

THE 1978 RELOCATION OF TULE ELK AT FORT HUNTER LIGGETT - REASONS FOR ITS FAILURE

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ABSTRACT

In December 1978, 22 tule elk (Cervus elaphus nannodes) were relocated from the Tupman Tule Elk Reserve near Buttonwillow to Fort Hunter Liggett. Investigation 2.5 years later revealed total failure -- only 3 cows could be confirmed as still existing. Failure was due primarily to excessive poaching. Factors conducive to the high poaching rate were tameness of the relocated elk, location of release site, lack of monitoring, and resentment by locals to changing policies at Fort Hunter Liggett. Recommendations for future elk releases include using wild elk, changing of the release site, full-time monitoring, and promoting public relations.

INTRODUCTION

Approximately 500,000 tule elk (Cervus elaphus nannodes) roamed the central and coastal valleys of California prior to the Spanish settlement (McCullough 1969). Distribution of tule elk in California ranged from the Redding area (Maloney 1945) in the north to Santa Barbara in the south (Fisher 1930). By 1875 this plentiful subspecies had been reduced to just a few animals -- perhaps to just a pair which lived in the marshes on the Miller-Lux Ranch near Buttonwillow. McCullough (1969) suggests that factors for the drastic decline were market hunting, change of vegetation from perennial bunch grasses to introduced annual grasses, and by destruction of habitat as farming and ranching usurped elk range.

Through vigorous protection by Henry Miller, the population increased to 28 elk by 1895. Shortly thereafter some were relocated elsewhere; some were moved to the Owens Valley east of the Sierra Nevada, a locality previously not inhabited by tule elk (McCullough 1969; Bureau of Land Management 1980). In the Owens Valley the elk thrived so well that hunts were instituted during the 1950's and 1960's to maintain the population at a carrying capacity of 495 elk.

Public opposition to the hunts resulted in Senate Bill 772 which prohibited harvesting of tule elk until statewide populations exceed 2000 animals or until the legislature determines that suitable habitat and locations for maintaining a population of that size cannot be found (Bureau of Land Management 1980). Federal Legislation (Public Law 94-389) in 1976 authorized federal participation in tule elk preservation. Furthermore, in 1977 the Tule Elk Interagency Task Force was established to maintain balance of elk with their ecosystem, to identify suitable habitats, and to relocate surplus animals.

In December 1978, 22 elk were relocated to Fort Hunter Liggett from the Tupman Tule Elk Reserve near Buttonwillow. The relocation was a direct result of an injunction by the task force. Today in California, following some 80 years of protection and relocations, about 1000 tule elk exist at 13 sites.

In April 1981 California Department of Fish and Game commissioned us through grant/contract agreement SA 49800313 with California Polytechnic State University to ascertain status of the elk from the 1978 relocation, to determine probable cause for the failure (or success) of the relocation, and to make recommendations for a future relocation to occur in December 1981 on Fort Hunter Liggett.

We wish to acknowledge the United States Army at Fort Hunter Liggett and Sandra Gowins and Dale Whitmore, both of California Department of Fish and Game, for their support and aid in the study. Results of this study were previously submitted in a special report to the California Department of Fish and Game (Hanson and Willison 1981).

STUDY AREA

Fort Hunter Liggett, a U.S. Army base, is located in the Santa Lucia Range about 95 km (60 mi) north of San Luis Obispo and 27 km (17 mi) southwest of King City. The base is bordered by Los Padres National Forest on the north and west and private lands on the east and south. Much of the surrounding private land is used for livestock grazing and agriculture. Elevations on this 66,000 ha (165,000 ac) army base vary from 360 m (1200 ft) to 990 m (3200 ft). Vegetation types consist of a mosaic of grassland, chaparral, and oak savannah and terrain includes meadow flats, valleys, gentle hills, and steep rugged mountains with sharp defiles. Two rivers, the San Antonio and Nacimiento, traverse Fort Hunter Liggett from the northwest to the southeast (Fig. 1).

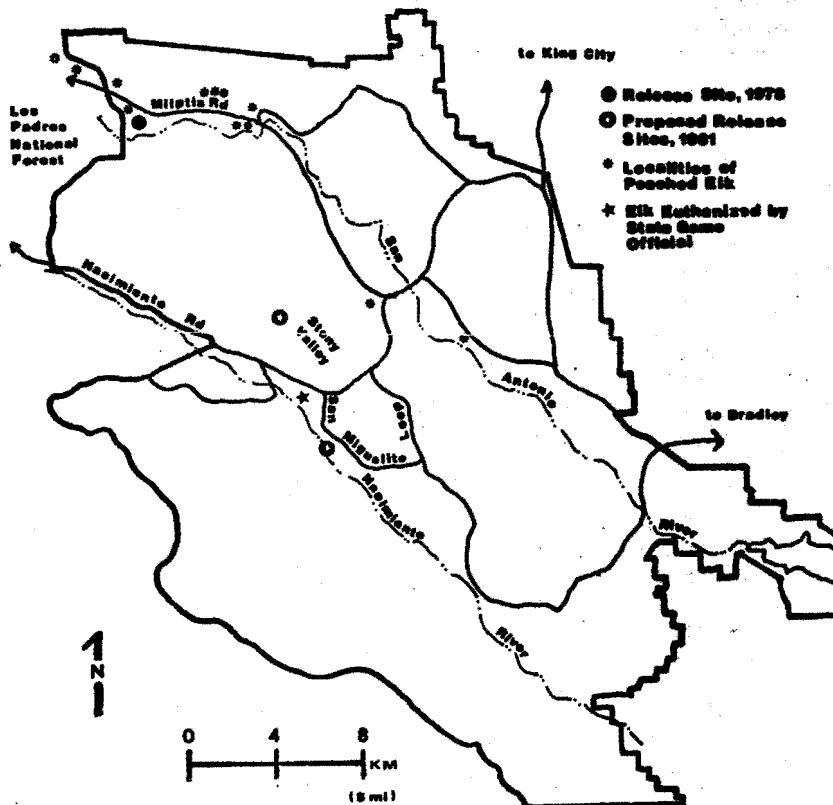


Figure 1. Map of Fort Hunter Liggett showing release sites and localities where tule elk were killed.

During the hot dry summers, pools of water usually remain in the river beds, although flow ceases. In addition, 14 small man-made reservoirs are distributed throughout the base; several springs with continuous flow also exist on the base. Several paved roads, some public, cross through Fort Hunter Liggett; numerous dirt roads developed by the military access nearly all parts of the base.

In the past cattle were grazed year-round, but now under new regulations designed for recovery of the range, they are grazed only from December to June. The California Department of Fish and Game under the auspices of the U.S. Army directs an important and popular hunting and fishing program. A full-time wildlife biologist and staff are maintained at a permanent station on the base.

Currently the army employs a prescribed burn program; inspection of past burn sites indicate that such areas return to their original vegetation type following the burn.

Occasionally access to segments of Fort Hunter Liggett are closed during military maneuvers and training; for example, sections important to the study were often closed to us during May through August.

METHODS

Our investigation period extended from April to November 1981. Several methods were used for this study. A field investigator stationed full-time at Fort Hunter Liggett checked records of reproduction and deaths maintained at the wildlife check station, surveyed areas where elk were known to reside, checked reports from personnel who saw elk, and used radio-telemetry.

Originally four cows of the 1978 relocation were equipped with radio collars. By the time of this study, the radios were already 2.5 years old and near the end of their life. Indeed, only one radio collar was known to still function, and the signal for it was detected only once; radio-telemetry was therefore unsuccessful in this study.

RESULTS AND DISCUSSION

The 22 elk from Tupman Tule Elk Reserve were released 5 December 1978 in the northwest portion of Fort Hunter Liggett near the "Indians" section of Los Padres National Forest (Fig. 1). The release site was along the San Antonio River bottom in a narrow valley near Milpitas Road.

Sometime between the time of release and the summer of 1980 a bull and several cows had migrated 12 km (7.5 mi) to upper Stony Valley, close to the central part of the base (Gulias 1981). This movement was unexpected since rugged mountains covered with thick, impenetrable chaparral isolates Stony Valley from the release site; however, the elk may have traveled on firebreaks cut through the chaparral. By summer 1981, only four cows remained in Stony Valley. Two wore radio collars but only one was still operating. During mid-July the cow with the operable collar was euthanized by a State Fish and Game official since the animal, having become entangled in a military parachute flare, was severely debilitated. On the same day four other cows were seen, one bearing a collar. In September one of the cows was said to have been poached; only three cows were observed in late October. The collared cow was no longer seen with the group and we assumed that she was the cow alleged to have been poached.

The group of three cows in upper Stony Valley represented the number of remaining elk which we could verify as still alive. Reports of a spike bull and calf in the San Miguelito Loop area were considered possible but suspect -- an escaped nilgai, a yearling-elk-sized Indian antelope, from a game farm was subsequently located in the same area. However, a report of two cows and a calf near the release site during late spring of 1981 by resident U.S. Forest Service ranger Sal Elizondo was considered reliable although repeated checks by the investigator failed to disclose this group.

Carcasses of dead elk which had been found and reported had been necropsied by personnel of California Department of Fish and Game. In all cases, cause of death was determined to be due to poaching. Records maintained at the CDFG check station on Fort Hunter Liggett disclosed that 13 animals may have survived until November 1981 (Table 1). Of these 13, only 5 cows (3 in Stony Valley and 2 near the release site) were felt to still exist. The eight elk unaccounted for could still have been on Fort Hunter Liggett, but we considered that unlikely. No reliable reports involving them were ever received. We assumed that some of the eight were poached. Fourteen elk -- an unusually high proportion -- were already verified as being shot; quite likely some poaching would not be detected, especially if the carcasses were butchered and removed.

Table 1. Elk mortality and recruitment of the 1978 release at Fort Hunter Liggett. Except for a cow euthanized 12 July 1981, all mortality was by poaching.

DATE	BULLS	COWS	UNKNOWN	TOTAL
5 Dec 1978	5	14	3	22
Dec 1978	-1 ^a			21
Spring 1979			+2 ^b	23
Aug 1979	-1			22
Sept 1979	+2 ^c			24
Oct 1979	-1	-2		21
Dec 1979	-1			20
Jan 1980	-1			19
Spring 1980			+2	21
2 Aug 1980	-1			20
10 Aug 1980	-1			19
1 Sept 1980	-1			18
7 Sept 1980		-3		15
12 Jul 1981		-1 ^d		14
Sept 1981		-1 ^e		13

^aMinus sign represents mortality.

^bPlus sign represents addition to the herd.

^cBulls transferred from San Luis National Wildlife Refuge to replace poached bulls.

^dDebililitated cow euthanized by state Fish and Game official.

^eActual poaching not proved, although substantial rumors indicate she was.

The night the elk were brought to Fort Hunter Liggett, several startled elk broke through the holding pen and scattered. These solitary individuals, fragmented from the main herd, were felt to have wandered from Fort Hunter Liggett. These scattered individuals would form part of the eight elk not accounted for.

Clearly though, the determinant factor for failure of the release was from heavy poaching. By the middle of the 1980 rutting period all elk known to be bulls were dead. Obviously, without males, breeding could not occur. One of the bulls was poached shortly after release and a second bull was poached just prior to the 1979 rut. Two additional bulls were transferred from the San Luis National Wildlife Refuge but within a year these two were killed.

From the time of release elk were poached regularly, so much so that recruitment of four known calves could not replace loss. In most poachings the carcass was merely left, with none of the meat being taken. Of 7 bulls, 14 cows, and 7 calves (sex unknown) affirmed to comprise the herd at various times, 8 bulls (one of the calves obviously was a male) and 7 cows (one being euthanized) were known kills. Of the 14 confirmed poached elk, 8 may have been shot during Fort Hunter Liggett deer hunts and another 3 during its pig season. Almost always the meat was left although the rack of one bull was taken.

Although poaching was the apparent reason for the failure of the relocation, we felt that identifying underlying causes would be beneficial in formulating our recommendations for the proposed December 1981 relocation. Such an analysis could suggest ways to avoid those factors which were conducive to the poaching of the elk. We felt that four main factors contributed to the poaching problem. First, the elk relocated in 1978 originated from the Tupman Rule Elk Reserve, a 1.8 km² (440 ac) fence-enclosed zoo-like preserve. Conditions and size of the preserve are insufficient to support the number of elk that reside there; thus elk daily are supplied with supplemental feed (alfalfa pellets). The elk are conditioned by the feed truck and the call of the manager to come to chow. Visitors and tourists can and do approach the docile elk with only a fence between them. Thus elk from Tupman, semidomesticated and conditioned to associate humans with food, lacked the wariness necessary to avoid humans, possibly becoming easy targets for poachers.

Conditions in the area where the elk were released also enhanced likelihood of poaching. The narrow San Antonio river valley, bordered on both sides by steep mountains covered with dense chaparral, tended to confine the elk to a restricted locality. Running the length of the valley is Milpitas Road, a paved road in good condition which terminates at campgrounds in Los Padres National Forest. This road, infrequently traveled, is in a remote section of the base and allowed elk regularly to come into contact with potential poachers. Indeed, most elk were poached in this area (Fig. 1).

When the elk were originally released, four were equipped with radio collars. Unfortunately no one was assigned to regularly monitor their movements or well-being. A monitor regularly in the area would probably have deterred poaching by alerting to potential poachers that the elk were being watched.

Finally, opposition and resentment to the elk introduction and changing policies at Fort Hunter Liggett may have engendered poaching. However, this last reason is difficult to substantiate as none of the poachers were specifically identified, although in a couple of instances the culprit was rumored. Fort Hunter Liggett formerly permitted grazing year-round, and although stocking levels were to be limited, compliance was suspect and abuses may have occurred. Changing of grazing policy from year-round to winter and spring and better control of cattle numbers occurred concurrently with the elk introduction. Resentment to change in grazing policy, which was designed for range recovery and improvement of habitat for wildlife, could have stimulated reprisals to the elk.

From the factors which seemed to encourage poaching, we formulated recommendations which we felt would increase success of the December 1981 relocation and lessen poaching. First, introducing wild elk which are unconditioned to humans would be preferred. (This the Department of Fish and Game had already planned to do since the next group of elk

scheduled for relocation were to come from the free-roaming and wild herd in the Owens Valley). Wild elk would be more likely to flee from human intruders and seek places of security, thus reducing the possibility of being targets for poachers.

Next, we proposed that the release site be shifted to the central part of the base, either in the upper Stony Valley or the San Miguelito Loop (Fig. 1). These two areas are about 5 km (3 mi) apart and the terrain is such that movement between them is unhindered. Both localities are ideal elk habitat. Vegetation consists of grassland/oak savannah with year-round water. The fact that at least five cows lived for over a year in these areas with only one poaching incident indicated that conditions here are conducive to reduce poaching. Rugged foothills bordering and interspersing the areas obscure visual sighting of elk by motorists driving on the paved road that bisects Stony Valley and provide secure places into which the elk could easily retreat. Unlike the remote Milpitas Road which runs the length of San Antonio River valley, the road traversing Stony Valley is a through road used by sightseers and more frequently traveled; poaching would less likely go undetected. In addition, roads here access only a small portion of possible elk habitat. A corral used for cattle operations already present in the San Miguelito Loop could readily be modified into a sturdy holding pen.

Plans for the 1981 release were to include a number of elk equipped with radio collars. We recommended that the elk be monitored full-time for about 1.5 years, after which period the elk should have become established. Information from the monitoring program would be used in fulfillment of a masters program. In addition, the presence of the monitor could be very important in inhibiting poachers, especially if people were aware that the elk were watched closely. To increase the effectiveness of the monitor, publicizing that he was continuously present with the elk would dissuade most poachers.

Lastly, we felt promoting the recent antipoaching CAL-TIP program would aid in discouraging poachers, especially if informers knew they could collect a substantial monetary reward by turning in poachers and if poachers knew that informers might likely turn them in. Newspaper articles, word-of-mouth resulting from the monitor's presence, and informing sportsmen at the wildlife check station would effect the latter two recommendations.

POSTSCRIPT

Briefly, the recommendations which we suggested were adopted in the December 1981 relocation of 26 elk. After a year to evaluate our recommendations, we can report that so far the December 1981 release has been successful at reducing poaching. Although a couple of elk were lost through natural causes, none so far as we know have been poached; we still can account for nearly all elk released December 1981. The elk herd has used the terrain of upper Stony Valley and San Miguelito Loop for security in the manner we anticipated and those suggestions which we thought would curtail poaching have so far been successful.

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