INTRODUCTION

1

This report presents the results of archeological survey of ca. 2,125 acres (860 hectares) conducted by Prewitt and Associates, Inc., from November 27, 1995, to January 9, 1996, at Camp Stanley Storage Activity. The investigations were conducted under a subcontract with Science Applications International Corporation of Boise, Idaho. Camp Stanley is a U.S. Army installation encompassing ca. 4,004 acres in northern Bexar County, Texas (Figure 1). Camp Stanley is divided into two parts—an Inner Cantonment (ca. 1,780 acres) and an Outer Cantonment (ca. 2,224 acres). Of the approximately 2,125 acres surveyed, ca. 977 acres were in the Inner Cantonment and ca. 1,148 acres were in the Outer Cantonment. The survey recorded 34 archeological sites consisting of 20 prehistoric components and 18 historic components.

These investigations are authorized by and were conducted in accordance with Section 106 of the National Historic Preservation Act of 1966 (P.L. 89-665, as amended in 1980), the Archeological and Historical Preservation Act of 1974 (P.L. 93-291, as amended), the National Environmental Policy Act of 1969 (P.L. 90-190, Executive Order 11593 (Protection and Enhancement of the Cultural Environment 1971), and Army Regulation 420-40.

The results of these investigations are presented in this report in the following manner. The remaining portion of Chapter 1 provides environmental background information on the geology, Quaternary geomorphology, climate, flora, and fauna of the area. Chapter 2 presents an in-depth Prehistoric Context for Camp Stanley and cultural chronologies for the Prehistoric and Historic periods. Chapter 3 presents the objectives and methods of the investigations. The results of the archeological survey are presented in Chapter 4 with individual site descriptions and summaries and interpretations of the collective prehistoric and historic resources. Assessments and recommendations for the cultural resources are given in Chapter 5.

GEOLOGY

Camp Stanley is located in south-central Texas along the Balcones fault zone which marks the southern and eastern margins of the Edwards Plateau, separating it from the Blackland Prairie and Gulf Coastal Plain to the southeast (Arbingast et al. 1973:6; Brown et al. 1974). The Balcones fault zone is a band of northeast-southwest-trending faults that were active during the Miocene. The fault blocks throughout this zone are generally downthrown to the southeast, a result of the uplift of the Edwards Plateau with respect to the Blackland Prairie and the Gulf Coastal Plain. Camp Stanley is underlain by the Lower Cretaceous Glen Rose Formation (Brown et al. 1974), which consists of alternating beds of limestones, dolomites, and marls that are indicative of shallow sub-tidal and tidal-flat environments. These alternating resistant and recessive beds give the Glen Rose Formation its characteristic stairstepped or benched topography. The Glen Rose is divided into upper and lower units. The lower Glen Rose is exposed across Camp Stanley in the Salado Creek valley, its tributaries, and smaller drainages (E. Collins 1994). It is 200–270 ft thick and consists of massive limestones and dolomitic limestones containing some rudistid reefs and mounds. The top of the lower Glen Rose unit is capped by a series of 1–3-ft-thick Corbula beds consisting of abundant steinkerns of the bivalve Corbula harveyi (E. Collins 1994). The upper Glen Rose is present on the hilltops, ridges, slopes, and intervening saddles across Camp Stanley and consists of thinner, more-dolomitic, and less-fossiliferous beds (E. Collins 1994). It has an overall thickness of 400 ft.

QUATERNARY GEOMORPHOLOGY

The rugged and highly dissected landscape of Camp Stanley is the result of millions of years of erosion. The uplift of the Edwards Plateau during the late Tertiary created knickpoints, which streams draining the plateau have been wearing down since the Miocene. Much of Camp Stanley is drained by Salado Creek, an intermittment upland tributary of the San Antonio River. The extreme southwestern corner of the installation is drained by an unnamed ephemeral tributary of Leon

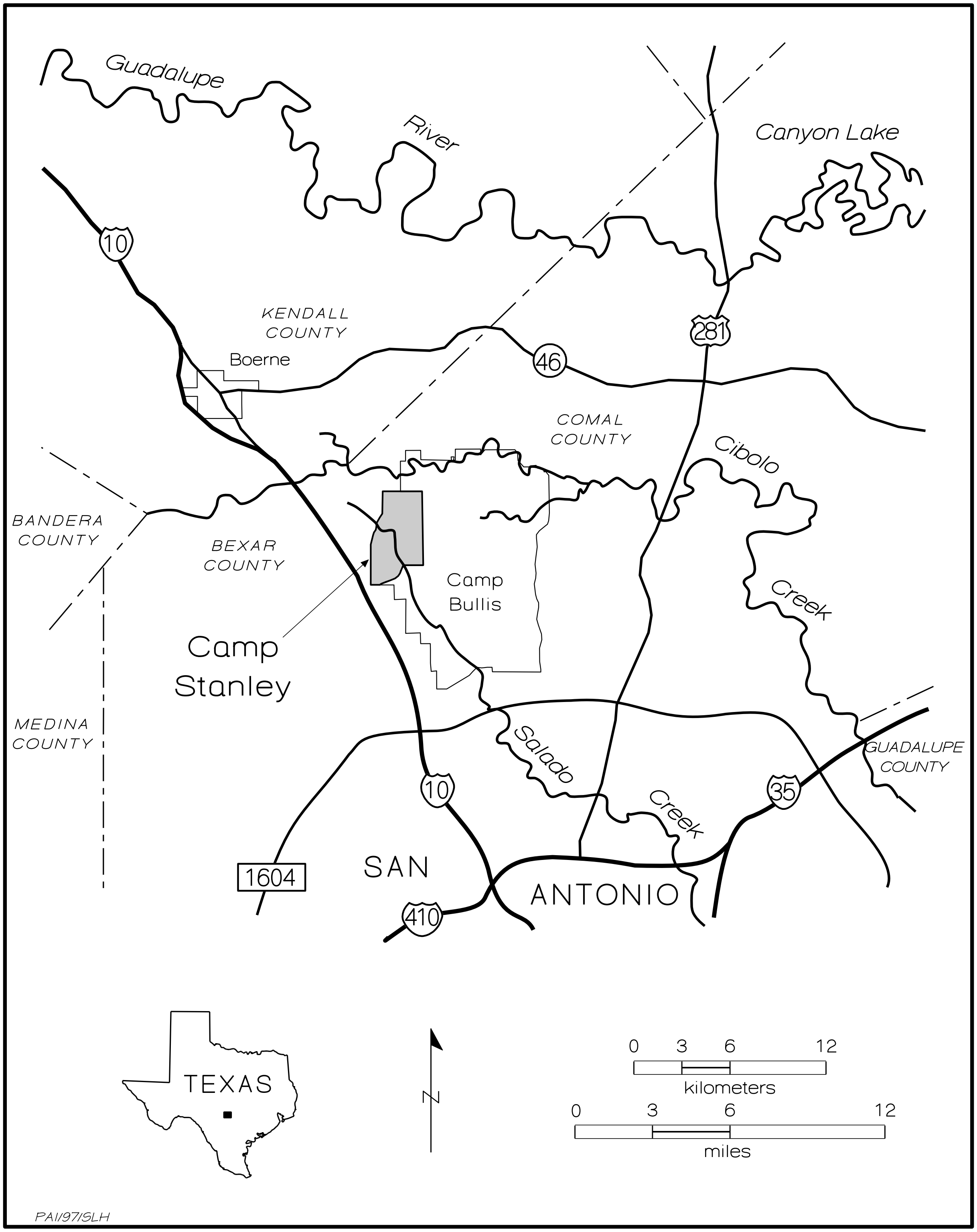

Figure 1. Project location map.

Creek, while the northeastern corner is drained by ephemeral tributaries of Cibolo Creek. Faulting has to some extent controlled or strongly influenced the development of these drainages (particularly Salado Creek) by directing groundwater to seeps and springs, exposing formations of varying resistances, and controlling gradients.

The low-order upland drainages are usually deep, narrow, and often scoured to bedrock and devoid of thick alluvial deposits. Relatively thick alluvial deposits were observed only in the Salado Creek valley in the form of a relatively broad floodplain. These alluvial deposits are up to 1–1.5 m thick and consist of thick gravelly basal units capped by thin mantles of loamy and clayey alluvium. Salado Creek is a slightly meandering, intermittent, mixed-load stream. The headwaters of Salado Creek are within and just outside Camp Stanley; therefore, Salado Creek has a steep gradient (9.5 m/km). Much of the Salado Creek valley has been modified and channelized, disturbing and destroying the stratigraphy of the alluvial deposits. Downstream, in Camp Bullis, a large earthern dam was constructed by the Soil Conservation Service on Salado Creek to inhibit rapid run-off and facilitate the infiltration of water into the Edwards aquifer. Undoubtedly, the presence of the dam has affected sedimentation upstream in Camp Stanley. In the past, the steep gradient of upper Salado Creek (9.5 m/km), coupled with heavy rainfalls and impervious ground cover throughout the watershed, resulted in intensive flash floods and scouring of the channel bed and margins. It is probable that most of the upper Salado Creek valley was scoured out periodically, making the presence of any alluvial deposits temporary features within the valley. How often this may have occurred is not known, but since flashy discharges are now controlled to some extent, much of the sediment upstream from the dam may have been deposited since its construction in the 1970s.

An earlier archeological survey along Salado Creek in Camp Bullis also noted the presence of basal gravels (high-energy environments) and suggested that most of the valley had little potential for yielding intact archeological sites (Quigg 1988:26). This notion was further supported by the absence of prehistoric cultural resources in primary context throughout the Salado Creek valley, even though the area was subjected to an intensive shovel-testing program during the survey.

Uplands, ridges, slopes, and intervening saddles characterize much of the Camp Stanley landscape and therefore represent an important part of the evolution of this landscape and potential archeological record. Kibler (Kibler and Gardner 1997) presents a simple model of landscape evolution for the Camp Stanley area, based on investigations at neighboring Camp Bullis, that primarily focuses on the development of upland slopes and processes of sediment transport from upland environments to the fluvial systems in the valley bottoms. The model views sediments and clasts being delivered to the valley bottoms from the uplands and slopes by sheetwash, rillwash, fluvial, and mass-wasting processes through a system of discontinuous and segmented bedrock-entrenched gullies. Other colluvial processes and depositional environments commonly associated with the development of slopes, such as debris flows and the formation of fans, are extremely rare.

Upland or upslope sediments are delivered by sheetwash and rillwash to the gullies, where the flow becomes channelized and restricted. The gullies tend to be widely spaced, creating broad, smooth slopes characteristic of a low drainage density system (Young 1972:74). The alternating resistant and pervious beds of the Glen Rose Formation as well as the gradient of the main slope play a major role in the development of these gullies, influencing and controlling drainage, channel (gully) morphology, gradient, and incision. Farther downslope, the walls and bottom of the channel will merge at a location known as the intersection point (Waters 1992:145). Intersection points usually occur where the drainage intersects an exposed bed of highy resistant bedrock, hindering entrenchment, and where the gradient of the main slope decreases. Sediments accumulate at intersection points to form small gully-mouth fans, sheetwash and rillwash become the dominant modes of sediment transport, and the overall gully channel becomes wider and shallower, until the channel once again becomes entrenched due to a bedrock or gradient change downslope. Channel gradient changes tend to be extremely sharp, localized, and marked by <1–3-m-high pour-offs, which denote changes in the resistance of the exposed bedrock. Entrenchment is usually through headward erosion and the undercutting and mass wasting of more-resistant limestone caps at the pour-offs.

Depositional environments on the uplands and valley slopes are rare. These surfaces are most often nonaggrading or deflationary with very thin soil mantles, which primarily are the result of in situ weathering or deposition through sheetwash and rillwash. The few depositional environments existing on the slopes are the result of sediments filling local topographic depressions, accumulating behind barriers (e.g., vegetation), or accumulating where gradients sharply decline (e.g., intersection points). These deposits tend to be thin (rarely more than 40 cm thick) discontinuous patches of gravelly loams.

Large overhangs or rockshelters currently are not known to exist in Camp Stanley but may form along low-order streams where underlying less-resistant bedrock units are undercut by the stream, such as shelters 41BX1031 and 41BX1032 at Camp Bullis. Slopes comprised of Glen Rose limestones apparently are not conducive to rockshelter formation or such features are very short lived and collapse quickly before fully developing. Abbott (1994:32) has noted that rockshelter development in the Glen Rose Formation at Fort Hood (Bell and Coryell Counties) is very uncommon. Karst features, such as solution cavities and sinkholes, are common in the northwestern and southeastern portions of Camp Bullis but are not known to exist in Camp Stanley.

Soils throughout Camp Stanley belong to the Tarrant-Brackett association (Taylor et al. 1966:2). A variety of soil series and types are included in the Tarrant-Brackett association; however, the thin, gravelly, calcareous Tarrant and Brackett soils are predominant, mantling the hilltops and slopes. Reddish brown and gravelly Crawford and Bexar soils occupy the lower valley slopes and intervening saddles. Dark-colored, calcareous, and clayey Krum soils occupy the toeslopes of the larger valleys and low-order upland drainages, while the dark-colored, clayey Trinity and Frio soils occupy the floodplain of Salado Creek.

CLIMATE

The climate of south-central Texas can be classified as a modified humid subtropical climate with Gulf-influenced hot summers and continental-influenced mild winters. Mean daily maximum and minimum temperatures for January are 62°F and 39°F, respectively. For July, mean daily maximum and mininum temperatures are 95°F and 74°F, respectively. The mean annual precipitation for the region is 81.2 cm (32 inches) but varies west to east across the region from 66 to 106 cm. Precipitation falls throughout the year but is generally in the form of late spring and early fall thunderstorms (Natural Fibers Information Center 1987:12, 49–50). The movement of warm moist Gulf air up onto the edge of the Edwards Plateau during warmer months often triggers short-lived but heavy cloudbursts, making the region one of the most flood prone in the United States (Patton and Baker 1977).

FLORA AND FAUNA

Camp Stanley is located along the southern margin of the Balconian biotic province (Blair 1950). The floral and faunal assemblages, however, tend to represent a mix of three biotic provinces—the Balconian, Texan, and Tamaulipan. The area also represents gin of the Balconian biotic province (Blair 1950). The floral and faunal assemblages, however, tend tothe geographical limit for the distribution of many faunal species (Blair 1950:113–114).

Early historic accounts of the floral community describe upland grassland savannahs with dense woodlands along stream valleys (Bonnell 1840:94; Roemer 1935:118). However, due to development, overgrazing, and suppression of natural fires throughout the region in the nineteenth and twentieth centuries, vegetation patterns have been severely altered. Today, upland areas consist of dense scrub forests of juniper (Juniperus ashei), Texas oak (*Quercus texana*), and live oak (*Q. virginiana*) with scattered Texas red bud (*Cercis texensis*) and prickly pear (*Opuntia* sp.), beargrass (*Nolina texana*), and sotol (*Dasilyrion* sp.) as understory vegetation. Dense patches of sotol and beargrass are present in upland and slope areas that have been subjected to recent (within the last 2–3 years) prescribed burnings. More diverse species are present along the stream valleys, including live oak, hackberry (*Celtis laevigata*), cedar elm (*Ulmus crassifolia*), and pecan (*Carya illinoensis*). These riparian zones may be interspersed with open grassy areas of little bluestem (*Schizachyrium scoparium*) and other tall grasses (Blair 1950:112–113).

Numerous faunal species occupy the area not only due to the intersection of three biotic provinces, but also due to the many habitats and microenvironments along the edge of the Edwards Plateau (Lundelius 1967:309–310). Present-day species include white-tailed deer (*Odocoileus virginianus*), coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), raccoon (*Procyon lotor*), striped skunk (*Mephitis mephitis*), fox squirrel (*Sciurus niger*), eastern cottontail rabbit (*Sylvilagus floridanus*), turkey (*Meleagris gallopavo*), as well as 49 other mammals, 36 species of snakes, and 16 lizard species (Blair 1950:113–115). Prehistorically, important economic species of the area included bison (*Bison bison*), pronghorn antelope (*Antilocapra americana*), and black bear (*Ursus americanus*) (Gerstle et al. 1978:29).