



**DESERT RESEARCH INSTITUTE  
CULTURAL RESOURCES STUDY  
BACKGROUND RESEARCH REPORT**

**Off-NTS Cultural Resources Studies:  
Background Research for Project Shoal**

**Prepared by**

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## OFF-NTS CULTURAL RESOURCES STUDIES: BACKGROUND RESEARCH FOR PROJECT SHOAL

### Environment

Project Shoal is a 2,560-acre parcel located in the Sand Springs Range in Churchill County, Nevada, approximately 28 miles southeast of the community of Fallon. The Sand Springs Range lies within the western Great Basin, and is part of the Basin and Range physiographic province. This area is characterized by roughly north-south trending mountain ranges with intervening valleys. The dominant rock of the Sand Springs Range is plutonic granodiorite and quartz monzonite dating to the Cretaceous. To the south the granitic intrusive is bounded by Mesozoic metamorphic rocks (Beal et al. 1964, Willden and Speed 1974). The northern half of the range is a semi-arid rolling plateau with maximum elevations barely exceeding 1,707 m (5,600 ft), an elevation difference of 305 to 396 m (1,000 to 1,300 ft) above the adjacent valley floors. The northern section of the range is bounded on the east by broad canyons that gradually descend to Fairview Valley - part of the central hydrographic region (Nevada Division of Water Resources 1974). To the northwest, the range is bounded by short, steep-walled canyons which are part of the Carson River Basin hydrographic region and lead to Fourmile Flat (Nevada Division of Water Resources 1974). To the north, the Sand Springs Range is separated from the Stillwater Range at Sand Springs Summit, a pass which is crossed by U.S. Highway 50. Temperatures fluctuate widely from below -18° C (0° F) in December and January at higher elevations to over 38° C (100° F) in July and August in the lowest valleys. Average annual precipitation is about 127 mm (5 in) in the valleys and 305 mm (12 in) at the highest elevations in the southern area of the range (Schilling 1964). Present vegetation is typical of shadscale (*Atriplex*) communities with *Artemisia tridentata* and *Artemisia arbuscula* dominant at elevations of 1524 m (5000 ft) and above in the lower mountains. Higher elevations in the project area do not support trees. Endemic taxa include *Iva nevadensis*, *Astragalus*, *Cymopterus*, *Eriogonum*, *Gilia*, *Lupinus*, *Mirabilis*, and *Penstemon* (Pendleton et al. 1982).

### Cultural Resources

#### Existing Data Review

An existing data review/records search was conducted at a number of locations, including the Bureau of Land Management in Carson City; the Bureau of Land Management, State Office, Reno; the Nevada Historical Society; Nevada State Museum; Desert Research Institute's Southern Nevada Science Center in Las Vegas and Water Resources Center in Reno; and Nevada Special Collections at the Getchell Library. No cultural resources are recorded in the Project Shoal area (Figure 1).

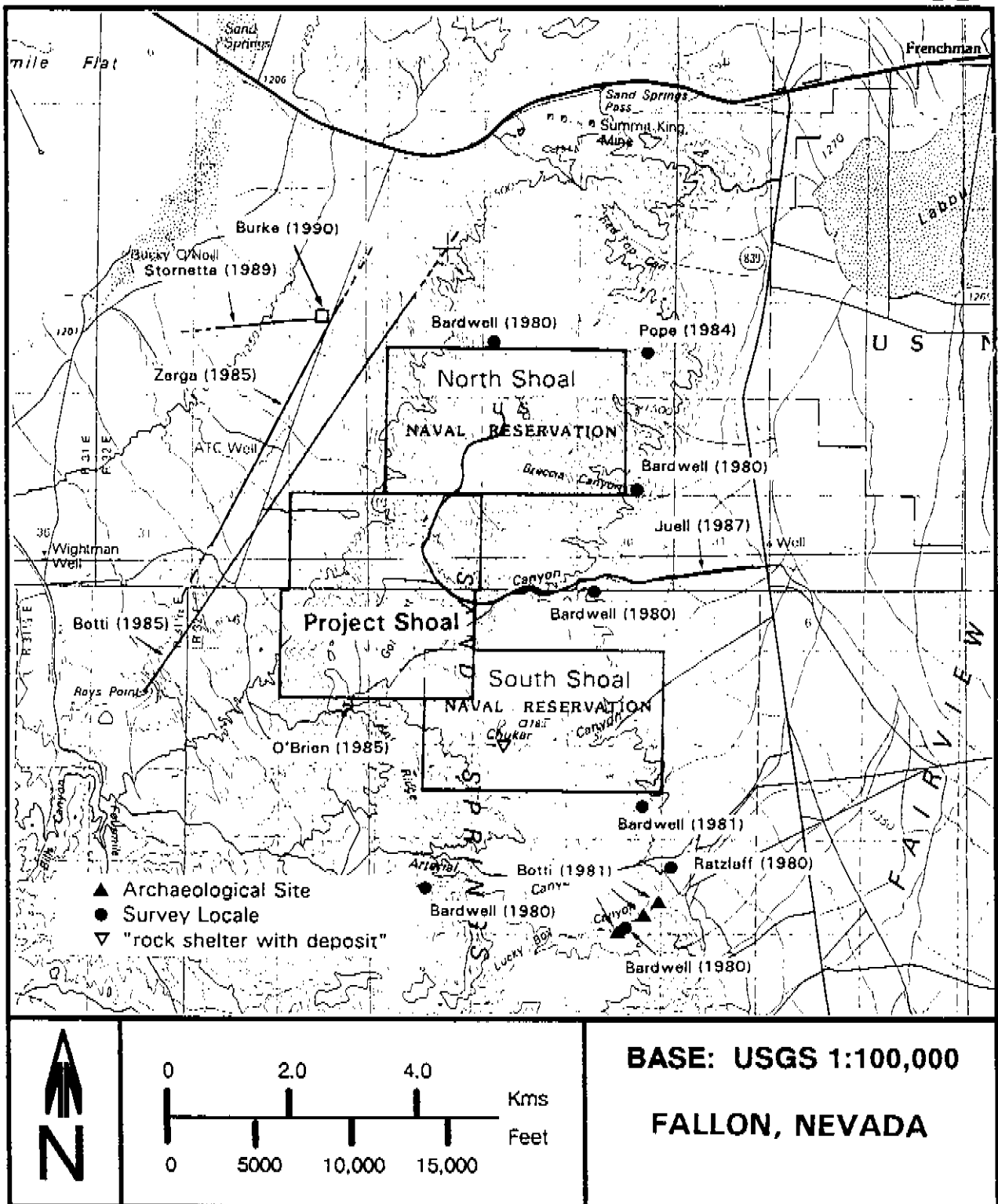


Figure 1. Location of Project Shoal, previous cultural resources surveys, and recorded archaeological sites in area.

Only one cultural resources survey has been undertaken within the Project Shoal area. Juell (1987a) conducted a survey that ascended GZ Canyon, passed 305 m (1000 ft) east of the Project Shoal Monument, and continued northeast and then northwest to U.S. Highway 50. No cultural resources were recorded. A number of reconnaissances have been conducted within 2 miles of Project Shoal (Figure 1). Bardwell (1980, 1981) surveyed six small parcels for wildlife guzzlers, O'Brien (1985) surveyed an area for the Shoal drift fence, Ratzlaff (1980) conducted a survey for soil test pits, and a survey was undertaken in association with the Tacts Site #10 (Pope 1984). No cultural resources were recorded by these surveys in the Sand Springs Range.

Other projects within 2 miles of Project Shoal were conducted as part of investigations for transmission lines or communication routes. Three separate surveys associated with transmission routes have crossed Sand Springs Pass (Botti 1985, Tuohy 1974a, Zerga 1985). The communication route along the road to the Scheelite Mines east of the Sand Springs Range was surveyed by Juell (1987b), and two cultural resources surveys were undertaken for transmission lines in Salt Wells Basin (Burke 1990, Stornetta 1989). None of these surveys recorded cultural resources within several miles of Project Shoal.

#### Recorded Cultural Resources

The nearest known archaeological site is .8 km (.5 mile) southeast of the Project Shoal area. It is noted on a map at the Nevada State Museum as "rock shelter with deposit." There is no additional information about this locality. Cultural resources have been recorded in Lucky Boy Canyon, approximately 4.5 km (2.8 miles) southeast of Project Shoal. Site 26Ch986 is a pictograph site with three dispersed localities (Nevada State Museum files). The red pigment pictographs are situated on granitic rocks on the south side of the canyon. Most of the pictographs have been obscured by natural deterioration. Clearly visible elements include Y-shapes, X-shapes, vertical lines, connected circles and meandering lines. No cultural materials were observed in association with the pictographs (Botti 1981). Alvin McLane (1993, personal communication) visited the site in 1986 and believes that the rock art indicated water at the nearby, now dry, Frenchman Spring. Frenchman Spring, according to local testimony, was the early source of water for Frenchman Station in Labou Flat. Wagon wheel hub grooves are evident on rocks in a narrow section of Lucky Boy Canyon.

#### **Overview of Regional Prehistory and History**

In sum, there are few known cultural resources within the Project Shoal area. The project, however, lies in the western Great Basin, an area with a prehistory that spans the past 10,000 years or more. This prehistory has been reviewed by Bard et al. (1981), Elston (1982, 1986), Pendleton et al. (1982), and Thomas (1985) and

reveals a variety of different types of prehistoric and historic occupations. Elston (1986) defines three subregions for the western Great Basin. Project Shoal is located at the divide between two of these regions, the Lahontan Basin and the central subregion. A long sequence of occupation in the Lahontan Basin is documented by important excavations at Lovelock Cave (Heizer and Napton 1970), Humboldt Cave (Heizer and Kreiger 1956), Hidden Cave (Thomas 1985), and others. In the central subregion significant investigations have been conducted in the Reese River Valley (Thomas 1971), Monitor Valley (including Gatecliff Shelter) (Thomas 1983) and at high altitude sites such as the Alta Toquima Village (Thomas 1982) to name but a few.

The earliest occupation of the western Great Basin may be older than 10,000 years B.P. Touhy (1974b) suggests that typological similarities between projectile points with concave bases found throughout the west and those from the Great Plains and eastern woodlands suggest a western manifestation of the Llano Complex. However, as many have pointed out (Heizer and Baumhoff 1970, Hester 1973, Wilke et al. 1974), Great Basin concave base points have been recovered from surface contexts and lack an independent means of chronological assessment. In addition, concave base points from the Great Basin lack definitive association with Pleistocene megafauna.

The earliest adaptive strategy defined for the western Great Basin is the Western Pluvial Lakes Tradition (WPLT). Bedwell (1970, 1973) and Hester (1973) have interpreted the WPLT as a specialized adaptation to lacustrine resources on the edges of pluvial lakes. The WPLT is characterized by a distinctive artifact inventory including stemmed projectile points dating from ca. 10,000 to 7000 B.P. Sites ascribed to the WPLT in the study region include the Hathaway Beach, Sadmat, and other sites in the Carson Sink (Warren and Ranere 1968); the Dansie site (Tuohy 1968); and the Coleman site (Touhy 1970). Recently, some archaeologists (Beck and Jones 1990) have abandoned the term WPLT, in part because increasing evidence indicates this was not strictly an adaptation to pluvial lakes as Bedwell (1970, 1973) originally suggested.

The Great Basin Archaic, proposed by Shutler (1961) and modified by Hester (1973), represents the varied archaeological remains present in the Great Basin between ca. 7000 B.P. to contact with Euroamericans. Elston (1982) interprets the Archaic as a generalized adaptive strategy using both desert and lacustrine resources as well as upland environments. It is divided into three periods: Early Archaic, Middle Archaic and Late Archaic. These divisions represent increased complexity in plant food gathering and processing tools (Elston 1982). The Early Archaic or Pinto period (7,000 to 4,000 years ago) is associated with Antevs' (1948) Altithermal period when climate was hot and dry. During the Middle Archaic or Elko/Gypsum period (4,000 to 1,500 years ago) climate shifted to a winter precipitation regime roughly like today. During this time a shift in settlement and subsistence strategies is postulated (Elston

1986). Winter camps and base camps are intensively occupied, and there is broader use of environments with increased use of seed resources in addition to big game. The Late Archaic (1500 B.P. to historic times) is associated with a warming and drying trend. Diagnostic artifacts are Rose Spring and Eastgate points, Desert series points and brownware pottery. During this period, the bow and arrow were introduced replacing the atlatl and dart as indicated by the transition to smaller projectile points (Elston 1986).

At the time of contact with Euroamericans in the mid 1800's the area was utilized by the *Toedokado* band of the Northern Paiute (Stewart 1939). Their territory centered around camps on the edges of the Carson Sink, northwest of the project area. Detailed information about the Northern Paiute can be found in Stewart (1939), Fowler and Liljeblad (1986) and Bard et al. (1981).

Information about the historical record of the area is summarized by Hardesty (1982) and Bard et al. (1981). Initial exploration of the region began in 1828 when Peter Skene Ogden, working for the Hudson Bay Company, followed the Humboldt River and crossed the Carson Sink (Bard et al. 1981). The Pony Express and the Overland Mail routes lie north of the project area and traversed Simpson Pass from 1859 to 1869. The Sand Springs Pony Express Station (26CH192) was built in March 1860 (Hardesty 1979, Mason 1976). This emigrant station was the first focus of Euroamerican activity near Project Shoal. The Fort Churchill and Sand Springs Road (26CH598), established in 1864, followed the Pony Express Trail. North of Simpson Pass, the road is bordered by dry-laid masonry walls (Hattori and McLane 1980). Early settlement and mining (1860-1900) bypassed the immediate area of Project Shoal. In 1905, gold was discovered in the Sands Spring Range and the Sand Springs mining district centered on the Dan Tucker (now Summit King) mine (Willden and Speed 1974). The Bermond Station in Frenchman, 5.6 km (3.5 miles) east of the Summit King mine and 11.3 km (7 miles) northwest of the study area, was established in 1906 as result of a mining boom in the Fariview District (Paher 1970). The freight road between the community of Fallon and Frenchman became U.S. Highway 50.

### **Project Shoal -- Land Withdrawal and Navy Application**

The Shoal Project area was established by the Department of Defense and the Atomic Energy Commission (AEC) as part of a research program (Project Vela) to detect underground nuclear tests (Tlachac 1991). On September 6, 1962, the AEC applied to the Bureau of Land Management (BLM) for the withdrawal of 2,560 acres in the Sands Springs Range (Public Land Order 2771) from all forms of use including mining, mineral leasing and material sale laws. The withdrawal (Public Land Order 2834) on December 4, 1962, amended the legal description to reflect a metes and

bounds area which did not change the acreage. The withdrawal is known as The Shoal Project.

On October 26, 1963, a nuclear device with an energy yield of approximately 12.5KT was detonated at a depth of 367 m (1,205 ft) in granite. This marked the second underground detonation occurring elsewhere than the Nevada Test Site, and the first detonation in a known earthquake-prone area. At the time of the detonation no radioactivity was vented. However, in December 1963, during the post-shot drilling of the cavity, drillers reported encountering high temperatures and radiation. Contaminated dirt was mixed with clean dirt to reduce concentrations of radioactive material and buried beneath a few feet of clean dirt (Mackedon 1991).

In 1970, the Energy Research and Development Administration (ERDA) relinquished the site with restrictions against subsurface use. The land has, however, remained withdrawn because of potential safety and environmental hazards. On February 21, 1985 the Department of Energy (formerly ERDA) submitted a withdrawal review report. The BLM recommended that the proposal for revocation be denied and that the withdrawal be continued until the land, both surface and subsurface, is clear for all uses. Environmental Restoration at the Shoal site currently involves activities associated with sampling wells and springs within a 10-mile radius.

From November 18, 1965, to November 17, 1982, the U.S. Navy had use of the Project Shoal area and two adjacent parcels, one to the northeast (North Shoal) and one to the southeast (South Shoal) under a Special Use permit. A withdrawal application for these lands is currently pending.

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