# ANNUAL REPORT:
# ARCHAEOLOGICAL SURVEY & EVALUATION
# FORT RICHARDSON & FORT WAINWRIGHT, 2003

MARCH 2004

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# FORT RICHARDSON & FORT WAINWRIGHT, 2003

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# 1.0 INTRODUCTION

In 2003, U.S. Army Alaska undertook the development of several proposed projects which triggered an archaeological and cultural resources analysis of proposed areas of potential effect. This report details the archaeological review and analysis which was conducted for each undertaking, at each post under U.S. Army Alaska's management: Fort Richardson and Fort Wainwright, including Donnelly Training Area, within the boundaries of the former Fort Greely.

Additionally, further survey investigations were undertaken in Donnelly Training Area East as a Section 110 inventory, pursuant to the National Historic Preservation Act.

Survey and sub-surface testing was conducted, following procedures defined in U.S. Army Garrison Alaska's archaeological research design (Hedman 2002) and Integrated Cultural Resources Management Plan (ICRMP; CEMML 2001). Where archaeological sites are identified within a project's area of potential effect, evaluative testing and investigation was conducted to determine eligibility for listing in the National Register of Historic Places, based on National Register criteria detailed in 36 CFR 79, and pursuant to Section 106 of the National Historic Preservation Act (NHPA; 36 CFR 800). No Historic Properties were affected by proposed project, as all eligible sites were avoided through coordination with project planning. On-site monitoring also occurred as necessary to ensure avoidance measures were appropriate and satisfied.

Archaeological field crews, comprised of employees of the Center for Environmental Management of Military Lands (CEMML), Colorado State University, conducted surveys of all areas potentially impacted (both directly and indirectly) by proposed undertakings, and in high probability areas identified for Section 110 inventory studies. One crew, comprised of four archaeologists, conducted surveys at Fort Richardson; one crew, comprised of four archaeologists, conducted surveys at Fort Wainwright cantonment area and Yukon Training Area; and four crews, comprised of four archaeologists each, conducted surveys at Donnelly Training Area.

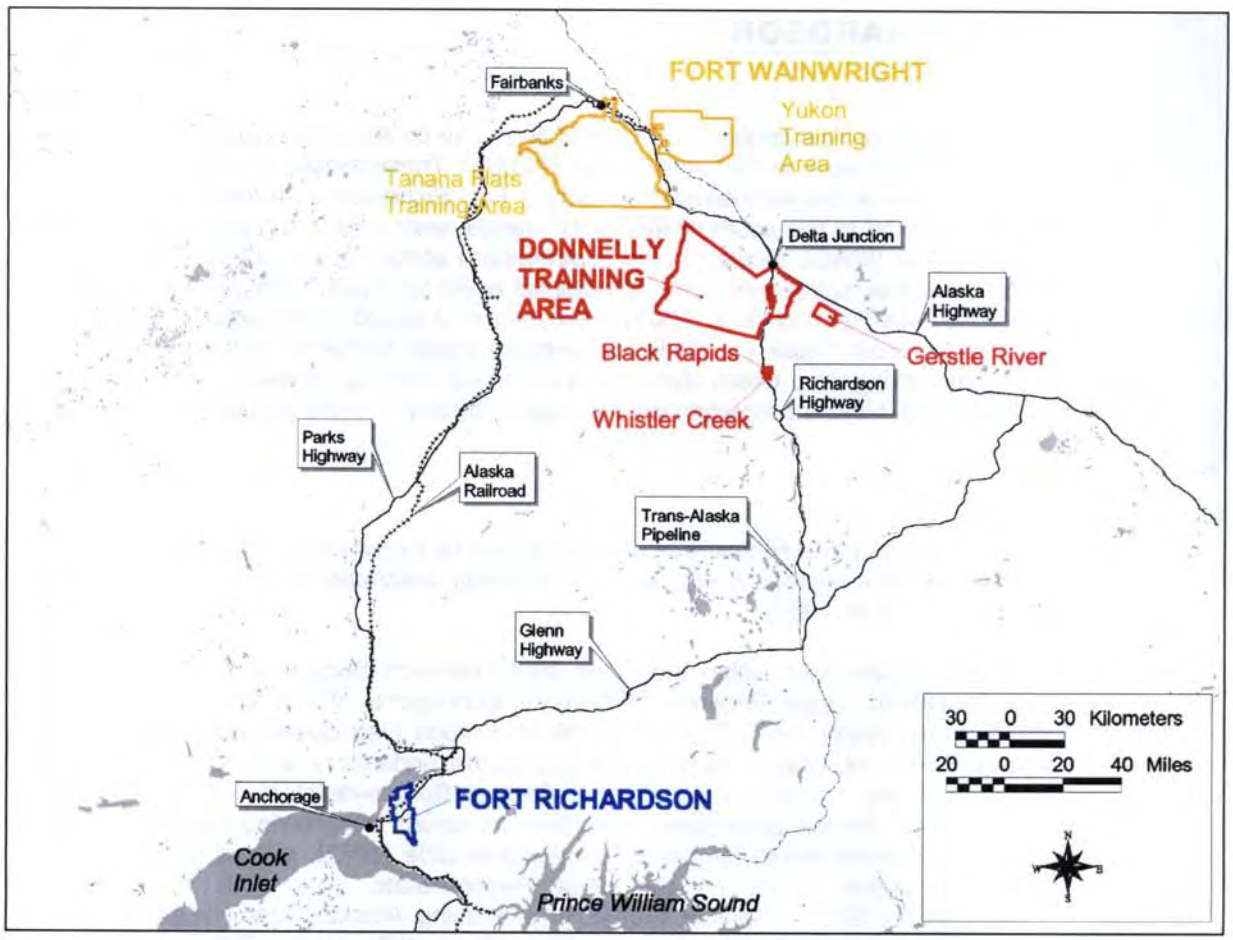



*Figure 1. Location of Fort Richardson and Fort Wainwright, including Donnelly Training Area.*

## 2.0 FORT RICHARDSON

### Introduction

Firing fans for training ranges constructed in 2003 and to be constructed in 2004 were the primary focus of archaeological work at Fort Richardson in 2003. These ranges include a multi-purpose training range located in the northeastern section of Fort Richardson; an Infantry Platoon Battle Course (IPBC), located to the south of the MOUT range, west Fort Richardson; and an Infantry Squad Battle Course (ISBC), located in the southeastern section of Fort Richardson (see figure 2). Firing fans and their subsequent area of potential effect for these training ranges (which were surveyed in 2002; see Hedman et al. 2003) were estimated based on projected non-dudded and duded munitions ranges (figure x). Additional archaeological fieldwork involved survey of bank stabilization areas along Ship Creek (figure x) and an easement proposed for Municipal Light & Power utilization. No historic properties will be affected by any of these proposed projects.

### Setting

A recent floristic study of Fort Richardson was conducted by Lichvar *et al.* (1997), with a thorough description of the Fort's ecological setting. The following description is from *Vegetation of Fort Richardson* (Lichvar *et al.* 1997):

> 'Fort Richardson falls within the Cook Inlet Lowlands Section of the Coastal Trough Humid Taiga Province of Bailey's Ecoregions of the United States (McNab and Avers 1994). Forests in the Anchorage area closely resemble the Boreal Forest of Interior Alaska, although some understory and tree species occur that are typically found in the Coastal Spruce-Hemlock Forest. Fort Richardson's forests have been described as open, low-growing spruce and closed spruce-hardwood forests by Viereck and Little (1972), and as a lowland spruce-hardwood forest by the Joint Federal-State Land Use Planning Commission (1973). 'Packee (1994), in examining Alaska's forest vegetation zones, characterizes the region as an area where white spruce *(Picea glauca)* and Sitka spruce (*Picea sitchensis*) naturally hybridize; balsam poplar (*Populus balsamifera*) and black cottonwood *(Populus trichocarpa*) intergraded; and mountain hemlock *(Tsuga mertensiana*) may form the subalpine forest. Vegetation reflects the transitional nature of the climate between maritime and continental. This maritime climatic influence has resulted in a lower incidence of natural fire than is found in the spruce-hardwood forests of interior Alaska (Gabriel and Tande 1983). 'Upland sites on Fort Richardson are dominated by paper birch (*Betula paperifera*), white spruce, and, on drier sites, quaking aspen *(Populus tremuloides*). Cottonwood and poplar are common in areas bordering principal streams. Black spruce *(Picea mariana*) is the dominant tree in wetter areas and on some well-drained sites. Most bogs are treeless or support stands of stunted black spruce. Grasses, herbs, willows (*Salix* spp.), and alders (*Alnus* spp.) dominate the vegetation in a narrow band along the Inlet and at elevations above 1,500 feet on the Chugach Mountain slopes' (Lichvar *et al.* 1997: Appendix I.).

Specifically, the project areas surveyed are largely comprised of upland vegetation, including paper birch (*Betula paperifera*), white spruce (*Picea glauca*), aspen (*Populus tremuloides*) and alders (*Alnus spp.*). Understory vegetation is moderate to dense, with various grasses and herbs, including fireweed (*Epilobium spp.*), lupine (*Lupinus spp.*) and high-bush cranberry (*Viburnum spp.*). Vegetation in the ISBC project area is considerably denser, dominated by alders (*Alnus spp.*), devil's club (*Oplopanax horridus )* and cow parsnip (*Heracleum maximum*). Visibility in the ISBC project area, specifically, was greatly reduced due to this dense vegetative cover.

## Background

Fort Richardson withdrawn lands fall within the traditional lands of the Dena'ina, northern Athabascan Tribes of the Cook Inlet. In general, the Dena'ina traditionally pursued a semi-permanent lifeway, spending winters in permanent settlements and dispersing in the summer months with the onset of summer fish runs. Seasonal camps at favorable fishing locations were established along river banks, coastal edges and lake shores, and were returned to each year. Once salmon runs had ended, groups would often focus on travel into the mountains to hunt caribou and mountain sheep; such trips to the interior would also be a time for trading with other groups encountered during these seasonal hunts. Moose, bear, mountain goats and Dall sheep were often hunted year-round in areas outlying winter village settlements (Townsend 1981: 626-627). Specifically, settlements at Knik Arm have been well-summarized by Fall (1987):

> In the nineteenth century this group included those Tanaina living along the shores of Knik Arm and the Matanuska and Knik rivers. They used the present day Anchorage area for salmon fishing and the Chugach and Talkeetna Mountains for hunting. In 1978-9, the only Tanaina village in this area was Eklutna, but in the past this was a highly populated area (Osgood 1937: 18) and many former village sites have been recorded (Kari 1978; Kari & Kari 1982).

The Anchorage area held several village sites prior to the arrival of Russian and Euro-American settlers; Anchorage itself was called *Qatuk'e'usht* (also *Xa'tikiuet*) by the people of Kenai, and once supported a Dena'ina village (Carberry & Lane 1986: 177; Yaw Davis 1965: 3). The mouth of Ship Creek historically supported a significant fish run, and was the focus of fish camps and seasonal subsistence fishing, prior to the advent of canneries and commercial fishing.

The introduction of Russian and Euro-American settlers into the region began with the famous voyages of Bering and Cook; in 1786, St. George became the first permanent Russian settlement established at Cook Inlet, at the mouth of the Kasilof River, Kenai Peninsula.

## *Archaeology*

Although glacial studies indicate that Cook Inlet may have been habitable by about 11,000 BP (Reger and Pinney 1996), few archaeological sites dating earlier than the late prehistoric period have been identified within the Cook Inlet region. The earliest and arguably the most significant site in the Cook Inlet area is Beluga Point, located approximately 10 miles to the southeast of Fort Richardson, near the entrance to Turnagain Arm. Though largely lacking datable material beyond 4000 BP, artifact assemblages at Beluga Point indicate consistent use of the location throughout the Holocene.

The earliest component at Beluga Point is the undated BPN-I core and blade component, estimated at 8000 to 10,000 BP, based on similarities with dated material found elsewhere in Alaska (Reger 1977, 1981). The presence of this assemblage, which could be designated as a regional variant of the American Paleoarctic Tradition (e.g. Anderson 1970a, 1970b; Dumond 1977), makes Beluga Point the lone early Holocene site in the Cook Inlet region identified to date. The only other site in the region that exhibits a similar assemblage is the early middle Holocene Long Lake site, dating to approximately 6600 BP in the Matanuska Valley (Reger and Bacon 1996). Despite the coastal location, these early microblade assemblages have been interpreted as reflecting the activities of terrestrial hunter-gatherers (Workman 1996).

The middle Holocene (6000 to 4000 BP) in Cook Inlet is represented by components BPN-II and BPS-II at Beluga Point. Though also undated, the presence of microblades and ground slate indicate an association with the maritime-adapted Ocean Bay I and II assemblages in the Kodiak archipelago, the Takli Alder and Birch assemblages of Shelikof Strait (Reger 1981:185-186), and

assemblages from the Alaska Peninsula that appear to be associated with the Arctic Small Tool tradition (Dumond 1977; Henn 1978).

Sites dating between 3000 and 1000 BP in the Cook Inlet region suggest the development and/or spread of Pacific Eskimo culture, seen in Norton affinities of a Beluga Point component dating prior to 1500 BP. It has been suggested that this period saw the spread of Norton peoples and technology from the Bristol Bay area (Reger 1981). Norton influence in Cook Inlet is overshadowed in this period by a number of sites exhibiting strong similarities to Kachemak tradition sites to the south. Upper Cook Inlet Kachemak components differ from those of the Kenai Peninsula and Kodiak in that they exhibit a toolkit that is apparently more adapted to terrestrial hunting and riverine exploitation than maritime subsistence. Components at the Knik Arm sites of Cottonwood Creek (Decagonal 1975:25-26, 35-41), Fish Creek (Dumond & Mace 1968) and Moose River (Dixon 1980:32-34; Reger & Boraas 1991) are representative of this adaptation, later defined as Riverine Kachemak by Reger and Boraas (1996), dating to between 2000 and 1000 BP on the Kenai Peninsula.

By far the most visible prehistoric site type in the Cook Inlet region is that of the late prehistoric Athabascan Tradition. These sites, often characterized by rectangular house depressions, cache pits, few diagnostic artifacts, and an abundance of fire-cracked rock, are presumably associated with the Dena'ina Athabascans that are thought to have replaced local Eskimo groups in the archaeological record by perhaps 750 or 1000 BP (McMahan et al. 1991). Linguistic evidence and Dena'ina oral history suggest that Athabascan groups from the Copper River drainage and the upper Stony and Mulchatna Rivers began moving into upper Cook Inlet between 1,500 and 2,000 years ago (Kari 1988). Of special significance is the existence of the modern Athabascan village of Eklutna, located to the north of Fort Richardson on Knik Arm; important aspects of the history of this village are found in the work of Chandonnet (1979, 1985), Yaw Davis (1965, 1994) and Yarborough (1996). General information on the Dena'ina Athabascans gathered from studies in the Lake Iliamna – Lake Clark region is found in the work of Townsend (1965, 1970, 1975, and 1981) as well as that of Ellanna and Balluta (1992).

Previous archaeological work at Fort Richardson includes at least eight projects since the late 1970s (Bacon 1979; Hedman et al. 2003; Holmes 1979; Reynolds 1996; Shaw 2000; Steele 1978, 1980; Veltre 1978). Of these surveys, only Steele, Reynolds, and Shaw reported the discovery of archaeological sites. Steele's 1980 work identified 4 sites, (ANC-263, 264, 265, and ANC-268), all of which were historic 20$^{th}$ century cabin ruins. Reynolds (1996) recorded the multi-component (historic) site ANC-822 near Ship Creek in the vicinity of the Moose Run Driving Range. Shaw (2000) recorded approximately 20 sites, the majority of which were Army related mounds, foxholes, and bunkers. Shaw's work also revealed a single prehistoric site, ANC-1175, composed of a single lithic flake and a small lithic spall. This observation is associated with a cleared area located along the edge of the Elmendorf Moraine (Shaw 2000: 97). The work of Shaw, Steele (1978), and Dilley (1996) indicate that moraine features scattered across Fort Richardson and oriented roughly northeast by southwest, represent a relatively high probability location for discovering prehistoric archaeological sites on Fort Richardson.

## *Historic Resources*

In addition to the known archaeological sites on Fort Richardson, there are numerous locations of historical and cultural significance, though the exact locations of many of these features have not been recorded to date. Portions of the Iditarod Historic Trail (ANC-270 and 280) are recorded and known to potentially exist on Fort Richardson. The Girdwood-Ship Creek Connecting Trail (ANC-280), descended the Ship Creek valley to the vicinity of Fort Richardson, where it presumably joined the Eagle River-Knik Trail (ANC-270). Though it is likely that ANC-270 lies outside of Fort Richardson lands, a connecting trail from Anchorage to ANC-270 is known to have existed. This connecting trail is recorded as following the Eagle River drainage (presumably from

Knik Arm) to Lake Clunie, and on to Birchwood (CEMML 2001:26). This route is likely to have followed Clunie Creek north from Eagle River to Lake Clunie, a route that crosses the northern portion of Fort Richardson.

## Ethno-Historic resources and Properties of Traditional Religious and Cultural Significance

In the 2002 field season (Hedman et al. 2003), an historic fish camp site was re-located, In 1994, Yaw Davis conducted a collaborative study with the Dena'ina team from the Native Village of Eklutna to identify traditional cultural sites and document ethno-historic land use on Elmendorf Air force Base. This study was not confined only to Elmendorf, but also extended onto Fort Richardson near its southern boundary with Elmendorf, and north of Eagle River Impact Area, to Whitney Point. A fish camp site was identified at that time near Whitney Point, which was used by the Eklutna Industrial (Vocational) School from 1924 – 1946. The site was identified during the 1994 study, however no location details were recorded, or clear photographic record documented.

*Figure 2 View of School Fish Camp site heading southwest.*

In 1924, the Department of the Interior Bureau of Education built and maintained the Eklutna Industrial (Vocational) School. The school was established to house 26 orphans, whose parents had died in the flu epidemic of 1918 (Carberry & Lane 1986: 174). The industrial school was a multi-faceted institution that included a collection of buildings (including a six room hospital, isolation ward, director's cottage, girls' and boys' dormitories, shop, gymnasium, cannery car; meat house, paint house, barn, brooder shed, laying house, waiting station and hog house (Chandonnet 1979: 21)). Within two years the school's population doubled, and there was a waiting list for new students. The fish camp site was constructed and used by the school to provide training in traditional fishing methods, while also providing fish for the school's subsistence (Yaw Davis 1994: 53). By 1946 the buildings had been condemned and the school was permanently closed (Chandonnet 1979: 22).

### *Military Survival Tactics*

A number of historic properties are located on or near Army lands in Alaska; many of these properties are historic structures and buildings pre-dating or associated with World War II and Cold War era Army activities (see e.g., Hollinger 2001; Shaw 2000). As found during previous surveys

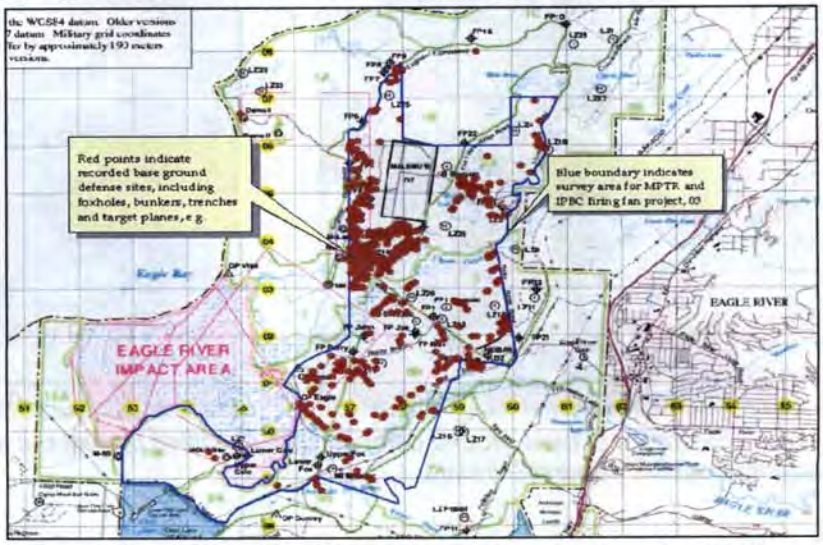


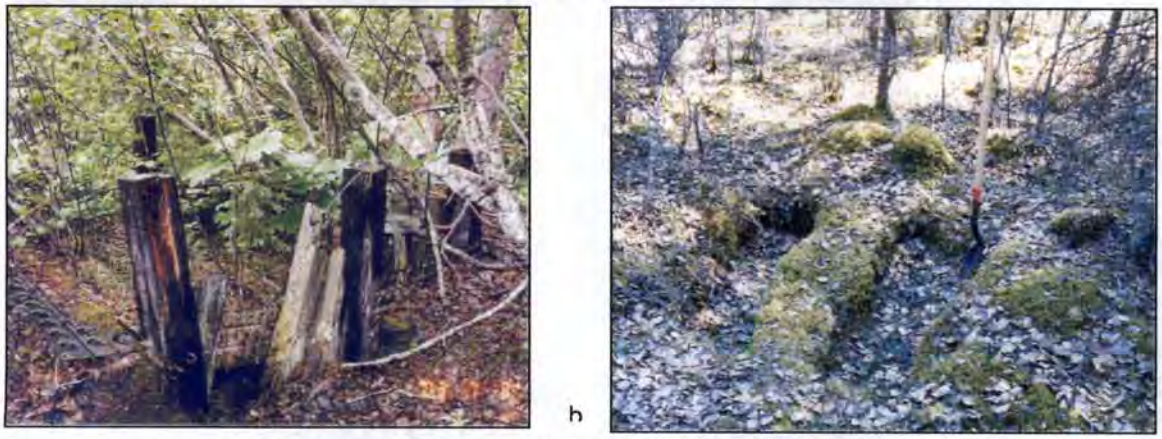

*Figure 3. Distribution of Military Survival Tactic Sites identified during 2003 survey of proposed firing fan*

on Fort Richardson (e.g., Shaw 2000), evidence of previous military training activity was prolific throughout the proposed training project areas. Heavy disturbance from trench building, foxholes and UXO (unexploded ammunitions) were observed frequently during survey. Although there is a possibility that some of these features may date to trainings undertaken during World War II and the immediate post-war period, none of these features can be clearly assigned to a specific date. Features such as these were referred to as 'Base Ground Defense Sites' in Shaw (2000), and were *uniformly* determined to be ineligible to the National Register of Historic Places (Shaw 2000: 16-22, 121). As Shaw explained:

> '[such sites are] temporary, theater-of-operations type structures, which are in a deteriorated condition with the construction date being uncertain within about 10 years. Most [military training] sites...have lost physical integrity through neglect after abandonment. The sites have also lost other aspects of integrity regarding design, setting, materials, workmanship, feeling and association over the years by neglect and/or direct actions resulting from operating a military base with changing physical requirements associated with execution of the primary mission. Such actions range among planned demolition of buildings judged to be excess property, inadvertent destruction of structures during new uses of the land such as for gravel pits, construction of new facilities which intrude into and radically change the site setting that existed during WWII, and direct efforts to "clean up" the sites when use stopped' (Shaw 2000: 16).

Specific examples of military survival tactic sites identified throughout the field survey include trenches, foxholes, log-lined foxholes; and bunkers/wood-framed structures and blinds (e.g., figures 3-4).

Features associated with past military training operations, found throughout training ranges at Fort Richardson currently have shown no clear pattern or relationship as identified in the field (see figure 3). Similarly to Shaw's findings, the continued use of these areas for subsequent base activities have heavily impacted the original structural integrity of the features; all structures encountered lack integrity due to structural deterioration. Evidence of continued use and re-use of military survival tactics structural materials during training exercises (e.g., to construct blinds or targets) was prolific. In agreement with Shaw, archaeological evaluations of these features would not contribute significantly to our understanding of military training history in WW II, and do not qualify under National Register of Historic Places criteria D (36 CFR § 60.4). As a result, these features have been determined ineligible for listing in the National Register of Historic Places.



a b

*Figure 4. Examples of base ground defense sites identified throughout survey area. A) Mechanical debris; b) parallel trench*

## 2.1 Multi-Purpose Training Range (MPTR) and Infantry Platoon Battle Course (IPBC) Training Range Firing Fan Surveys

In 2002, the United States Army Garrison, Alaska (USAG-AK) proposed range development projects within U.S. Army Alaska (USARAK) lands at Ft. Richardson, involving the construction of new training ranges to begin use in 2004 and 2005. Surveys for he Multi-Purpose training range upgrade/expansion project (MPTR) and the Infantry Platoon Battle Course (IPBC) were conducted in the 2002 field season (Hedman et al. 2003). Additional surveys were undertaken in the 2003 field season to address areas potentially impacted by firing munitions (the 'firing fan') associated with the utilization of the MPTR and IPBC training ranges.

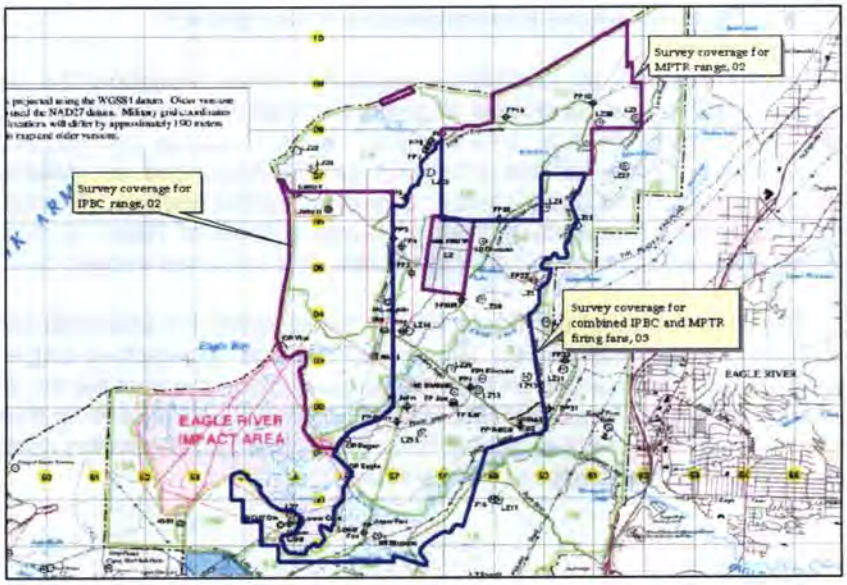



*Figure 5. Location of survey coverage for IPBC and MPTR training ranges (2002) and combined firing fan (2003).*

The new training range complex and supporting facilities will be used to train USARAK and other Alaska soldiers in infantry squad/ platoon tactics and basic urban/suburban operations using automated targetry, enabling trainers to vary scenarios presented to trainees. The Infantry Platoon Battle Course (ISBC), located on North Post between Malemute Drop Zone and Eagle River Flats, is a larger-scale course designed for more combat realism and larger unit (platoon) training. The Multi-Purpose Training Range (MPTR) will provide qualification and training scenarios for vehicle-mounted, crew-served weapon crews. Munitions fired from this range will be non-dudded (e.g., inert, high explosive anti-tank, inert high explosive plastic), similar to munitions currently fired at Fort Richardson. As a part of training exercises, other weapons (e.g., mortars, artillery) could be indirectly fired over the IPBC and MPTR ranges to provide combat realism. These indirect rounds would impact in Eagle River Flats, a current impact area, and would be fired within restrictions established for such firing within U.S. Army Alaska Regulations 350-2, *Training*.

No historic properties or cultural resources have previously been identified within the proposed area of potential effect for the proposed IPBC and MPTR range firing fans.

### Survey and Field Methods

In July and August 2003, an archaeological survey crew of four archaeologists employed by the Center for Environmental Management of Military Lands (CEMML), conducted a pedestrian survey of the proposed IPBC and MPTR range firing fans, under the supervision of Ft. Richardson archaeologist, Kirsten Anderson. Pedestrian surveys were carried out in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." This research design was submitted to SHPO for review and comment, as required by 36 CFR 800, in March 2003.

The firing fans for the two training ranges cover a single, large area extending to the edge of Eagle River Flats Impact Area on the southwest, and to Clunie Lake on the east (see figure 1). The project Area of Potential Effect (APE) encompassed an area larger than the proposed range firing fan footprint, in order to ensure coverage of areas that may incur secondary impacts during training use. Terrain that exceeded slopes of 40° were eliminated from survey, as no impacts will occur on slopes greater than 30°. Additionally, every effort was made to survey low-lying wet areas, but some wetlands were eliminated from survey coverage, due to inaccessibility, lack of visibility, and low probability of containing intact cultural deposits.

Parallel pedestrian transects spaced at approximate 20m intervals were walked either north-south or east-west, depending on terrain and access. Transect survey units were partitioned according to existing roads and trails where possible. When existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined.

Given the poor visibility and dense vegetative cover throughout the proposed project area, sub-surface testing was conducted in areas considered to be high probability, based on previous survey and research (e.g., lake margins, glacial moraines and ridges, river/stream confluences) during initial review of the proposed project area, and as determined by the supervising archaeologist and field crew leader based on survey findings. Shovel tests were approximately 40 x 40cm, and frequently did not go below a depth of 70cm. Levels were dug at 7cm levels, unless clear stratigraphy dictated otherwise, and screened through ¼" hardware cloth.

An intensive survey of the Eagle River's banks within the proposed project area was included in addition to the overall survey, as survey coverage approaching Eagle River from the north and south generally concluded on high ridges overlooking the river below. Survey of the river banks began heading upstream from the east boundary of the Eagle River Impact Area, extending to the eastern boundary of the projected firing fan (figure 1). Vegetation continued to be dense, ending abruptly at the river's edge in most places.

## Findings

Structures: Quonset Hut (ANC-01331)

The ruins of one 'Quonset' hut were identified to the south of Artillery Road, approximately 2.5 kilometers east of Eagle Bay. It is a corrugated, steel framed and roofed structure in a dilapidated state, with the roof caved in and structural integrity of the adjacent walls failing.


*Figure 6 Location of 'Quonset' hut ruins identified during survey*

Quonset huts were first utilized by the military during World War II, when prefabricated, temporary shelters became necessary in remote defense situations:

> ***'In March 1941 Admiral Ben Moreell, chief of Navy Yards and Docks, got together with the George A. Fuller Co. to make a prefabricated, knockdown shelter to be built in the United States and shipped to distant bases to be easily and quickly assembled by troops in the field...The first Fuller design, created at their Quonset Point, Rhode Island facility, was a half-cylinder, corrugated steel structure with arch ribs. It had insulation, pressed-wood interior, could be erected on concrete, on***

***pilings, or on the ground with a wood floor. The wood ends had a door and two windows. The first units were 16 x 36 feet but soon they made them in 20 x 40 foot and 20 x 56 foot models. The 56 foot one provided for an overhang past the end walls. They also made a 40 x 100 foot warehouse and other sizes. The army ordered 16,000 of them after the attack on Pearl Harbor. Eventually 170,000 were produced' (Kodiak Military History Museum website).***

'Quonset' huts used by the military went through a series of adaptations and modifications. Originally based on the 'Nissen' hut designed in Britain for use in WWI, the Quonset hut design was modified to improve upon speed of construction and durability, with the 'Quonset Type II':

> 'The hut the Navy poetically termed the 'Quonset redesigned hut' had 'short straight nailable members arranged to form a multi-angled barrel vault' (Architectural Forum, February 1945). The composite I-beam framing members described above were cut, bent, and welded to form a 4-foot vertical sidewall with a segmented 'curve' above. The number of segments (all four feet long) is determined by the width of the hut; the 16'x36' size, which was still the basic type, had seven counting the walls and an inside height of about 8 feet. Each rib was still shipped in two pieces that bolted together at the top. The exterior covering was vertically-oriented, with curved corrugated metal over the roof and short straight corrugated metal on the 4-foot walls. The metal was fastened to the ribs and purlins with double headed nails driven through a steel and fiber washer to keep out rain. The nails were placed through the high point on a corrugation to avoid holes where water would accumulate. The joints of the sheets were buttered with mastic (National Steel 1944; personal observations 2000-2). Endwall frames were metal (wood may also have been used)...' (Williamson 2003: 16).

Both the 'Quonset Type II' and the Armco Hut/Elephant Shelters developed later for 'iron bunkers and ammunition magazines' (Williamson 2003; 38) share characteristics similar to those observed on the 'Quonset' hut ruins identified during survey. The vertically-oriented side panels with corrugated metal panels curving to form the roof, along with limited evidence of rib beams and wooden end panels
suggest a higher correlation with the 'Quonset Type II.' It is not unlikely that the hut was once used for military training ammunition storage, but this cannot be confirmed.

*Figure 7. View of 'Quonset' hut ruins.*

Given the advanced state of deterioration and subsequent lack of integrity, the Quonset hut identified during survey is not eligible for listing in the National Register of Historic Places. Additionally, archaeological evaluations of the Quonset hut ruins would not contribute significantly to our understanding of military training history, falling under similar conditions of use, re-use and decay as that identified under Shaw's (2000) 'Base Ground Defense Sites.' Subsequently, the Quonset hut ruins are not eligible under National Register of Historic Places criterion D.

Bark Stripped Trees Over 26 bark stripped birch trees were identified during survey of the proposed IPBC and MPTR training range firing fans Many of these trees were interspersed among base ground defense sites, while others were located along ridges and in other isolated groupings. In areas where bark stripped trees were identified, test pits were excavated to determine if any cultural, sub-surface features were associated with the area. However, all test pits excavated were negative, recovering no cultural material. Cultural resources studies undertaken previously have affirmed that groupings of peeled birch trees near Otter Lake are the work of boy scout troops who attended an annual summer camp at Ft. Richardson (Shaw 200: 94). However, this explanation cannot be confirmed for all peeled birch trees, and it is likely that some of those identified during survey may be culturally modified trees.

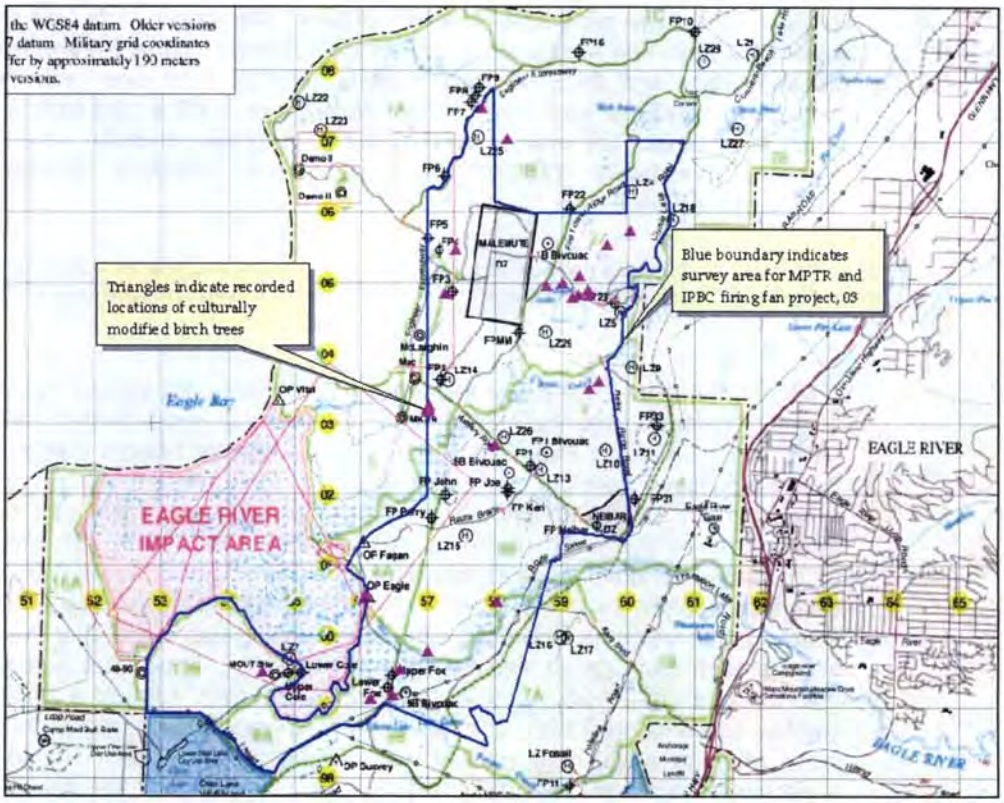



*Figure 8. Distribution of stripped birch trees during 2003 survey of proposed firing fan.*

*Figure 9. Example of bark stripped birch tree identified during survey.*

Culturally modified trees (CMT) have come under increasing research in the past decade, recognizing the significance of such trees in understanding Native and non-Native forest use (Mobley & Eldridge 1992: 91-110; Eldridge 1997). However, previous research has largely focused on the Pacific Northwest, British Columbia and Southeast Alaska, where culturally modified trees are predominantly spruce, cedar and hemlock (e.g., Eldridge 1997; Stryd 1998; Mobley & Eldridge 1992). CMT studies have thus been directed on a much different history of use and ecological environment than that of the paper birch trees that predominate in the Alaskan interior. Additionally, paper birch (*Betula papyrifera*) trees—such as those found throughout the survey area—have a life span that rarely exceeds 80-


*Figure 10. Location of river cobble-lined fire-ring, south bank of Eagle River.*

100 years of age (www.forestworld.com /public/silvics/), rendering the age and potential cultural significance of bark stripped trees difficult to determine without further traditional use studies (to be undertaken in 2004).

Effects to bark stripped trees as a result of the proposed firing fan will be minimal and indirect. However, live fire use in the MPTR range may cause some birch trees within the firing fan to become damaged or destroyed by inadvertent fires.

Sites: Eagle River fire-ring

A small, circular grouping of river cobbles was identified on the southern bank of Eagle River, immediately upstream from the bridge east of the Eagle River Impact Area. The grouping is located approximately 15m south of the riverbank proper, along a game trail within a grove of alders . The grouping is circular in pattern, consisting of 10-12 river cobbles, one with evidence of fire cracked fractures The circle has been broken, presumably due to animal activity directly related to the game trail that crosses the grouping, as well as frequent scouring during times of high water. Since river cobbles are numerous near the river's banks, a section of the interior soil within the grouping was investigated to determine possible stratigraphy and any hearth-type residues. A railroad spike was located immediately beneath the organic mat surface, beneath which were clear layers of alluvium, with a thin lens of charcoal, overlying river rock. Two additional probes were placed outside the group of cobbles, however no further evidence of charcoal was evident, and no cultural material was recovered. Soils are very shallow (approximately <6cm on average), comprised of alluvial silts

*Figure 11. View of fire ring, lined with river cobbles, adjacent to southern bank of Eagle River, immediately upstream from Eagle River Impact Area eastern boundary.*

overlying river cobbles. No ground depressions were identified in the vicinity of the fire ring, despite intensive examination.

Directly northeast of the fire ring by approximately 1.5m, is an overturned tree/root wad, where two Meal Ready to Eat (MRE) plastic packages are located on the ground surface (figure 12). It is unclear if these MRE packets are directly relatable to the fire ring; however, given the limited distance between the two findings, it appears likely that they are related. Based on the proximity of the MRE packages indicating a date of less than 50 years old, and the lack of cultural deposits or material identified in the surrounding area, the fire ring appears to be a temporary, modern feature. Subsequently, the site is not eligible for listing in the National Register of Historic Places. Additionally, the location of the fire ring will not be impacted by proposed firing fan activity, as no munitions are expected to be fired across Eagle River.


*Figure 12. View of MRE packages in upturned soil from deadfall, and view of fire ring to the southwest.*

No prehistoric cultural materials were identified or recovered during the field inventory.

## Summary

Survey and sub-surface testing failed to identify any historic properties within the boundaries of the proposed project area of potential effect. The project area has been heavily disturbed by previous military activities, evident in interspersed foxholes, bunkers, UXO, and military training debris found throughout the surveyed area. Additionally, a fire-ring identified on the southern banks of Eagle River was identified, but determined to be a temporary, modern structure. None of these features were determined eligible for listing in the National Register of Historic Places, based on criteria listed under 36 CFR 800.

## 2.2 Infantry Squad Battle Course (ISBC) Training Range Firing Fan Survey

Similar to the MPTR and IPBC training ranges, USAG-AK developed an Infantry Squad Battle Course (ISBC) training range on south post, east of the Glenn Highway (figure 13), which began construction in 2003. Surveys for the proposed ISBC training range were conducted in 2002 (Hedman et al. 2003). Additional surveys were undertaken in 2003 to address the area potentially impacted by firing munitions (the 'firing fan') resulting from use of the ISBC.

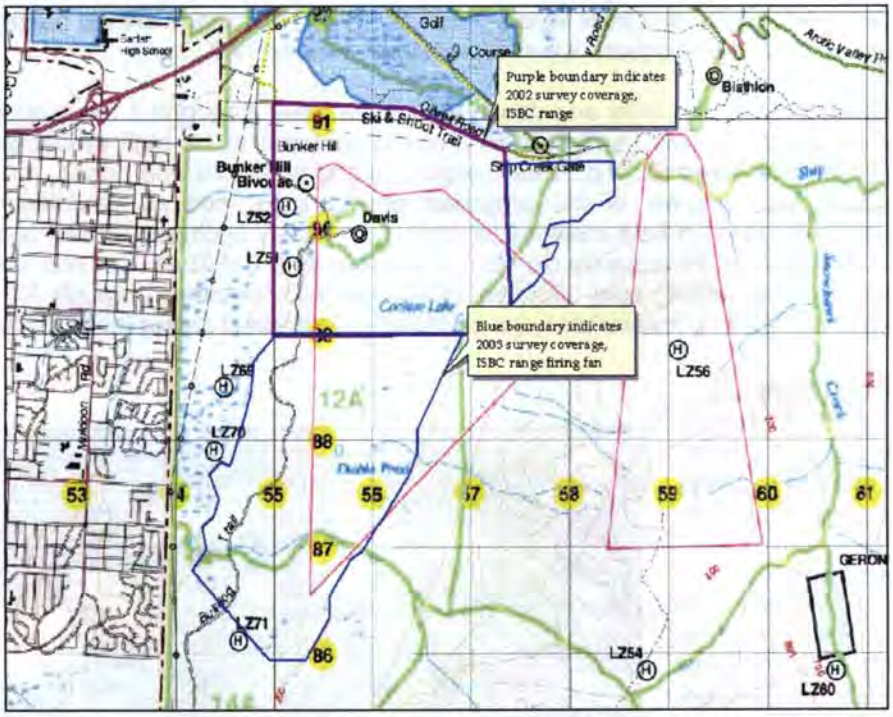



*Figure 13. Location of ISBC training range (2002) and firing fan (2003) survey areas, south Fort Richardson.*

The proposed project will utilize the new ISBC training range in order to meet requirements for implementation of the military mission at Fort Richardson. The training range firing fan will support proposed implementation of the Stryker Brigade Combat Team (SBCT) Transformation. The firing fan associated with proposed training plans for the current review is a mission-essential project for the existing force, the 172nd Infantry Brigade (Separate), as certified by U.S. Army Pacific.

USAG-AK is constructing the training range complex and supporting facilities to train USARAK and other Alaska soldiers in infantry squad/platoon tactics and basic urban/suburban operations using automated targetry, enabling trainers to vary scenarios presented to trainees. The Infantry Squad Battle Course (ISBC), located on South Post on what is now Davis Range (built on top of a former tank table range), will include a Breach Facility, an Urban Assault Course, and a Shoot House. These ancillary ranges would be arranged near the ISBC and share common support facilities. The ISBC will include new targetry that, based on current projections, expands to the east/southeast of the training area proper, to the south of Ship Creek (figure x).

No historic properties or archaeological sites have previously been identified within the proposed area of potential effect for the currently proposed ISBC range firing fan.

### Survey and Field Methods

In June and July 2003, an archaeological survey crew of four archaeologists employed by the Center for Environmental Management of Military Lands (CEMML), conducted a pedestrian survey of the proposed ISBC range firing fan. The project Area of Potential Effect (APE) encompassed an area larger than the proposed range firing fan footprint, in order to ensure

coverage of areas that may incur secondary impacts during training use. The survey area subsequently covered approximately six square kilometers, between the Ship Creek gate and Bunker Hill . Terrain that exceeded slopes of 40° were eliminated from survey, as no impacts will occur on slopes greater than 30°.

Parallel pedestrian transects spaced at approximate 20m intervals were walked either north-south or east-west, depending on terrain and access. Transect survey units were partitioned according to existing roads and trails where possible. When existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined.

Given the poor visibility and dense vegetative cover throughout the proposed project area, sub-surface testing was conducted in areas considered to be high probability, based on previous survey and research (e.g., lake margins, glacial moraines and ridges, river/stream confluences) during initial review of the proposed project area, and as determined by the supervising archaeologist and field crew leader based on survey findings. Shovel tests were approximately 40 x 40cm, and frequently did not go below a depth of 70cm. Levels were dug at 7cm levels, unless clear stratigraphy dictated otherwise, and screened through ¼" hardware cloth. No prehistoric cultural materials were identified or recovered during the field inventory.

## Findings

Two former structures were identified during survey, and were further investigated to assess potential eligibility to the National Register of Historic Places:


*Figure 14. Location of log-constructed feature.*

Log-constructed storage structure/cabin

An approximately 3m x 3m log structure was identified during survey, located on a hilltop immediately east of Bulldog Trail, south of Ship Creek. Surrounding the area are birch and alder, with devil's club and various forbs.

*Figure 15. View of first cabin structure, east of Bulldog Trail. View heading northeast.*

The structure is notched log construction, with evidence of both machine and hand axes used in its construction. Large, round-headed nails secure the notched corners. The remains of the structure are now 2 - 3 logs in height, with evidence of roofing logs/material fallen to the floor of the structure. The logs are in a state of decomposition, with the presumed entrance to the structure slumped and unstable. Seven test pits were explored: four were excavated within the confines of the existing remains; three were excavated outside the structure on a roughly north-south, east-west axis. Three nails, identical to those exhibited in the remaining corners of the structure, were recovered from the first test pit, while two fragments of modern bottle glass and a second nail was recovered from the second test pit. The bottle glass is modern, with very little patina visible on the surface. Additionally, a pull-tab "Dr. Pepper" can was recovered in the corner of the structure, as were clear and red plastic fragments (investigations on the date of the "Dr. Pepper" can indicated a date no earlier than 1962, and most likely dates to the late 1960's). No material was recovered from test pits excavated outside the structure's foundations.

The immediate ground surface of the cabin/structure exhibit numerous undulations, appearing similar to various foxholes identified during pedestrian survey of training ranges, and in Shaw's survey of proposed railroad corridor re-alignments (Shaw 2000). It is likely that some of these depressions were originally associated with the log structure, and were not constructed explicitly for military training, but were utilized in subsequent training missions. A trail heading northwest from the cabin/structure is visible, leading to a clearing in the trees, however no evidence of deliberate clearing was evident. A peeled birch tree is located at this cleared area. Various deep depressions are extant to the west of this clearing, heading down the slope of the hill, and are most likely associated with military training, appearing similar to foxholes and make-shift bunkers seen throughout the proposed project area. Recent research on the history of homesteads on Fort Richardson indicates that the site and original structure were not associated with any recorded homestead parcels (Hollinger 2001).

Based on survey and investigations at the cabin/structure site, it was determined that the site is not eligible for listing on the National Register. The presence of plastic fragments, modern bottle glass and a pull-tab can (dating only as early as 1962) indicate that the log feature is most likely not over 50 years old in age. Additionally, subsurface investigations revealed very little to no material; subsequent excavation of the structure remains would not contribute significantly to our understanding of cabin/storage use on Fort Richardson, and thus the feature does not qualify under National Register Criteria D. Previous research on the early homesteads of Fort Richardson indicates that this location is not a recorded homestead property, and is not

associated with the early homestead history of Fort Richardson/Elmendorf Field (Hollinger 2001). Similarly, as Shaw (2000) described in his assessment of military base ground defense sites, the continued use of the area for military training and activities have heavily impacted the original structural integrity of the structure remains and immediate surroundings. As a result, the site is not eligible for listing in the National Register.

Second log-framed feature

A second log-framed foundation, approximately 4m x 4m, was identified to the south of an unnamed creek, immediately west of Bulldog Trail. The feature is comprised of a square, log frame or foundation, standing three logs in height. The location is generally flat, surrounded by birches, intermittent spruce, and low shrub vegetation. The location is a naturally clear area, in generally intermittent birch/spruce habitat encroaching on wetlands.

*Figure 16. Location of second log-framed feature, Davis range.*

Like the feature described above, the frame is also notched log construction, with very shallow notching made by an axe. No nails are evident as a securing measure, and the structure gives every appearance of being superficial and temporary, or abandoned while under construction. A large (approximately 1m x 2m) piece of plywood, with superficial machine-planed grooves on one side, lies on the ground in the northwestern section of the structure. An investigation of the surrounding area exhibited various small depressions that appear to be foxholes.


*Figure 17. View of log-framed structure, heading west-northwest.*

Four subsurface test pits were excavated: three within the structure and one outside the structure to the east, where a small depression was located. No material was recovered from any of

these investigations. Decaying logs that would be likely evidence of a roof or standing structure are absent. The ground enclosed within the frame is very flat, covered by vegetation and the large sheet of plywood.

Shaw (2000) identified a similar feature during survey for proposed railroad re-alignments on Fort Richardson (2000: 116-120; ANC-1177), and identified the feature as a 'crib-framed foxhole.' Although the structure identified by Shaw had a clear foxhole like depression enclosed by a frame of small logs, the superficial/temporary nature of the feature identified here appears to share similarities with that described by Shaw (2000: 116-120), and subsequently most likely falls under Shaw's assessment of 'Base-Ground Defense Sites' (2000; discussed above). Previous research indicates that this area was not a homestead property prior to the withdrawal of the land for use as Elmendorf Field and later Fort Richardson (Hollinger 2001). Given the lack of material recovered in investigations of the log feature, and the evidence of foxholes and disturbance from military training in the general locality, the frame was determined not eligible for listing in the National Register.

## Summary

Survey and sub-surface testing failed to identify any historic properties within the boundary of the proposed ISBC firing fan project area of potential effect. The project area has been heavily disturbed by previous military activities, evident in interspersed foxholes, bunkers, UXO, and military training debris found throughout the surveyed area. None of these features were determined eligible for the National Register criteria listed under 36 CFR 800. Additionally, two log-constructed features were identified and investigated, but were determined not eligible for listing on the National Register, based on the investigations and assessment detailed above.

## 2.3 Ship Creek Stream-bank Stabilization Project

The United States Army Garrison Alaska (USAG-AK) proposed a stream bank stabilization project to correct eroding north banks of Ship Creek west of the Glenn Highway on Fort Richardson, and improve habitat and stabilize the existing banks in six identified areas (see figures 18). Six proposed stream bank rehabilitation areas located along Ship creek, between the Glenn Highway and the Fort Richardson fish hatchery, were identified for stabilization. As of June 2, 2003 only one restoration plan has been developed for Area 2; restoration plans for Areas 1 and 3-6 will be developed in the future as funding becomes available The proposal for Area 2 involves the construction of 5 stone Bendway weirs which will redirect the flow of water away from the eroding access road and water wells that are utilized by the fish hatchery. Overlapping rootwads will be placed between the Bendway weirs, in order to further secure the toe of slope. Coir logs, willow live staking and vegetative matting techniques will also be utilized to reestablish the vegetation growth up to the adjacent road.

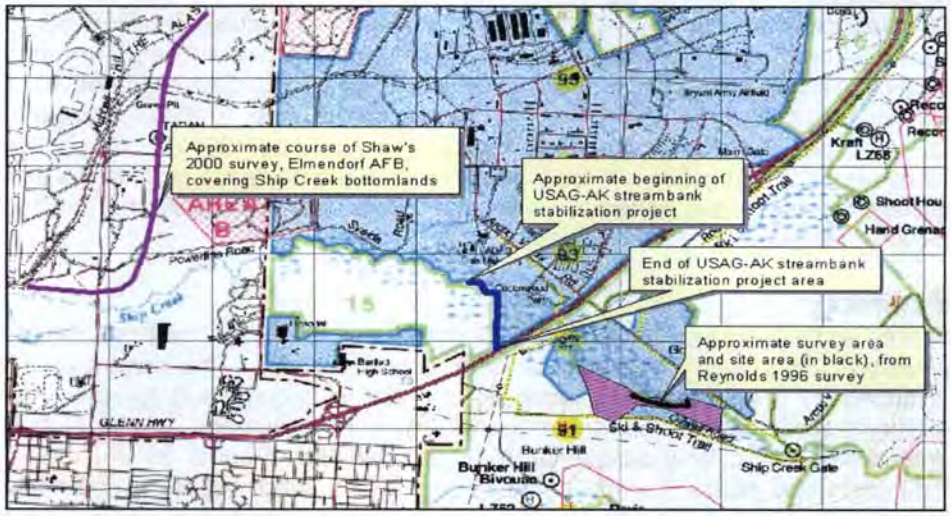



*Figure 18. Location of project area, with previous survey work conducted identified (from Ft. Richardson installation special).*

### Background

Shaw's study (2000) of proposed railroad realignment sections included southern portions of the Ship Creek bottomlands, immediately adjacent to the Ft. Richardson boundary, on Elmendorf Air Force Base. A survey of the proposed right-of-way through the bottomland adjacent to Ship Creek's banks revealed no cultural material; Shaw did comment on a number of mature stands of cottonwood/birch/spruce, but observed no bark-stripped birches (2000: 30). Shaw also


*Figure 19. Aerial view of proposed project areas along Ship Creek.*

commented on observed burn scars on mature cottonwood trees that could potentially be of cultural origin; however, he did not feel that these potential modifications are indicative of a particular or unusual activity, and thus did not consider the scarring significant. No further investigation was considered warranted (2000: 30).


*Figure 20. Area 2 example of proposed stabilization measures along Ship Creek banks.*

Reynolds (1996) conducted a survey along Ship Creek to the east of the presently proposed project area, for construction of the Moose Run Golf Course. One site was identified, consisting of several features: a cut log, a system of trails (none of which could be identified specifically as fragments of the Iditarod trail), the remains of a cabin and root cellar, and a cache pit and two rectangular depressions. However, the site's integrity was considered severely eroded, and was not determined eligible for listing in the National Register of Historic Places (Reynolds 1996).

No historic properties or archaeological sites have previously been recorded within the proposed area of potential effect of the current Ship Creek stream bank stabilization project.

*Figure 21 Grooved stone observed out of context on construction/berm pile, southwest Ship Creek project area.*

## Survey and Field Methods

A pedestrian survey of the six proposed stabilization areas was conducted on 20th and 21st of May, and again on the 09 June 2003. Transects were walked parallel to the stream banks on both the north and south sides of Ship Creek, west of the Glenn Highway crossing, and were walked in a meandering pattern to maximize coverage of potentially impacted areas. Due to reduced visibility from vegetative cover, opportunistic survey tactics were then employed, focusing on areas of good visibility, and where direct impacts are anticipated, i.e., immediately adjacent stream banks and along existing road/pathways where heavy equipment may impact outlying areas.

The project area shows evidence of heavy disturbance, evident in imported and re-deposited gravels/fill from construction of the adjacent road base on the north, and in the construction of park facilities on the northeast corner of the project area, near the Glenn Highway crossing. Additionally, heavy construction resulting from previous stabilization and placement of riprap in the southwest project area has disturbed existing ground contexts. Extensive erosion has also occurred, scouring and undercutting adjacent stream banks. Exposed stream banks were inspected for evidence of stratigraphy and cultural material; however, exposed banks exhibited heavy glacial deposits, with no evidence of cultural material observed. Soils are generally friable on the creek/wetland margins, with gravel inclusions.

During initial survey, one potential cultural item was observed in the southwest corner of the project area: a rounded river cobble exhibited a groove, circumscribing the upper half, not unlike a net sinker (figures 6 & 7). However, the cobble was observed resting on top of a berm constructed when riprap was placed along the stream bank, and lies in the midst of construction debris and redeposited rock/soil. The surrounding area was examined thoroughly for any evidence of intact soil contexts or cultural material, but none was observed.

Due to the importance of Ship Creek as a major fishing corridor and history of use as a focus of fish camps, several areas were investigated through shovel probing, to ensure full coverage of the proposed project areas. Shovel probes were placed in several areas where mature cottonwoods stand, where visibility is most restrictive, and where direct project impacts are anticipated. Beneath a duff layer of approximately 4-5 cm, soils are loamy, with dense gravel/cobble inclusions. All excavated soil was screened through ¼ inch hardware cloth. No cultural material was identified.

## Summary

No cultural material was observed during pedestrian survey and shovel probing. Disturbance in the area is extensive, resulting from road bed and park facility construction on the north bank of Ship Creek, and from previous placement of riprap and construction of a berm in the southwest project area, resulting in major disturbance to original soil deposition. Impacts from the proposed project should be minimal, consisting of heavy equipment use and ground disturbance from the installation of rootwads. As the proposed erosion control areas are within previously disturbed contexts (i.e., alongside the north bank of Ship Creek, where a road and park facilities have been previously constructed), any impacts to undisturbed ground will be minimal, and the project should have no effect on archaeological resources.

Additionally, some secondary impacts may occur to the southwest banks of Ship Creek near an existing dam and across from the Fort Richardson Fish Hatchery, where boulders may be replaced or removed. However, this area has undergone extensive previous disturbance, and a thorough surface examination of the area identified no intact deposits in the proposed project area. One object of potentially cultural origin was identified in this southwest area; however, the potential artifact was observed out of context atop a constructed berm, and an intensive examination of the surrounding area yielded no additional cultural material, or evidence of undisturbed ground contexts. Thus, the project will have no effect on archaeological resources. No historic properties were identified during the course of survey.

## 2.4 Municipal Light & Power Line Easement Project

In 2003, USAG-AK proposed to upgrade its infrastructure utility and reduce its operation and maintenance cost at Fort Richardson; as a result, new options have been explored to supply power to the post, involving the decentralization of heating by the installation of individual boilers at various buildings in place of the steam heat that is currently provided by the Fort Richardson Central Heat & Power Plant (CH&PP). Such an undertaking involves the purchase of commercial power from a local provider, ML&P.

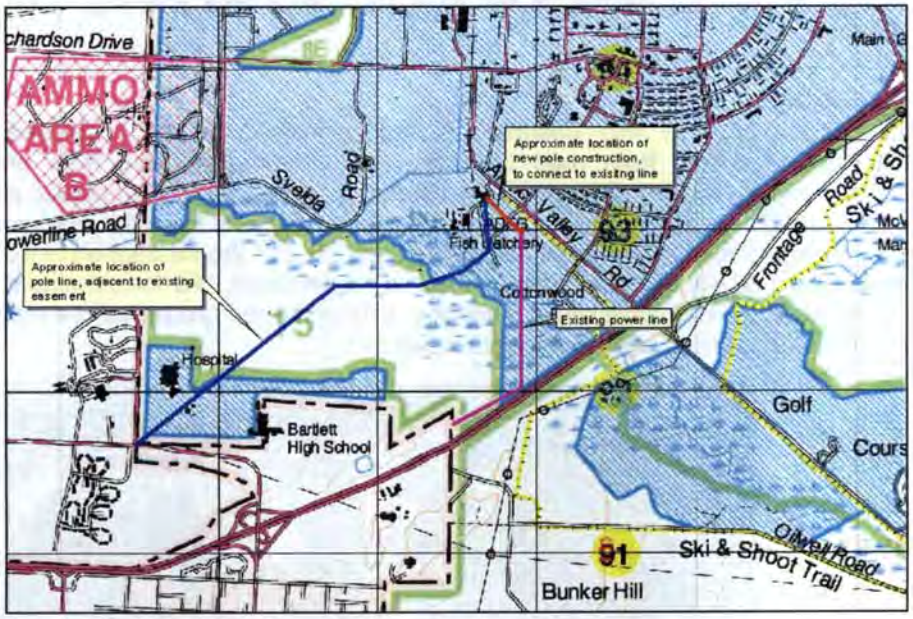



*Figure 22. Location of project area (from Ft. Richardson installation*

Under the proposal, a redundant power line would be constructed along Steamline Road, with an easement established for ML&P's construction of the power line. Additionally, ML&P will need to install three to four power poles to connect the existing line to the Fort Richardson Hatchery and the Fort Richardson substation. It has been proposed to construct the redundant power line (1.65 miles) along Steamline Road in the winter, when the ground is frozen, to minimize ground disturbance. The proposed project is illustrated in figures x.

Similar to the Ship Creek stabilization project, previous surveys conducted near the project area have not identified any archaeological resources. Shaw's study (2000) of proposed railroad realignment sections included southern portions of the Ship Creek bottomlands, immediately adjacent (west) to the Ft. Richardson boundary, on Elmendorf Air Force Base. A survey of the proposed right-of-way through the bottomland adjacent to Ship Creek's banks revealed no cultural material; Shaw did comment on a number of mature stands of cottonwood/birch/spruce, but observed no bark-stripped birches (2000: 30). Shaw also commented on observed burn scars on mature cottonwood trees that could potentially be of cultural origin; however, he did not feel that these potential modifications are indicative of a particular or unusual activity, and thus did not consider the scarring significant. No further investigation was considered warranted (2000: 30)

No historic properties or archaeological sites have previously been recorded within the proposed area of potential effect of the current ML&P intertie project.

### Survey and Field Methods

A pedestrian survey of the project area was conducted on 30 June 2003. Transects were walked on the edge of the existing easement, to investigate areas where any secondary impacts may occur. Due to reduced visibility from vegetative cover, opportunistic survey tactics were then employed, focusing on areas of good visibility, and where direct impacts are anticipated, i.e.,

immediately adjacent to the existing road/pathways, and where heavy equipment may impact outlying areas.

The project area showed evidence of heavy disturbance, with an existing road that covers much of the area. Additionally, heavy construction resulting from previous development at the fish hatchery, along the banks of Ship Creek where road construction has occurred, and surrounding the existing substation and power line, is extensive. Additionally, the proposed easement crosses wetlands and flat areas, where the probability of site localities is extremely low, based on the findings of previous surveys in the Anchorage bowl area (see e.g., Shaw 2000; Steel 1978, 1980).

## Summary

No cultural material was observed during pedestrian survey. Disturbance in the area is extensive, resulting from road bed/easement construction, and from previous development surrounding the fish hatchery, existing substation, and existing road placed parallel to Ship Creek. Soil deposition has thus been heavily disturbed. Impacts from the proposed project should be minimal, consisting of hand-cut vegetative clearing and the installation of power poles during the winter months, when ground disturbance will be minimal. As the proposed project is located in previously disturbed contexts, any impacts to undisturbed ground will be minimal, and the project will have no effect on archaeological resources.

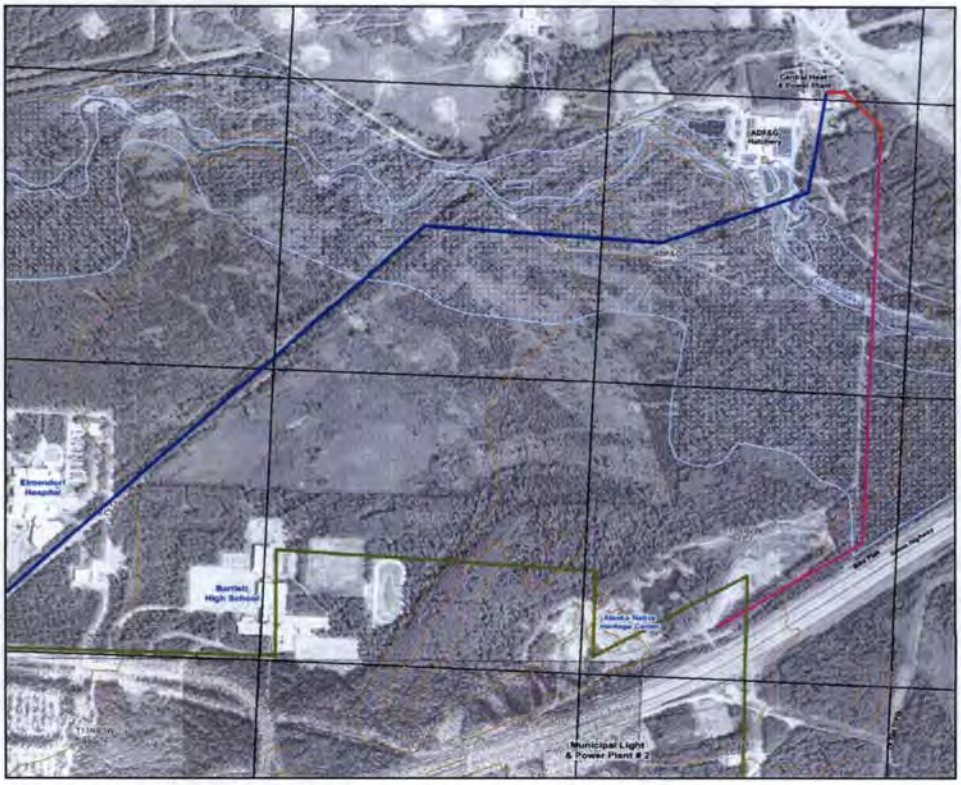



*Figure 23. Aerial view of proposed project area.*

## 3.0 Fort Wainwright (Including Donnelly Training Area)

### Introduction

Similar to the archaeological research undertaken at Fort Richardson, the surface danger zone (firing fan) of the three range construction projects were the primary focus of archaeological work at Fort Wainwright's Yukon Training Area in 2003. These ranges included: an Infantry Platoon Battle Course (IPBC), located in the western portion of Fort Wainwright's Yukon Training Area, and an Infantry Squad Battle Course (ISBC), to the east of the IPBC, and a Multi-Purpose Training Range (MOUT), located in the southwestern portion of Yukon Training Area. Evaluations of historic properties with in the surface danger zone have not been completed. Additional archaeological fieldwork included surveys for: Johnson Road Maneuver Corridor, ISBC MAC Training Site, Firebird Assault Strip Firing Point Site, Quarry Expansion, and a demolition range at Bravo Battery. No historic properties will be affected by any of these proposed projects.

At Donnelly Training Area, U.S. Army Alaska (USAG-AK) proposed four major range development projects which were the primary focus of survey during the 2003 field season. Additional survey and analysis was conducted at the Gravel Source, Access Roads, Stream Stabilizations and Bridges replacement.

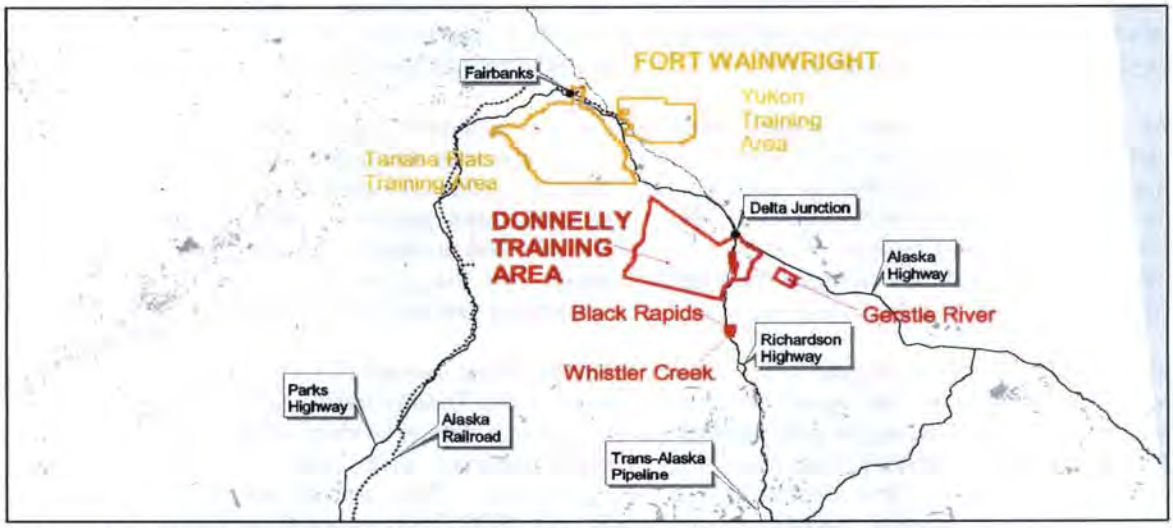



*Figure 24. Location of Fort Wainwright, including Donnelly Training Area.*

### Setting

Fort Wainwright is located in central Alaska, north of the Alaska Range in the Tanana River Valley. The Post lies 120 miles south of the Arctic Circle near the cities of Fairbanks and North Pole in the Fairbanks North Star Borough. The installation consists of the Main Post, Tanana Flats Training Area, Yukon Training Area, Dyke Range, and Donnelly Training Area, which lies near Delta Junction, within the boundaries of former Fort Greely. The projects listed under Fort Wainwright are all located within the Yukon Training Area, approximately 20 miles southeast of Fairbanks (see figure 24).

Fort Wainwright has the northern continental climate of the Alaskan interior, characterized by short, moderate summers, long, cold winters, and little precipitation or humidity. Average monthly temperatures in Fairbanks range from –11.5° Fahrenheit (F) in January to 61.5°F in July, with an average annual temperature of 26.3°F. The record low temperature is –66°F, and the record high is 98°F. Average annual precipitation is 10.4 inches, most of which falls as rain during summer

and early fall. Average annual snowfall is 67 inches, with a record high of 168 inches during the winter of 1970-71 (Natural Resources Branch 2002).

The weather of Donnelly Training Area is influenced by mountain ranges on three sides that form an effective barrier to the flow of warm, moist maritime air during most of the year. Surrounding upland areas tend to aid drainage and the settling of cold Arctic air into Tanana Valley lowlands (Natural Resources Branch 2001). Average monthly temperatures range from -6.4°F in January to 60.0°F in July, with an average annual temperature of 27.4°F. The record low temperature is -63°F, and the record high is 92°F. Average annual precipitation is 11.12 inches, which falls over 90.4 days, mostly during summer and early fall. Average annual snowfall is 40.5 inches, with a record 99.7 inches in 1945 (27 years of AMT data) (Natural Resources Branch 2001).

## Background

Fort Wainwright training lands fall within an area occupied at the time of Euro-American contact by Lower-Middle Tanana Athapaskans, including 'bands' described generally as the Salcha, Big Delta-Goodpaster, Wood River and Chena Bands (McKennan 1981:564; Andrews 1975; 177; Mishler 1986). Traditional settlement patterns were focused on a widely mobile seasonal round, with the fall caribou hunt playing a pivotal role in subsistence preparations for the winter, while summer activities were focused at fish camps, and in berry/root collecting and sheep hunting (McKennan 1981: 565). These activities were frequently a communal focus, with several local 'bands' connected by common interest, geography and intermarriage. Despite anthropological attempts to define 'boundaries' for the peoples living in the lower Tanana River valley, natural terrain served as the only definable 'boundary' to settlement patterns (McKennan 1981).

As Euro-American traders, miners, missionaries and explorers moved into the Tanana River valley, the traditional lifeway of local Athapaskan groups was disrupted. Access to trade goods and the development of the fur trade not only affected traditional material culture, but also began to dramatically affect subsistence activities and settlement patterns. Similarly, the advent of missionaries in the Interior of Alaska profoundly affected traditional social organization. The introduction of mission schools for Native children and the doctrine of new religious beliefs contributed to an erosion of traditional settlement patterns and practices (McKennan 1981).

In 1898, the discovery of gold in the Tanana uplands began a rush of Euro-American settlement to the Tanana valley. As the economic importance of the Tanana valley increased, the need for reliable transportation routes and communication systems rose in tandem. Existing trails, such as the Bonnifield, Donnelly-Wahburn, and Valdez-Fairbanks trails saw increased use and development in the first decade of the 20th century. This activity also resulted in the establishment of several roadhouses and posts. In 1906 Congressional appropriations led to improvement of the Valdez-Fairbanks trail, crossing the Alaska Range south of Delta Junction, following the Tanana River to Fairbanks. Completion of the Alaska Railroad in 1923 was followed 20 years later by construction of the Alaska Highway in 1942, firmly tying the Alaskan interior to the outside.

As Fairbanks grew in the first decade of the 20th century, several agricultural homesteads were developed on lands now encompassed by sections of the Fort Wainwright cantonment. These homesteads provided Fairbanks with a variety of agricultural products and wood for fuel, but were subsumed when lands were withdrawn for the creation of Ladd Field, which later became Fort Wainwright (Price 2002).

Development in the Alaskan interior increased dramatically with the advent of World War II and subsequent military build-up in Alaska. Of particular significance was the development of airfields near Delta Junction (Fort Greely), Fairbanks (Ladd Field, later Fort Wainwright), and 26 miles southeast of Fairbanks (Eielson Air Force Base). These locations began as lend-lease bases and cold weather testing centers, but soon expanded with the increased need for military support during World War II and later Cold War.

## Archaeology

Archaeological research on Fort Wainwright's training areas has resulted in numerous technical reports (Bacon 1978; Bacon and Holmes 1979; Dixon et al. 1980; Frizzera 1973; Higgs et al. 1999; Holmes 1979; Potter et al. 2000; Rabich & Reger 1978; Staley 1993), scientific papers (Holmes and Anderson 1986; West 1967; 1975), and the identification of at least 155 archaeological sites. Work on Fort Wainwright has been largely stratified sampling in nature, resulting at times in as little as 1% of the survey universe being inventoried. This work has largely focused on known recorded sites and areas thought to be of very highest potential for containing archaeological sites. Areas of less than ideal site potential have often been neglected, and sites that may be eligible for nomination to the NRHP have been incompletely documented or left unevaluated. Thus, while a large number of important sites have been identified on Fort Wainwright, a number of important gaps exist in the cultural resource inventory.

Despite its incomplete nature, the current archaeological record represents all of the recognized prehistoric cultures of the Alaskan interior. Of particular significance is the role played by archaeological resources located on Army lands in the definition of the Denali Complex of the American Paleoarctic Tradition (Anderson 1970; West 1967; 1981). Though not located on Army lands, two of the oldest well-dated sites in North America—Swan Point and Broken Mammoth, dated to between 11,500 and 12,000 BP—are located just to the north of Donnelly Training Area East (formerly known as Fort Greely, near Delta Junction), in the vicinity of Shaw Creek (Holmes 1996, 1998; Holmes et al. 1996; Yesner et al. 1999). Sites reflecting the influence of what has been termed Northern Archaic (e.g. Anderson 1968; Workman 1978), dating to perhaps 6000 to 2000 BP, are also present on Fort Wainwright training lands, as are late prehistoric Athapaskan (e.g. Andrews 1975; 1987; Cook 1989, Mishler 1986; Sheppard et al. 1991; Shinkwin 1979; Yarborough 1978) and Euro-American historic archaeological sites (Gamza 1995; Phillips 1984). The significance of these known sites on Army Withdrawal Lands is attested to by the fact that despite nearly 50 of these sites remain to be evaluated, 27 individual sites and 2 archaeological districts have been determined eligible for listing in the National Register of Historic Places (NRHP), while a third archaeological district remains to be evaluated.

Specific to Fort Wainright's Yukon Training Area (YTA), previous work has identified archaeological deposits in the small rises of Tanana Flats and those bordering the Tanana and Chena Floodplain. In contrast, small lithic scatters have been sparsely documented throughout the Yukon Training Area's 250,000 acres (Holmes 1980). A possible explanation for this discrepancy is that sites have been destroyed by military activity in high probability locations (i.e. along ridgelines and on hilltops). It is also possible that this lack of sites may reflect the low-intensity use of this rugged terrain. It is probable that human activity focused in areas near the Tanana, Salcha, Chena, and Wood rivers, relying on access to high country further upstream, rather than traveling overland through the hills of YTA.

## Historic Resources

Historic research dealing with Fort Wainwright includes recent historic context studies that deal with homesteading (Price 2002), early mining (Neely 2001), and early transportation on Fort Wainwright (Burr Neely 2003). Although mining was perhaps the most important economic endeavor of the late 19$^{th}$ century and early 20$^{th}$ century in the Fort Wainwright area, only three archaeological sites associated with mining have been recorded on Army managed lands in Alaska (Burr Neely 2001:37). Several early transportation routes, roadhouses, and other structures associated with travel are known to exist in the vicinity of Fort Wainwright and Donnelly Training area, including the Donnelly-Washburn Bonnefield trails, for example (Burr Neely 2003). Military construction and training activities have also resulted in several potential site types, including downed aircraft, fighting positions, and training and target debris. The majority of these military survival tactics are difficult to assign

to a specific context, and have often been consistently used for military training exercises; such sites have thus been determined ineligible for listing in the National Register of Historic Places (see above; Shaw 2000).

## 3.1 Surface Danger Zone for the Multi-Purpose Training Range (MPTR), the Infantry Platoon Battle Course (IPBC), and the Infantry Squad Battle Course (ISBC) Training Ranges

The U.S. Army Garrison Alaska is constructing three ranges within Fort Wainwright's Yukon Training Area; a multi-purpose training range (MPTR) an Infantry Platoon Battle Course (IPBC) and an Infantry Squad Battle Course (ISBC). These training ranges will have a combined Surface Danger Zone (SDZ) of approximately 3137 acres. A surface danger zone is defined as "that segment of the range area which is endangered by a particular type of weapon firing" (tecom). The SDZ which encompasses the training ranges is located east of Eielson Air Force Base in Fort Wainwright's Yukon Training Area (figure).

The information provided in this paragraph is a review of the three training ranges that are currently being constructed. The first range, the multi-purpose training range (MPTR), would entail construction of a control tower, an after-action-review building, warm-up facility, ammunition break-down facility, vehicle maintenance facility, vehicle holding area, gravel training roads, targets, arctic latrines, and utilities. The second range the Infantry Squad Battle Course (ISBC) would include a breach facility, an urban assault course, and a shoot house. Weapons fired on this course would use small arms, non-dudded ammunition, with small explosive charges used at the breach facility. The third the Infantry Platoon Battle Course (IPBC) is a larger-scale course

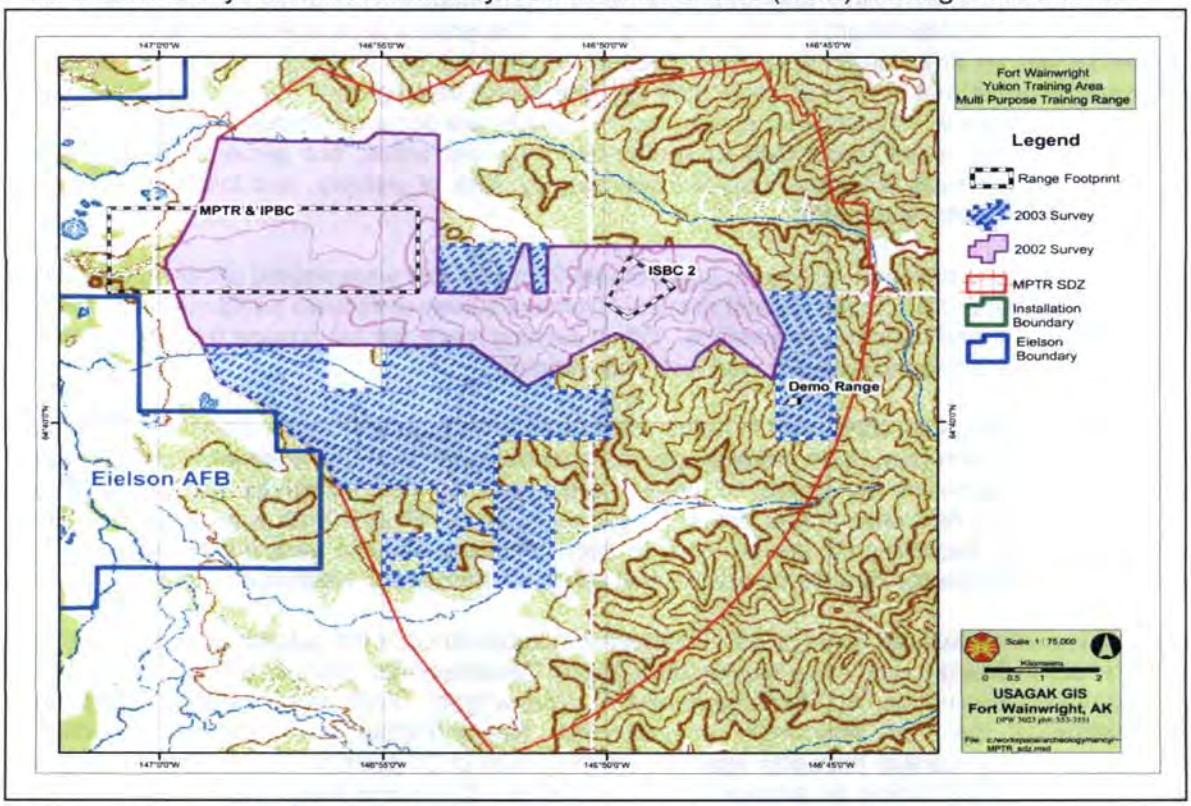



*Figure 27 Completed archaeology surveys of the surface danger zone, purple represents 2002 surveys and blue represents 2003 surveys.*

designed for combat realism and larger unit (platoon) training. Weapons fired on this course would be the same as those on the Infantry Squad Battle Course. The ISBC and the IPBC would include an after-action review facility to allow the control, monitoring, and reviewing of simulations and training operations. Supporting facilities for both courses would also include communications, electric service, an ammunition breakdown facility, control tower, warm-up facility, crushed aggregate access roads and parking areas, and self-contained dry-flush, arctic latrines.

Several known prehistoric archeological sites are located within the proposed Surface Danger Zone: FAI-157, XBD-095, and XBD-104. Site XBD-105 is located approximately one kilometer north of the SDZ. In 2002, sites XBD-157 and XBD-104 were re located but no additional cultural material was identified. In 2003, reconnaissance efforts to relocate site XBD-095 were unsuccessful.

## Survey and Field Methods

The immediate footprints of the ranges were surveyed in 2002. SHPO concurred with the findings of No Historic Properties Affected[1]. A partial section 106 (NHPA) review of the surface danger zone was conducted in 2003 and is expected to be completed in 2004. An archaeological survey crew of four archaeologists employed by the Center for Environmental Management of Military Lands (CEMML) conducted a pedestrian survey of the proposed Surface Danger Zone, under the supervision of Fort Wainwright archaeologist, Nancy Fichter. Pedestrian surveys were carried out in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." This research design was submitted to SHPO for review and comment, as required by 36 CFR 800, in March 2003.

The SDZ for the three training ranges cover an area approximately 3137 acres east of Eielson Air Force Base in Fort Wainwright's Yukon Training Area. The project Area of Potential Effect (APE) encompassed an area larger than the proposed range firing fan footprint, in order to ensure coverage of areas that may incur secondary impacts during training use. Terrain that exceeded slopes of 40° were eliminated from survey, as no impacts will occur on slopes greater than 30°. Additionally, every effort was made to survey low-lying wet areas, but some wetlands were eliminated from survey coverage, due to inaccessibility, lack of visibility, and low probability of containing intact cultural deposits.

Parallel pedestrian transects spaced at approximate 20m intervals were walked either north-south or east-west, depending on terrain and access. Transect survey units were partitioned according to existing roads and trails where possible. When existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined.

Sub-surface testing was conducted in areas considered to be high probability, based on previous survey and research (e.g., lake margins, glacial moraines and ridges, river/stream confluences) during initial review of the proposed project area, and as determined by the supervising archaeologist and field crew leader based on survey findings. Shovel tests were approximately 40 x 40cm, and frequently did not go below a depth of 70cm. Levels were dug at 7cm levels, unless clear stratigraphy dictated otherwise, and screened through ¼" hardware cloth.

Archaeological pedestrian surveys were conducted in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." Four archaeologists under the supervision of the Fort Wainwright archaeologist, Nancy Fichter, surveyed the proposed undertaking using parallel transects spaced at a maximum of 20 meters. Transect survey units were partitioned according to existing roads and trails. If existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. During initial review of the proposed project area, high probability areas (e.g., lake margins, ridges, benches adjacent to steeper slopes) were identified for systematic sub-surface testing. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth.

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[1] MPTR finding of No Historic Properties Effected submitted to SHPO July 10, 2002 with SHPO concurrence received July 30, 2002. ISBC and IPBC finding of No Historic Properties Effected submitted to SHPO December 10, 2002 with SHPO concurrence received January 14, 2003.

## Findings

### Unidentified Iron Cylinder

This iron cylindrical object was identified ½ kilometer from Bravo Battery, 100 feet from Quarry Road, and at an elevation of 1750 feet. It is approximately 10 feet in length and two feet wide. The object is hollow, completely sealed at both ends except for identical threaded fittings with a 3.14in circumference located at each end. Alders surrounding the object dates to 23-30 years old. Attempts to identify this cylinder have been unsuccessful to date.

*Figure 26a Unidentified iron cylinder*

*Figure 26 b threaded fitting of unidentified iron cylinder*

### Stout House

The vestige of a WWII stout house was identified north of Quarry road about ¾ kilometers off an established ATV trail. This stout house is a 2x4 wooden construction with diagonal sheathing and remnants of 1.5 lb felt tar paper covering on the NE, SW, and SE exterior walls. The NW wall is 90% covered with tar paper. The floor is 1x 3 ½" tongue-in-groove hardwood. The ceiling finish is 1x 5 ¼" – 5 ½" tongue-in-groove. The interior walls have fiberboard covering. The building is insulated with 'aluminum foil insulation blanket type II double layer' (manufacturer's tag). The northeast interior wall is lined with plywood cubby holes with names penciled on the framing. There are six square window openings that measure 40" X 40", two on the NE and SW walls, and one on the SE and NW walls. The windows were single sash with some glazing still present. The building originally had a gabled roof that is now collapse. It is partially covered with hardware cloth. Two breaker boxes; 140 amp fuses and 125 amp fuses were still attached to the SE wall. The electrical lines leading to the two fuse boxes are cloth covered wire cord. The structure rests on skids and was probably transported to the site. The surrounding area in which the stout house is located was evidently cleared at one time, but has since overgrown with alders, raspberry bushes, and various grasses. Two gallon drums labeled 'dry cleaning solvent', located on the outside of the northeast wall have been modified for use as a oil fuel tank possibly for a stove that is now gone.

The United States army had an enormous task of adequately housing over 6 million troops by November 1944. 95 percent of the troops were housed in temporary buildings. Temporary structures were meant to last 5 to 20 years and were designed to be both economic and efficient. They used building technologies and materials, such as plywood, hardboard, and sheetrock that were not widely used until after WWII. Temporary buildings were designed with five basic principles; speed, simplicity, conservation of materials, flexibility, and safety (U of Utah).

Stout houses were considered temporary structures, built during the early mobilization of WWII (Goodwin 1997). "[A stout house is] a simple 12' by 16' hut, built of prefabricated wood composition panels. It was box-like in design and required little construction effort; had the additional advantage in that it could be transported by air" (Blue collection)

*Figure 27 a Stout house*

*Figure 27 b Collapsed roof of Stout house*

*Figure 28 a oil fuel tank near Stout house*

*Figure 28 b Cubbyholes inside Stout house*

**Military Survival Tactics**

A number of historic structures and buildings that pre-date or are related to World War II and Cold War era Army activities are located on or near Army lands (see e.g., Hollinger 2001; Shaw 2000). On Fort Wainwright, evidence of previous military survival tactics were identified throughout the proposed training project areas. Moderate disturbance from bunkers, foxholes and UXO (unexploded ammunitions) were observed during survey. Although there is a possibility that some of these features may date to training undertaken during World War II and the immediate post-war period, none of these features can be clearly assigned to a specific date. These sites

> 'have ... lost ... aspects of integrity regarding design, setting, materials, workmanship, feeling and association over the years by neglect and/or direct actions resulting from operating a military base with changing physical requirements associated with execution of the primary mission. Such actions range among planned demolition of buildings judged to be excess property, inadvertent destruction of structures during new uses of the land such as for gravel pits, construction of new facilities which intrude into and radically change the site setting that existed during WWII, and direct efforts to "clean up" the sites when use stopped' (Shaw 2000: 16).

Survivability tactics are crucial to all branches of the armed forces. Their purpose includes protecting personnel, weapons, and supplies while deceiving the enemy. Survival doctrine considers the when, where, and how fighting and protective situations are prepared.

"Available survivability tactics include building a good defense; employing frequent movement; using concealment, deception, and camouflage; and constructing fighting and protective positions for both individuals and equipment. The worth of survivability positions has been proven throughout history. Protective construction in the form of fighting and protective positions by itself cannot eliminate vulnerability on the modern battlefield. It can, however, limit personnel and equipment losses by reducing exposure to threat..." (Department of Army, 1985)

Examples of these military survival tactics (figures 29-31 ) that were identified during survey are a perimeter bunker and deliberate positions, such as one man fighting positions (fox holes):

**Perimeter Bunker**
The structure stands at 9 feet tall and 7feet wide and is constructed of milled lumber with modern nails. There is a ladder resting on one side that would have allowed access to a once existing platform. The construction of cross-supported beams, fortifies the structure, which would allow for continual or heavy usage (Berta personal communication). It is located a 100m from Quarry Road on an old over grown road that is approximately 5m wide and 3m deep.


*Figure 29a Perimeter bunker*


*Figure 29 b Ladder of Perimeter bunker*

Bunkers are characteristically "larger fighting positions built for squad-size units who are required to remain in defensive positions for a longer period of time" (Survivability 1985: 29). Typically perimeter bunkers are made from plywood and are used for above ground protective security positions. The construction would have included a semi-enclosed bunker that rested atop the support beams. The structure identified in the field is only the support beams; the bunker portion of the structure is missing.

No cultural materials were identified or recovered during field inventory.

**Deliberate Fighting Positions**
"Deliberate fighting positions are modified hasty positions[2] prepared during periods of relaxed enemy pressure." (Survivability, 1985: 5) One man fighting positions, also known has foxholes, were the most common deliberate position identified during field survey. Most measured 5' to 6' in length, 2' in width, and 1'-2' feet in depth and were associated with areas impacted by military training.

[2] "When time and materials are limited, troops in contact with the enemy use a hasty fighting position located behind whatever cover are available. It should provide frontal protection from direct fire while allowing fire to the front and oblique". (Survivability, 1985:3)

*Figure 30 one man fighting position with a low parapet made of stones*

*Figure 31 one man fighting position with a low parapet made of soil*

## Summary

Survey and sub-surface testing failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The area of potential affect received 100% survey coverage. The project area has been heavily disturbed by previous military activities, evident in interspersed foxholes, bunkers, UXO, and military training debris found throughout the surveyed area.

## 3.2 Demolition Range Project

United States Army Garrison Alaska (USG-AK) proposed a Demolition Range to be sited on the south side of Quarry Road neighboring Bravo Battery in the Yukon Training Area. This range measures approximately 153 meters by 214 meters and will be used primarily for C4 munitions (one pound plastic blocks) and a variety of explosives used with in the military system.

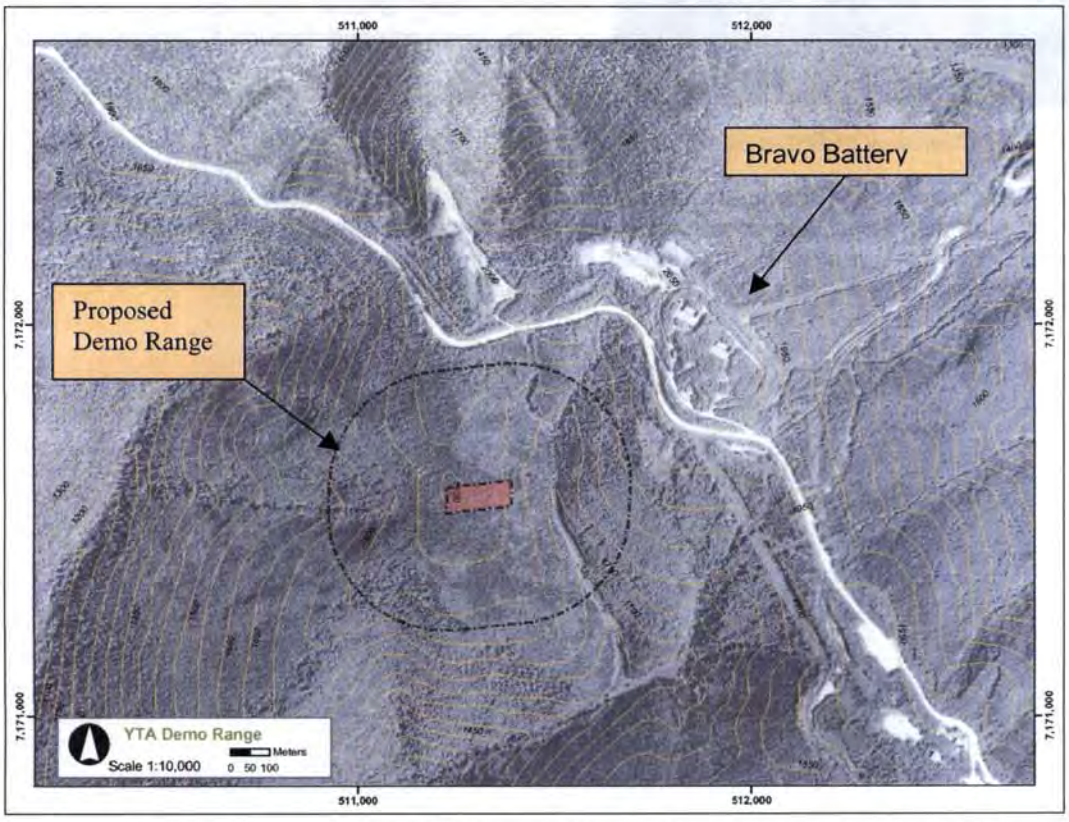


*Figure 32 Photo Image of Bravo Battery and Demo Range Construction Proposal*

**Survey and Field methods**

There is one known prehistoric archeological site (XBD-095) located within the general vicinity of this project's APE. Reconnaissance efforts from the 2002 and 2003 archaeological crews failed to relocate the site.

Archaeological pedestrian surveys were conducted in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." In July 2003, four archaeologists surveyed the proposed undertaking using parallel transects spaced at a maximum of 20 meters.

*Figure 33 View of Bravo Battery looking North – Showing Preexisting Disturbance*

*Figure 34 Overview of Bravo Battery,*

Transect survey units were partitioned according to existing roads and trails. If existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. During initial review of the proposed project area, high probability areas (e.g., lake margins, ridges, benches adjacent to steeper slopes) were identified for systematic sub-surface testing. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth.

## Summary

Survey and sub-surface testing failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The area of potential affect received 100% survey coverage. The probability of locating intact archaeological sites was low. Disturbance in the project area was substantial due to previous military training and vehicular access.

## 3.3 Barrow Pit Expansion Project

The United States Army Garrison Alaska proposed to enlarge an existing barrow pit located at the junction of Skyline and Quarry Road in the Yukon Training Area (YTA) at Fort Wainwright .The footprint of the barrow pit will be expanded to support the upgrade of Johnson Road and the development of firing points in the YTA. An estimated 100,000 cubic yards of material will be needed to support these projects.

### Survey and Field methods

Archaeological pedestrian surveys were conducted in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." In august 2003, two archaeologists surveyed the proposed undertaking using parallel transects spaced at a maximum of 20 meters. Transect survey units were partitioned according to existing roads and trails. If existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. During initial review of the proposed project area, high probability areas (e.g., lake margins, ridges, benches adjacent to steeper slopes) were identified for systematic sub-surface testing. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth.

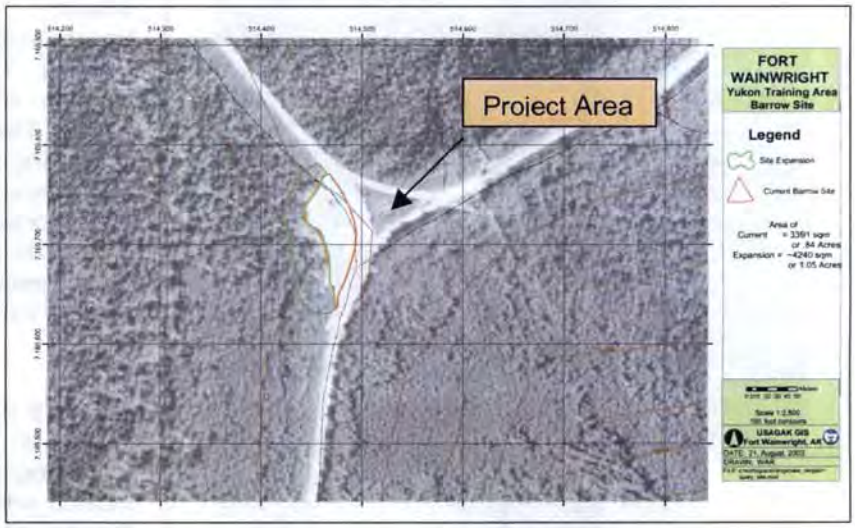


*Figure 35 Barrow Pit: Area of Potential Affect*

### Summary

Survey and sub-surface testing failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The area of potential affect received 100% survey coverage.

*Figure 36 Barrow Pit: Aerial photograph of project area*

*Figure 37 barrow pit: view of project area*

## 3.4 Firebird Assault Strip, Firing Point Project

The United States Army Garrison Alaska proposed to construct a firing point in an area previously used as an artillery firing point and bivouac area, sited on the east side of Johnson Road adjacent to the Firebird Assault Strip/Drop Zone in the Yukon Training Area at Fort Wainwright


*Figure 38 Firebird Firing Point Site: Area of Potential Effect*

The construction of the firing point is to support the 172nd Separate Infantry Brigade (SIB) transformation to a Stryker Brigade Combat Team (SBCT) and the addition of the 155 mm artillery pieces. The undertaking will consist of leveling off and hardening a pad approximately 300 x 100 meters. An associated bivouac area will be created in conjunction with the pad to accommodate up to 10 battery support vehicles.

### Survey and Field Methods

There is one known prehistoric archeological site (XBD-095) located within the general vicinity of this project's APE. Reconnaissance efforts from the 2002 and 2003 archaeological crews failed to relocate the site.

Archaeological pedestrian surveys were conducted in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." In August 2003, four archaeologists surveyed the proposed undertaking using parallel transects spaced at a maximum of 20 meters. Transect survey units were partitioned according to existing roads and trails. If existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. During initial review of the proposed project area, high probability areas (e.g., lake margins, ridges, benches adjacent to steeper slopes) were identified for systematic sub-surface testing. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth.

### Summary

Survey and sub-surface testing failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The area of potential affect received 100% survey coverage.

*Figure 39 Firebird Firing Point: Aerial photograph of project area.*

*Figure 40 Firebird Firing Point: view from Quarry Road*

## 3.5 Infantry Squad Battle Course (ISBC)

The United States Army Garrison Alaska proposes to construct an Infantry Squad Battle Course to be sited on the existing MAC Mount Assault Course, located south of Brigadier Road.

The ISBC will be used to conduct basis offense and defense mission oriented training exercises.

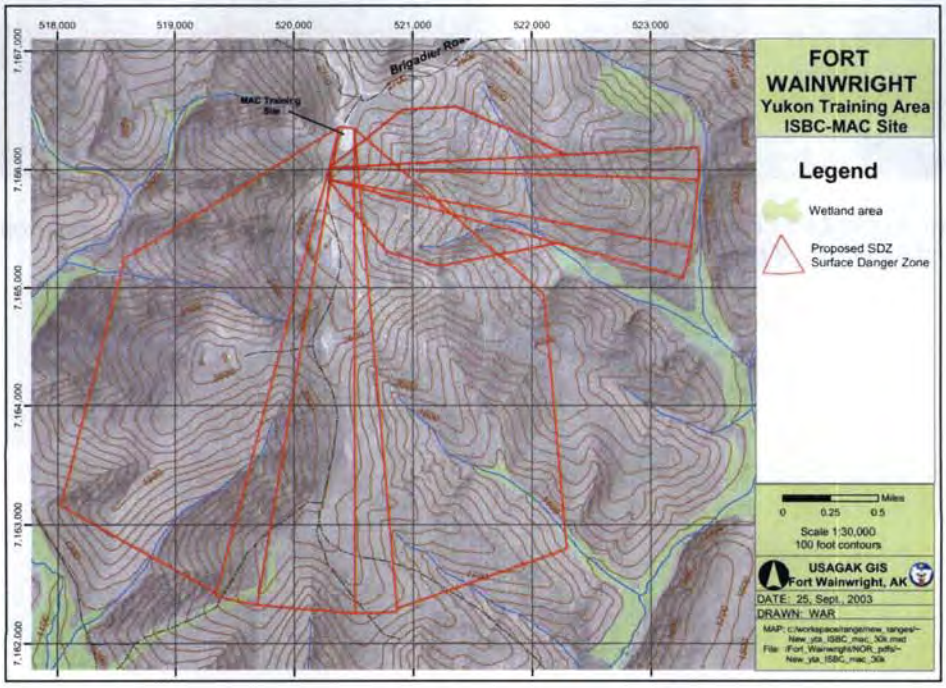


*Figure 41 ISBC MAC Training Site: Area of Potential Effect*

Weapons fired on this course will be small arms ammunition (e.g. 9mm tracer (AT4 sub-caliber), 5.56mm (M-16), 7.62mm (M-60 machine gun), 40mm training practice round – orange smoke (M-203)) using non-duded ammunition.

### Survey and Field Methods

Archaeological pedestrian surveys were conducted in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." In July and September 2003, four archaeologists surveyed the proposed undertaking using parallel transects spaced at a maximum of 20 meters. Transect survey units were partitioned according to existing roads and trails. If existing roads did not provide for practical unit boundaries, a one square kilometer work unit was

*Figure 42 ISBC MAC Training Site from Johnson Road*

defined. During initial review of the proposed project area, high probability areas (e.g., lake margins, ridges, benches adjacent to steeper slopes) were identified for systematic sub-surface testing. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth.

*Figure 43 ISBC MAC Training Site: Shovel Test Area*

## Summary

Survey and sub-surface testing failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The area of potential affect received 100% survey coverage.

## 3.6 Maneuver Corridor Test Site

United States Army Garrison Alaska proposes to establish a Maneuver Corridor test site to examine the effects of different landscape treatments near Charlie Battery in Fort Wainwright's Yukon Training Area. The information obtained from these tests will be used to create military training areas where vehicles may operate off established road systems. The primary vehicle considered in these tests is the Stryker, which is a light armored, wheeled vehicle approximately nine feet wide. Removal of trees via a combination of hand thinning and hydro-axing of the area will be employed to create the test site.

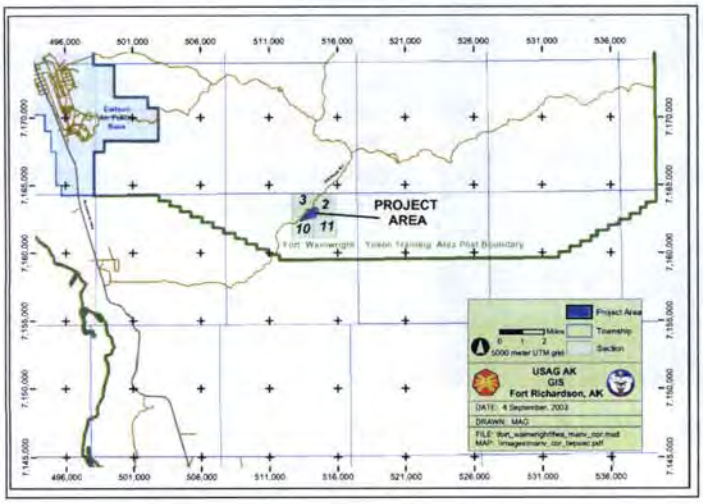


*Figure 44 Maneuver Corridor Project Area*

### Survey and Field Methods

Archaeological pedestrian surveys were conducted in accordance to the guidelines established in the "Research Design: U.S. Army Alaska 2003 Range Developments, Section 106 Archaeological Inventory and Evaluation, Ft. Richardson and Ft. Wainwright." In June 2003, four archaeologists surveyed the proposed undertaking using parallel transects spaced at a maximum of 20 meters. Transect survey units were partitioned according to existing roads and trails. If existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. During initial review of the proposed project area, high probability areas (e.g., lake margins, ridges, benches adjacent to steeper slopes) were identified for systematic sub-surface testing. Shovel tests were approximately 50 x 50cm, and screened through ¼" hardware cloth.


*Figure 45 Maneuver Corridor Project: Close up View of Surveyed Area*

*Figure 46 Southwest view (230°) Maneuver Corridor Project Area*

## Summary

Survey and sub-surface testing failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. The area of potential affect received 100% survey coverage.

## 4.0 Donnelly Training Area

### Introduction

U.S. Army Alaska (USAG-AK) has proposed four major range development projects, as well as several smaller projects on lands at Ft. Wainwright's Donnelly Training Area. The major range development projects include, a Landscape-scale Fire Mitigation Project (firebreak), Unmanned Aerial Vehicle launch and recovery site (UAV landing strip), Cold Weather/ Automotive Test Complex (CRTC racetrack), and the Battle Area Complex (BAX footprints and firing fans). Smaller projects include Gravel Source, Access Roads, Stream Stabilizations and Bridges replacement. An archaeological survey of the proposed projects was conducted in May, June, July, August and September of 2003. A total of 105 archaeological sites were identified and recorded in the areas surveyed during the 2003 summer field season. Only one of these sites fell within the proposed construction footprint, and was subsequently evaluated for eligibility to the National Register of Historic Places, pursuant to 36 CFR 800.

**Table 1. Acreage of proposed range development projects**

| PROJECTS | TO BE SURVEYED | SURVEYED | COMPLETED | SITES FOUND |
|---|---|---|---|---|
| UAV Landing Strip | 988.4 | 988.4 | 100% | 6 |
| CRTC Test Track | 5930.4 | 5930.4 | 100% | 16 |
| BAX Footprint Eddy DZ | 3459.4 | 3459.4 | 100% | 0 |
| BAX Firing Fan Eddy DZ | 22239 | 17914.5 | 81% | 70 |
| Fire Break Phase 1 | 494.2 | 481.18 | 98% | 1 |
| Fire Break Phase 3 (2005) | 2223.9 | 679.52 | 28% | 8 |
| Other Small Projects | 988.4 | 988.4 | 100% | 0 |
| Additional area surveyed | 2841.6 | 2841.6 | 100% | 4 |
| **TOTAL** | **39165.3** | **33283.4** | | **105** |

Landscape-scale Fire Mitigation Project is located on the east of Buffalo drop Zone and in north of Eddy Drop Zone. Nine new archaeological sites were located in the area of the Fire Break during the course of survey in 2003. One site was located within the proposed for the Phase 1 of the Fire Brake. No ground disturbance occurred at the archeological site, only hand thinning of vegetation next to the site. A staff archaeologist monitored the hand thinning which occurred around the site.

Aerial Vehicle launch and recovery site is located between the Old Richardson Highway and the Delta River, and north of Windy Ridge Road. Six new archaeological sites were located in BAX Area B during the course of survey in 2003. In addition to the six new archaeological sites recorded, two previously recorded sites (XMH-267 and XMH-268) were relocated during the course of survey in 2003. However, no sites are in the APE for the UAV Landing Strip.

Cold Weather/ Automotive Test Complex is located in Donnelly Training Area East, between the Richardson Highway and Jarvis Creek. Sixteen new archaeological sites were located in the area of the CRTC test track during the course of survey in 2003. One site was located directly within the proposed CRTC test track construction footprint, and was subsequently evaluated for eligibility for listing in the National Register of Historic Places, based on criteria outlined in 36 CFR 60.4.

The proposed construction of the Battle Area Complex (BAX) encompassed three different locations, referenced here as Texas Range, Eddy Drop Zone, and Donnelly Drop Zone. After the course of design planning, Eddy Drop Zone became the preferred alternative for locating the BAX project. The majority of Eddy Drop Zone BAX footprint alternative was surveyed in 2002 (Hedman

et al. 2003). However, a small portion of the footprint was not. The remainder was surveyed in 2003, no new site found.

Seventy new archaeological sites were located in Eddy Drop Zone BAX firing fan alternative, during the course of survey in 2003. These sites lie inside the boundaries of one of three firing fan alternatives for the proposed BAX project, and therefore were not evaluated determine eligibility for inclusion in the NRHP. However, if these sites fall into the APE of the chosen firing fan alternative, sites will be evaluated to determine eligibility for inclusion in the NRHP.

A description of each survey and evaluations, as appropriate, follow:

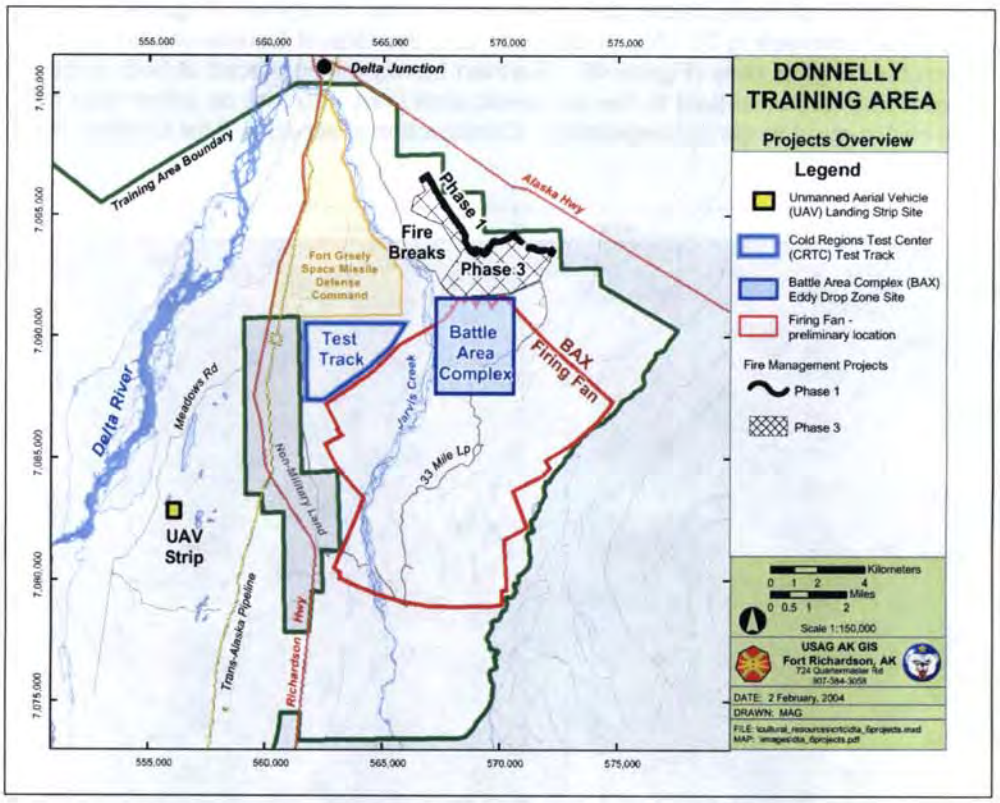


*Figure 47: Location of proposed range development projects*

## 4.1 Gravel Source and Access Road

The United States Army has proposed construction of a Gravel Source and Access Road located within U.S. Army Garrison Alaska (USAG-AK) lands, on Ft. Wainwright, Alaska. The project involves the construction of a three-acre Gravel Source and a 500-meter long Access Road at Ft. Wainwright's Donnelly Training Area.

The project involves the construction of a three-acre Gravel Source which will be used for the road upgrades project currently under way on 33 Mile Loop Road. The Gravel Source has road access; however three archaeological sites (XMH-922, XMH-923, and XMH-924) would be impacted by the traffic of heavy trucks and other construction equipment (Figure48). A 500-meter long Access Road connecting 33 Mile Loop Road and the Gravel Source will be made to avoid these three archaeological sites (Figure 48). Earthen berms will be placed at both ends of the old road to prevent any further impact to the archaeological sites. 20 feet on either side of the new road may be Hydro-axed to control vegetation. Construction is scheduled for October 2003.

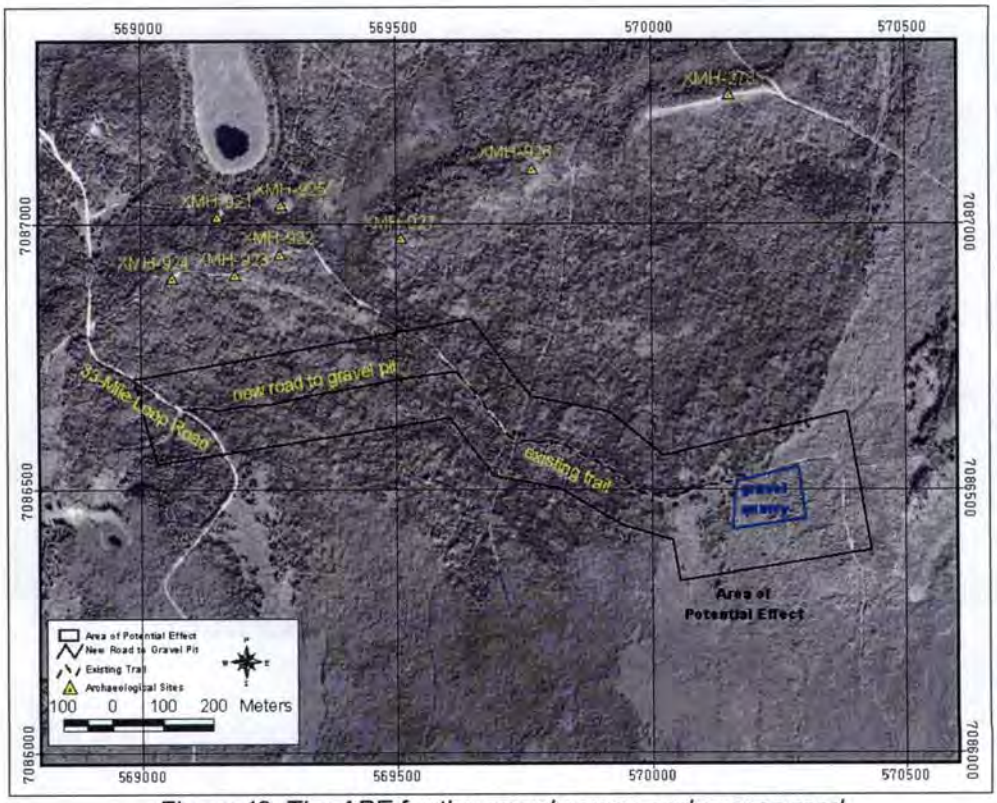


*Figure 48 .The APE for the gravel source and access road*

**Survey and Field Methods**

In the summers of 2002 and 2003, two archaeological survey crews (each comprised of four archaeologists) employed by the Center for Environmental Management of Military Lands (CEMML, Colorado State University), conducted a pedestrian survey of the proposed Gravel Source and Access Road at Ft. Wainwright's Donnelly Training Area.

The project's Area of Potential Effect (APE) encompassed an area larger than the anticipated construction footprint, in order to ensure coverage of areas that may incur secondary impacts during construction or use. All of the area shown in Figure 48 was surveyed in the summer of

2002 and all the area inside the APE was resurveyed in 2003

Parallel pedestrian transects spaced at 20m were walked systematically across the APE and surrounding area. Transect survey units were partitioned according to existing roads and trails where possible. When existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. Systematic sub-surface shovel testing was undertaken in areas considered to have high probability for containing archaeological sites. Areas that were shovel tested included but were not limited to: landforms affording a view of surrounding terrain; lake margins; ridgelines; terrace edges; hilltops; benches adjacent to steeper slopes; and bluffs. Shovel tests were typically 30cm in diameter and excavated into glacial till or consolidated outwash. All soil removed was screened through ¼" hardware cloth.

**Results/Summary**
Pedestrian survey of the proposed project area failed to identify any cultural resources within the boundaries of the proposed project's area of potential effect. All previously recorded archaeological sites or historic properties fall outside the proposed project area. Subsequently, the proposed project will have no effect on historic properties.

**Cultural Resources**
Eight prehistoric sites have been recorded in 2002 within one kilometer of the proposed project area (Figures 48). To the Northwest of the proposed project area, seven sites were recorded during surveys conducted by the Center for Environmental Management of Military Lands, Colorado State University in 2002 (Hedman et al. 2003). These Sites (XMH-921, XMH-922, XMH-923, XMH-924, XMH-925, XMH-926 and XMH-927) are located to the south of Fiddle Lake. To the north of the proposed project area, one site (XMH-278) was recorded near an unnamed lake (Bacon and Holmes 1979).

Following is a description of each recorded site near the currently proposed project area:

XMH-278
**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-278 consists of numerous flakes found on the surface of a northeast/ southwest trending ridge, about 200m south of a small lake. Nine gray chert flakes, a biface knife or projectile fragment, a biface perform or blank, and a unifacially retouched flake were collected. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-278 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated determine to eligibility for inclusion in the National Register of Historic Places (NRHP). However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-921

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-921 is located at the terminal end of a well-defined glacial moraine ridge extending north/south. Fiddle Lake is visible to the northeast at approximately 300 meters. The site was identified during pedestrian survey. Five late-stage reduction flakes of gray chert were observed on the surface. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-921 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. This site could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-922

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-922 is situated on the crest of a relatively narrow east/west trending glacial moraine ridge. The site is approximately 300 meters south of Fiddle Lake. Site XMH-923 is approximately 100m west and may be associated. The site was identified during pedestrian survey. Ten tertiary chert flakes were observed on the surface of a small two-track. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-922 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. Site could potentially contain more cultural material where late stage lithic reduction occurred. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-923

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-923 is located on the crest of a narrow east/west trending glacial moraine ridge approximately 300 meters south of Fiddle Lake. Site XMH-922 located approximately 100m east may be associated. The site was identified during pedestrian survey in 2002. Two tertiary chert flakes were observed on the surface of a small two-track running along the ridge crest. In 2003 two uniface fragments were found at the site, in the center small two-track. These two fragments were collected. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-923 has initially been classified as a small lithic scatter where late stage lithic reduction occurred. Site could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-924

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-924 is located on the crest of a narrow east/west trending glacial moraine ridge approximately 300 meters south of Fiddle Lake. Site XMH-923 located along the same ridge may be associated. The site was identified during pedestrian survey. One tertiary gray chert flake and a possible notched tool of chert were observed on the surface of a small two-track running along the ridge crest. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-924 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-925

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-925 is located on a wind-eroded southeast facing hilltop, 100 meters southeast of Fiddle Lake. The site was identified during pedestrian survey. One dark gray chert flake and one fine-grained black basalt flake were observed on the surface. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-925 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-926

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-926 is located on the southeast-facing slope of a small hilltop approximately 500 meters east of Fiddle Lake. The surrounding terrain is comprised of kettle lakes and low ridges throughout flat plains. The site was identified during pedestrian survey._Basalt and chert debitage, including one retouched chert flake was, observed on the surface. Subsurface

examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-926 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## XMH-927

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-927 is located on the southeast-facing slope of a small knoll on a long ridge approximately 400 meters southeast of Fiddle Lake. Site XMH-927 was identified during pedestrian survey. Two gray chert flakes were observed on the surface. Subsurface examinations have yet to be conducted. UTM coordinates for the site are: [redacted]

**Recommendations**
XMH-927 has initially been classified as a small lithic scatter and could potentially contain more cultural material. This site lies inside the boundaries of the proposed Gravel Source project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

## 4.2 Landscape-scale Fire Mitigation Project

The United States Army, in coordination with the Alaska Fire Service, has proposed a landscape-scale fire mitigation project located within U.S. Army Garrison Alaska's (USAG-AK) lands at Ft. Wainwright's Donnelly Training Area East. This project was developed explicitly to mitigate potential fire risks from range expansion in the Eddy Drop Zone Study Area.

A three phase mitigation project to prevent potential fires directly related to the expansion of the Eddy Drop Zone Study Area. Phase 1 and Phase 3 of the project are directly located on USA-GAK property, but lands involved in Phase II are located on private property in Delta Junction.

Phase 1 (FY 2003-2004) will begin during the 2003 summer field season. The forestry crew from Colorado State University and hot shot crews from the Alaska Fire Service will begin tree thinning operations in the areas defined on the inserted map. Stand conversion by hydro-ax and shear-blading would begin in late fall 2003. All coniferous over story vegetation would be mechanically removed and piled into windrows within the treatment area and burned in the next winter. Hand thinning (removing the vegetation by chainsaw and other hand implements) will occur in areas of cultural and environmental sensitivity.

During Phase 2 (FY 2003-2004) the risks associated with nearby housing sub-divisions will be identified. All large volatile vegetation would need to be removed 100 feet from structures, and

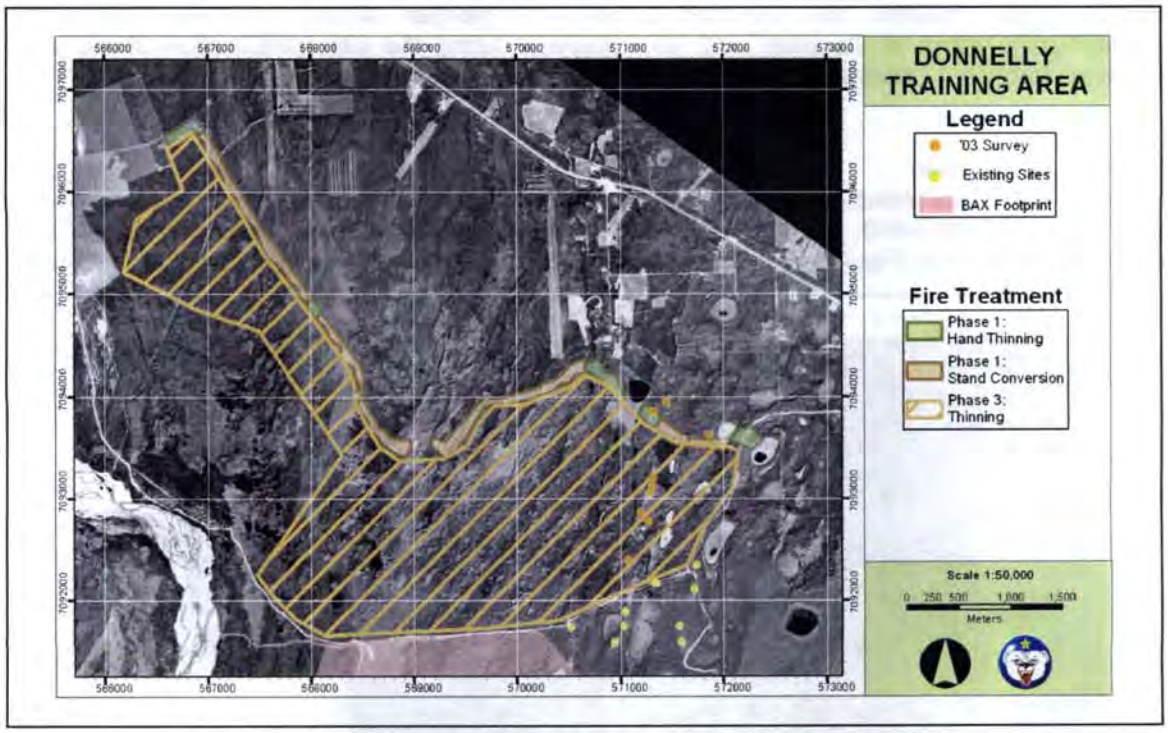


*Figure 49. Location of the Landscape-scale Fire Mitigation Project*

smaller, less volatile vegetation would need to be cleared 30 feet from structures and limbed to remove ladder fuels. The Bureau of Land Management will work with Alaska state agencies and private homeowners to identify the work that will be accomplished, and timelines required to accomplish the project.

Phase 3 (FY 2005, continuous) would expand the fuel break with selected removal of vegetation within the area of interest. The treatment would entail clearance of the forest in a series of polygons in a multi-year project. Similar stand conversion techniques would be used in this phase as were used in Phase 1.

### Survey and Field Methods

In May 2003 two archaeological survey crews (each comprised of four archaeologists) employed by the Center for Environmental Management of Military Lands, Colorado State University, conducted pedestrian archaeological surveys of the APE encompassing an area of approximately 1160 acres; 98% of Phase 1 and 28% of Phase 3 was completed. Additional surveys will be conducted in 2004, before the work start on Phase 3. The 2003 survey area is larger than the proposed Phase 1 fire break footprint, in order to ensure coverage of areas that may sustain secondary impacts during thinning operations.

Survey methods undertaken in this project included the walking of parallel pedestrian transects spaced at a maximum of 20m in all areas that were not deemed too wet to contain cultural material. Transect survey units were partitioned according to existing roads and trails where possible. When existing roads did not provide for practical unit boundaries, a one square kilometer work unit was defined. Systematic sub-surface testing was undertaken in areas determined to be high probability for containing archeological sites. Areas that were shovel tested included but were not limited to any landform that afforded a view, lake margins, ridgelines, terrace edges, hilltops, and benches adjacent to steeper slopes. Shovel tests were approximately 30cm in diameter. All soil removed during the site identification phase was screened through ¼" hardware cloth.

### Cultural Resources

Nine prehistoric archeological sites (XMH-992, XMH-993, XMH-994, XMH-995, XMH-996, XMH-997, XMH-998, XMH-999, and XMH-1051) were recorded within 1.5 kilometers of the proposed Phase 1 project area (Figures 50). Only one site (XMH-995) was located in Phase 1 project APE.

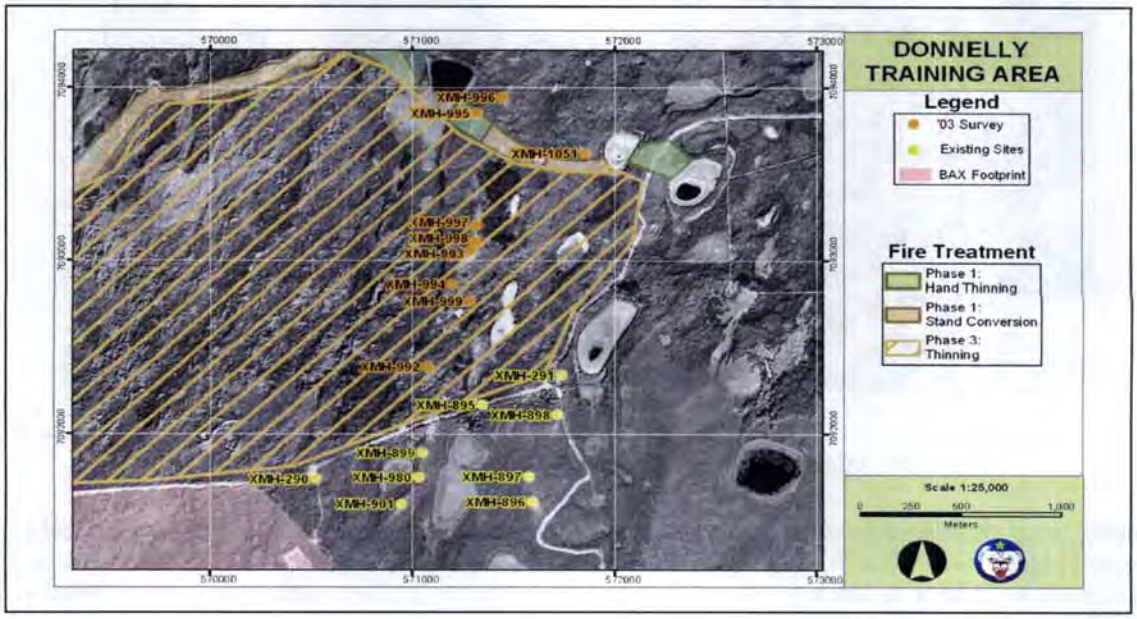


*Figure 50. Location of the archeological sites in the Landscape-scale Fire Mitigation Project*

A staff archaeologist monitored the hand thinning which occur around the site. No hand thinning or ground disturbance occurred at any of the nine archeological sites.

Following is a description of each recorded site near the currently proposed project area:

## XMH-992

**Latitude:** [redacted]
**Longitude:** [redacted]
**Determination: Not evaluated**

Site XMH-992 is located on a relatively small, high knoll with approximately 30% surface visibility. The visibility is contained along a small, two-track road leading to the top of the knoll from the south. The Granite Range is visible to the southeast and the Alaska Range to the southwest. According to the map, there are two small lakes to the east approximately 200 meters away, but these are not visible from the site. UTM coordinates for the site are: [redacted]

*Figure 51. General view of site, XMH-992 heading*

Site XMH-992 consists mainly of lithic debitage. There are seven flakes, two pieces of shatter, and one chert uniface on the surface. The flakes and shatter consist of mix of chert, basalt, and rhyolite. The unifacially retouched flake is made of green chert. Three density plots were placed on the site, each with either one or two flakes present in each of them. DP S17/W5 contained one dark gray tertiary flake and one unidentified piece of shatter. DP S16/W4 contained one gray chert tertiary flake. DP S7/W3 contained one primary basalt flake. Artifact density is calculated as being up to 1.33 artifacts per-square meter. A flake type analysis indicates both primary and late stage lithic reduction occurred at the site. Two primary, one secondary, and four tertiary flakes were found all together on the site. Subsurface examinations have yet to be conducted.

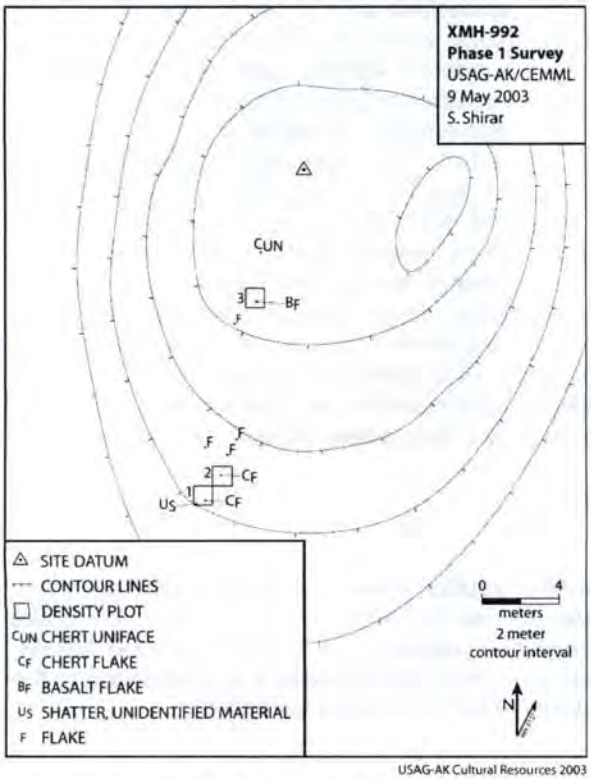


*Figure 52. Site map of test at XMH-992*

**Recommendations**

XMH-992 has initially been classified as a small lithic scatter where both primary and late stage lithic reduction occurred. This site lies outside the APE for the proposed fire brake project, and therefore was not evaluated to determine eligibility for inclusion in the National Register of Historic Places (NRHP). However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

XMH-993

**Latitude:** [redacted]

**Longitude:** [redacted]

**Determination: Not evaluated**

*Figure 53: General view of site, XMH-993 heading north*

XMH-993 is located on the highest point of an approximately 450 meter long, narrow north/south trending ridge with about 40% surface visibility. There are spectacular views of the Granite Range to the southeast and of the Alaska Range to the southwest. The Alaskan Highway can be seen to the northeast. According to the map there is a small lake 200 meters to the southeast and another one 400 meters directly to the east, but they are not visible from the site. The western edge of the ridge drops quickly while the eastern edge gradually falls to a small bench and then becomes steep. The northern edge of the site drops quickly, and then flattens to where XMH-998 is located. UTM coordinates for the site are: [redacted]

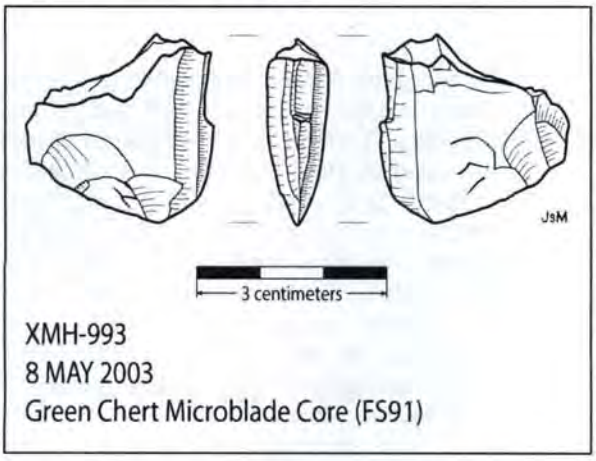


*Figure 54: Illustration of the Microblade Core from XMH-993*

XMH-993 consists mainly of lithic debitage (175+ flakes), with fourteen formalized tools and diagnostic debitage found, including microblade, bifacial, and unifacial technology (Table 2). One wedge-shaped microblade core of green chert (FS91) was found at the site (Figure 54). The core has a bifacial worked keel and exhibits five microblade facets. Unsuccessful platform rejuvenation rendered the core unusable and it was most likely discarded. Two uniface fragments of green chert (FS123 and FS152) refit into a single scraper. Chert, basalt, rhyolite, and quartzite are present among the flakes. Four density plots were placed on the site and contained mainly of tertiary flakes (Table 3 Figure 56). Artifact density is calculated as being up to 14.5 artifacts per-square meter. A flake type analysis indicates that late stage lithic reduction occurred at the site. One large primary flake was located at the site; however this artifact is most likely a flake blank brought into the site.

Subsurface examinations have yet to be conducted.

**Recommendations**

XMH-993 has initially been classified as a large lithic scatter where microblade production and late stage lithic reduction occurred. This site lies outside the APE for the proposed fire brake project, and therefore was not evaluated to determine eligibility for inclusion in the NRHP. However, if the APE is moved by later design alteration, or if further projects are proposed in the area, the site should be evaluated to determine eligibility for inclusion in the NRHP.

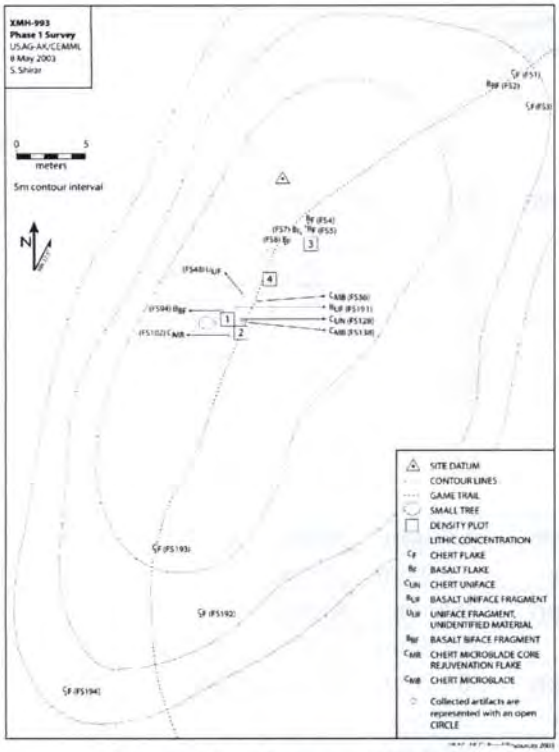


*Figure 55: Site map of test at XMH-993*

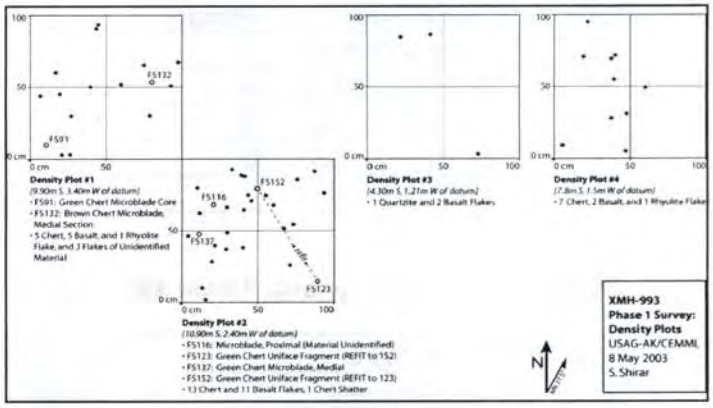


*Figure 56: Density Plots from XMH-993*

**Table 2. Lithic assemblage recorded from XMH-993.**

| Artifact Class | Frequency | % of Assemblage |
|---|---|---|
| Bifaces | | |
| Biface fragments | 2 | 3% |
| Unifacial | | |
| End scraper fragment | 1 | 1% |
| Uniface fragments | 3 | 4% |
| Unifacially retouched flake | 1 | 1% |
| Microblade Cores and Microblades | | |
| Microblade core | 1 | 1% |
| Microblade core rejuvenation flakes | 1 | 1% |
| Microblades | 5 | 6% |
| **Debitage** | | |
| Flakes* | 63 | 83% |
| **Shatter** | **1** | **1%** |
| Total | 78 | 100% |