

THE RESOURCES AGENCY
CALIFORNIA DEPARTMENT OF FISH AND GAME

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REPORT TO THE 1975 LEGISLATURE
ON PROGRESS OF THE MOUNTAIN LION STUDY

JANUARY 1, 1975

STATUS OF INVESTIGATIONS - PHASE II

Description of Intensive Study Area

The California Department of Fish and Game's investigation into the status of the mountain lion continued throughout the year. Study concentration was applied to approximately a 200 sq. mile area of the Los Padres National Forest and Hunter Liggett Military Reservation in southwestern Monterey County. Capture of mountain lions and electronic monitoring of those tagged has been the thrust of this effort during 1974.

Southwestern Monterey County was chosen as the site for this intensive study because it represented an environmental situation thus far unstudied in relation to mountain lions. The area contains a mixture of habitat types with major differences between the eastern and western slopes which fall steeply away from the coast ridge which essentially bisects the study site. Habitat types range from coastal scrub near sea level on the western slope to grassland, chaparral, broadleaf evergreen-redwood and coniferous forest. On the eastern slope from the top is chaparral and oak-woodland, and in the canyon bottoms of each side is riparian habitat. Elevation runs from sea level to nearly 4,000 ft. Land use in the Los Padres National Forest includes recreation (hunting, fishing, hiking and camping), cattle grazing and leases to mining interests. Hunter Liggett Reservation, in addition to its varied military missions, allows recreational use (hunting and fishing) and cattle grazing. There are small private holdings within the study area.

A good road system exists on both slopes and most allow year-round access into much of the study site. An extensive, but poorly maintained, trail system exists in the Los Padres National Forest allowing access by foot and horseback. Road maintenance must be conducted by the project during winter. High winds and heavy rains take their toll in fallen trees and eroded roadbeds. The storm of January 1, 1974 caused extensive tree and brush damage to much of the upper elevations within the project's site. Many old trail systems were obliterated and travel and tracking conditions are frustrating at best in this area. General weather conditions during the progress of the study have been cold and wet (little snow) during the winter and spring, hot and very arid during summer and fall. Project personnel headquarters are located at Willow Creek, within the study area.

Capture Techniques

Capture activities have occupied the bulk of personnel effort and have followed the general outline following. Pursuit activities are conducted on weekends when capture-specialists are available and begins by dragging roads with brush to prepare it for track identification. By subsequently riding the fender of a vehicle, lion tracks may be observed on the prepared roadbed. As a fresh sign is observed, it is investigated and if promising, dogs will be released on the scent. The capture team, in communication via radio, coordinates the various aspects of pursuit and follows the dogs to a successful treed lion. Upon capture (tree) the lion is tranquilized and lowered to the ground with ropes to avoid injury. Body measurements are taken and a radio-transmitting collar is attached to the lion. The mountain lion is watched constantly while recovering from the drug to make sure nothing happened to it while incapacitated.

The drugs used in the operation include sernylan, acepromazine and streptillin. The first two are the tranquilizing agents and the third an antibiotic to counter any possible infection. No problems have been encountered with lions drugged during capture activities and normal recovery of all cats has occurred. The drug is administered via a CO₂ powered rifle or pistol firing a 2cc dart which holds the tranquilizer.

Three types of power source have been used with the collars. A solar collar was initially used, but was discontinued when returns proved too skimpy or absent to justify continuance. Battery powered collars, though slightly heavier, are proving more reliable. A mercury battery was utilized at first but because of a relatively short life all collars now applied are using lithium batteries which considerably extend the transmitting life of the collar.

Monitoring Activities

Monitoring activities are accomplished with a variety of receivers and antennas both fixed and mobile. Ground monitoring is accomplished by driving through the study area and adjacent lands with receiving equipment operating. A whip antenna attached to the vehicle provides pickup for the receiver. Two fixed antenna stations have also been set up in the study area and are yielding signal returns with increased signal sensitivity. Aerial relocation is accomplished by flying transects over the study area and adjacent lands. Signal pickup is accomplished with the antenna and receiver system used in the vehicle. Signals are easier to pickup from the air because of their transmitting configuration, thus aerial relocation is far more successful than ground relocation. All relocations of tagged lions are recorded on maps to provide territory and movement data.

Thus far in Phase II of the mountain lion study, nine lions have been captured and tagged, eight with radio collars. Six males and three females have been successfully pursued since February 1974, when the first lion was captured. Of the nine lions captured, one was not collared. This lion was a cub, approximately 30 lbs. in weight and four to five months old. The eight collared lions have been location recorded a total of 125 times including capture, recapture and aerial-ground signal reception. Some ranges have been thoroughly transcribed with numerous relocations; some are scanty (see maps). Ranges have varied from 30 to approximately 200 square miles (see map). Males have generally ranged throughout a larger area than females. However, no male range was exclusively his own and as many as three males have been monitored within a short distance (a matter of 450 yards) of one another. Monitoring activities have verified movement of lions during all portions of the day even in summer heat. The speed and strength of the signal varies greatly when the lion is in motion. Also, lion number 11 has been observed twice (once by project personnel) during the day.

Most of the lions captured have shown signs of old injuries, from frayed ears to long scars with accompanying subcutaneous muscle damage. Injuries are possibly the result of prey and intraspecific contacts.

Scratching

Scratching by lions as a "signpost" to other cats appears to be present on the study area. Numerous locations on the project area can be depended on to yield new scratches on a regular basis. Whether these "signposts" are used in avoidance or attraction cannot be said at this time in that telemetry has

indicated proximity of lions, male-male and female-male, on numerous occasions. On several occasions a male has been observed, by his tracks, to accompany a female for distances of one-quarter mile along roadways, and into the surrounding countryside. On these occasions scratch activity seems to be increased, sometimes being present every 10-20 yards. Scratching does not always accompany the deposition of scat. Scats have been collected. Superficial inspection has revealed deer and pig hair in most scats.

Livestock Predation

One act of livestock predation has occurred on the area adjacent to the north-eastern boundary of the study area. A goat was killed by a mountain lion and carried across a small creek where it was consumed. The goat was chained to a heavy (70⁺ lbs.) pipe and was killed within 10 yards of an occupied cabin. The occupants were awakened by the sound of the pipe being dragged across the boulders in the creek. The lion withdrew when the incident was investigated by the residents, but returned later that night to consume the rest of the goat. The track record of the incident was still quite clear when investigated. Even though cattle are grazed over a large area of the study site no incidence of predation on these animals has been reported by the ranchers questioned.

Unusual Mortalities

Project personnel responded to a request to assist in the removal of a lion trapped in a well near the city of Paso Robles. The cat had been in the well a number of hours before its presence was even discovered. The sound of fluid in the lungs was present and the lion barely could respond to stimuli. Upon removal from the well the cat lost consciousness and died a few moments later. Artificial respiration and external cardiac stimulation failed to revive the lion. No explanation could be obtained as a reason for the cat being in the well. The 20' well was cased with a 3' diameter steel casing extending two feet above the ground.

Plans for 1975

Capture-monitor activities will continue through 1975. Tracks within the boundaries of the project indicate several additional uncollared adult lions still remain to be captured. An increasing emphasis on monitoring is anticipated to give a better, more accurate idea of sequential movement over a continuous interval of several days to a week. Also, increased activity on scat content identification and field kill records will be attempted. Thus far only three kills have been found, all deer.

Depredations

During 1974 Department of Fish and Game employees investigating complaints of mountain lion depredation confirmed 21 incidents of livestock losses and issued 17 permits to kill the offending animal pursuant to Section 4851, Fish and Game Code. Five animals were taken. This compares to 12 permits issued and seven mountain lions dispatched in 1973.

The incidents of confirmed livestock losses in 1974 occurred in these counties:

San Luis Obispo	5
Santa Barbara	3
Fresno	3
Kern	2
Riverside	2
Placer	2
Monterey	2
Santa Clara	1
Mono	1
Total	<u>21</u>

Depredation occurred most often on sheep, followed by goats, calves, colts and pigs, in that order.

Mortalities

During 1974 two mountain lions were known to be illegally killed. The violators were apprehended and convicted. Two road-killed mountain lions were recorded during the year. An additional one was hit but a search failed to find a carcass. One mountain lion fell into an open well. Rescue attempts failed to save its life and the animal died from prolonged exposure in the water.

Permits to Pursue Mountain Lions

Under provisions of Section 4853 of the Fish and Game Code and Section 251.4, Title 14, the Department may issue permits to pursue mountain lions. A permit is permitted between October 1 and February 28 only and no mountain lions may be killed or injured.

To date four permits have been issued. During the 1973-74 period six permits were issued. Permittees reported treeing two lions. Some permittees did not use the permit.

Mountain Lion Captures and Relocations W-51-R

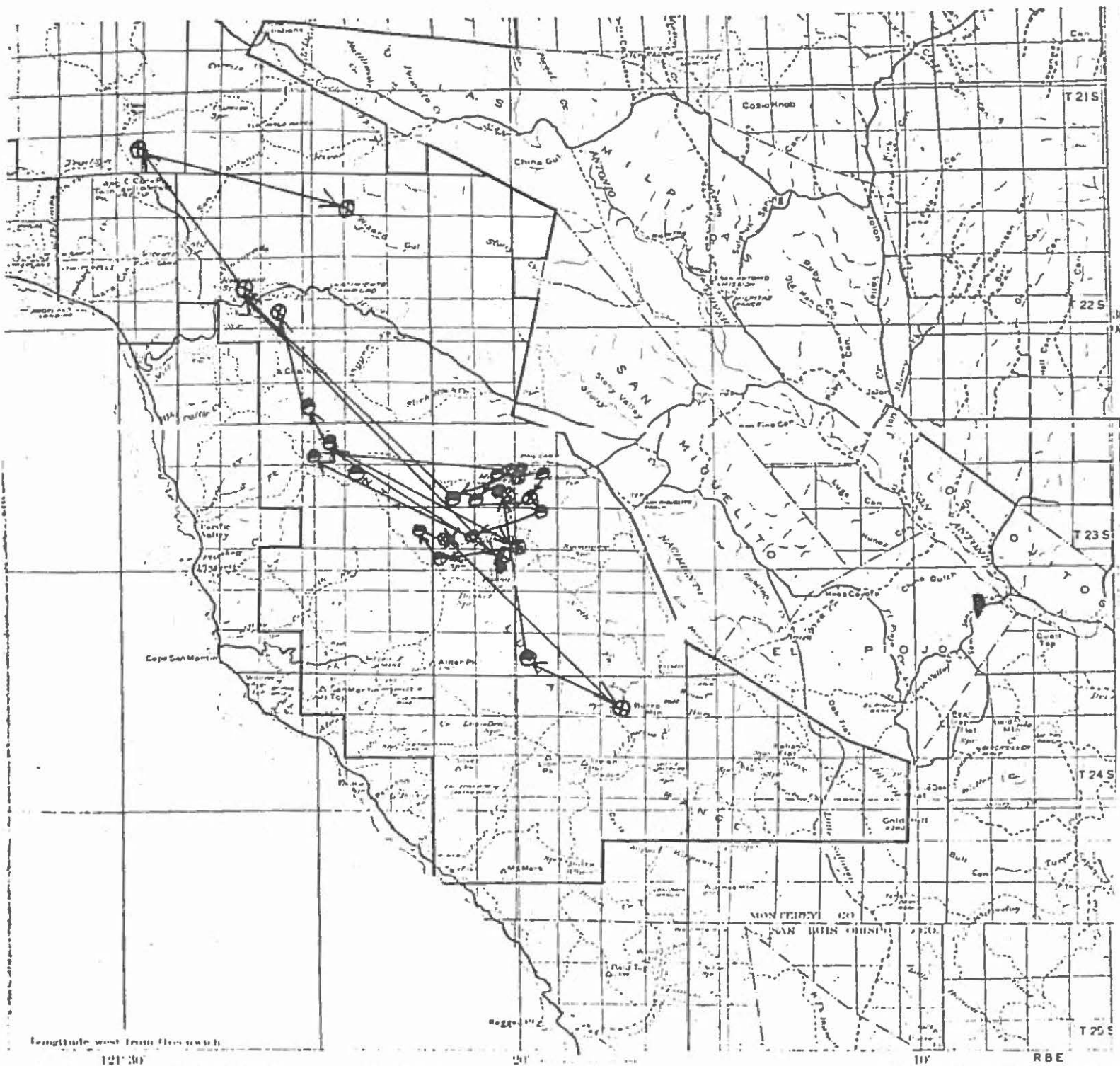
Locations/Month

<u>Lion Number</u>	<u>Feb.</u>	<u>March</u>	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug.</u>	<u>Sept.</u>	<u>Oct.</u>	<u>Nov.</u>	<u>Dec.</u>
10*	4	8			1						
11*	2		2	2		5	1	3	3	2	
12		3	1	8	4	9	2				
13**		3	1	2	5	3	2	1	2		
15				2	3	4					
16*				2			1	1			
17						3	2	5	3	1	
18							4	7	4	3	
19										1	

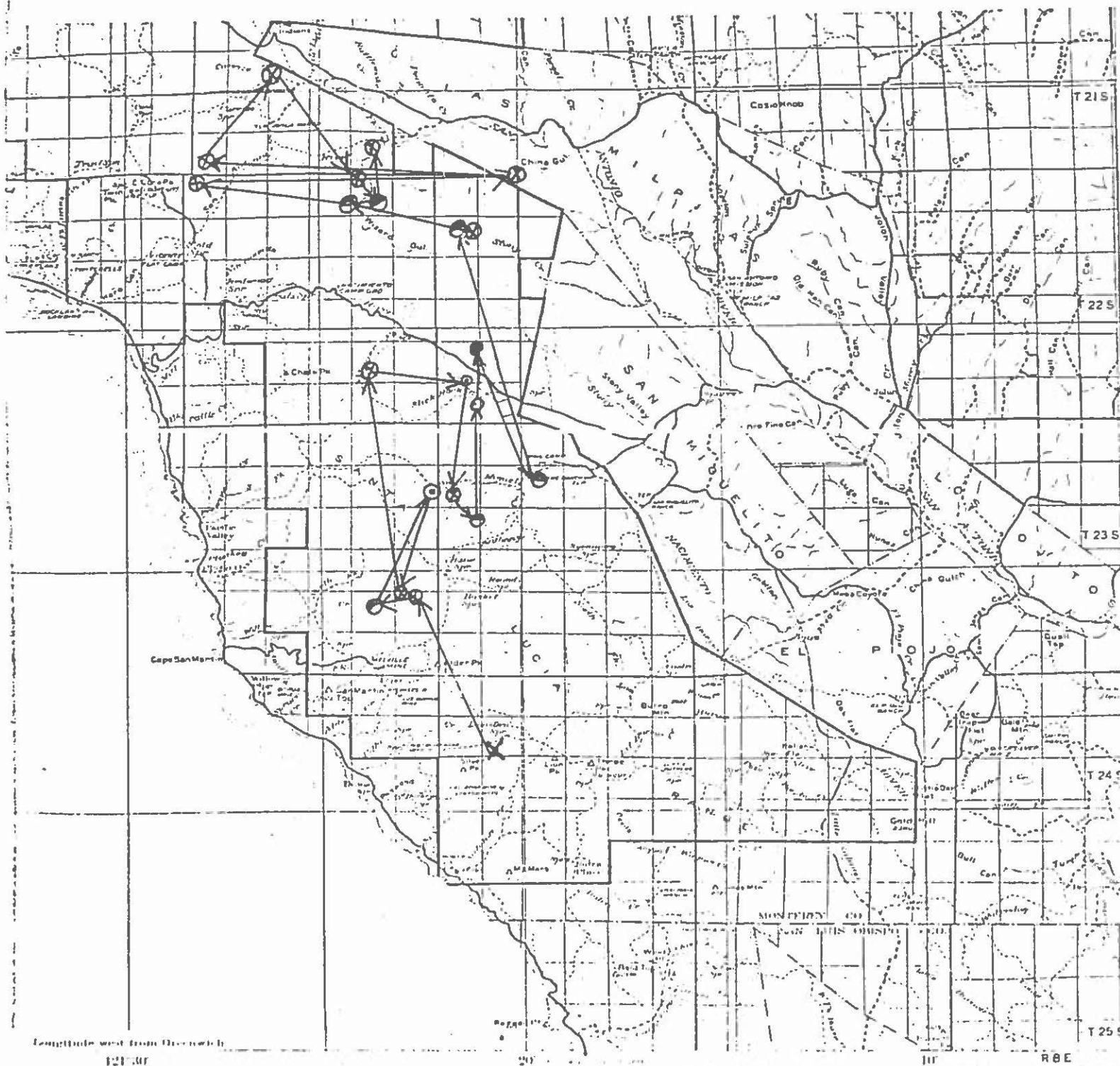
All collars lithium battery powered except

* Photo collars

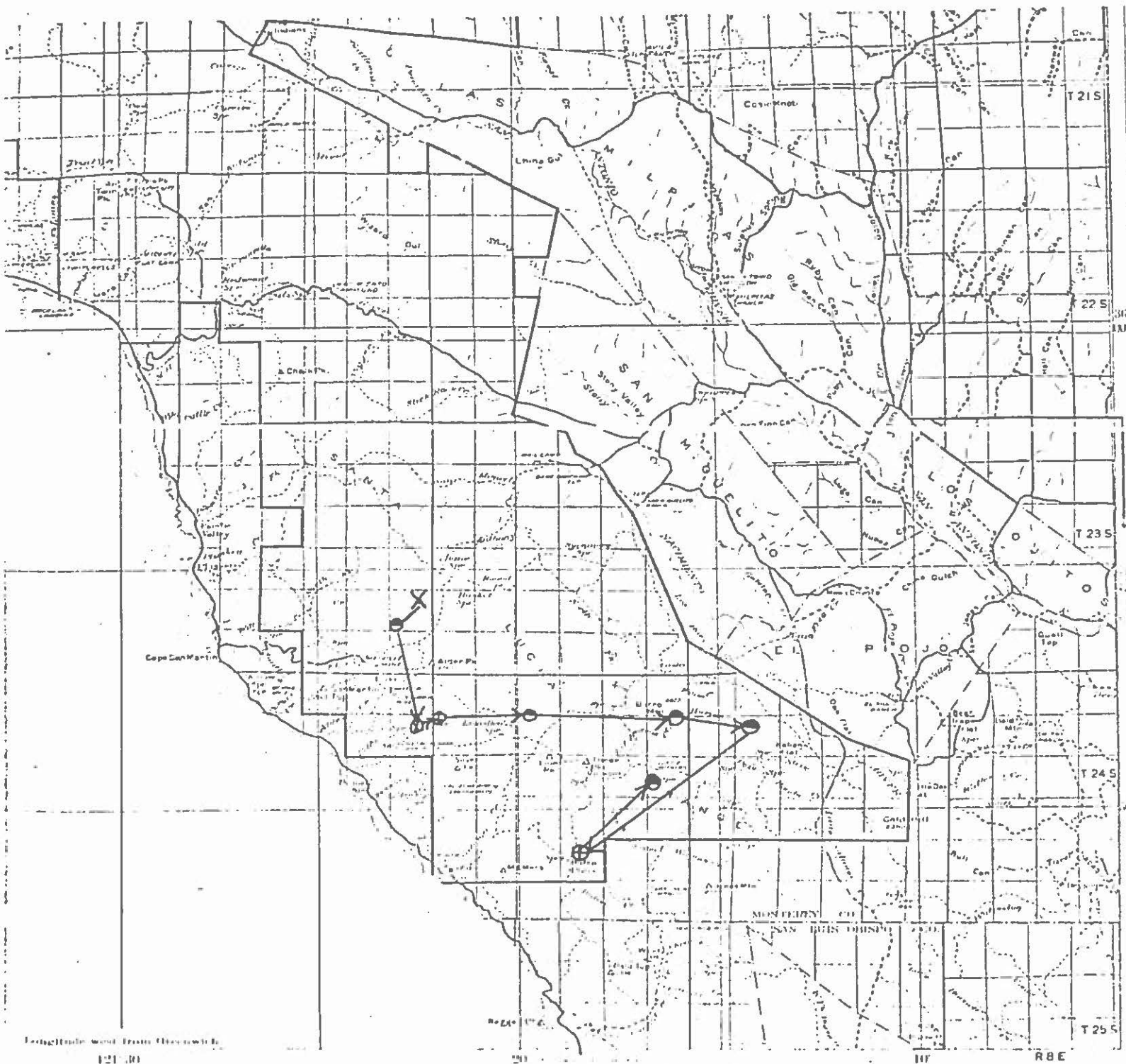
**Mercury Battery



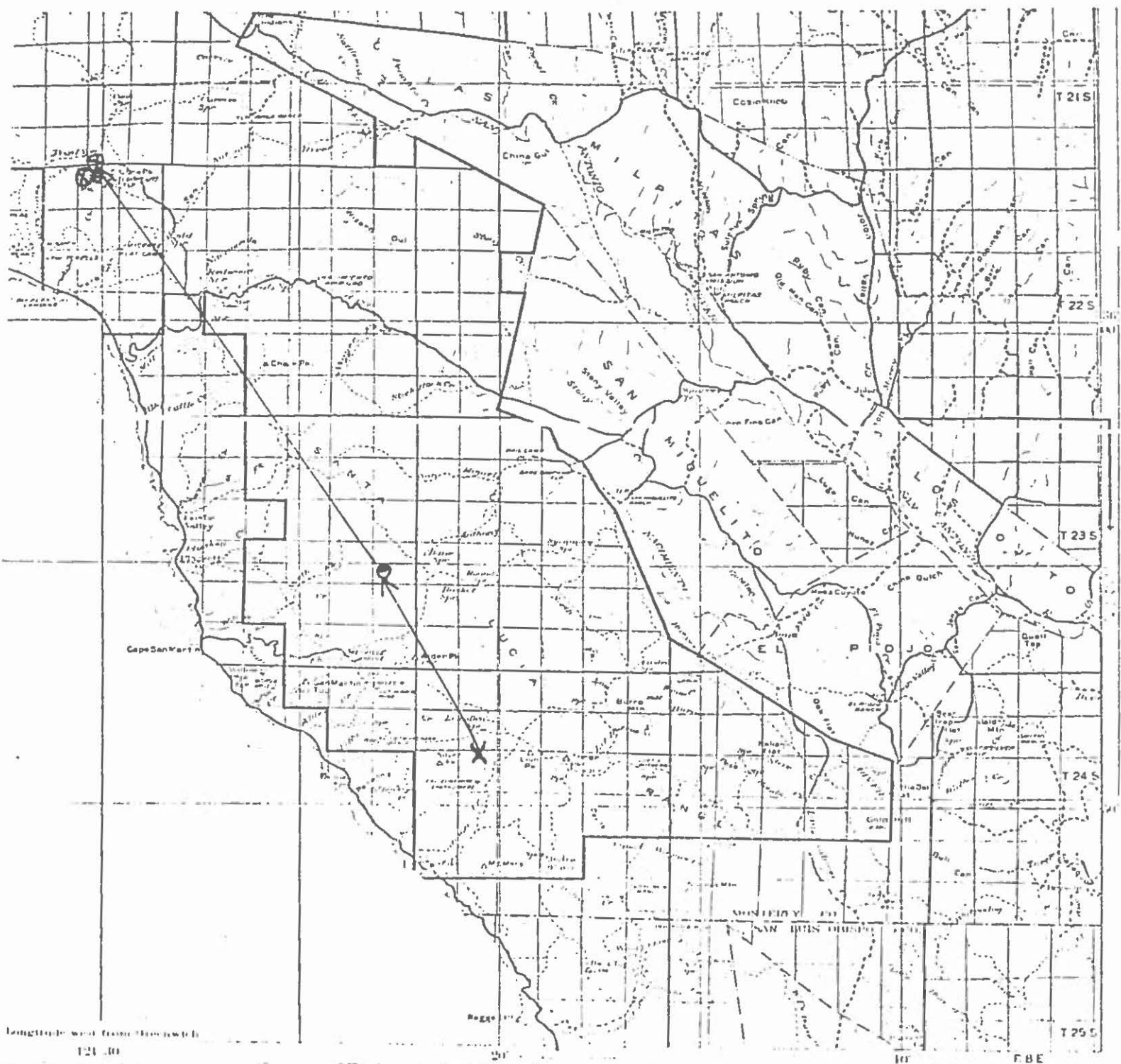
MOUNTAIN LION #12 - ♀
 CHANNEL B- LITHIUM BATTERY 112/112
 CAPTURED: 3-23-74
 26 RELOCATIONS 3-30-74 - 8-8-74



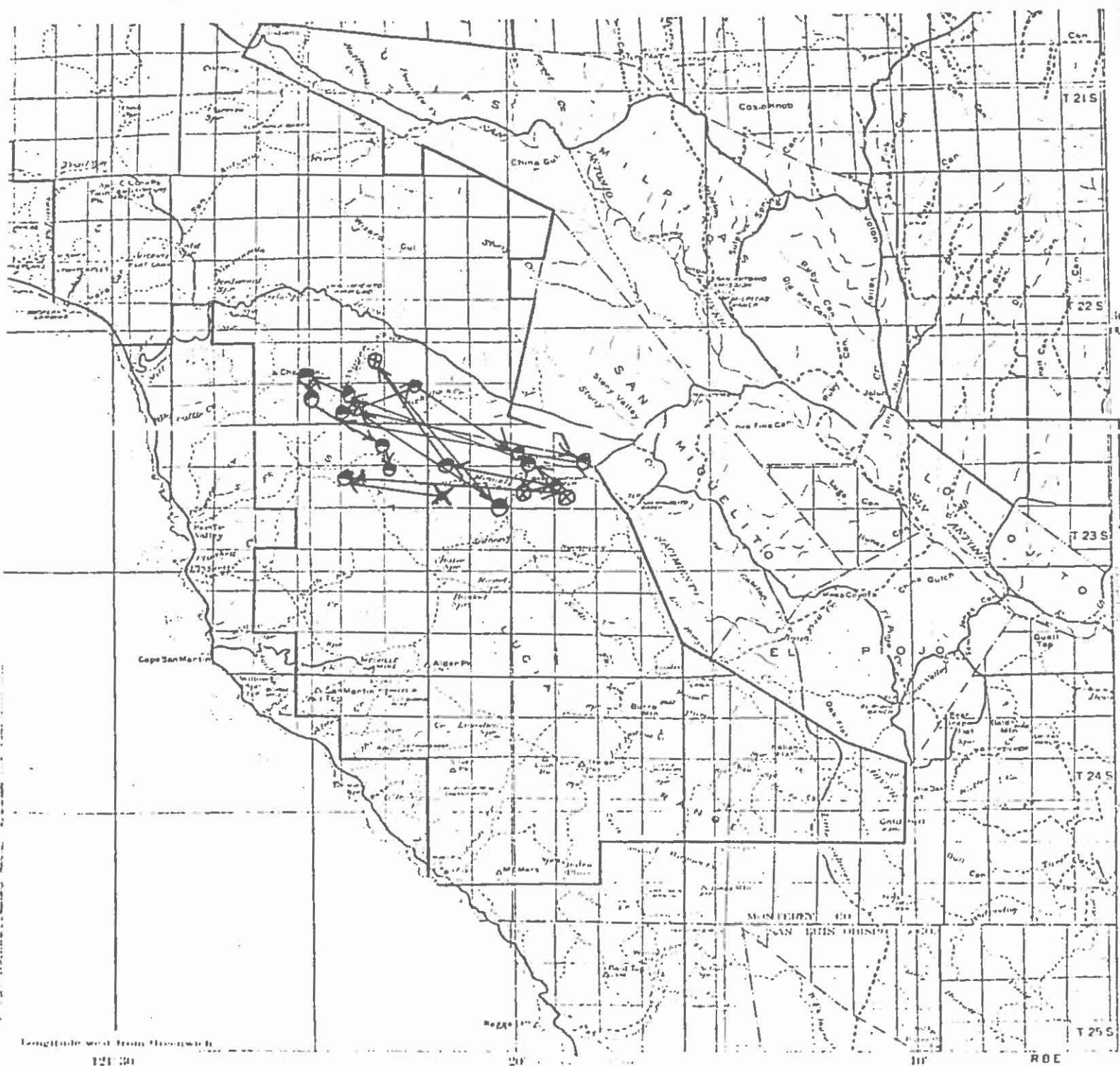
MOUNTAIN LION #13 - ♂
 CHANNEL D - MERCURY
 CRECOLLAR E - LITHIUM
 CAPTURED 3-24-74
 18 RELOCATIONS - 3-30-74 - 10-13-74



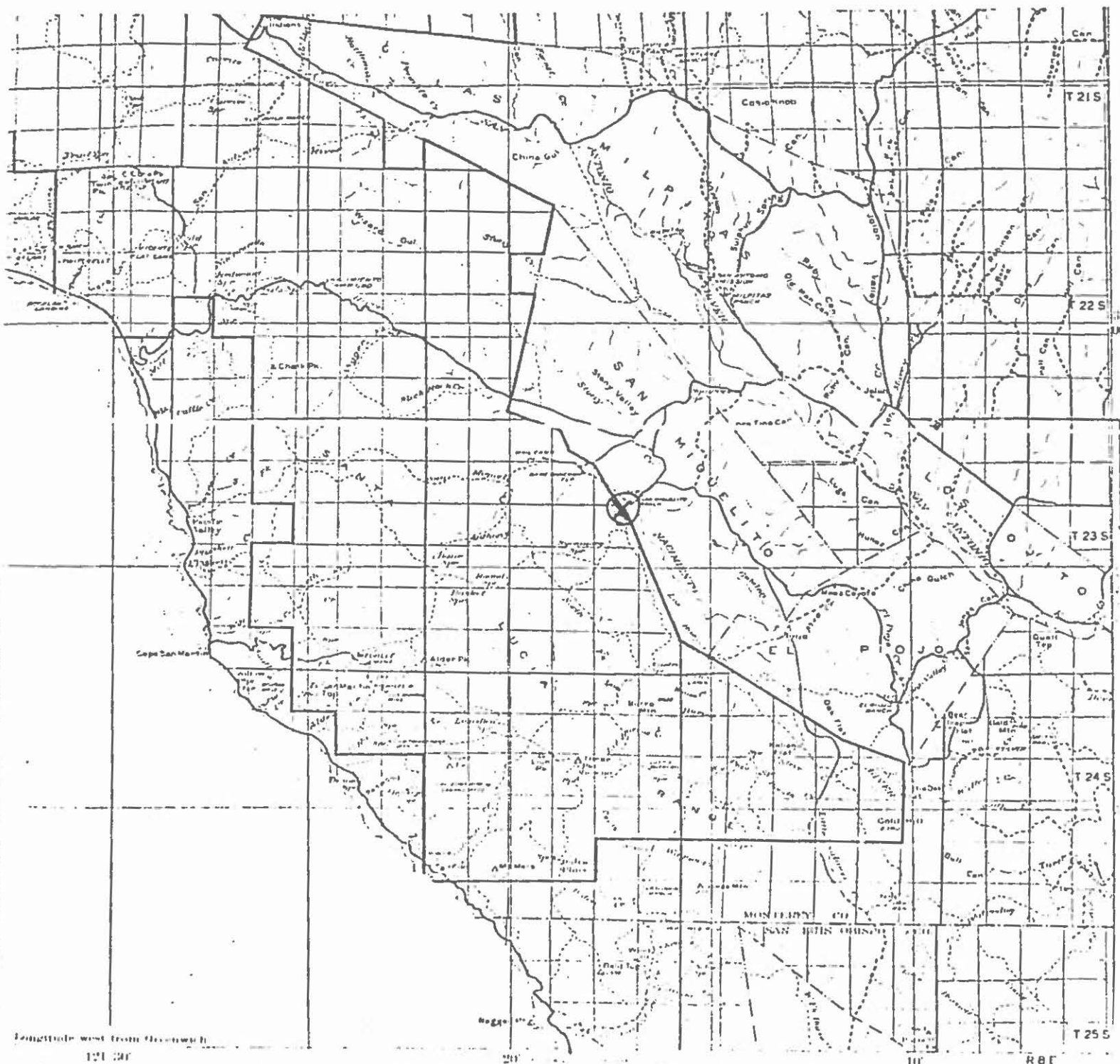
MOUNTAIN LION # 15-8
 CHANNEL C - LITHIUM - 31.26 mHz
 CAPTURED 5-19-74
 9 RELOCATIONS 5-20-74 - 7-27-74



MOUNTAIN LION #16 ♂
 CHANNEL H - SOLAR - 31.46 mHz
 CAPTURED 5-21-74
 3 RELOCATIONS



MOUNTAIN LION #18 - Q
CHANNEL D - LITHIUM - 31.30 MHz
CAPTURED 8-17-74
17 RELOCATIONS



MOUNTAIN LION #19 ♂
 KITTEN - NOT RADIO COLLARED
 CAPTURED 11-24-74