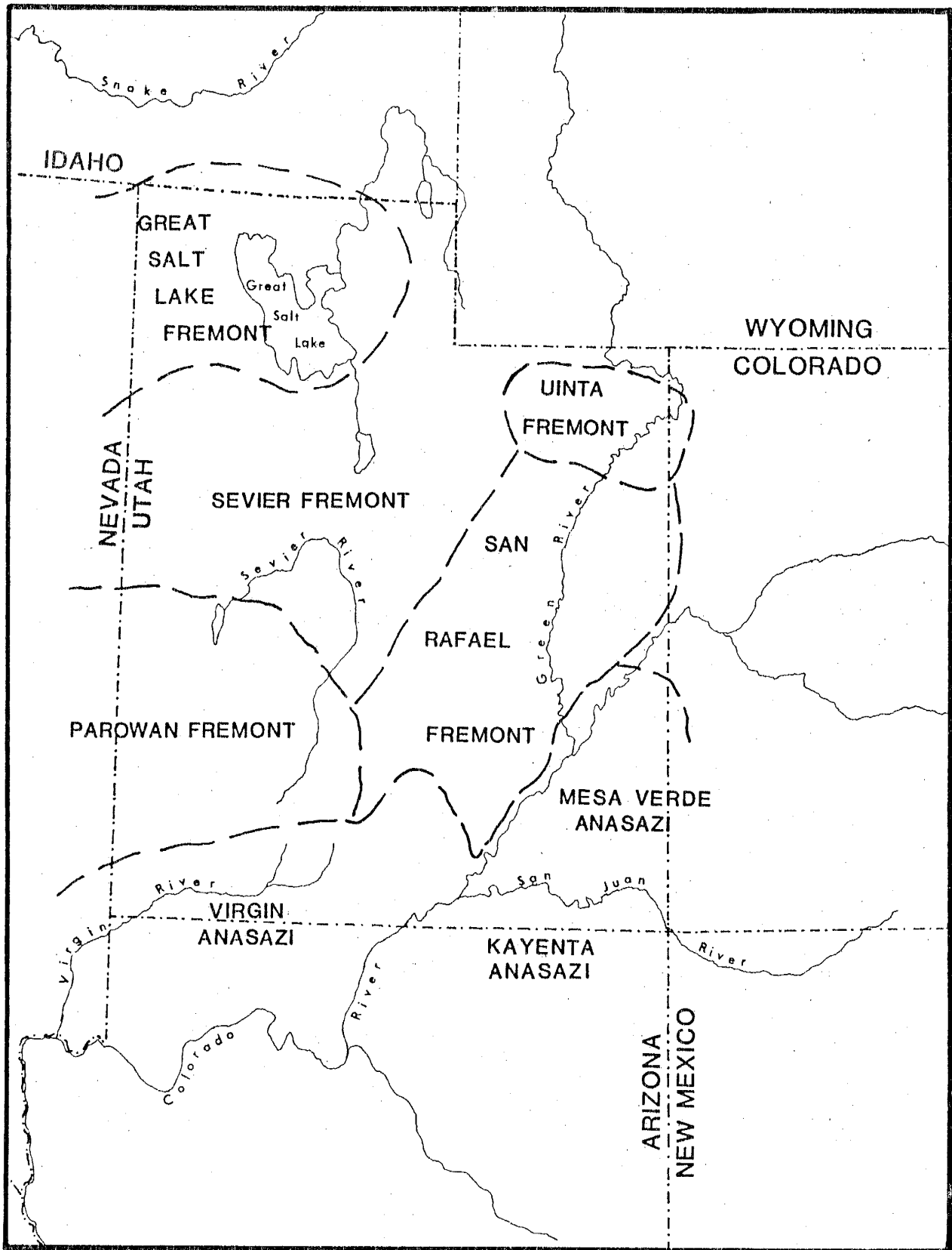


Figure 4. Map of Fremont variants (after Marwitt 1970: 137).

As Figure 4 illustrates, the San Rafael variant is the Fremont variant closest to the project area. The Uinta variant may actually extend southwards to the vicinity of Cisco, Utah, to include the Turner-Look site, which yielded a large number of calcite tempered Uinta Gray ceramics (Lindsay 1976). Importantly, however, the map shows that in Utah, the area south of the Colorado was occupied by the Anasazi rather than the Fremont. This is corroborated by Utah archaeologists such as Pierson (1980), and Lindsay (1976).

The validity of the Fremont regional variants identified by Marwitt has recently been the topic of considerable debate (e.g. Madsen 1980). Perhaps the most important criticism is offered by Madsen (1979), who largely rejects the artifactual/architectural trait list approach employed by Marwitt in favor of an approach considering differences and similarities of the settlement and subsistence patterns reflected by Marwitt's regional variants. Madsen (1979) has determined that the subsistence and settlement patterns of the Great Basin variants differ substantially from those found on the Colorado Plateau. The Great Basin variants, possibly including the Sevier, Parowan and perhaps the Great Salt Lake groups, are thought by Madsen to have focused upon exploitation of the marsh or riverine environments so prevalent in the physiographic province. The collecting of wild fauna and flora, especially those associated with the cattail/bulrush ecosystem, is considered the primary subsistence base, with corn agriculture being of lesser importance. Habitation structures are located near the marsh environments, and generally lack masonry. Upland areas were exploited, but probably from the centrally located lowland villages.

The Colorado Plateau peoples, however, including the San Rafael and the Uinta Fremont variants, are thought to have focused upon upland environments, given the environmental constraints of the particular physiographic province. Madsen (1979) writes that corn was much more important on the Colorado Plateau than in the Great Basin, although to what extent is unknown. Villages are small on the Plateau, and are usually located on hills or benches overlooking small permanent streams. Many of the structures are masonry. Madsen divides the Fremont culture as defined by Marwitt (1973) not into regional variants, but rather into two or perhaps three distinct cultures. The Great Basin groups are ascribed to the Sevier Culture, and the Colorado Plateau groups are considered the Fremont Culture. Madsen (1979) also discusses an "unnamed Plains-derived culture" in the Uinta Basin, to explain the association of certain archaeological attributes commonly found on the Great Plains physiographic province in the region associated with the Formative stage sites in north-eastern Utah.

Just how well the Formative Stage manifestations in West-Central Colorado fit into the Fremont culture depends upon the criteria used to define the Fremont. Presently, even students of the Fremont cannot agree upon a common definition. In general, proffered definitions have relied primarily upon a trait-list approach, with recent emphasis upon subsistence and settlement patterns. Early investigators used the trait-list method extensively to illustrate artifactual and architectural differences between the Fremont and other cultural groups. After years of

investigation, certain items such as stone balls, moccasins, calcite pottery tempering, ornate clay figurines, one-rod-and-bundle basketry, certain vessel forms, surface manipulated ceramics, and metates with secondary depressions were recognized as being unique to the culture (Jennings 1978:156). If Fremont cultural affiliation is defined by the presence of one or more of the traits listed above on a site, then Fremont affiliation of Formative Stage sites in West-Central Colorado is tenuous. Fremont ceramic types are extremely scarce in the region. Fremont ceramics are reported from only four sites, and the classification of sherds at two of these sites is questionable. Fremont sherds are reported from the Paradox 1 site (Leach and Lippold 1973), but no descriptions have been published. Crane (1978:79) reports finding 58 Emery Gray and 30 "Emery Gray Corrugated" sherds at 5MN367 in Roc Creek, Montrose County, but adds that the collection of sherds had primarily crushed igneous rock temper, and that "since gray wares with crushed igneous rock temper are found in both the Pueblo and Fremont areas, and since Roc Creek is located near the border of both these cultures, it raises the question as to whether the ceramics can be used in this case to determine the cultural affiliation of the site." Further, Madsen (1977) writes that corrugated Emery Gray ceramics are rare; this coupled with the discovery of Anasazi corrugated wares at other sites in western Montrose County implies that the corrugated ceramics at 5MN367 may be of Anasazi derivation. Even if Crane's and Leach and Lippold's classifications are correct, the dearth of Fremont ceramics in West-Central Colorado is surprising. It is difficult to imagine Fremont peoples, employing horticultural techniques and a sedentary lifestyle, not producing their own ceramics or securing large quantities in trade. If the Fremont did not occupy the project area, the dearth of Fremont ceramics is still unexpected, assuming that an informal trading network existed between the Fremont and the inhabitants of West-Central Colorado, and that ceramics were desirable trade items.

Other Fremont traits are either absent or present in small quantities in the region. Moccasins are virtually unknown in the area; in fact, yucca sandals are common in cave sites in western Montrose County. One-rod-and-bundle basketry is present in very small quantities. Lister and Wormington (1956) report finding a piece at the Moore Rockshelter, and Hurst (1940;1942) reports on two fragments during the excavation of Tabeguache Cave I. Other basket construction methods are also present (e.g. Hurst 1943). Stone balls and Utah-type metates are not reported in the region. Ornate clay figurines have yet to be reported in West-Central Colorado. Three fragmentary, possible figurines have been reported however, but these cannot be described as particularly ornate. Huscher and Huscher (1943:28) report finding several small, rather shapeless lumps of dried clay and one small rod of fired clay in a masonry structure with Pueblo ceramics in Mesa County. Wormington and Lister (1956) discovered a possible figurine fragment at Site C2-1 in Mesa County. The features of the unfired clay specimen were not clear; it was flattened on the back and rounded in front, suggesting an anthropomorphic figurine. The head of a clay figurine is reported by Baker (1978) near Ridgeway. The specimen was discovered on an historic site that also may have yielded prehistoric artifacts. Dr. Douglas D. Scott (personal communication) believes that the figurine head was manufactured in Mexico in historic times. Perhaps the best indication of Fremont traits in West-Central Colorado is a

scattering of Fremont-style rock art panels. While such panels are far outnumbered by non-Fremont motifs (see McKern 1978 and Buckles 1971) they are reported at scattered locations in the region (Sally Cole, personal communication).

The trait-list approach to identifying Fremont sites has recently been modified by Madsen (1979), who places heavy emphasis upon settlement and subsistence criteria. While his work primarily focuses upon contrasting subsistence patterns of the regional variants of the Fremont culture as defined by others, he does offer a very general definition of the Fremont that may be herein employed. According to Madsen (1979:720), the Fremont culture is characterized by a corn horticultural subsistence pattern, which is supplemented by the collection of wild floral and faunal foodstuffs. Settlements tend to be small and located near or overlooking permanent streams. Masonry surface structures and stone-lined pit dwellings typify Fremont architecture. The artifact inventory is similar to other Southwestern agricultural groups, and has few unique items. Sites near the Anasazi culture area yield many Anasazi trade goods. With Madsen's definition, the Formative Stage sites in West-Central Colorado may be considered Fremont, in that masonry structures and corn agriculture may characterize the sites. Madsen's definition, however, is too vague for our use here, as it, for example, is unable to distinguish classic Anasazi sites from classic Fremont sites. This problem can be eliminated by adding a single trait to Madsen's definition. It is suggested that Fremont sites are characterized by the following attributes:

- a. A corn horticultural subsistence pattern, supplemented by the collection of wild floral and faunal foodstuffs;
- b. Masonry surface structures or stone-lined pithouses; and
- c. A discrete ceramic tradition, the specific types of which may vary regionally. Recognized types include those discussed in Madsen's (1977) monograph on Fremont ceramics.

This definition appears to conform to data collected at Fremont sites on the Colorado Plateau in Utah and northwestern Colorado. It does, however, generally reject Fremont cultural affiliation for Formative Stage sites in West-Central Colorado, due to the paucity of Fremont ceramics.

If the differences between the Formative Stage sites in West-Central Colorado and the Anasazi or Fremont cultures are too great to support notions that they represent regional variants or subcultures of the Fremont or Anasazi cultures, then perhaps the least radical alternative would be to suggest that these sites represent an *in situ* development from an Archaic technocomplex (Douglas Scott, personal communication). In this scheme, people practicing an Archaic tradition lifestyle adopted a Formative Stage lifestyle as the need to intensify food production

arose. Being relatively close to Anasazi and Fremont culture areas, they were able to trade certain items, such as ceramics, and were open to influence for such things as architectural styles. The importance of cultivated foodstuffs relative to collected wild foods may not have been similar to either the Fremont or the Anasazi; perhaps hunting and gathering techniques were still able to meet most of the economic needs.

3.3.4 Evaluation of the Data Base

3.3.4.1 Quantity and Quality of the Data Base. Formative Stage sites comprise a small percentage of the sites in West-Central Colorado. Sites yielding Formative Stage ceramics, masonry structures or cultigens number less than one hundred. Considering that hunting and gathering probably played an important role in the settlement/subsistence system, however, many limited activity sites and short-term campsites affiliated with the Formative Stage may be present but unrecognized, due to the absence of cultigens, masonry structures and ceramics.

The quality of the data base for the Formative Stage is poor. A substantial proportion of the Formative Stage habitation sites were investigated in the 1930s and 1940s, when different objectives and standards prevailed. Investigations by the Woodburys (1932), the Huschers (1943) and C.T. Hurst (various) may have been state-of-the-art at the time, but nonetheless resulted in losses of data that would now be valuable. Recent investigations at Formative Stage sites in West-Central Colorado have also resulted in an unfortunate loss of valuable information. Archaeological excavations of numerous Formative Stage structures in western Montrose County were undertaken by Metropolitan State College in the early 1970s. The results of these efforts are largely unreported, and the literature that is available is of varying value. Field and analytic techniques are suspect.

Another group of archaeologists conducted excavations at the Paradox 1 site in western Montrose County in 1970. This site supposedly yielded a surface masonry structure of Fremont affiliation and a pithouse of Anasazi affiliation. Both Fremont and Anasazi ceramics were reportedly found. Unfortunately, these excavations were not adequately documented. The only published account is an analysis of the recovered faunal material (Kasper 1977).

The poor quality of reporting and perhaps analytic techniques of the aforementioned recent investigations is particularly insidious. Not only is information lost, as would be the case with a potted site, but potentially misleading data is generated. The brief accounts that do refer to the two investigations suggest that Fremont sites are extant in western Montrose County, with Fremont architecture and Fremont ceramics. Such finds would be very important indeed, and would substantially affect many archaeologists interpretations of the Formative Stage occupation of the project area. Inadequate reporting, however, makes critical analysis of the sites and their assemblages impossible. An unnecessary source of confusion therefore exists.

3.3.4.2 Physical Condition of Resources. Formative Stage sites

are generally more susceptible to disturbance than sites affiliated with other culture units. Rockshelter habitation sites and masonry structures are readily visible and so attract the attention of vandals. Surface scatters of ceramics are likely to be collected, due to the absence of ceramics at most sites in the region.

The condition of Formative Stage sites has also been adversely affected by archaeologists. A considerable proportion of the habitation sites have been excavated, primarily by early investigators and by more recent investigators employing less than state-of-the-art analytic and reporting techniques.

3.3.4.3 Research Problems

3.3.4.3.1 Relationship of the Formative Stage to the Archaic Stage. The relationship between these two stages is not well understood. Formative Stage lifeways in West-Central Colorado may have appeared either as a result of immigration of Formative Stage peoples from other regions or by the adoption of their lifeways by the indigenous population. The apparent paucity of Formative Stage Sites suggests to some archaeologists that the Formative Stage lifeway was not adopted by all of the culture groups of West-Central Colorado, and that both Formative and Archaic lifeways may have been contemporaneous and possibly competitive in the region. To date, however, no definite evidence for contemporaneity is apparent; for example, no Archaic assemblages have been chronometrically dated to the time encompassed by the Formative Stage.

3.3.4.3.2 Cultural Affiliation. As discussed above, there remain substantial problems in determining the cultural affiliation of the Formative Stage sites in West-Central Colorado. While the Huschers' assertion that some might be of Athapaskan origin appears to have few supporters today, there are proponents for Anasazi, Fremont, and an unnamed, indigenous culture affiliation. The problem of ascribing cultural affiliation is resultant from the incompleteness of our data base. As mentioned, most of the investigations into Formative Stage sites occurred in the 1930s and 1940s, before the development of certain specialized studies such as palynology and radiocarbon dating. Further, research topics in vogue today, such as subsistence and settlement patterns, had not fully matured, resulting in incomplete recording or presentation of data along such lines. It is imperative, therefore, that Formative Stage sites be identified and investigated. Research topics should include settlement and subsistence practices, technology, and chronology. Data generated by such research will possibly provide insight into cultural affiliation.

3.3.4.3.3 Chronology. The temporal span of the Formative lifeway needs to be further explored. Tree-ring dates of 10 B.C. to A.D. 10, A.D. 348 and A.D. 361 were obtained in the cultigen-bearing Tabeguache Cave I, but are suspect since they were analyzed by inexperienced students of C.T. Hurst (Gleichman et al. 1982). More credible tree-ring and radiocarbon dates obtained at Formative Stage sites range between A.D. 580 ± 65 and A.D. 1045 ± 65 (see Crane 1978). These may not represent the temporal limits of the occupation, however.

3.3.4.3.4 Subsistence. While Tabequache Cave I yielded over two thousand corn cobs (Hurst 1940), most Formative Stage sites yield only small amount of corn. The importance of cultigens in the subsistence strategy of this stage needs to be determined by further research.

3.3.4.3.5 Settlement patterns. Settlement patterns are poorly understood. Lithic scatters, representing resource procurement forays, are probably associated with the structural habitation sites, but their frequency and distribution is unknown. It is also unknown whether the structural sites were occupied year round, seasonally, or intermittently.

3.3.4.3.6 Relation of the Formative Stage to later culture units. Formative Stage lifeways disappeared from Colorado and Utah sometime in the 12th or 13th centuries. In some areas such as southwestern Colorado, data suggests that people emigrated from the area to more hospitable regions. In other areas, however, data supporting emigration is less compelling. It is feasible, for example, that Formative Stage peoples reverted to a non-horticultural economy rather than abandoned the area. Additional data will perhaps shed light on this research problem.

3.3.4.4 Important Resources. All sites attributable to the Formative Stage should be regarded as particularly important cultural resources. This includes not only sites yielding Formative Stage ceramics, cultigens, rock art and masonry structures, but also open lithic scatters. These latter sites may provide information on the nature and distribution of sites related to the hunting and gathering activities of the Formative Stage peoples of West-Central Colorado.

3.4 Proto-Historic/Historic Stage

3.4.1 Late Prehistoric Period

3.4.1.1 Culture History. Following the disappearance of the Formative Stage in West-Central Colorado by the 13th century A.D., an Archaic-like lifeway reemerged. The apparent similarity in lifeways has resulted in some archaeologists referring to this stage as the "Post-Formative Archaic Stage." Hunting and gathering was once again the primary subsistence base, and a transhumance lifestyle was practiced. The material culture was quite similar to that of the Archaic Stage, although the bow and arrow had become popular.

The period prior to the apparent immigration of the Ute is poorly understood in West-Central Colorado. Only one site definitely dating to this period has been identified in the region; Buckles (n.d.) obtained a radiocarbon date calibrated between A.D. 1335 and 1435 from a lithic scatter in the Ridgeway Reservoir project area. The results of his analysis are in preparation.

3.4.1.2 Research Problems

3.4.1.2.1 Cultural Affiliation. The people represented in

the archaeological record in the project area between approximately A.D. 1300 and 1600 may have been the descendants of indigenous Formative Stage peoples, or may have been Athapaskans on their way to the Southwest. Buckles (1971), who in his dissertation did not recognize a Formative Stage, argues for continuity of general lifeways and material culture from the time of the Ute into the Archaic Stage, which would support the hypothesis that indigenous populations are represented in this period. Perry (1980), however, suggests that Proto-Apacheans followed the Colorado Rockies southward from the Northwestern Plains to their eventual homeland in the Southwest. Perry (1980) implies that the emigrants may have passed through the mountainous areas of Colorado in small parties between A.D. 1300 and 1500. Supportive evidence in West-Central Colorado is presently absent, but the hypothesis is intriguing. Mention too should be made of 5SM762, on which Jeddito Corrugated and Jeddito Black-on-Yellow sherds were recovered (Breternitz 1981). These ceramics types were manufactured between approximately A.D. 1300 and 1450 (Smith 1971) by the Hopi. Whether these sherds were traded into the area or represent a short term intrusion into the region by Pueblo Indians is unknown.

3.4.1.2.2 Other research problems. The paucity of data for this period gives rise to a gamut of research problems. Pertinent research topics include demography, chronology, settlement and subsistence patterns and technology.

3.4.2 Ute Tradition

3.4.2.1 Culture History. Archaeological and linguistic data suggest that the Numic-speaking Ute entered the Colorado Plateau from the southwestern portion of the Great Basin sometime after A.D. 1000. Considering primarily the distribution of sites yielding ceramics of Numic-speaking peoples in association with chronometric dates, Madsen (1975) believes that Numic-speaking peoples reached northern Utah by A.D. 1200 to 1300. Wright, utilizing similar data, posits that the Numic-speaking Shoshone reached northwestern Wyoming at the beginning of the 15th century. While these works do not consider archaeological data generated in West-Central Colorado, it seems appropriate to extrapolate that Numic-speaking groups reached the region sometime between A.D. 1200 and 1400. The earliest firm evidence of a Numic-speaking Ute occupation of western Colorado dates to the 17th century. Dean (1969) has analyzed a dendrochronological specimen obtained at an apparent brush structure near Durango and calculated a date between A.D. 1600 and 1774. Historic Spanish documents make mention of the Utes as early as 1626 (Shroeder 1965). In West-Central Colorado, wickiups at 5MN41 and 5MN42 have been tree-ring dated at approximately A.D. 1741 and 1763 respectively (letter from Jeffrey S. Dean to William G. Buckles 1974). The first actual Euro-American observation of Utes in the region occurred in 1776 on the Dominguez-Escalante Expedition (Bolton 1972). Throughout the historic period, Utes were the sole inhabitants of West-Central Colorado (Buckles 1968). Ute occupation of the region terminated in 1881 with their expulsion to reservations in northeastern Utah.

The Ute lifeway, especially prior to Euro-American contact, was

quite similar to the earlier Archaic lifeways (see Buckles 1971). A hunting and gathering economy was employed; small bands traveled within annual territories in a patterned fashion. Temporary brush structures were built for protection. Ute artifact assemblages were similar to Archaic assemblages in terms of the categories of tools represented. In fact, it appears possible that portions of Ute assemblages were actually specimens collected on other prehistoric sites for reutilization (Eddy et al. 1983). Major differences between the Ute Tradition and the Archaic Stage concern the Utes' reliance upon the bow and arrow instead of atlatl and dart (Smith 1974; Buckles 1971), Ute use if not manufacture of ceramics, and, according to Bettinger and Baumhoff (1982), employment by the Ute of a more labor intensive subsistence system, focusing upon less desirable floral and faunal resources. Differences became more pronounced as Euro-American influences increased in the latter portion of the Ute occupation. Use of the horse as a beast of burden apparently had a significant effect on all aspects of Ute culture, permitting use of the tipi and greater mobility. In terms of material culture, late Ute sites frequently yield trade items such as glass buttons, glass beads, iron projectile points, metal knives, and metal pendants.

3.4.2.2 Ute Sites in the Region. Few Ute sites have been recorded in West-Central Colorado, in spite of historic accounts suggesting a rather intensive occupation. This is probably partially due to difficulty in recognizing Ute sites, as a result of their reuse of earlier cultures' artifacts. Many may be erroneously assigned to earlier culture units. Also, it is possible but yet undemonstrated that the intensive use of horses changed settlement patterns somewhat, resulting in the placement of base camps at greater distances from exploited resources, possibly along major river courses. These areas are presently owned primarily by private individuals, and so have been less intensively inspected for sites and have been modified by agriculture and construction.

3.4.2.3 Evaluation of the Data Base.

3.4.2.3.1 Quantity and Quality of Data Base. Relatively few definite Ute sites have been identified in the region. Fifteen sites with wickiups have been documented; each contain between one and nine structures. Twenty-eight sites have been recorded as possessing Uncompahgre Brownware ceramics. A total of 2384 Uncompahgre Brownware sherds are reported in the region; of this total, 1653 are in private collections and 731 have been collected by archaeologists. Finds of ceramics usually represent single or few vessels. A small number of other sites yielding both lithic artifacts and Euro-American trade goods have also been documented.

The only intensive investigations of Ute sites in the region have been conducted by Buckles (1971). Buckles' description and analysis of Ute sites is of the highest quality.

3.4.2.3.2 Physical Condition of Resources. Ute sites are generally in fair condition. Sites without structures frequently have had projectile points, ceramics, and trade items illicitly collected,

but they generally have not been damaged by pothunters. Sites with wickiups have also been heavily collected, and some have had buried materials unearthed. Subsurface damage generally occurs as a result of people informally kicking or scraping away the soil and duff within the structures, but even this is often sufficient to damage the occupation level. The structures themselves are usually left intact. Some sites have been fenced by the Bureau of Land Management to decrease the potential for future disturbance.

3.4.2.3.3 Research Problems

3.4.2.3.3.1 Ute origins. While linguistic analysis and studies of the distribution of chronometrically dated Shoshonean/Ute ceramics have provided general indications as to when the Ute immigrated into the area, specific regional data are not abundant. Efforts should be made to identify and chronometrically date early Ute sites.

3.4.2.3.3.2 Identification of Ute sites. It seems likely that the paucity of recorded Ute sites in the region is partially due to difficulty in recognizing Ute sites. Resolution of this problem is likely to be difficult.

3.4.2.3.3.3 Intensity of subsistence system. Assuming that the Utes did indeed immigrate into the region and found an indigenous population adapted to a hunting and gathering lifestyle, the nature of the resulting competition between the two groups can be studied. Employing optimal foraging theory, Bettinger and Baumhoff (1982) argue that Numic-speaking peoples were able to successfully expand over the Great Basin because they employed a more labor intensive hunting and gathering strategy than their competitors. It follows that the Numic-speaking Ute may have had a broader diet than their competitors, including foods considered less desirable because of higher extraction and processing time, and perhaps less palatability. More small seeds and small fauna may have been included in the Ute diet. Bettinger and Baumhoff (1982) posit that environment and general level of technology being equal, a high cost adaptive strategy is likely to displace a low cost strategy.

Bettinger and Baumhoff's hypothesis is testable in West-Central Colorado. Sites of the appropriate age and cultural affiliation need to be identified and analyzed in terms of the floral and faunal resources exploited and the technology developed to support the subsistence system.

3.4.2.3.3.4 Effect of horses on the Ute Tradition. The first horses with whom the Utes had contact were evidently used as food (Stewart 1966). Sometime between 1640 and 1670, however, the Ute began using horses for beasts-of-burden (Stewart 1966; Smith 1974). They probably had a dramatic effect on the Ute lifeway, and research to discern the impacts of the horse on the Ute lifeway is appropriate.

3.4.2.3.4 Important Resources. Since sites of definite Ute origin are uncommon in West-Central Colorado, all Ute sites whose

integrity is intact should be regarded as important resources. Structural sites, such as wickiups and tree-platforms should receive special concern, however, since they are particularly subject to natural and human destruction. One gets the impression from reading early accounts of the archaeology of the region by people such as the Huschers (n.d.) that structural sites are disappearing at a rapid rate.

4.0 General Research Problems. Research problems that cross-cut the culture units discussed above are herein considered.

4.1 Dearth of excavation data. Many of the research problems discussed elsewhere in this manuscript stem from the paucity of excavated data. Only 65 sites have had an area of five square meters or more exposed in professional excavation. Of that total, 41 were excavated in the early 1960s or earlier. Of the 24 sites excavated in the 1970s and 1980s, eight have reports in preparation and one appears unlikely to ever have a report written for it. The excavations that have been completed and described in literature have generally been of good quality, and have spawned many research questions. New, problem-oriented excavation projects are needed to address these research questions.

4.2 Chronology. Largely as a result of the dearth of excavation data, the chronology of the culture sequence in the region needs refinement. At present only eight tree-ring dates and 56 radiocarbon dates have been processed. Considering that the region may have been occupied in excess of 10,000 years, the data base is indeed small. Appendix A presents the chronometric dates obtained in the region. Those dates in parenthesis have been calculated by this writer to facilitate comparability. In some cases these represent dates that have been adjusted with the aid of MASCA correction factors (Michels 1973) to allow for atmospheric fluctuations in C14 content. In other cases the parenthetical date represents a B.P. date, calculated to permit use of a calibrated date range, which gives the range in which there is a 95 percent probability that the true calendar date is represented (Klein et al. 1982).

As the number of chronometric dates in the region grows, refinement of a regionally-specific projectile point sequence will be possible.

4.3 Settlement Patterns. Additional archaeological survey is needed in order to better understand prehistoric settlement patterns. Few sample-oriented surveys whose objectives concern site prediction have been implemented in the region. Of these, most were completed several years ago and no longer represent the state-of-the-art predictive modeling. Newer techniques, often employing discriminant analysis to differentiate site from nonsite locations, have been successfully employed in certain portions of western Colorado (Burgess et al. 1980; Kenneth Kvamme, personal communication) and show great promise for the entire region. Past inventories of large scale have also tended to avoid certain geographical areas, such as major valley bottoms and high elevations, due to land ownership and location of resource developments. A sample-oriented inventory cross-cutting all major environmental/elevational zones in the region would be desirable.

4.4 Cultural process. To determine the cultural processes responsible for the patterns of prehistoric change and continuity, additional synchronic and diachronic research into past lifeways is needed. Research topics include analysis of settlement and subsistence patterns, technology, demography, and social organization.

4.5 Demography. Very few aboriginal burials have been discovered in

West-Central Colorado, and of these, only three have apparently been adequately analyzed. Two were dug by amateurs at 5MN23, and were analyzed by a member of the Ute Prehistory Project (Buckles 1971:1040), and one was excavated in Glade Park and was analyzed by Woodbury (1930).

4.6 Site significance. Evaluation of prehistoric site significance usually concerns the potential of a site to yield important scientific information. This is no easy task, since sites are frequently evaluated without the aid of subsurface exploration. Further, it can be argued that all sites may potentially yield important data; to understand a hunting and gathering subsistence system, for example, it is just as necessary to know the nature and distribution of limited activity sites as it is the more complex habitation sites. Nonetheless, a framework for identifying particularly important sites can be developed, which reflects some of the research problems identified in this manuscript.

The most important archaeological sites have the potential to answer specific research questions. Most of the research problems herein presented can be addressed through the identification and analysis of site chronology, subsistence practices, technology, and paleoenvironment. Consequently, particularly important sites in the region have the potential to yield the following types of data.

4.6.1 Chronological data.

- 4.6.1.1 Sites with hearths or lenses of charcoal.
- 4.6.1.2 Sites with obsidian
- 4.6.1.3 Sites with ceramics for cross-dating and thermoluminescence analysis.
- 4.6.1.4 Sites with beams of sufficient size for tree-ring analysis.
- 4.6.1.5 Sites with temporally diagnostic lithic artifacts.

4.6.2 Subsistence data.

- 4.6.2.1 Sites with hearths or lenses of charcoal that may contain carbonized macrofloral specimens.
- 4.6.2.2 Rockshelters, where perishable floral and faunal materials and coprolites may be preserved.
- 4.6.2.3 Sites with animal bone.
- 4.6.2.4 Sites with tool kits indicative of specific subsistence practices.

4.6.3 Data concerning diachronic change.

- 4.6.3.1 Stratified sites.
- 4.6.3.2 Horizontally distributed, distinct, datable components.

4.6.4 Paleoenvironmental data.

- 4.6.4.1 Rockshelter sites with long-term accumulation of

sediments, molluscs, pollen, coprolites and macrofloral and faunal specimens.

4.6.4.2 Open sites with datable stratigraphy and soils yielding pollen.

4.6.5 Burial data.

4.6.5.1 Sites with human skeletal materials.

Some sites are important too because of their rarity. Since archaeological sites are fragile and nonrenewable resources, site types present in very low numbers are generally considered more important than site types well represented in the record. Insight into the frequency of certain site types is provided in Table 4, presenting estimations of frequency of occurrences. The total results from an inspection of the site files at the BLM Montrose District Office, the Grand Junction Resource Area Office, the Glenwood Springs Resource Area Office, and the USDA Forest Service Supervisor's Office for the Uncompahgre, Gunnison and Grand Mesa National Forests. Totals should be considered as estimations, due to possible problems in site file systems, possible errors by this writer, and the fact that sites are constantly being recorded. Further, some site types, such as rock art and sites with ceramics, may be counted more than once if they occur on other site types. These biases, however, are probably not of sufficient magnitude to significantly affect the ratios obtained.

TABLE 4
FREQUENCY OF KEY SITE TYPES

<u>Type</u>	<u>Number</u>	<u>Percentage</u>
Open Lithic Scatter	2297	80%
Rockshelters	289	10%
Rock Art	134	5%
Masonry Stone Structures	53	2%
Sites with Ceramics	67	2%
Wickiups	15	1%
TOTAL	<u>2855</u>	<u>100%</u>

As these totals indicate, rockshelter, rock art, and sites with ceramics or structures should receive special preservation and research consideration.

4.7 Destruction of data base. While the archaeological data base is likely to expand for some time as a result of additional inventories and excavations, the actual number of aboriginal sites is decreasing. Sites are being destroyed by both natural agents and human activities. Destruction of sites may be most severe in the major valleys, where lands are generally owned by private individuals. There, sites are subject to irrigation and other farming-related ground disturbing activities, as well

as urban expansion, often without prior identification and investigation (cf. Collins et al. 1981). The archaeological resources of West-Central Colorado are varied and scientifically valuable. The perhaps inevitable loss of scientific information must be mitigated by thorough recording, reporting, and problem-oriented archaeological research.

APPENDIX A

CHRONOMETRIC DATES FROM ARCHAEOLOGICAL
SITES IN WEST-CENTRAL COLORADO

CHRONOMETRIC DATES FROM ARCHAEOLOGICAL
SITES IN WEST-CENTRAL COLORADO

Site	Date BP B.C./A.D.	Calibrated		Laboratory Number	Type of Sample	Reference	Comment
		Date Range (95% Confidence)					
5MN42	A.D. 1763 v	--		UTE-4	tree ring	Personal communication between William G. Buckles and Jeffrey Dean	
5MN42	A.D. 1762 ++ v	--		UTE-5	tree ring	Personal communication between William G. Buckles and Jeffrey Dean	
5MN41	A.D. 1741	--		UTE-2	tree ring	Personal communication between William G. Buckles and Jeffrey Dean	
	510 ± 60 BP			BETA			
5OR182	A.D. 1440	A.D. 1335 to 1435		1971	charcoal	Buckles n.d.	
5ME429	860 ± 110 BP					Martin et al	
	A.D. 1110 ± 110	A.D. 925 to 1305		RL-1170	charcoal	1980	
	(870 BP)				C14,		
5MN368	A.D. 1080 ± 70	A.D. 1035 to 1255		UGA-1274	human bone	Crane 1978	
	(905 BP)						
5MN654	A.D. 1045 ± 65	A.D. 1020 to 1250		UGA-1379	charcoal	Crane 1978	
Site						Gleichman	
No. 2	A.D. 1025 vv	--		--	tree ring	et al. 1982	
	930 ± 120 BP						
5ME428	A.D. 1060 ± 120	A.D. 895 to 1255		RL-1173	charcoal	Martin et al	
	980 ± 60 BP			BETA		1980	
5OR198	A.D. 920 ± 60	A.D. 900 to 1210		1969	charcoal	Buckles n.d	
	(1045 BP)						
5MN367	A.D. 905 ± 60	A.D. 875 to 1055		--	charcoal	Crane 1977	
	(1190 BP)						
5MN517	A.D. 760 ± 355	A.D. 340 to 1280		UGA-1132	charcoal	Crane 1978	
	1250 ± 70 BP			BETA			
5OR198	A.D. 650 ± 70	A.D. 620 to 890		2455	charcoal	Buckles n.d.	

CHRONOMETRIC DATES (Continued)

Site	Date BP		Calibrated		Laboratory Number	Type of Sample	Reference	Comment
	B.C./A.D.		Date Range (95% Confidence)					
Tabaguache Cave I	10 B.C. to A.D. 10		--		--	tree ring	Gleichman et al. 1982	dated by C.T. Hurst's students
5ME428	1980 ± 120 BP		185 B.C. to A.D. 225		RL-1172	charcoal	Martin et al. 1980	
50R243	2000 ± 50 BP				BETA			
	50 B.C. ± 50		170 B.C. to A.D. 205		2643	charcoal	Buckles n.d.	
50R179	2010 ± 100 B.P.				BETA			
	60 B.C. ± 100		370 B.C. to A.D. 220		1968	charcoal	Buckles n.d.	
50R182	2030 ± 80 BP				BETA			
	80 B.C. ± 80		380 B.C. to A.D. 215		2638	charcoal	Buckles n.d.	
50R243	2060 ± 60 BP				BETA			
	110 B.C. ± 60		365 B.C. to A.D. 40		1970	charcoal	Buckles n.d.	
5MN40	150 B.C. ± 220		575 B.C. to A.D. 230		--	charcoal	Buckles 1971	
50R243	2220 ± 80 BP				BETA			
	220 B.C. ± 80		545 to 20 B.C.		2644	charcoal	Buckles n.d.	
5ME217	2250 ± 75 BP							
	300 B.C. ± 75		580 to 35 B.C.		971	charcoal	Lutz 1978	
50R179	2300 ± 100 BP				BETA			
	300 B.C. ± 100		755 to 165 B.C.		2635	charcoal	Buckles n.d.	
50R167	2320 ± 90 BP				BETA			
	320 B.C. ± 90		760 to 170 B.C.		2454	charcoal	Buckles n.d.	
5ME82	2440 ± 120 BP							
	610 B.C. ± 190		800 to 385 B.C.		RL-1222	charcoal	Reed and Nickens 1980	
5ME82	2510 ± 120 BP							
	660 B.C. ± 180		825 to 405 B.C.		RL-1218	charcoal	Reed and Nickens 1980	
5ME635	2660 ± 130 BP							
	900 B.C. ± 130		1220 to 425 B.C.		RL-1132	charcoal	Alexander and Martin 1980	
5ME635	2690 ± 120 BP							
	940 B.C. ± 140		1100 to 615 B.C.		RL-1130	charcoal	Alexander and Martin 1980	
5MN40	745 B.C. ± 180		1340 to 415 B.C.		--	charcoal	Buckles 1971	

CHRONOMETRIC DATES (Continued)

Site	Date BP		Calibrated Date Range (95% Confidence)	Laboratory Number	Type of Sample	Reference	Comment
	B.C./A.D.	BP					
5GF126	2770 ± 60	BP	1105 to 800 B.C.	--	charcoal	Carl Conners, personal communication	
5OR243	2830 ± 60	BP	1235 to 825 B.C.	BETA 2642	charcoal	Buckles n.d.	
5GF126	2900 ± 60	BP	1330 to 885 B.C.	--	charcoal	Carl Conners, personal communication	
5ME635	2970 ± 220	BP	1665 to 800 B.C.	RL-1131	charcoal	Alexander and Martin 1980	
5OR167	3095 ± 130	BP	1690 to 915 B.C.	BETA 2000	charcoal	Buckles n.d.	
5OR167	3180 ± 100	BP	1695 to 1250 B.C.	BETA 1999	charcoal	Buckles n.d.	
5OR167	3215 ± 110	BP	1735 to 1340 B.C.	BETA 1998	charcoal	Buckles n.d.	
5ME82	3340 ± 130	BP	1970 to 1375 B.C.	RL-1215	charcoal	Reed and Nickens 1980	anomalous
5ME82	4140 ± 150	BP	3145 to 2395 B.C.	RL-1213	charcoal	Reed and Nickens 1980	
5OR317	4145 ± 90	BP	3020 to 2420 B.C.	BETA 2152	charcoal	Buckles n.d.	
5ME82	4430 ± 150	BP	3505 to 2860 B.C.	RL-1217	charcoal	Reed and Nickens 1980	
5ME82	3180 B.C. ± 200		3910 to 3365 B.C.	RL-1214	charcoal	Reed and Nickens 1980	
5OR167	4890 ± 160	BP	4350 to 3070 B.C.	BETA 2001	charcoal	Buckles n.d.	
5ME82	4920 ± 270	BP	4130 to 3570 B.C.	RL-1216	charcoal	Reed and Nickens 1980	
5ME82	2270 B.C. ± 270		4135 to 3640 B.C.	RL-1219	charcoal	Reed and Nickens 1980	
5ME82	5050 ± 160	BP	4340 to 3655 B.C.	RL-1220	charcoal	Reed and Nickens 1980	
5ME82	3870 B.C. ± 170						
5ME82	5070 ± 160	BP					
5ME82	3900 B.C. ± 190						
5ME82	5130 ± 170	BP					
5ME82	3970 B.C. ± 220						

CHRONOMETRIC DATES (Continued)

Site	Date BP B.C./A.D.	Calibrated		Laboratory Number	Type of Sample	Reference	Comment
		Date Range (95% Confidence)					
5ME429	1280 ± 110 BP A.D. 710 ± 110 (1370 BP)	A.D. 590 to 900	RL-1169	charcoal	Martin et al. 1980		
5MN653	A.D. 580 ± 65 1540 ± 55 BP	A.D. 580 to 775	UGA-1375	charcoal	Crane 1978		
5ME217	A.D. 410 ± 55	A.D. 360 to 605	974	charcoal	Lutz 1978		
Tabeguache Cave I	A.D. 372	--	--	tree- ring	Gleichman et al. 1982	dated by C.T. Hurst's students	
Tabeguache Cave I	A.D. 361	--	--	tree- ring	Gleichman et al. 1982	dated by C.T. Hurst's students	
5ME217	1590 ± 50 BP A.D. 360	A.D. 245 to 590	972	charcoal	Lutz 1978		
Tabeguache Cave I	A.D. 348	--	--	tree- ring	Gleichman et al. 1982	dated by C.T. Hurst's students	
50R243	1680 ± 60 BP A.D. 220 ± 60	A.D. 100 to 550	2456	charcoal	Buckles n.d.		
5ME217	1690 ± 55 BP A.D. 260 ± 55	A.D. 85 to 455	973	charcoal	Lutz 1978		
50R198	1730 ± 50 B.P. A.D. 170 ± 50	A.D. 65 to 430	BETA 2641	charcoal	Buckles n.d.		
50R179	1800 ± 80 BP A.D. 100 ± 80	A.D. 1 to 425	BETA 2636	charcoal	Buckles n.d.		
50R179	1840 ± 50 BP A.D. 60 ± 50	A.D. 15 to 250	BETA 2637	charcoal	Buckles n.d.		
5DR182	1860 ± 90 BP A.D. 40 ± 90	140 B.C. to A.D. 355	BETA 2151	charcoal	Buckles n.d.		
50R182	1870 ± 70 BP A.D. 30 ± 70	5 B.C. to A.D. 240	BETA 2639	charcoal	Buckles n.d.		
5ME428	1910 ± 120 BP A.D. 30 ± 140	160 B.C. to A.D. 245	RL-1171	charcoal	Martin et al. 1980		
50R182	1910 ± 90 BP 10 B.C. ± 90	160 B.C. to A.D. 245	BETA 2640	charcoal	Buckles n.d.		

CHRONOMETRIC DATES (Continued)

Site	Date BP	Calibrated		Laboratory Number	Type of Sample	Reference	Comment
	B.C./A.D.	Date Range (95% Confidence)					
5ME82	5930 ± 180 BP					Reed and Nickens 1980	
	4820 B.C. ± 230	5255 to 4430 B.C.		RL-1223	charcoal	Nickens 1980	
5ME82	6150 ± 190 BP					Reed and Nickens 1980	
	5090 B.C. ± 180	5425 to 4580 B.C.		RL-1221	charcoal	Nickens 1980	
	6710 ± 270 BP			BETA			
50R167	4760 B.C. ± 270	6165 to 5190 B.C.		2002	charcoal	Buckles n.d.	

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