

RE-ESTABLISHING THE HARRIS' HAWK
ON THE LOWER COLORADO RIVER

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Abstract. Eleven Harris' hawks were donated for release to the inter-agency effort to re-establish an historic population of Harris' hawks that disappeared during the mid-1950's. The progeny of captive Harris' hawks were hatched as three to six month old juvenals. Juvenal and adult hawks that had been used for the sport of falconry were hatched. All Harris' hawks were marked with distinct color band configurations as well as permanent, lock-on, aluminum bird bands. Selected individuals have been fitted with "back-pack" mounted radio telemetry transmitters. Documentation of recent Harris' hawk sightings made along the river between San Luis, Arizona and Needles, California are included.

INTRODUCTION

The Harris' hawk (Parabuteo unicinctus superior) is a medium sized bird of prey that inhabits prairie, mesquite, and riparian lands of the southwestern United States, Mexico and Central America. The adult is predominantly black, with rufous shoulders, wing linings, and thighs. The long black tail has a white terminal band and flashy white tail coverts that are evident when the hawk is in flight. The feet and cere are bright yellow. The juvenals are mottled throughout the body and wing linings, and have a banded tail. As in many birds of prey, they exhibit reverse sexual dimorphism with the females being one third larger than the males. (Brown and Amadon, 1968)

Harris' hawks build a large stick nest in trees or cacti. Along the Lower Colorado River, the hawks traditionally nested in cottonwood (Populus fremontii), mesquite (Prosopis sp.), and willow (Salix goodingii) trees (Dixon, personal notes). They are known to breed in polyandrous trios (Mader 1975). The second adult male in the trios assists the nesting pair in feeding the nestlings and fledglings.

Double broodedness is common in the Harris' hawk with the second clutch being laid about three months after the first clutch was laid. Three clutches per year have been documented where the breeding pair produces its first clutch in January or February (Whaley 1979).

The flight and hunting style of this species is intermediary between the long-winged, short-tailed Buteo hawks and the short-winged, long-tailed Accipiter hawks. The Harris' hawk is capable of short bursts of speed and twisting

pursuit, in addition they can soar thermals or glide to the ground from hunting perches. They eat a large variety of prey including small to medium-sized birds, mammals and reptiles.

Habitat alteration, due largely to the interruption of the annual flood cycle by upstream dams, was a major factor in the decline of the Harris' hawk between 1930 and 1960. Nesting and foraging areas were dramatically altered over a relatively short period of time.

In the early 1970's public concern for the degradation of the riparian growth along the Colorado River inspired government agencies to begin habitat manipulation to preserve at least some sections of the Colorado River. This was largely the result of studies including those by the California Fish and Game and Arizona Game and Fish Departments of Elf Owls (Micrathene whitneyi), Clapper Rails (Rallus longirostris), Great Blue Herons (Ardea herodias), and other sensitive species which demonstrated that much of the population reductions observed were due primarily to habitat reduction. The Bureau of Land Management has responded by considering wildlife values in its multiple use programs and has developed Habitat Management Plans to improve the quality of wildlife habitat.

The Peregrine Fund has pioneered work involving re-establishment of raptor populations in areas where the species has become rare or extinct (Burnham 1979). The Santa Cruz Predatory Bird Research Group in cooperation with California Department of Fish and Game, Arizona Game and Fish Department and Bureau of Land Management biologists, has adapted techniques developed by The Peregrine Fund for use in an attempt to re-establish the Harris' hawk to its native Colorado River Valley.

ACKNOWLEDGEMENTS

This program is a cooperative effort that could not have been initiated without the leadership of Ron Schlorff, California Department of Fish and Game; Jim de Vos and Richard Remington, Arizona Game and Fish Department; Brian Walton, Santa Cruz Predatory Bird Research Group--a facet of the UCSC Environmental Field Program; and Gary Ferrier of the Bureau of Land Management. The people listed in the Tables provided the birds and cooperation that makes this program feasible. Master bird bander Eleanor Radke provided the expertise and guidance that developed the banding and color marker system.

Several other agencies cooperated and they include: The National Audubon Society, The Bureau of Reclamation, The U. S. Army, Yuma Proving Grounds, and The U. S. Fish and Wildlife Service.

METHODS

Harris' hawks are being bred in captivity by several breeders in California. This effort is coordinated by the Santa Cruz Predatory Bird Research Group (SCPBRG) and California Dept. of Fish and Game. Many of the breeders began producing Harris' hawks so that they could be given to falconers and flown for their sport of hunting with birds of prey. Being conservationists, they have agreed to augment production at the Santa Cruz facility and provide a portion of their birds for release. Falconers have also donated birds that they are no longer using for sport.

Captive-rearing of Harris' hawks has proven to be very successful with many pairs producing two and sometimes three clutches per year. Eyasses destined for release are left in the breeding chamber with the parent birds until about a week prior to fledging so that proper imprinting takes place. The hawks are then transported directly to hack sites on the Colorado River.

Hacking involves placing an artificial nest or "hackbox" in a tree that houses young captive-reared Harris' hawks. They are fed by dropping food down a chute from a concealed position behind the box. When they reach fledging age, they are released. They continue to return to the hack box for food until they reach independence.

Fledged nestlings, juvenals and adults are placed in a six by eight by six foot high hack enclosure made out of vertical lengths of one inch PVC pipe. The hawks are released after a period of a few days to a week. Food is placed at the hack site daily for two weeks then every other day for the remainder of the six week hack period.

Remote sensing devices have been set up at hack sites to record the frequency of individual visits to the feeding station. Color bands allow identification of each hawk that takes advantage of the food that is provided.

Eyas Harris' hawks that have been raised by hand in the absence of any contact with siblings have been found to be undesirable for release.

RESULTS

Eleven Harris' hawks were released during 1981. Eight were hacked together as four to six months old juvenals during late fall. Three falconer donated hawks were hacked at another site in the spring.

Harris' hawk observations have increased dramatically since mid 1980. They have been observed to the north near Blythe and Needles, California and south to San Luis, Arizona. Observations indicate a gradual population dispersal in the lower Colorado River Valley. We expect more breeding to occur within this population as more of the hawks reach maturity.

Four out of eight hawks hacked and cross-fostered during the spring of 1981 were observed in the wild as independent hawks five months after their release. Three of these same hawks were observed perching, engaging in intra-specific play and hunting with newly released, captive bred juvenals in January, 1982.

An intervalometer equipped, super eight movie camera operating at two frames per minute recorded visits to the hack station on four days in late December, 1981. It was not always possible to read the color bands (especially when more than one hawk was at the station), but at least seven hawks fed at the hack board. One of the seven recorded is known to be an individual from the April 1981 release.

DISCUSSION

The Peregrine Fund has had good success with similar techniques in their effort to re-establish peregrine falcons in areas where the species was extinct. They have shown that raptors can be housed, bred in captivity, the offspring released, survive and then breed in the wild. It is costly to document the whereabouts of every surviving individual, but the success of their program indicates that the methods developed work well.

Three falconry hawks were released during the spring. Two were juvenals and the third was a five year old adult. All were effective hunters. The vocalizations of one of the juvenals indicated that she was subordinate to the other two. She fed at the hack site for two weeks before she dispersed. The other two hawks were usually observed together and remained in the vicinity of the hack chamber until feeding was discontinued two months after release.

Eight juvenal Harris' hawks were placed in two, side by side, six by eight by six foot high hack chambers on the morning of December 9, 1981. The hawks hatched during the summer and fall of 1981 at various breeding facilities and were kept together in a large aviary by the Santa Cruz Predatory Bird Research Group. The hawks were released from one chamber on December 11 and, after establishing that they were returning to the hack site to feed, the second chamber was opened on December 14.

Within a few days after the hawks had been released from the second chamber, two of the birds released in April at the same site appeared at the feeding station. They were often seen perched side by side with the newly released

hawks. Groups of up to five juvenals hawks engaged in intra-specific play have been observed within one kilometer of the hack site. It is believed that individuals from the April, 1981 release were included in those groups.

APPENDIX

HARRIS' HAWK SIGHTINGS

Many reports of Harris' hawk sightings have been forwarded to me over the past two years. Some of them were vague and others impossible to follow up due to a lack of details. The most reliable are documented here. They demonstrate a distribution of sightings from Needles, California south to San Luis, Arizona. In most cases the observer was unable to report whether or not the hawk was banded. The appearance of many of these hawks must be credited to the re-introduction effort, given the paucity of sightings between 1960 and 1980.

Two sightings were documented by Jim Bicket, biologist for the Needles Resource Area, Bureau of Land Management. Anita Holmes, also of the Needles Resource Area, positively identified a Harris' hawk when it flared up in front of the windshield of the truck she was driving. Holmes stated that the hawk appeared to be in pursuit and narrowly missed the truck. The hawk was seen nine kilometers WSW of Kelso, California, near the Kelso Dunes.

The second sighting in that area was made by Mrs. Jane Southcott on her ranch in Gold Valley approximately eighteen km SE of Cima, California. The hawk was seen during the summer of 1980.

Bob Celentano, California Fish and Game Department biologist, saw a Harris' hawk at milepost 28 along U.S. 95 north of Blythe, California. The hawk was perched on a utility pole on the highway above a dense, undisturbed stand of mesquite along the Colorado River. The hawk was seen in May, 1981.

Mike Walker and Kerrie Stinemetz, Bureau of Reclamation biologists, were engaged in a helicopter survey of the Colorado River south of Yuma when they sighted a Harris' hawk in flight near their aircraft. The hawk was over "Hunter's Hole", ten kilometers northwest of Gadsden, Arizona. The sighting was made on November 9, 1981.

Richard Remington, Arizona Game and Fish Department game specialist, documented 2 sightings. The first was made along the levee road eight kilometers south of Laguna Dam on January 6, 1981. The hawk was soaring over a wheat stubble field.

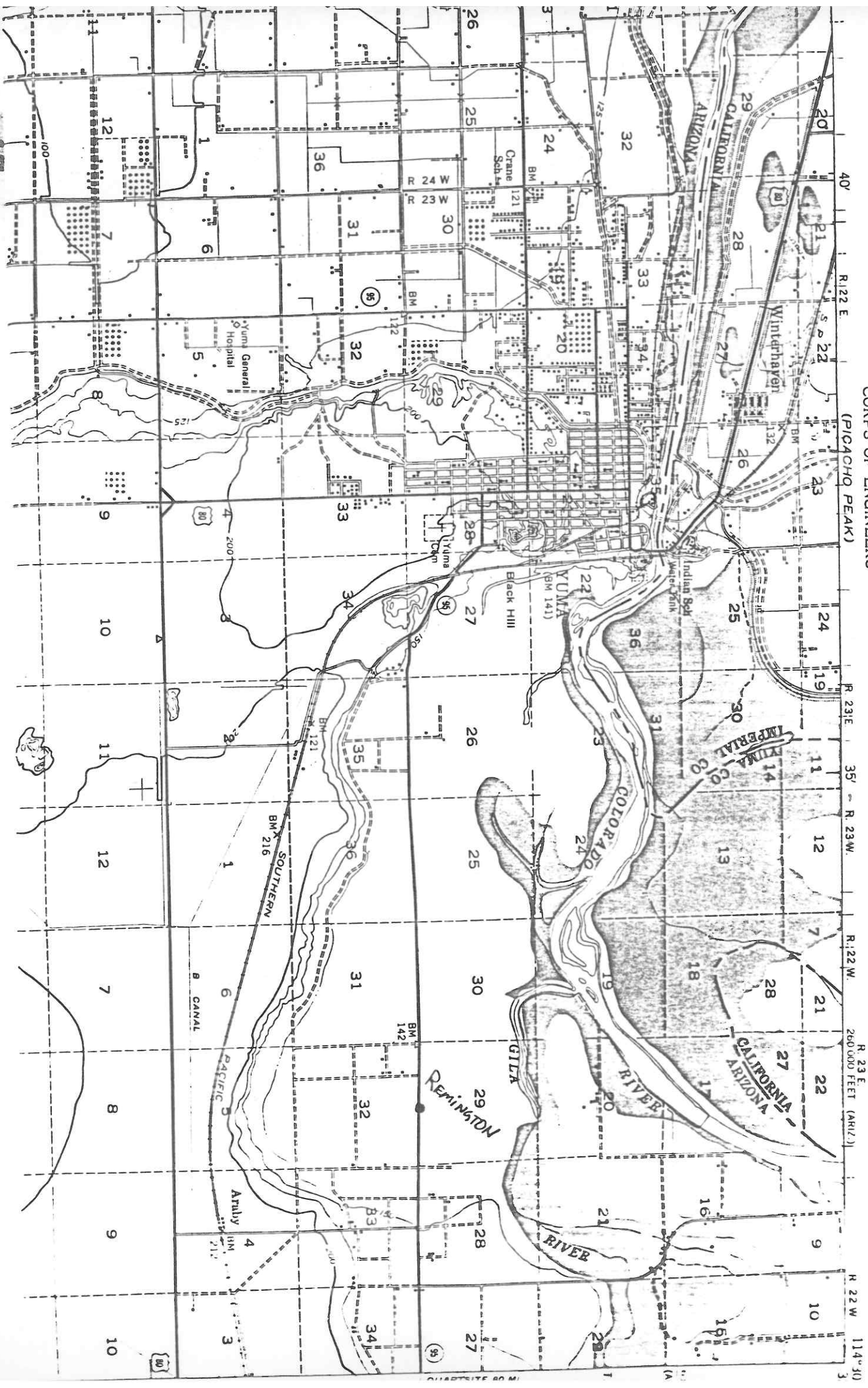
Remington's second sighting in the Yuma area was of an adult, male Harris' hawk perched on a utility pole near the intersection of Highway 95 and 5½ E, nine kilometers east of Yuma. The sighting was made March 16, 1981.

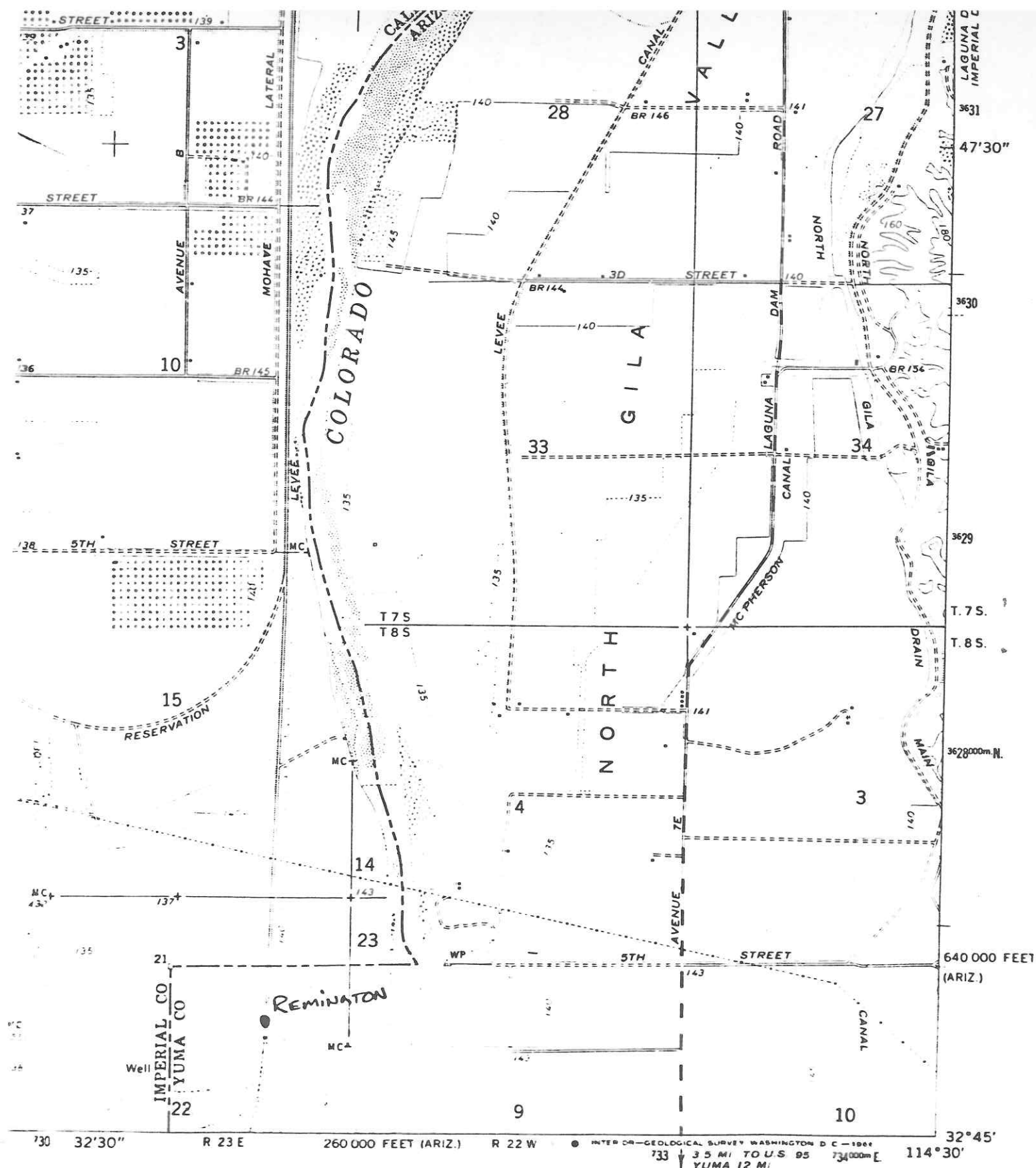


COUNTY OF SAN BERNARDINO MAP

UNITED STATES
DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS

YUMA QUADRANGLE
ARIZONA—CALIFORNIA
15 MINUTE SERIES (TOPOGRAPHIC)





ROAD CLASSIFICATION

Medium-duty

Light-duty

Unimproved dirt



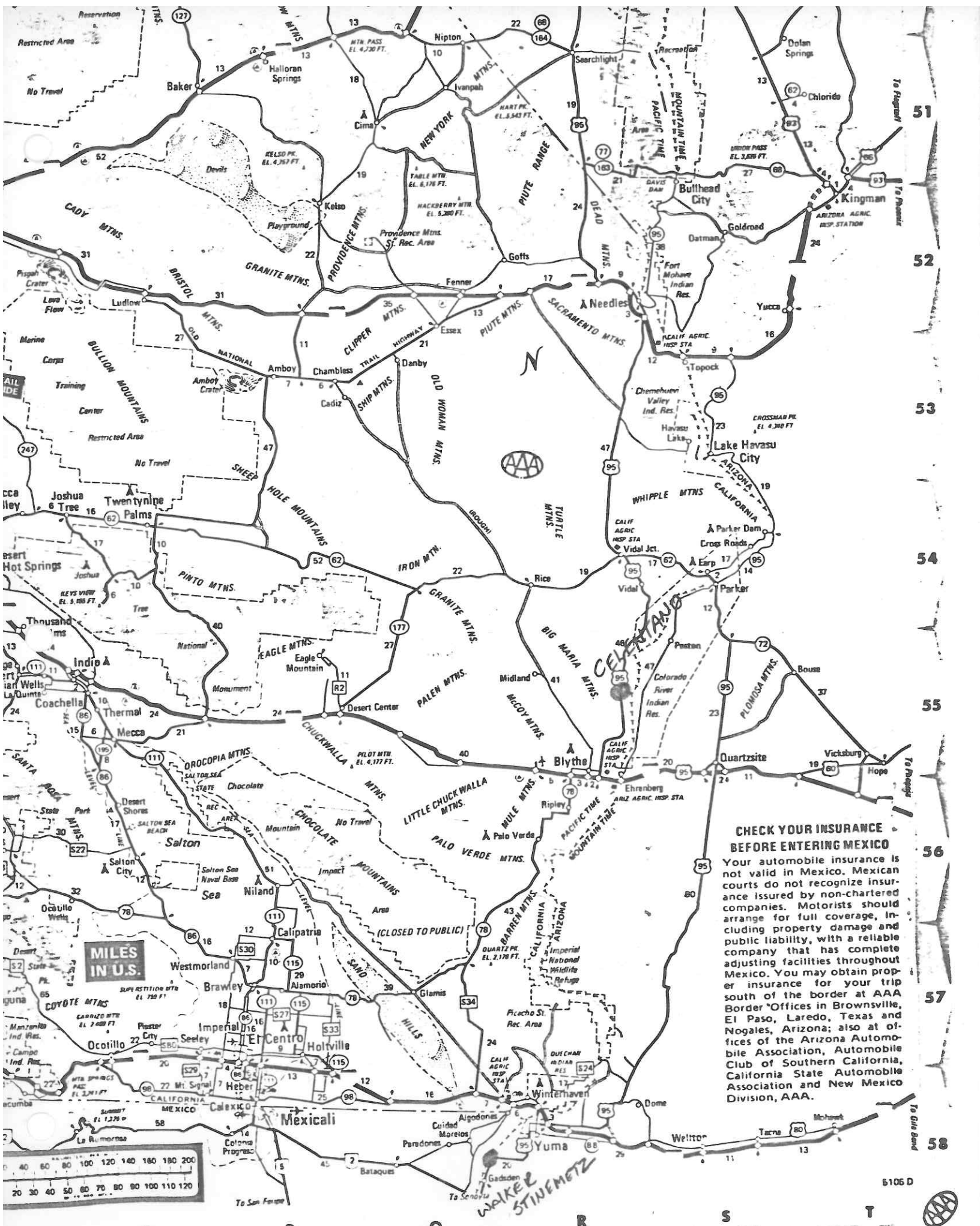
QUADRANGLE LOCATION

BARD, CALIF. - ARIZ.

SE 1/4 PICACHO PEAK 15' QUADRANGLE
N3245-W11430/7.5

1965

AMS 3049 I SE-SERIES V895



**CHECK YOUR INSURANCE
BEFORE ENTERING MEXICO**

Your automobile insurance is not valid in Mexico. Mexican courts do not recognize insurance issued by non-chartered companies. Motorists should arrange for full coverage, including property damage and public liability, with a reliable company that has complete adjusting facilities throughout Mexico. You may obtain proper insurance for your trip south of the border at AAA Border Offices in Brownsville, El Paso, Laredo, Texas and Nogales, Arizona; also at offices of the Arizona Automobile Association, Automobile Club of Southern California, California State Automobile Association and New Mexico Division, AAA.

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TABLE OF DONORS

Spring 1981

<u>Source</u>	<u>Age/Sex</u>	<u>Method</u>
Haschak	ATY/F	Hack
Belangee	SY/M	
S.F. Zoological Gardens	ATY/M	
SCPBRG	ATY/F	
H. Diener	HY/F	
H. Diener	HY/F	
H. Diener	HY/M	Hack
Belangee	HY/F	Cross foster
Robertson	HY/M	
Robertson	HY/F	
Robertson	HY/F	Cross foster

Fall 1981

SCPBRG	HY/M	Hack
(Captive reared by	HY/M	
Haschak, Diener and	HY/M	
Belangee)	HY/F	
	HY/F	
	HY/F	
	HY/F	
	HY/F	
	HY/F	Hack

HY - Hack Year
 SY - Second Year
 AHY - After Hatch Year
 ATY - After Third Year
 U - Unknown

*N/A
this report
purged*

TABLE OF DONORS

Spring 1982

<u>Source</u>	<u>Age/Sex</u>	<u>Method</u>
Meyer	ATY/F	Hack
Frank	HY/F	"
Watts	HY/F	"

HY - Hatch Year

ATY - After Third Year

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