

Long Meadow Restoration Project

Cultural Resource Specialist Report

Western Divide Ranger District

PREPARED BY:



Alex Verdugo
Archaeologist, North Zone,
Sequoia National Forest

DATE: 1/17/2013

REVIEWED BY:



Linn Gassaway
North Zone Archaeologist
Sequoia National Forest

DATE: 1/17/2013

Cultural Resource protection laws

Protection and management of cultural resource on National Forest System land is mandated by the National Historic Preservation Act, 1966 as amended (NHPA), 36 CFR 800, Forest Service Manual 2360, American Indian Religious Freedom Act, Archaeological Resource Protection Act and the National Environmental Policy Act (NEPA). In addition Pacific Southwest Region has developed alternative procedures, per 36 CFR 800.14, in the form of the *First Amended Regional Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with section 106 of the National Historic Preservation Act for undertakings on the National Forests of the Pacific Southwest Region* (Regional PA). The Sequoia National Forest also has alternative procedures under the *Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Identification, Evaluation and Treatment of Historic Properties managed by the National Forests of the Sierra Nevada, California* (Sierra PA)

Area of Potential Effect (APE)

The Area of Potential Effect (APE) for Cultural Resources identification and analysis for the Long Meadow Restoration Project encompasses all areas to which plug structures (Pond and Plug), valley grade control, revegetation, opening of a temporary road, staging of equipment, and installation of a temporary fence, will be applied. This APE is pursuant to the Regional PA and totals approximately 13 acres (Figure 1).

Project Description

Location

The Long Meadow Restoration project area encompasses the northeast portion of Long Meadow and a skid road stretching to the north for 804 meters (0.5 miles). This area is located on the western slopes above the Kern River in southeastern Tulare County, California, about 4 kilometers (2.5 miles) west of Johnsondale, California.

Figure 1. Forest Vicinity Map

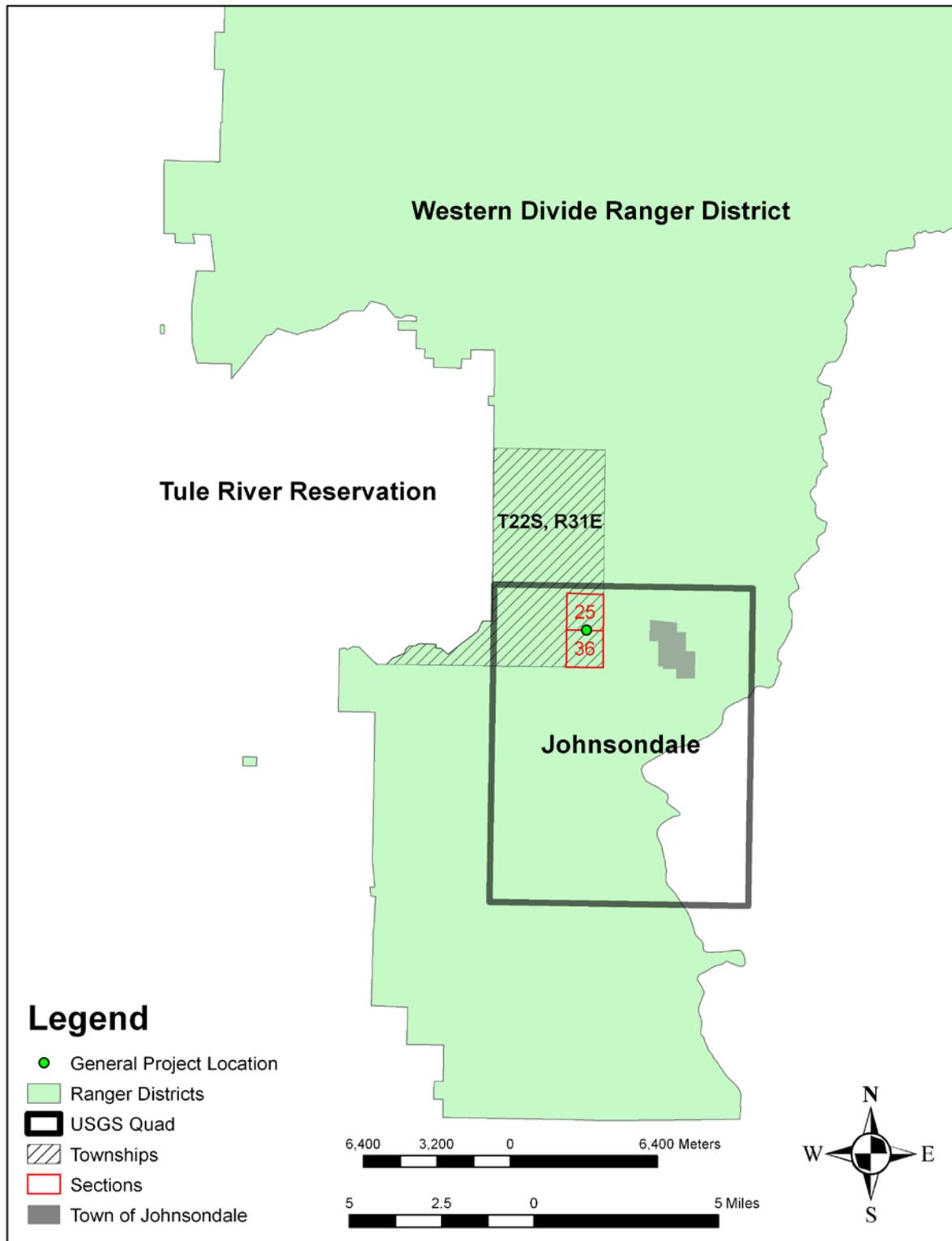
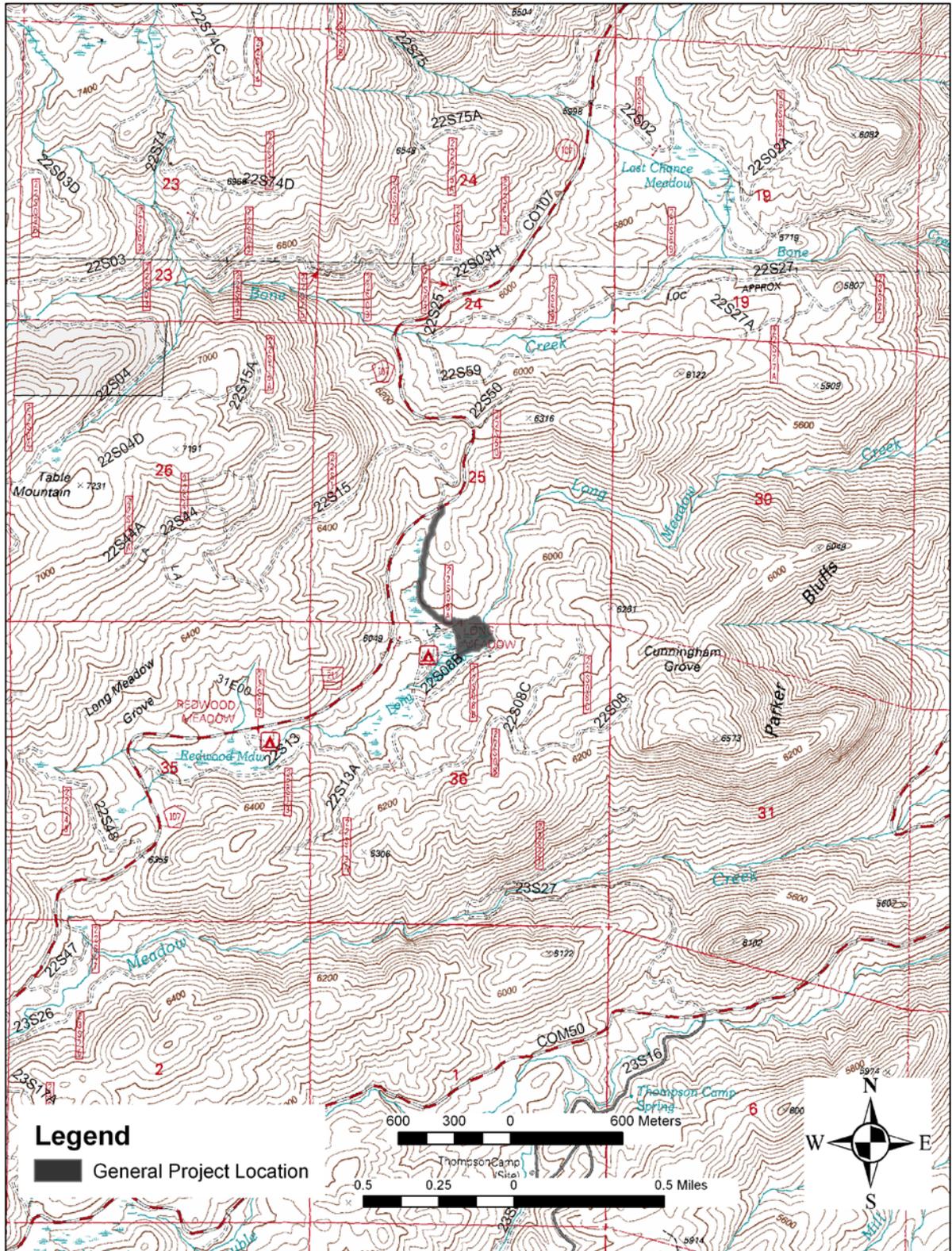


Figure 2. Project Location Map



General Description

The Western Divide Ranger District proposes to restore Long Meadow through a low gradient step pool system. This system is being applied to the meadow because the meadow stability is being threatened by a large head-cut, which has become established at the bottom (northeast side) of the meadow. If left in its current condition the head-cut will continue to expand, promoting significant losses of meadow vegetation and soil, reductions in water quality, and sedimentation of downstream environments.

This project proposes five activities to restore and enhance Long Meadow. These proposed activities are described below.

Plug Structures (also known as Pond and Plug)

This technique plugs the existing gully system through the creation of ponds, decreasing the water's velocity that is currently undercutting the existing head-cut and causing it to grow.

Two plugs would be installed. The exact location would be staked in the field prior to implementation. Creation of the plug structure would include removing soil from the sides and bottom of the gully and the surrounding areas and using it to create the plugs. The soil removal would be done in a manner that sculpts the gully in preparation for the ponds, which would fill with water and would help raise the water level to restore the meadow. The ponds would be designed and constructed to have irregular shapes and varying depths that will provide numerous habitats for riparian-dependent species. This process would relocate approximately 760 cubic meters (1,000 cubic yards) of existing soil using mechanical equipment, such as a backhoe, dozer, or a tracked excavator.

Topsoil from all excavation areas would be stockpiled adjacent to the plugs and used on top of the plugs once constructed.

Valley Grade Control Structure

A valley grade control structure is made of rock and soil and used to stop the forward progression of the current head-cut as well as preventing future head-cuts. For this project, the valley grade control structure will be located downstream of the plug structures, and above an existing partially intact dam. An estimated 150 cubic meters (200 cubic yards) of 15-60 centimeter (0.5-2.0 foot) diameter rock would be used to provide armoring at the lower end of the meadow. Some of the stockpiled soil removed from the gully will be added to the structure. It is anticipated that rock will come from existing stockpiles along Highway 178.

Revegetation

Rooted willows (cut from around the project area and grown off-site) would be planted along the stream banks and around ponds. The willows and transplanted vegetation would stabilize the existing bank and trap sediment. Stockpiled sod and willows will be placed on the plug structures. Large conifers that have become established within the

meadow will not be cut as part of this project unless they pose a safety hazard or limit equipment access during implementation of the project.

Access and Staging

Mechanical equipment would access the meadow using a skid road that is currently not open to public vehicle travel. This road would be temporarily opened for the purpose of moving equipment and materials to the meadow to complete the restoration project. Two points along this road have been selected to stage equipment and materials. Water bars and/or rolling dips may be installed to prevent erosion during implementation. Once the project is completed, the road will be closed and the proper drainage restored to prevent future erosion.

Temporary Fence

A temporary fence (approximately five to seven years) will be installed to keep horses and cattle out of the project area. This fence will be approximately 220 meters (700 feet) total in length and will originate and terminate at the existing fence. The fence will be constructed of wood and/or metal posts and a minimum of three wires. The fence will be a take-down type fence, where the wire and metal stays would be disconnected from the posts and laid flat on the ground during winter months. Prior to use in the spring, the wire would be reconnected to the posts.

To minimize equipment disturbance in the meadow, all equipment routes would remain near the gully. The shortest and most durable route from the meadow's margin to the installation points would be identified and used for equipment access throughout the implementation of the project. Disturbed areas from project implementation would be restored.

Figure 3. Project Map



Existing Conditions

Prehistoric Background

Expected Prehistoric Land-Use:

The following description is taken from the *Giant Sequoia National Monument Specialist Report: Cultural Resources and Tribal and Native American Interests* (Gassaway 2012:22).

People first arrived in California more than 13,000 years ago. Occupation of the higher elevations (above 7,000 ft) of the southern Sierra Nevada would have been limited prior to 14,000 years ago during the Tioga glaciation. Archaeological data indicates that humans have inhabited the southern Sierra Nevada and portions of the Monument for at least 9,000 years. While currently there are no known sites older than 7,000 years old, there is the potential in the Monument to have some of the oldest sites in the Sierra Nevada; since this portion of the Sierra Nevada was not extensively glaciated during the Tioga glaciation. The earliest human occupation could have come from either the west (Tulare and Buena Vista Lakes) or southeast (Great Basin), where fluted projectile points have shown the presence of people 8,000 to 10,000 years ago.

The project area is located in the Sierra Nevada Mountain Range bordering two different archaeological zones, southern San Joaquin Valley, and the southern Sierra Range. The project area is also within the traditional territory of the *Bankalachi* (or *toloim*), a mixed Yokuts/*Tubatulabal* tribelet. The *Bankalachi* occupy an area within the traditional territory of the *Tubatulabal* but is near the territory of the Foothill Yokuts (Jackson 2010: 71). For this reason both the southern San Joaquin Valley and southern Sierra Range chronologies will be described, see Figure 4.

Figure 4. Defined cultural phases of the San Joaquin Valley and the southern Sierra Range (Moratto 1984)

Southern San Joaquin Valley	Southern Sierra Range	Dates (Years)
Yokuts	Tubatulabal	
Late Buena Vista Lake	Chimney Phase	1500
Hiatus?	Sawtooth Phase	1000
		A.D. 500
Middle Buena Vista Lake	Canebrake Phase	0
		500 B.C.
Early Buena Vista Lake		1000
		1500
		2000
	Lamont Phase	2500
		3000
		3500
?	?	4000
		4500
		5000
		5500
San Dieguito		6000
		6500
Western Pluvial Lakes Tradition?		7000
		7500
		8000

Southern Sierra Nevada Range Phases (McGuire and Garfinkel 1980):

The overview of cultural phases developed for the southern Sierra Nevada were taken from the *Giant Sequoia National Monument Specialist Report: Cultural Resources and Tribal and Native American Interests* (Gassaway 2012: 21-22) and are provided below.

Paleoindian (9,000 to 6,000 B.P.): This phase is represented by isolated points, such as Lake Mojave and Silver Lake found in high altitudes, around 8,000 feet. McGuire [1981] suggested that the associated sites resulted from trans-Sierran travel or temporary camps for hunting large game. Generally, the area was only used by nomadic groups on a sporadic basis.

Lamont Phase (6000 to 3200 B.P): This phase is marked by a dry period in the southwestern Great Basin. Prehistoric sites are located on ridges, saddles, and meadows. Visits to the area are sporadic and associated with the

occasional gathering of pinyon nuts. Projectile points consist of Pinto series points (Campbell and Campbell 1935). The sites and points seem to be associated with large game hunting. Basalt was the choice material for flaked stone tools. It is thought that the warming conditions of the Altithermal climatic period caused the shift and expansion into the pinyon-juniper zones (Moratto 1984: 333).

Canebrake Phase (3200 to 1400 B.P.): This phase suggests that pinyon exploitation began around 3,200 years ago, and that by 1,400 years ago, regular use of the pinyon resources was taking place (Moratto 1984:333). Characteristic artifacts include Elko series projectile points, manos, metates, blades, choppers, and hammerstones. Bedrock mortars and pestles are not present. Trading is for obsidian from the east and marine shell beads from the west. McGuire (1981) suggested that this phase is the first intensive occupation within the southern Sierra Nevada and involved the beginning of a shift toward a more intensive use of plant resources.

Sawtooth Phase (1400 to 700 B.P.): This phase sees a shift from the atlatl and dart to the bow and arrow. Rose Spring and Eastgate are the typical projectile points and bedrock mortars now appear, indicating a more diverse subsistence. Sites are more dispersed in location and increase in number (Moratto 1972). The typical artifacts and features are bedrock mortars, cobble pestles, obsidian oval scrapers, flaked knives, and triangular drills (Bennyhoff 1956). Bedrock mortars and pestles also appear for the first time in this phase. Bennyhoff (1956) suggested that the use of bedrock mortars indicates an intensification of acorns processing. Trade may be lacking due to the limited amount of shell beads present, although some Olivella Spire-lopped beads have been found (Moratto 1984: 333).

Chimney Phase (700 BP to historic period): This phase is marked by high intensity use and great growth in occupation in the region. Sites are now located near major rivers. Sites include large villages, house pits, bedrock mortars, formal cemeteries, Owens Valley Brownware pottery, soapstone objects, Olivella and clam shell beads, Desert Side-notched and Cottonwood Triangular projectile points, pestles, manos, metates, historic glass beads, pictographs, and a variety of other artifacts (Moratto 1984). Villages were being reused, populations were increasing in size, ceremonial areas developed, and long distance trading occurred.

Southern San Joaquin Valley Phases:

The following overview of the southern San Joaquin Valley chronology is taken from the *Giant Sequoia National Monument Specialist Report: Cultural Resources and Tribal and Native American Interests* (Gassaway 2012:25).

Archaeological investigations on Kern and Tulare lakes revealed that occupation occurred possibly as early as 11,000 years ago in the southern San Joaquin Valley.

The Western Pluvial Lakes Tradition (pre-11000 B.P –7000 B.P.?) is characterized by a large reliance upon the hunting of mammals and a toolkit that includes chipped stone crescents, large scrapers and choppers, hammerstones, several types of cores, drills, and graters. Sites attributed to this tradition are generally located on or near shores of former pluvial lakes and marshes, or along former stream channels. Population density was low at that time, with a few settlements focused around the shores of ancient lakes. Between 8000 and 4000 B.P., prehistoric economy centered on hunting and fishing, although mortars and pestles as well as ornamental *Olivella* and *Haliotis* shell appear occasionally in assemblages.

Research shows that beginning about 4000 B.P., the subsistence base expanded to include seed processing as a supplement to foraging for fish and fowl. Intensive occupation of the valley and foothill region may not have occurred until around 2500 B.C. Sites dating to this period contain assemblages comparable to the Early Horizon components of the Sacramento-San Joaquin Delta region (Moratto 1984; Riddell 1951; Walker 1947; Wedel 1941). It is difficult to clearly determine the ancestry of these early peoples, although artifact assemblages associated with occupations postdating 1000 B.C. may be linked to the ancestors of the ethnographic Yokuts. The latest period of occupation, from 1500 B.P. to historic contact, indicates a greater reliance on acorns and other plant foods as well as trade with the central coast region and southern California interior.

The Early Buena Vista Lake Phase (approximately 2500 B.C – 1000 B.C.?) was ill defined by stratigraphic levels unearthed during excavations at Lake Buena Vista. These excavations represent some of the most scientific and intense excavations ever performed in the southern San Joaquin Valley. Unfortunately, very little is known about this early occupation.

The Middle Buena Vista Lake Phase (approximately 1000 B.C. – A.D. 500?) was defined by stratigraphic levels discovered during excavations along the shoreline of Buena Vista Lake. Settlement during this phase was by people with strong cultural ties to the Delta, perhaps by ancestral Yokuts.

The Late Buena Vista Lake Phase (A.D. 1500-1850?) was defined by more recent stratigraphic levels unearthed during excavations at Buena Vista Lake. This phase reflects influence from both the Santa Barbara Coast and the southern California interior.

Ethnographic Group(s):

The project area is closest to the traditional territory of a mixed Yokuts/*Tubatulabal* tribelet called the *Bankalachi* (or *toloim*). The main villages of this tribelet, located along Poso Creek and White River, were called *Hoschiiu*, *Altau Bekiu*, *Holmiu*, and *Shikidapau* (Gassaway 2012:31).

The following ethnographic data was taken from the *Giant Sequoia National Monument Specialist Report: Cultural Resources and Tribal and Native American Interests* (Gassaway 2012: 27-28 and 31-33).

The Yokuts speak dialects of Yokutsan which is a language group in the Penutian language family. The Yokutsan speaking groups are part of a widespread and populous set of peoples occupying the San Joaquin Valley from the Sacramento Delta to the Tehachapis, north and south, and from the east side of the southern Coast Ranges to the Sierra Nevada foothills, east and west. The "Yokutsan" language family is related to several other large central California language families, Wintuan, Maiduan, and Utian. Yokuts languages and dialects are subgrouped into three divisions which correspond only roughly to the environmental zones occupied: Foothill Division, Valley Division, and Buena Vista Division. The Yokuts seem to have been well established in their regions over a significant period of time, certainly in excess of 1,000 years.

The *Tubatulabal* speak Tubatulabalic, a branch of the Uto-Aztecan language family, and are therefore related to the Mono peoples. However, Tubatulabalic is an "isolate" language, meaning that it is not closely related to any other language with which it forms a group or family. It is quite distinct from other California or Basin Uto-Aztecan languages, thus suggesting considerable time has elapsed since its divergence from other Uto-Aztecan relatives. Based on the language isolation and the fact that their mythology contains no migration tales, their occupation of the area is long-standing and may be of substantial antiquity (Gassaway 2012:27-28).

Subsistence and material culture for the Yokuts and *Tubatulabal* is described as:

The Yokuts... and *Tubatulabal* relied on a hunting, fishing and gathering economy. This economy adapted to seasonal change wherein specific resources were targeted based on the season. Spring gathering involved young plants and greens such as clover (*Trifolium* spp.) and yucca blossoms (*Yucca* L.). Summer, the principal gathering season, brought a diversity of plant foods including varieties of grasses, seeds, tubers and berries. In summer the population of major villages would often divide, departing for temporary camps in the valley and foothills. Late summer provided the most

essential storage foods including pine nuts (or piñon nuts) and acorns (Theodoratus Cultural Research 1984).

This economy caused tribelets to have seasonal rounds where “permanent” villages were occupied for the most part in the winter months. During the summer, villages would split into groups of two or three families and travel to summer camps. The elderly or sick were left in the village with someone in attendance. Although there were no definite tribal boundaries, village sites were regarded as the seat of the tribelet, and territories were confined to hunting and gathering areas. In times of food shortage, adjacent tribes, who maintained friendly relations, shared available resources (Gayton 1930).

Houses were constructed of thatch or cedar bark with a frame and support of thick but pliable willow or live oak branches. They were conical shaped measuring between six and twelve feet in diameter. Other village structures included storehouses or granaries for acorns and a sweathouse. Sweathouses were semi-subterranean and were constructed of one or two large center posts with a possible gable beam resting between the forks of two posts. Brush and willows were then piled onto the structure. The floor was excavated and the earth was then piled onto the top of the brush, securing the walls of the sweathouse so as to hold in the heat.

Winter villages were in the lower elevations where groves of black oaks (*Quercus kelloggii*) grew. Acorns were obtained while they were still slightly green and were knocked out of the trees by men using wooden hooks. Women would gather the acorns and carry them home in their burden baskets. Most acorns were stored in granaries outside the houses. Acorns were pounded, leached and then boiled in a water tight basket and cooked with hot stones.

Pine nuts were gathered by the men, who would hoist themselves into the pine trees and use the hooked stick to knock down the cones. “Green” or unopened pine cones would be placed on a big bed of coals. Once the opened cones cooled they were fully opened with obsidian blades and the nuts were removed.

Manzanita (*Arctostaphylos manzanita*) berries were gathered to create a refreshing cider drink. Once gathered, the berries were mashed with a pestle and put in a sieve above a large mush basket. Water was poured over the mash and the cider gathered in the large basket below. Yucca (*Yucca L.*) plants were gathered in the fall to obtain their roots for roasting, returning to the same patches in the spring with hooked sticks to collect the tall blossom buds.

While women were the principal gatherers, men were responsible for fishing and hunting. Fish were obtained by various methods, including poisoning,

spearing, and trapping with weirs. Weirs were composed of woven willows braced with stones; a net bag was then arranged in the structure that would ensnare the fish. Poisoned fish floated to the surface and were collected into baskets.

A large variety of game animals were readily available and included mule deer, tule elk, antelope, black bear, rabbits and ground squirrels, as well as a variety of birds such as quail, pigeons and waterfowl (Theodoratus Cultural Research 1984). Bows and arrows were used most frequently, but snares and traps were also utilized. Both the plain bow, constructed of pepperwood or California Laurel (*Umbellularia californica*) and strung with a two-ply sinew cord and the sinew-backed bows made of juniper wood (*Juniperus* sp.) were utilized in the area. Obsidian for arrow points was traded in a rough form from the Great Basin. Spring traps were used to snare rabbits, jays, and squirrels. Birds such as quail were shot, not trapped (Gassaway 2012:31-33)....

A description of pottery production and trade is described as:

Rolled coiled clay pottery production was practiced throughout the region. These clay coils were flattened with a stone and the inside was scraped with Live Oak bark. The raw pots were then sun-dried for approximately two days and soapstone was rubbed over the entire surface as a finish. Pots were gradually fired in a pit for a period between 10 and 18 hours. When the pots were still at high heat a lacquer of acorn gruel was applied to the pots and at that point, the pots were allowed to cool. Large pots were used primarily for cooking meat and sometimes for cooking acorn mush. Medium sized pots were serving vessels and small spherical dishes were used as cups or scoops.

A significant part of the economy was trade. The tribes from both sides of the Sierra Nevada traveled across the mountains for trade. Items brought from the east were rock salt, pine nuts, mountain sheep skins, moccasins, buckskin jackets, leggings made of fox skin, rabbit skin blankets, baskets, pine sticks, sinew-backed bows, and unfinished obsidian blanks. Items taken east were beads, acorn meal, and baskets. In later times, the tribes of the Great Basin desired red beads and Spanish blankets for trade (Gassaway 2012:33)....

Expected Historic Land-Use:

Native American and European Contact:

Early contact between the *Tubatulabal* and Yokuts, and Europeans came with Francisco Garcés' visit to the South Fork Kern River and Kern River confluence, White River, and California Hot Springs (Yokuts territory) in 1776. The 1857 Kern River Gold Rush further increased land use by settlers and several violent conflicts occurred as a result. In

1863, American soldiers massacred 35-40 *Tubatulabal* and Palagewan men over accounts of cattle theft, and connections to an uprising the previous year. Agriculture was practiced by the *Tubatulabal* in the late 1860s and in 1875, most *Tubatulabal* men worked on ranches run by white settlers. In 1893 the *Tubatulabal* were allotted land in the Kern and South Fork Kern River valleys. During this time, the *Tubatulabal* people moved to towns and cities throughout California with many others moving to the Tule River Indian Reservation (Ramierz et al. 2010:13).

The Tule River Indian Reservation, located 4 kilometers (2.5 miles) west of the project area, was created as a direct result of the 1856 Tule River War. Initially the reservation was located just east of present-day Porterville (designated as State Historical Landmark #388), where Adobe ruins were still standing in 1926. In 1873 the reservation's location changed. Today, the reservation is located east of Lake Success (Lloyd and Baloian 2011:13).

Historic Logging:

As early as the 1880s, logging has been an important industry around the project area. Generally, early logging operations consisted of small scale, privately-owned sawmills (Brown and Elling 1981:51). Through time, the mills became larger and more complex. The logging industry is represented near the project area by the town of Johnsondale. After a timberland exchange between the USDA Forest Service and the Dwyer-Rucker Timber Company in 1935, Johnsondale began as a large logging operation (Ramierz et al. 2010:14). The purpose of the exchange was intended to make scattered parcels of privately owned forest land, from Double Bunk Meadow to Camp Nelson, useful for a larger sawmill operation (Rouch 2006). This optimization was also intended to spur the local economy during the Great Depression (Ramierz et al. 2010:14).

During operation Johnsondale consisted of a town with “more than 100 houses, a company office, post office, store, gas pump, fire department, dining hall, school, hospital, and community hall” (Ramierz et al. 2010:14). The mill shut down in 1979 due to the economy and concerns over the environment. In 1984 Johnsondale was turned into a time-share community (Ramierz et al. 2010:14).

Grazing:

Infrastructure representing the use of the project area for grazing is present as a historic structure recorded as Forest Service site 05135300194. This site is located on the southwest side of Long Meadow approximately 490 meters (1,600 feet) southwest of the project area.

Open range in the southern Sierra Nevada was grazed by stockmen and settlers. The loss of cotton and increase in demand for wool during the Civil War caused many stockmen to graze sheep. This increase in demand brought foreign-born Basque, Portuguese, Mexican, and Chinese herders to the southern Sierra Nevada. These foreign born herders, became independent after working as hired hands for cattlemen. The combination of limited high meadow resources, drought, and the increase number of cattle and sheep ultimately caused conflicts known as the “grass wars”. These conflicts generally arose

between cattlemen and those who grazed sheep (Rose 2005:39-40). The grass wars were widespread and Gene Tully, an early Reserve Ranger, recalled that “almost every meadow was contested” (Rose 2005:41).

Grazing and conflict went on until the early 1900s. In 1907 herders in violation of new grazing permits, issued by the burgeoning Forest Service, started an important battle over the power of government to regulate grazing on public lands. This legal challenge was protracted for years until 1911 when the case was ruled on by the Supreme Court. The ruling, known as *United States vs. Grimaud*, was in favor of the Forest Service and established that pasturage must be subject to the rules and regulations set by the Secretary of Agriculture. This case played an important role in giving the Forest Service legal legitimacy (Rose 2005:42 and 44).

Indications of range use outside but near the project area includes The Peyrone Redwood Grove, Peyrone Creek, Peyrone Camp, Nobe Young Meadow, Nobe Young Creek, Crawford Creek, and Crawford Camp. These camps, meadows, and creeks are named after turn-of-the-century sheep and cattle herders Celestrino Peyrone, Mr. Crawford, and Nobe Young. Young was a herder whom the meadow and creek were named after. Mr. Crawford had a homestead near Cow Mountain and ran cattle in the Slate Mountain area. Peyrone was a shepherd of French and Indian descent. Peyrone drove his sheep through the Crawford compartment to higher elevations of the Sierras from the Tule River Indian Reservation (Gassaway 2012:40).

Recreation:

The use of the project area for recreation is represented by the Long Meadow Campground, recorded as the historic component of Forest Service Site 05135300007. The campground is located approximately 290 meters (950 feet) southwest of the project area.

Infrastructure for recreation had small beginnings. During the period of heavy grazing, described above, the public began noticing negative environmental effects, not only from grazing but from uncontrolled fires. These concerns led to the Conservation Movement and ultimately to the creation of public lands and the Forest Service. In these early days of management, direction for recreation revolved around sanitation and fire control (Gassaway 2008:3).

Throughout the 1920s recreation development policy was still limited and simple in nature. Beginning in the 1930s and with the New Deal, the Forest Service expanded its scope of recreation. Using Civilian Conservation Corps (CCC) labor, the Forest Service built substantial recreation structures all over the country. These structures included bathhouses, shelters, amphitheaters, and playgrounds (Gassaway 2008:5).

Campground development on the Western Divide Ranger District of the Sequoia National Forest followed the first wave of construction in the 1930s after the Copeland Act. These campgrounds, included the Long Meadow Campground, built in 1940. The

Long Meadow Campground was subsequently expanded in the 1950s and early 1960s (Gassaway 2008:6, Table 2).

Previous Archaeological Survey Coverage and Sites

All surveys in Table 1 (described below) were judged to be adequate or inadequate based on standards defined in the *Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region* (Regional PA). These seven surveys covered all 13 acres of the project area and Long Meadow.

Table 1: Previous surveys

SURVEY NUMBER	SURVEY PROTOCOL	SURVEY NAME	SOURCE AUTHOR
R1981051353007	Intensive, General, and Cursory	Hot Springs Meadow Restoration	Forest Service Archaeologist
R1982051353002	Intensive, General, and Cursory	FY 1982 Plantation Site Release	Forest Service Archaeologist
R1986051353002	Intensive, General, and Cursory	Camp/Doublebunk Timber Sales	Forest Service Archaeologist
R1992051353005	General	Holey Dome North Salvage Sale	Forest Service Archaeologist
R2007051352013	Intensive	Western Divide Salvage Project	Forest Service Archaeologist
R2008051352050	Intensive	Campground Prospectus Project	Forest Service Archaeologist
R2011051352072	Intensive	Long Meadow Restoration Survey and Subsurface Testing Project	Forest Service Archaeologist

R1981051353007 Hot Springs Meadow Restoration

Survey for the Hot Springs Meadow Restoration project was conducted by Archaeological Technicians Lawrence R. Beidle, and Bruce A. Jenkins, with Beidle named as the reporter. Survey included a combination of cursory, general, and intensive protocols. These protocols corresponded to archaeological sensitivity. The total project area involved 269 acres. The report does not state what protocol was used in the Long Meadow area. Due to this lack of information, this survey is considered to be inadequate for use of the Long Meadow Restoration Project.

R1982051353002 FY 1982 Plantation Site Release

The FY 1982 Plantation Site Release project was surveyed and reported on by Archaeological Technician Lawrence R. Beidle. The project area (totaling 286 acres) was

covered using a combination of cursory, general, and intensive survey protocols. Acres of new survey were not separated from the project area acres. Survey protocols were used to correspond with low, medium, and high areas of archaeological sensitivity with coverage becoming more intensive in areas of higher sensitivity. Cursors coverage was defined as walking transects spaced 45 meters (147 feet) or more apart. General coverage was defined as walking transects spaced 15-45 meters (49-147 feet) apart. This coverage type was “enhanced” by Beidle, walking a zig-zag pattern between transects. Intensive coverage was defined as walking transects spaced 0.3-15 meters (1-49 feet) apart and scraping duff from the ground as needed to see mineral soil. Smaller transects were used after the discovery of an artifact. Combinations of all three protocols were used in the Long Meadow area with intensive coverage being used closest to the project area. The survey resulted in the discovery of two prehistoric sites. Neither of these sites were found in close proximity to Long Meadow. Given the location and protocol, this survey was determined to be adequate for use of the Long Meadow Restoration Project.

R1986051353002 Camp/Doublebunk Timber Sales

The Camp/Doublebunk Timber Sales project was surveyed by Brent Abel, and Monte Smith, Archaeological Technicians, with Abel named as the reporter. Three types of survey coverage were employed over the whole project area which included the Camp timber sale (512 acres), and the Doublebunk timber sale (475 acres). Acres of new survey were not separated out from the project acres. The Doublebunk timber sale encompassed Long Meadow. In the area of Long Meadow intensive coverage was used. Intensive coverage involved walking transects spaced 1-15 meters (3.2-49 feet) apart. This coverage type was chosen based on Long Meadow being determined a high sensitivity area. As a result of the survey as a whole two prehistoric archaeological sites were found. None of these sites were discovered in the area around Long Meadow. This survey was determined to be adequate for use of the Long Meadow Restoration Project due to its location and intensity.

R1992051353005 Holey Dome North Salvage Sale

The Holey Dome North Salvage Sale project area was surveyed by Archaeologists Kathy Moskowitz, Steven Ptomey, and Juanita Garcia, with Moskowitz named as the reporter. This project area was split into northern and southern sections. The northern section included Long Meadow and totaled 8,282 acres. New survey for the project totaled 3,400 acres. These acres were given as “total acres” and not separated by section. Long Meadow was described as having moderate sensitivity and was surveyed using 16-50 meter (52-164 foot) transects. As a result of the survey over the entire northern section, two new sites were discovered. Neither of these sites were discovered close to Long Meadow. Because an intensive protocol was not used, this survey was determined to be inadequate for use of the Long Meadow Restoration Project.

R2007051352013 Western Divide Salvage Project

North Zone Archaeologist Linn Gassaway, Archaeological Technician Brett Jones, and Forest personal Emily Howe, and Truman Duncan surveyed the Western Divide Salvage Project. Linn Gassaway was listed as the reporter. Acres of new survey totaled 425. The report indicates that meadow peripheries and areas 0-100 meters (328 feet) to water were

surveyed with intensive coverage. Intensive coverage was described as walking transects spaced 0-15 meters (0-49 feet) apart. As a result of the survey, six new sites were recorded. None of these sites were found within the immediate area of Long Meadow. This survey was considered adequate for use in the Long Meadow Restoration Project.

R2008051352050 Campground Prospectus Project

North Zone Archaeologist Linn Gassaway, and Archaeological Technicians Ernest Wingate, and Robert Mariani conducted survey for the Campground Prospectus Project. Intensive survey, 0-15 meters (0-49 feet) between transects, was used regardless of archaeological sensitivity. In areas where brush and or steep slope made survey unfeasible the survey crew attempted to employ a cursory coverage type. Cursory coverage involved walking 45 meters (147 feet) between transects. Six new sites were discovered as a result of the survey. No sites were found near the Long Meadow Project area. For the purposes of the Long Meadow Restoration Project, this survey was considered adequate.

R2011051352072 Long Meadow Restoration Survey and Subsurface Testing Project:

Archaeological subsurface testing and surface survey at Long Meadow was intended to determine the presence and extent of cultural materials at the Area of Potential Effects (APE) proposed for the Long Meadow Restoration Project. The Long Meadow Restoration Survey and Subsurface Testing Project was conducted by Linn Gassaway (North Zone Archaeologist), Alex Verdugo (Archaeologist), and Ernest Wingate (Archaeological Technician) with Alex Verdugo noted as the reporter. Determining the presence of subsurface cultural materials at site 05135200007 (CA-TUL-49/50/1382) was accomplished by conducting 39 auger tests. These tests were located within the area of the APE proposed for the construction of the step pool system. Auger tests resulted in the discovery of two prehistoric artifacts both of which were outside the APE. These artifacts were considered isolates and did not constitute an archaeological site. A pedestrian survey using intensive, 15 meter (49 foot) transects, was also used as part of this project. The pedestrian survey covered part of the areas planned for staging materials and equipment, as well as the access road connecting the meadow head-cut to County Road 107. No archaeological remains were discovered as a result of the pedestrian survey.

The result of the auger testing and surface survey at Long Meadow determined that there are no cultural materials within the portion of Long Meadow planned for access, staging equipment, revegetation, installation of plug and pond structures, installation of valley grade control structures, and installation of a temporary fence.

Sites

After subsurface and surface survey, historic property (FS# 05135300007), was identified near but outside the Area of Potential Effects (APE). This property is a multi-component (prehistoric and historic) site.

All cultural resource information and locations are protected under the Freedom of Information Act and is available to appropriate Forest Service personnel and COR via the Zone Archaeologist or Forest Archaeologist if needed.

Environmental Consequences

Direct Effects

Direct effects are those occurring at the same time and place as the triggering action. After pedestrian survey and auger testing (R2011051352072 Long Meadow Survey and Subsurface Testing Project) it was determined that, no cultural materials will be disturbed by construction of the plug and pond structures, valley grade control structures, the use of the access route, staging areas, and the installation of the temporary fence. The Long Meadow Restoration Project will have no direct effects on historic properties because none of the project actions are within the boundaries of site 05135300007.

Indirect Effects

Impacts from indirect effects are those caused by the triggering action but occur at a later time or at some distance away. The project area has a long history of grazing. Installation of a temporary fence for the Long Meadow project is expected to change cattle movement patterns and thus cattle impacts. The potential effects of cattle grazing is highly variable based on number of cattle, soils, precipitation, vegetation and changes in livestock grazing patterns and distributions. Impacts to historic properties from grazing can include:

- Artifact breakage;
- Changes in soil chemistries;
- Introduction of noncultural elements;
- Alteration of horizontal and vertical distribution of cultural materials through trampling by live stock;
- Alteration of horizontal and vertical distribution of cultural materials through deflation, compaction and erosion of soils; and
- Increased exposure of archaeological site surfaces and consequently, increases in the incidence of vandalism and unauthorized artifact collection.

These impacts are expected to be confined to along the newly fenced area located outside of the boundaries of site 05135300007. Additionally the new fence will only be in use for a restricted amount of time. Due to the location of the new fence away from site 05135300007, and its temporary nature, the fence installation is determined to have no indirect effects on historic properties.

Cumulative Effects

Installation of the low gradient step pool system is intended to stop the growth of a head-cut in Long Meadow while decreasing downstream sedimentation. Downstream erosion rates will not change as a result of the step pool system. Due to the decrease in sedimentation, and the lack of change in erosion rates, the installation of the step pool system is determined to have no cumulative effects on historic properties.

Historic properties near the APE (site 05135300007), have been potentially subject to impacts from recreational use such as hiking, hunting, and dispersed camping. The use of an old road to access the project area, as discussed in the Project Description section above, will not increase, or decrease impacts from recreation use. This is because while the road is open it will be restricted to Forest Personal and contractors assigned to the meadow restoration. After completion of the restoration, the road will again be closed to public use. Use of this road will have no cumulative effects on historic properties.

The Long Meadow Restoration Project is determined to have no cumulative effects on historic properties.

Mitigations

All surveys and site protection measures have and will follow standards defined in the *Programmatic Agreement Among the U.S.D.A. Forest Service, Pacific Southwest Region, California State Historic Preservation Officer, and Advisory Council on Historic Preservation Regarding the Process for Compliance with Section 106 of the National Historic Preservation Act for Undertakings on the National Forests of the Pacific Southwest Region* (Regional PA Attachment B). See below for details.

The following protection measures, should they be needed, will be implemented for the Long Meadow Restoration Project. When these protection measures are effectively applied, the Forest will have taken into account the effect of these undertakings on historic properties.

I. At a minimum, historic properties shall be excluded from areas where activities associated with an undertaking will occur.

B. All historic properties within an APE shall be clearly delineated prior to implementing any associated activities that have the potential to affect historic properties.

1. Historic property boundaries shall be delineated with coded flagging and/or other effective marking. Activities within historic property boundaries will be prohibited with the exception of using developed Forest transportation systems when the HRM recommends that such use is consistent with the terms and purposes of this agreement.
2. Historic property location and boundary marking information shall be conveyed to appropriate Forest Service administrators or employees responsible for implementation so pertinent information can be incorporated into planning and implementation documents, and contracts (e.g., clauses or stipulations in permits).

E. Monitoring may be used to enhance the effectiveness of protection measures in conjunction with other measures. The results of any monitoring inspections shall be included in the annual report.

Avoidance procedures.

All historic properties will be flagged in the field prior to project implementation and a record of when the flagging takes place will be kept in the Heritage Program files. If necessary, an archaeologist will be on site to monitor the installation of the fence and guide its location.

When Avoidance Is Not Possible

If procedures described above cannot be implemented to protect historic properties, the project leader will hold project operations and inform the Sequoia National Forest North Zone heritage staff.

Unanticipated Discoveries

There is always the possibility that surface and subsurface cultural resources will be located during project operations. Should any additional project historic properties be located, the find must be protected from operations and reported immediately to the Cultural Resource staff. All operations will be suspended until the sites are visited and appropriate recordation and evaluation is made by the Zone or Forest Archaeologist.

Summary of Effects

For the Long Meadow Restoration Project all surveys and site protection measures have and will follow survey and site protection standards defined in the Regional PA (Section III and Attachment B), and the Sierra PA (Section V and Attachment 7). By following these standards, because of the lack of historic properties within the Area of Potential Effect (APE), and through use of management measures, I have determined the project to have a **No Effect** to historic properties under NHPA.

Summary of Cumulative Effects

By implementation of the requirements stated above the Long Meadow Restoration Project is determined to have minimal potential for cumulative effects to known historic properties under NHPA, and NEPA.

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