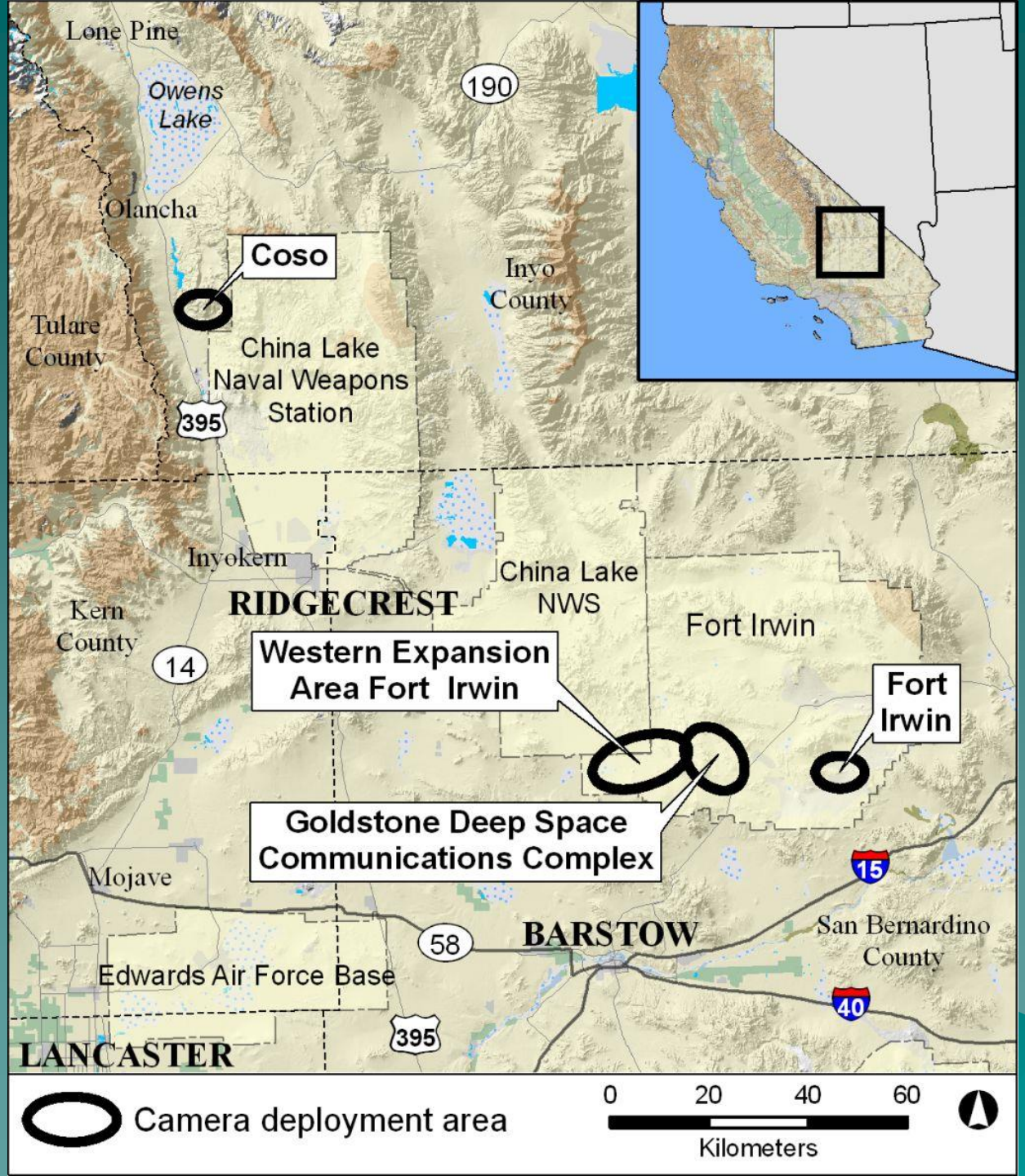
CAMERA AND LIVE-TRAPPING STUDIES

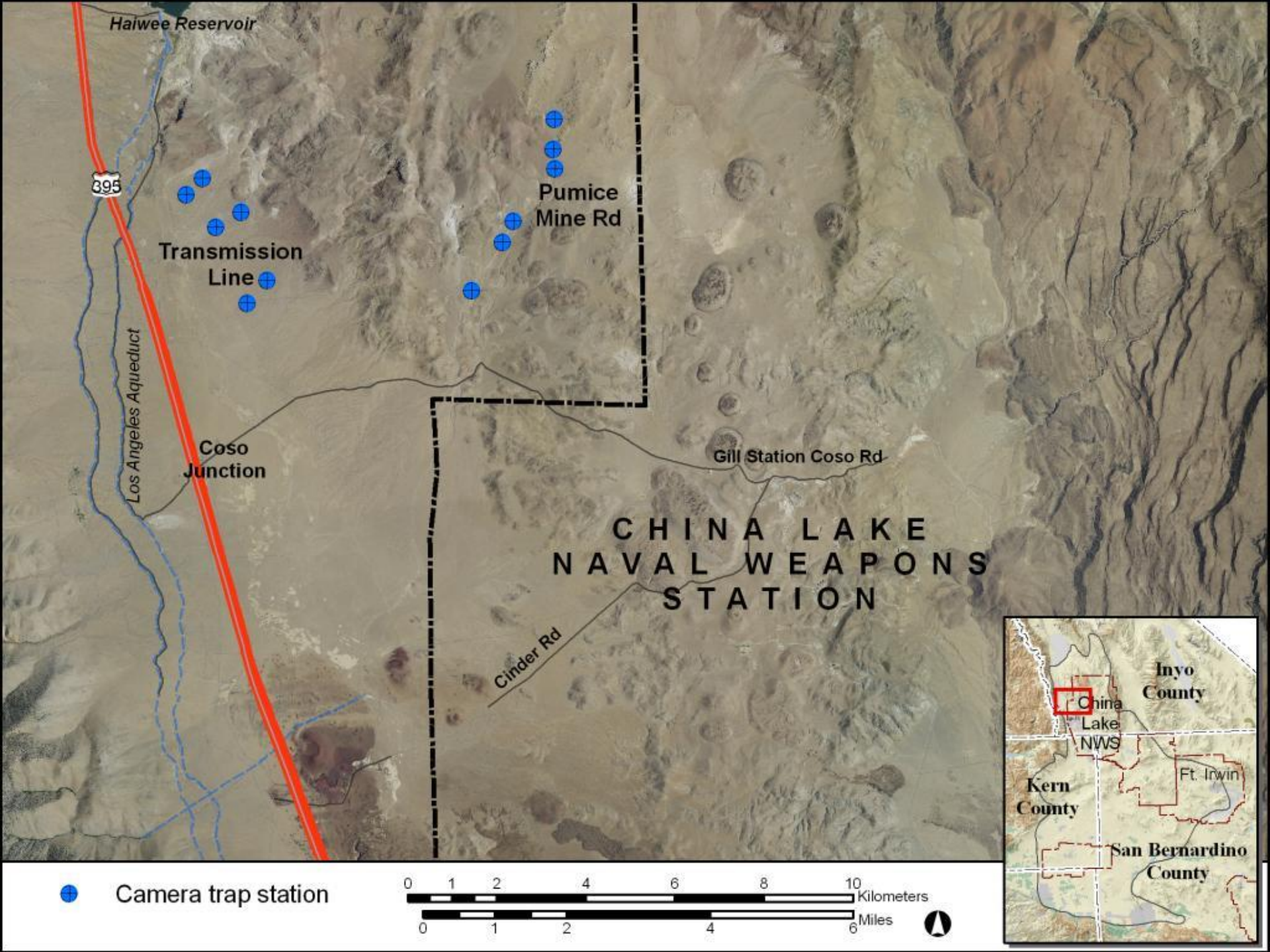
2010 Results

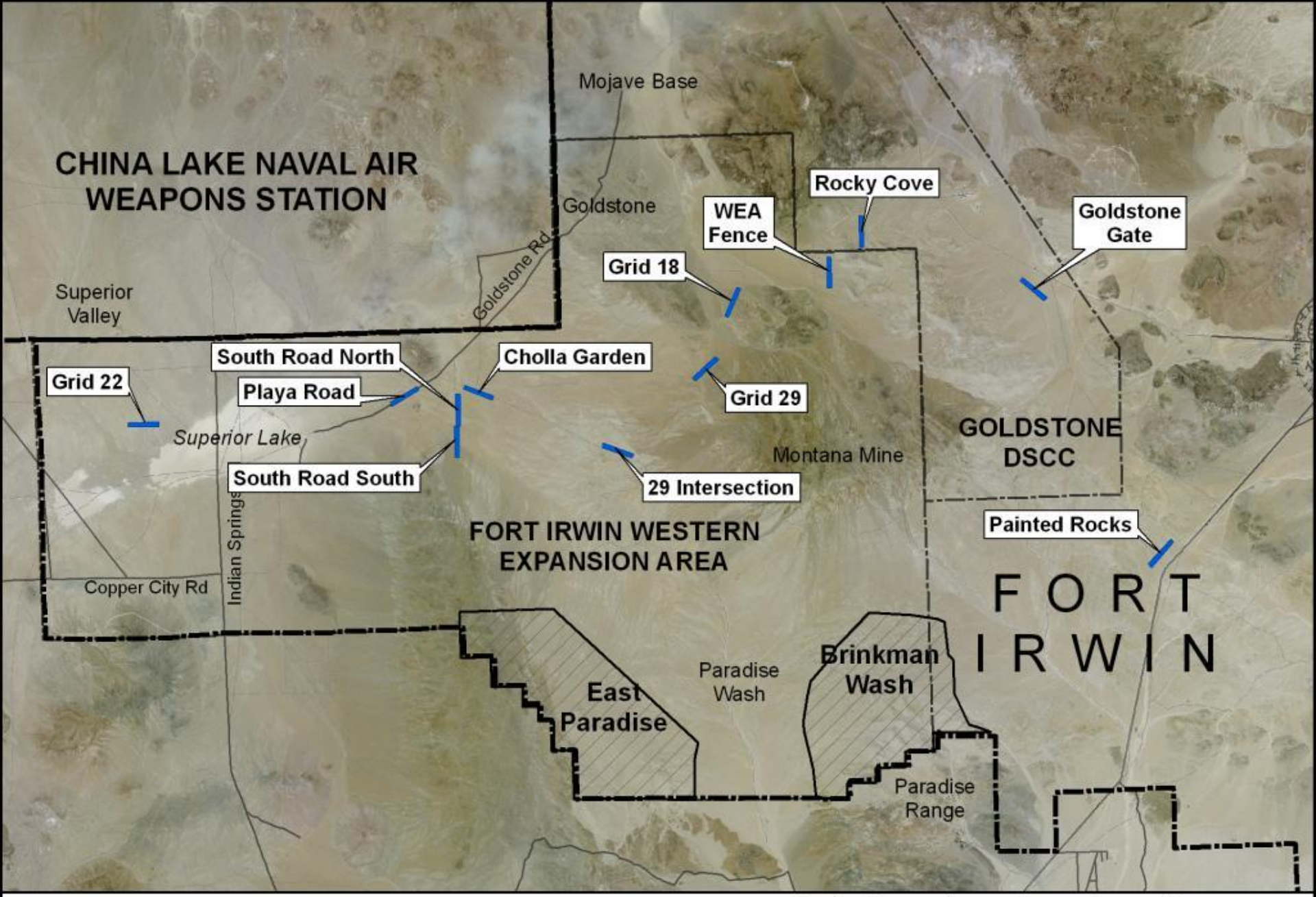
BROUGHT TO YOU BY

STUDY OBJECTIVES

- Compare the effectiveness of MGS detection methods:
  - Live-trapping
  - Trail cameras
  - Recording of vocalization
- Can MGS and round-tailed ground squirrels be distinguished by cameras and vocalizations?


Lone Pine
Owens Lake
190
Olancha
Coso
Inyo County
Tulare County
China Lake Naval Weapons Station
395
Inyokern
RIDGECREST
China Lake NWS
Fort Irwin
Kern County
14
Western Expansion Area Fort Irwin
Fort Irwin
Goldstone Deep Space Communications Complex
Mojave
15
58
BARSTOW
San Bernardino County
Edwards Air Force Base
40
395
LANCASTER
Camera deployment area
0
20
40
60
Kilometers


Haiwee Reservoir
395
Transmission Line
Pumice Mine Rd
Los Angeles Aqueduct
Coso Junction
Gill Station Coso Rd
CHINA LAKE NAVAL WEAPONS STATION
Cinder Rd
Inyo County
China Lake NWS
Kern County
Ft. Irwin
San Bernardino County
Camera trap station
0 1 2 4 6 8 10 Kilometers
0 1 2 4 6 Miles



Camera trap stations (2010)

Camera trap stations

0 1 2 4 6 8 10 Kilometers

0 1 2 4 6 Miles

Camera and audio-recording stations

Trapping grids (2010)

0 1 2 4 6 8 10 Kilometers

0 1 2 4 6 Miles

RESULTS

- Coso – no MGS detections at camera stations
- Ft Irwin WEA – MGS camera detections at five of eight study sites
- Goldstone DSCC – no MGS camera detections
- Ft Irwin proper – RTGS detections in both study sites

FT IRWIN WEA

- Traps used at 4 grids first – Apr 2-7
- Pre-baiting for 2 days, then trapping conducted for 5 days
- Captured MGS were individually marked by shaving fur to produce unique patterns
- Cameras used at same 4 grids – Apr 8-14
- Cameras were operated for 5 days also

2010-04-09 12:09:41 PM M 1/5
98°F
RC60 COVERT
RECONYX

2010-04-09 12:48:04 PM M 3/5
101°F
RC60 COVERT
RECONYX

2010-04-11 11:35:13 AM M 4/5
77°F
RC60 COVERT
RECONYX

2010-06-10 12:22:06 PM M 2/5
96°F
RC60 COVERT
RECONYX

2010-06-11 11:17:11 AM M 3/5
99°F
RC60 COVERT
RECONYX

2010-06-11 11:40:04 AM M 1/5
107°F
RC60 COVERT
RECONYX

2010-06-08 3:24:24 AM M 1/5
79°F
RC60 COVERT
RECONYX

Traps vs. Cameras

Grid Name	Trap Detections (individuals)	Camera Detections (min.no.individuals)
Grid 29	2 F	3 F
Playa Road	1 F, 1 M	2 F, 1 M
S Road North	4 F, 4 M	5 F, 4 M
Cholla Garden	2 F	3 F, 1 M

Detection Rates

- Cameras with detections = 28/56
- Camera-days with detections = 76/280
- Total camera visits per grid (14 cameras over 5 days) = 95, 14, 174, 157
- Traps with captures = 20/400
- Trap-days with captures = 24/2000

Camera Advantages

- Detect MGS if they are present, with roughly the same or greater effectiveness as traps
- Operators do not require special qualifications or experience
- Can be used in hot or cold weather with no danger to animals
- Document activity patterns during the day and behavioral interactions

Trapping Advantages

- Collect definitive demographic data: sex, age, reproductive condition
- By marking animals, gain an indication of abundance
- Trapping is essential to obtain tissue samples for genetic work or to radio-tag individuals
- It all depends on your objectives