

Monitoring Bats on the Lower Colorado River

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Study Objectives

- 1) To determine distribution of two covered, and two evaluation MSCP bat species within the study area during all seasons of the year.
- 2) To determine habitat use by the four species during all seasons.
- 3) Evaluate migration patterns of bats along the LCR.

MSCP Species



Western yellow bat



Townsend's big-eared bat



Western red bat



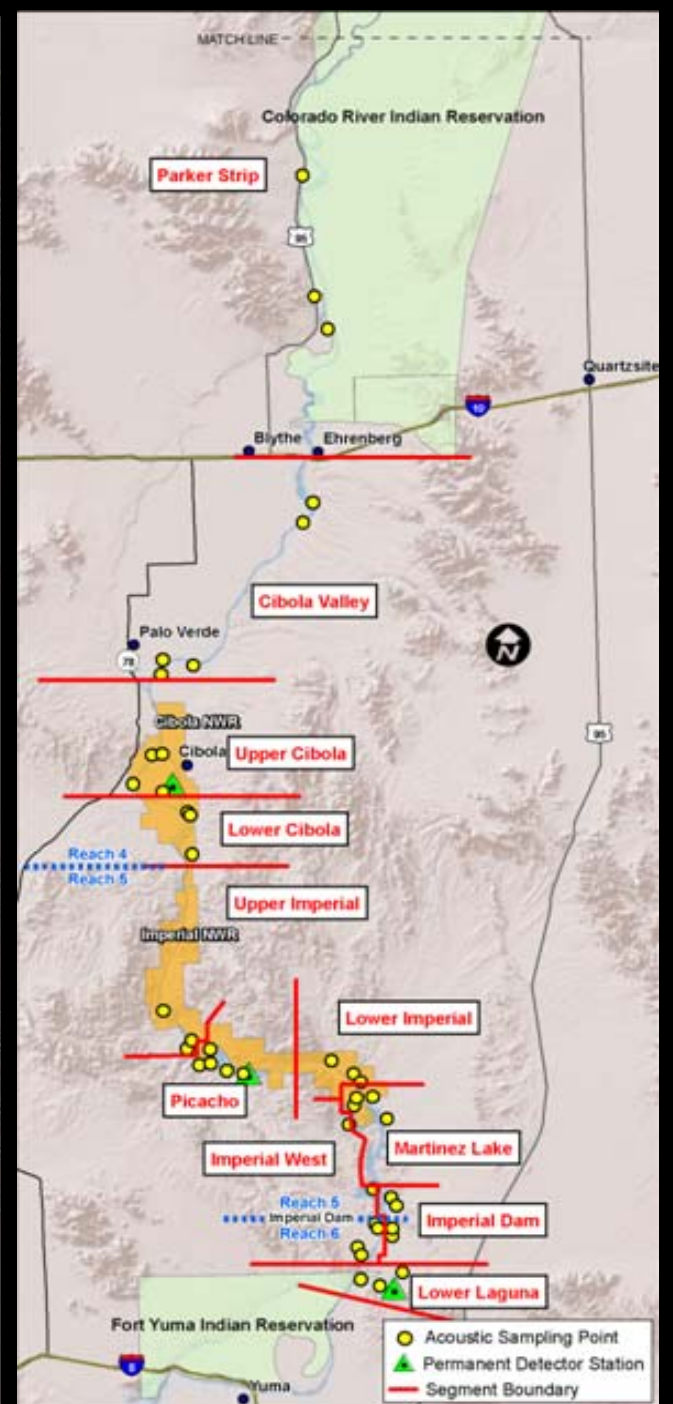
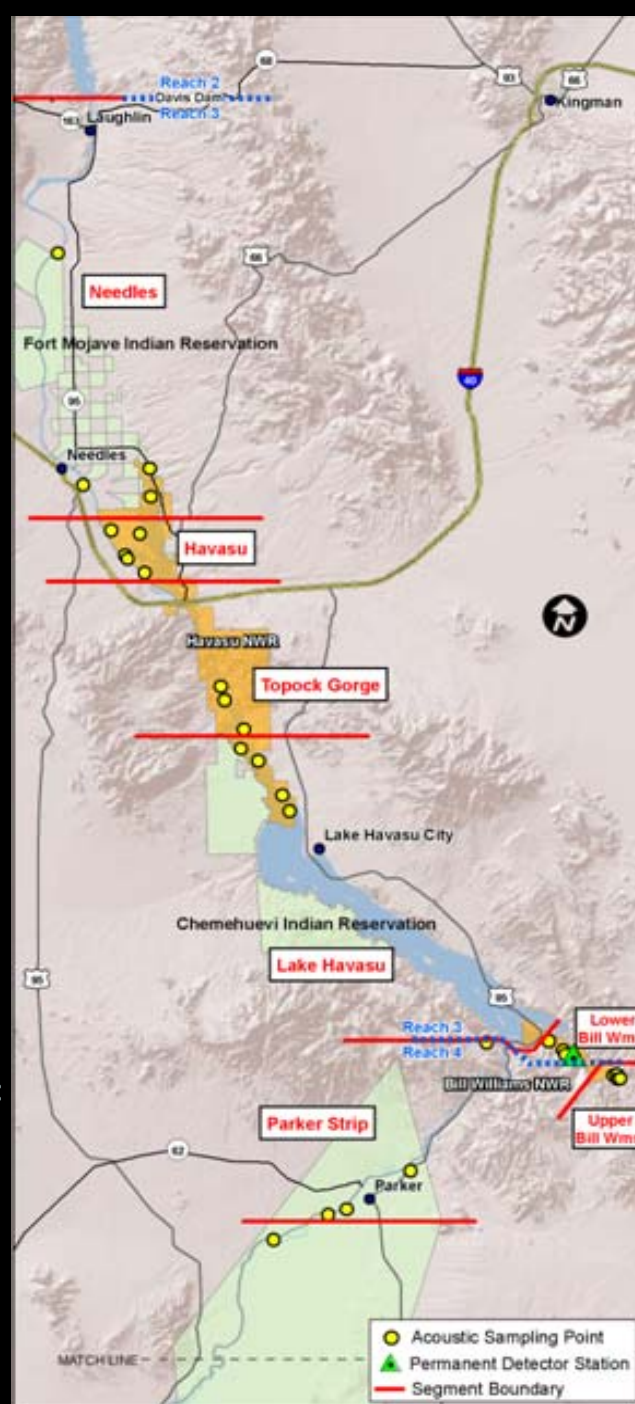
California leaf-nosed bat

Study Area

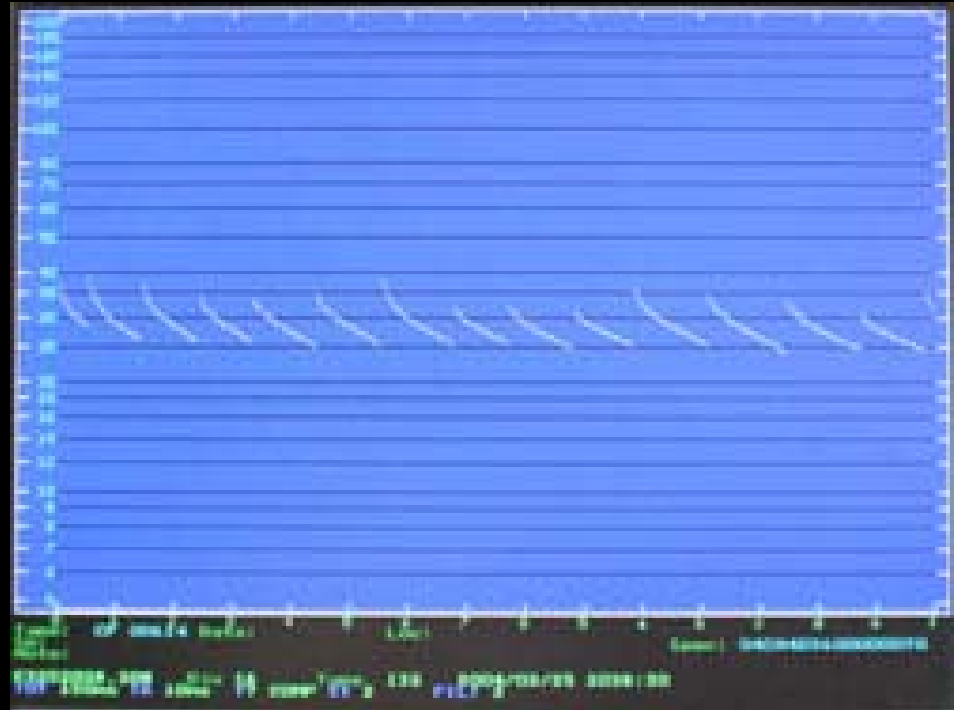


Study Area

3 Reaches X
6 Segments X
4 Vegetation types =
72 Sampling points
For 4 seasons

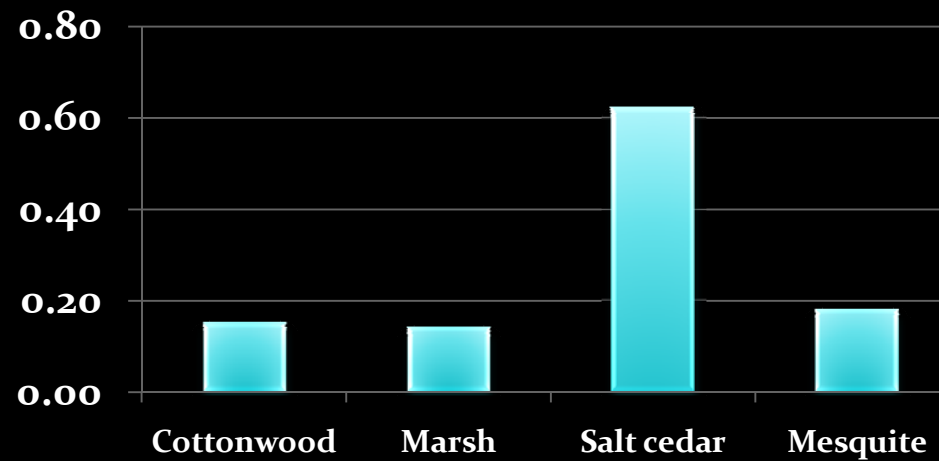


Acoustic Sampling



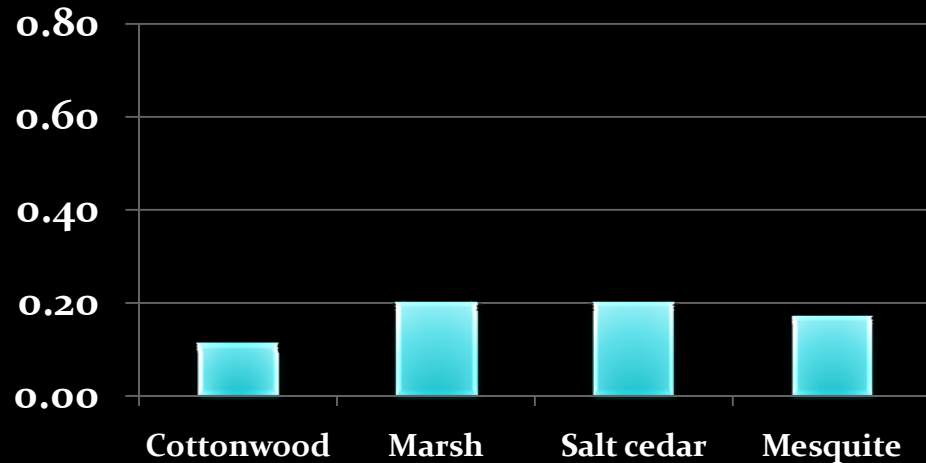
Detection Rates by Vegetation Types

Western red bat



Spring 08

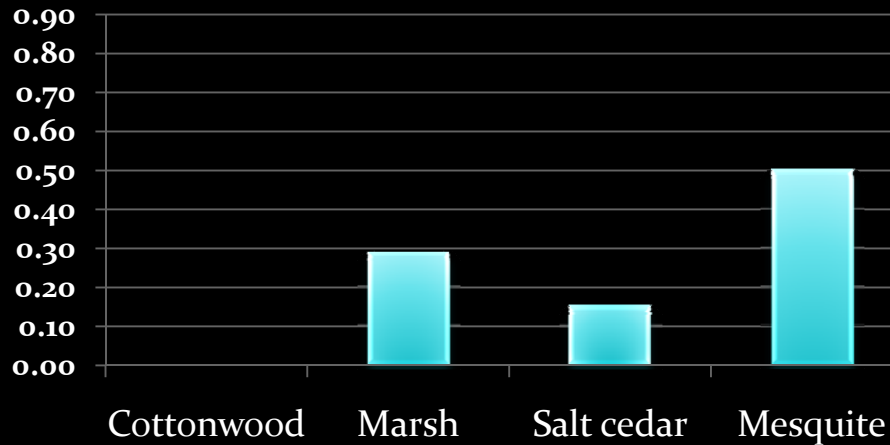
Western red bat



Summer 08

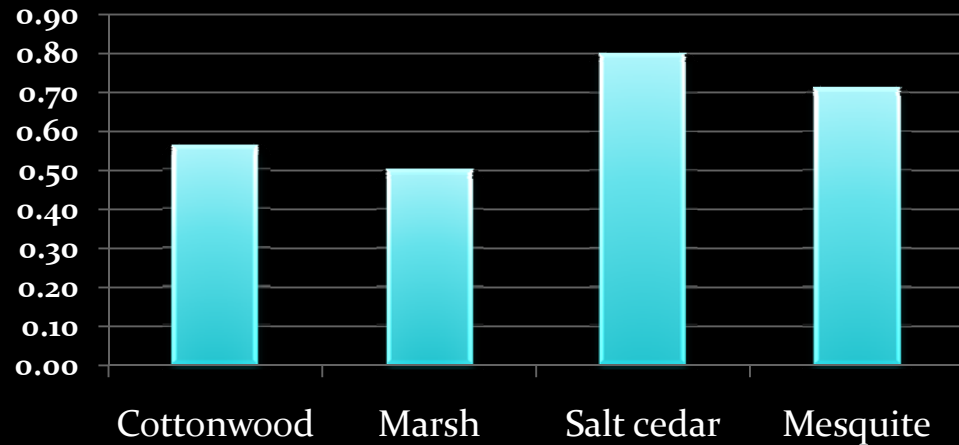
Detection Rates by Vegetation Types

Western yellow bat



Spring 08

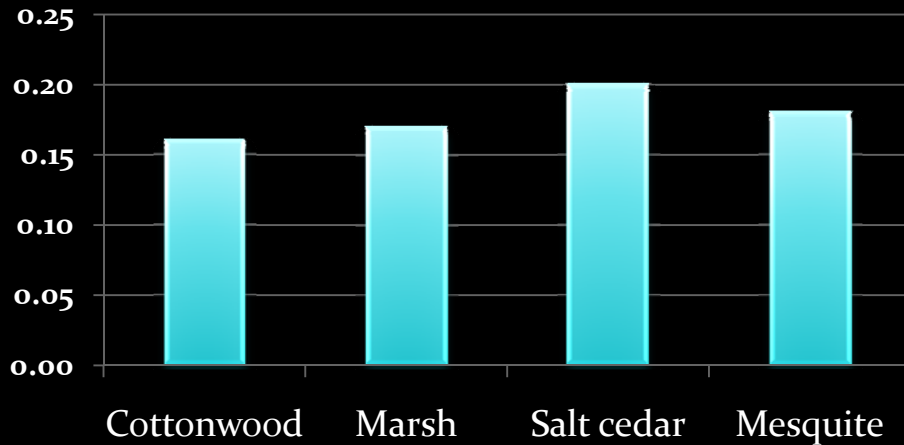
Western yellow bat



Summer 08

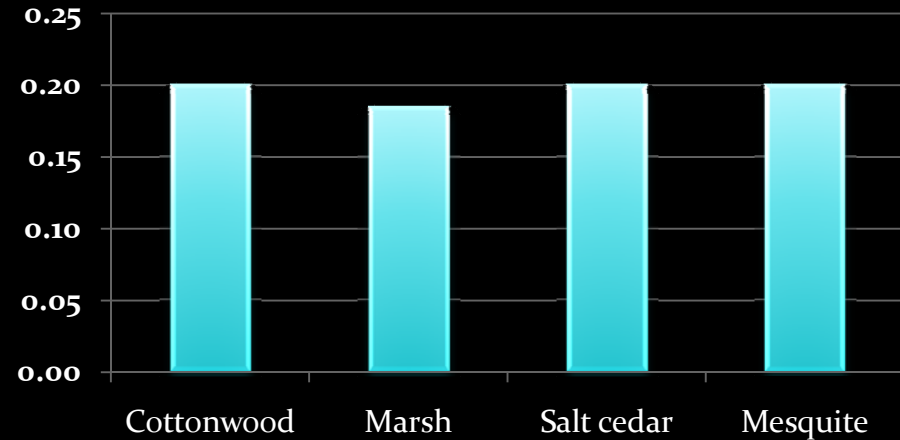
Detection Rates by Vegetation Types

California leaf-nosed bat



Spring 08

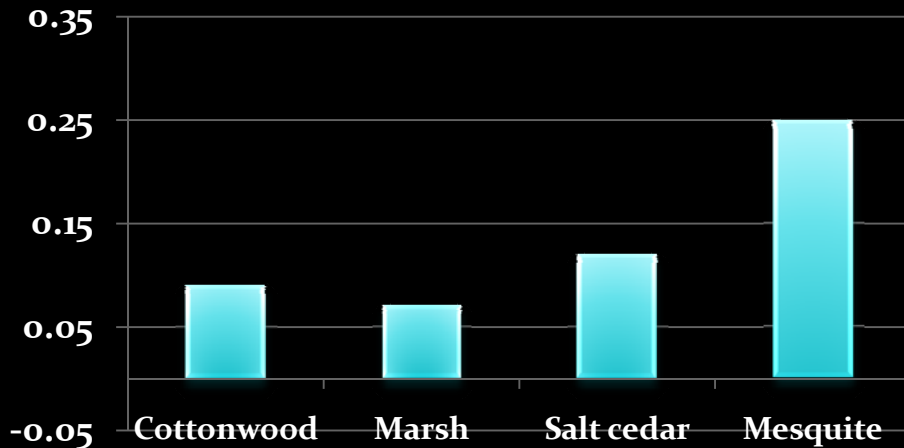
California leaf-nosed bat



Summer 08

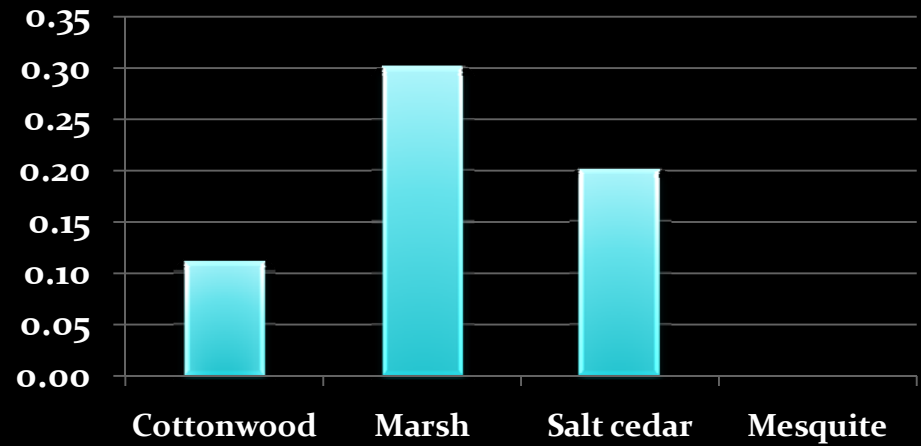
Detection Rates by Vegetation Types

Townsend's big-eared bat



Spring 08

Townsend's big-eared bat



Summer 08

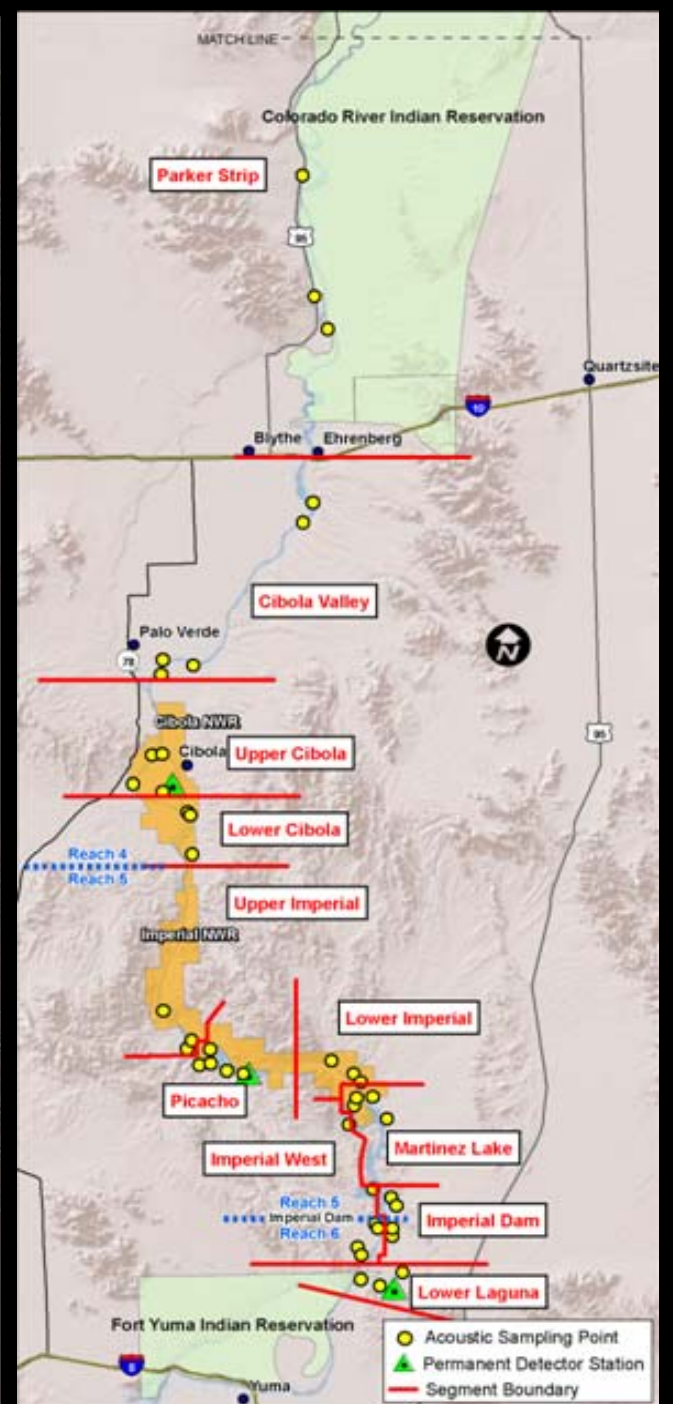
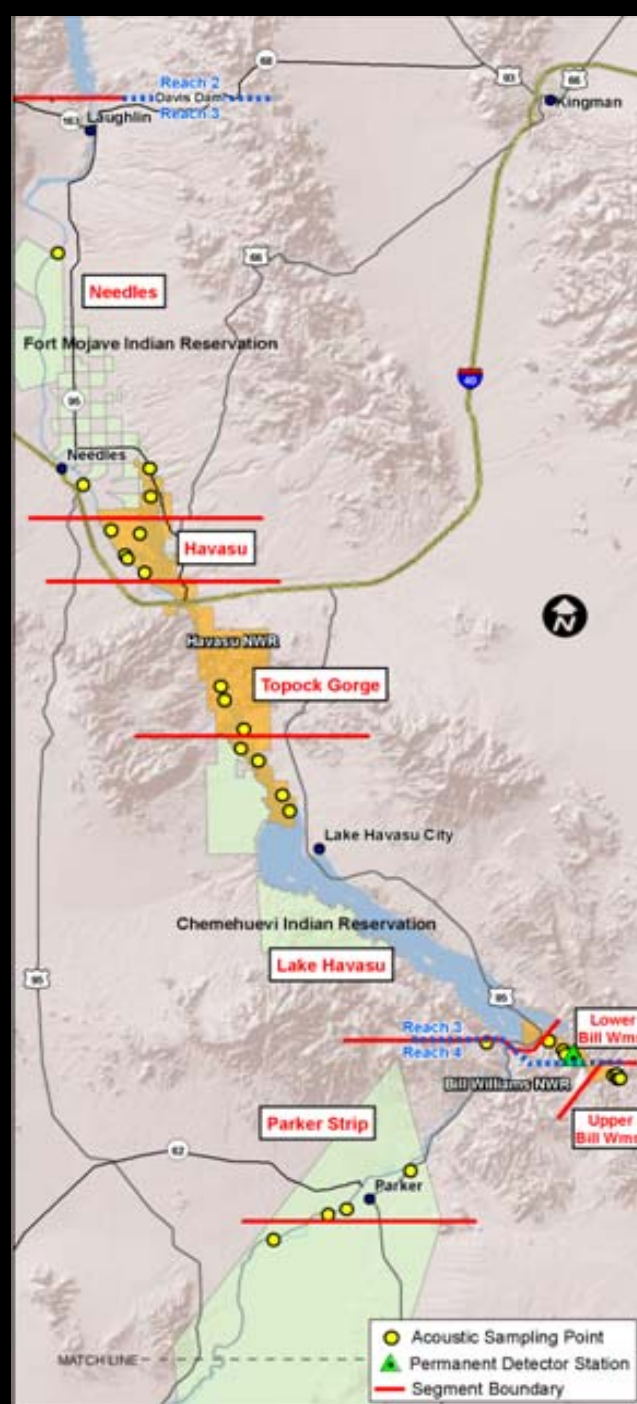
Acoustic Permanent Stations



Cibola Permanent
Station

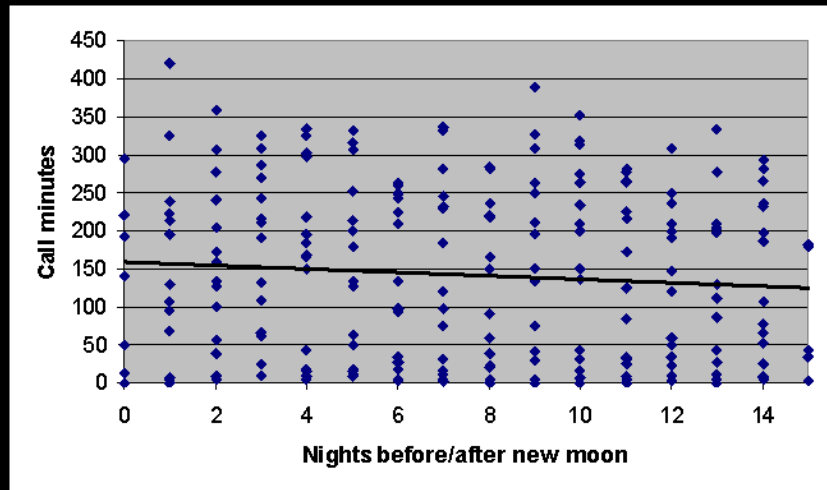
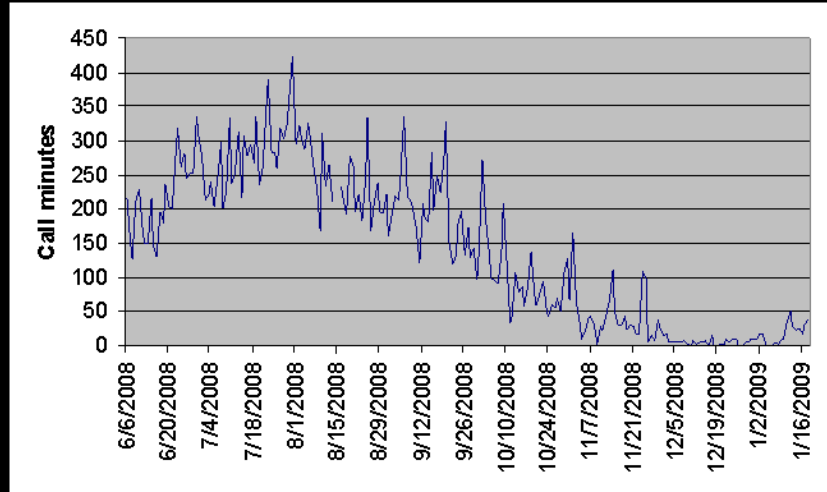
- Picacho State Recreation Area
- Mitty Lake Wildlife Area
- Cibola National Wildlife Refuge
- Bill Williams River National Wildlife Refuge

Permanent Stations



Preliminary Results For Permanent Stations

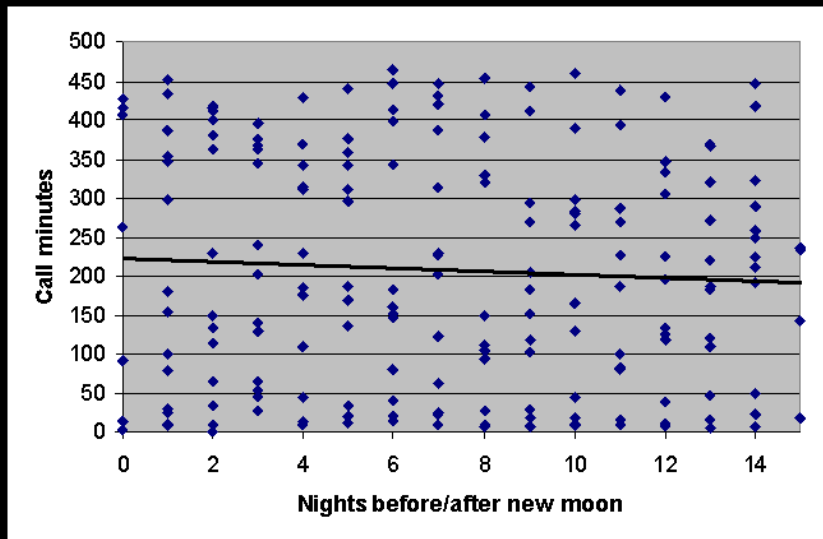
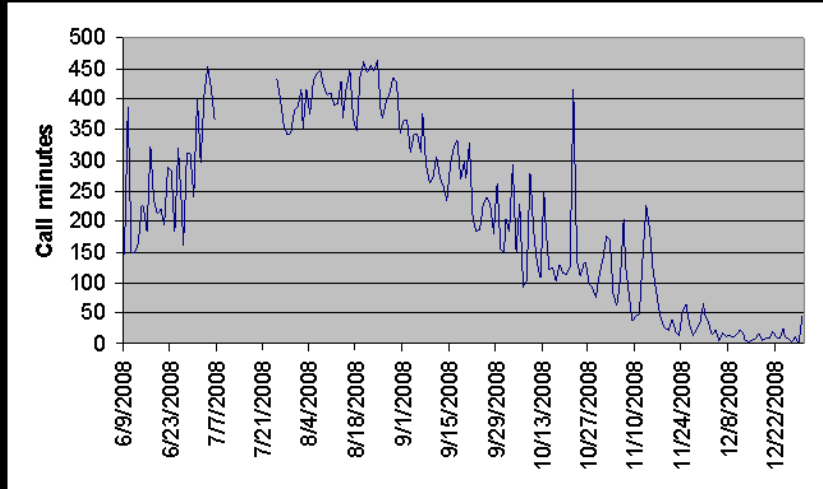
P
I
C
A
C
H
O



R squared = 0.0071

B
I
L
L
W
I
L
L
I
A
M
S

Preliminary Results For Permanent Stations

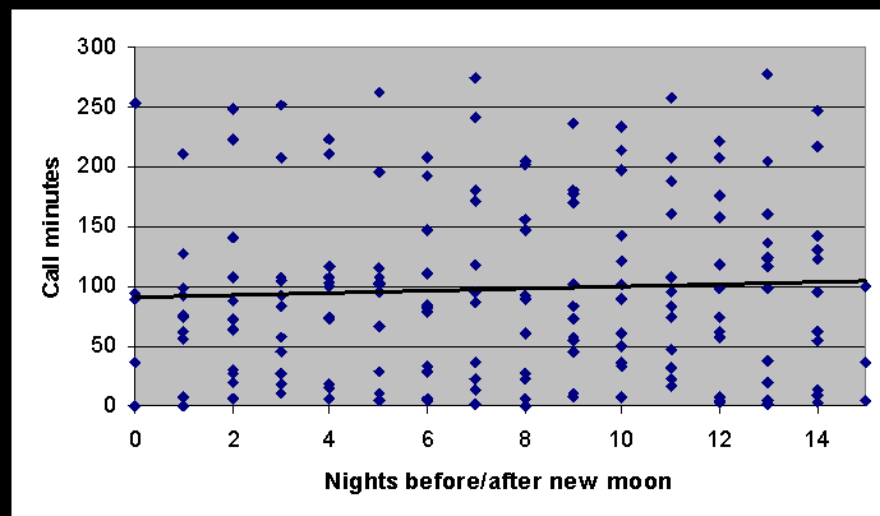
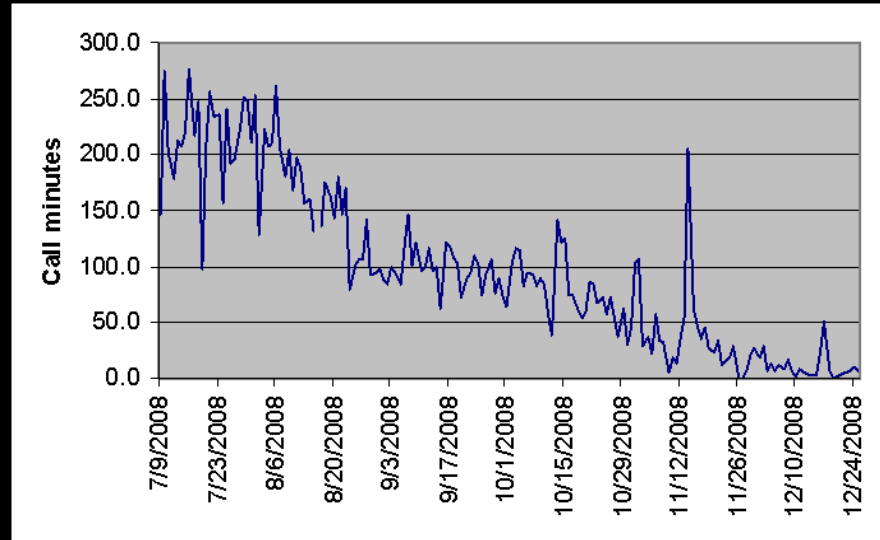


R squared = 0.0036

Preliminary Results For Permanent Stations

M
I
T
T
R
Y

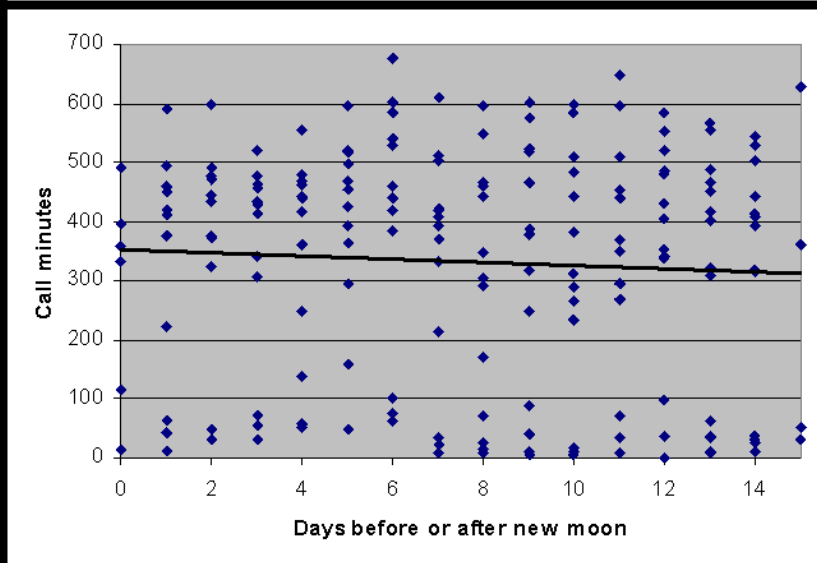
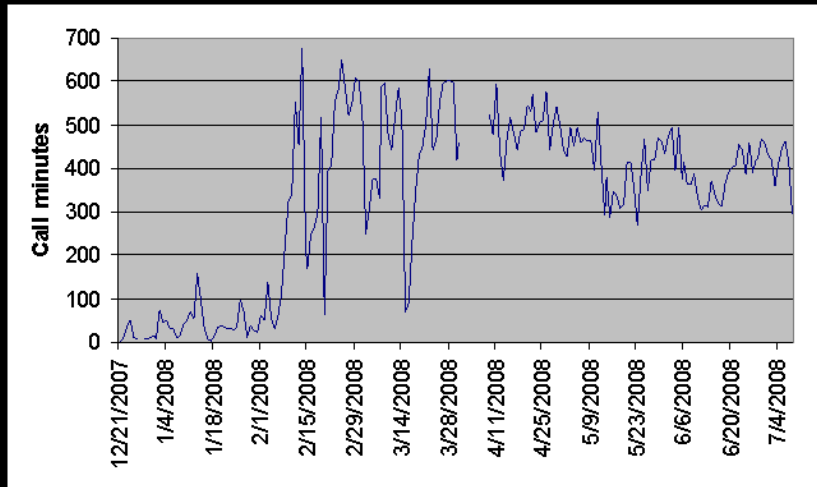
L
A
K
E



R squared = 0.0022

Preliminary Results For Permanent Stations

I
M
P
E
R
I
A
L

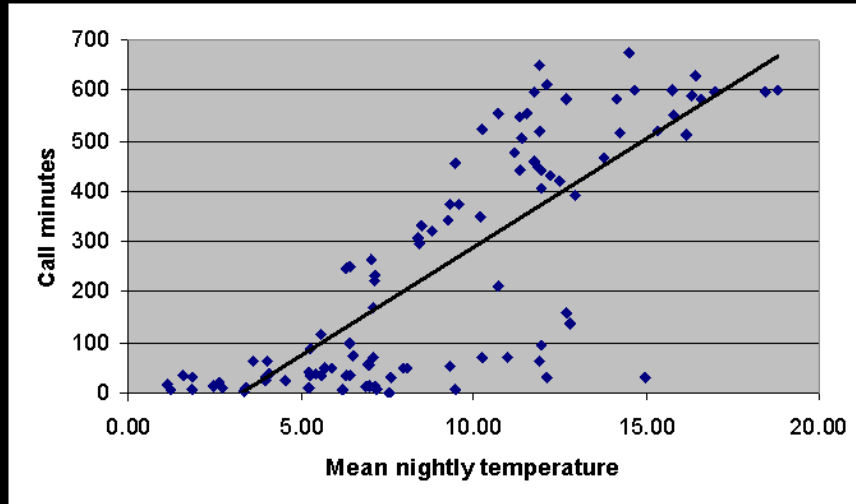


$$r^2=0.003$$

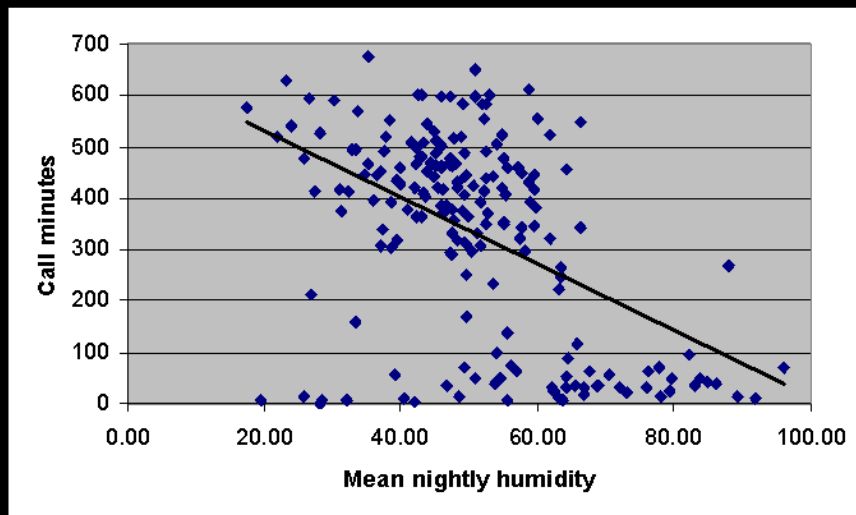
Preliminary Results

For Permanent Stations (12/07 – 03/08)

I
M
P
E
R
I
A
L



Relationship between call minutes and mean nightly temperatures ($r^2 = 0.639$).



Relationship between call minutes and mean nightly humidity ($r^2 = 0.238$).

Future plans...

- Analyze distribution of 4 MSCP species
- Refine and standardize call analysis techniques
- Conduct vegetation analysis at the 72 points
- Construct occupancy models and correlate these with habitat characteristics
- Continue sampling

Special Thanks to:

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