

Temporal distribution of western red bats, western yellow bats, pale Townsend's big-eared bat and California leaf-nosed bat as determined by acoustic sampling along the LCR



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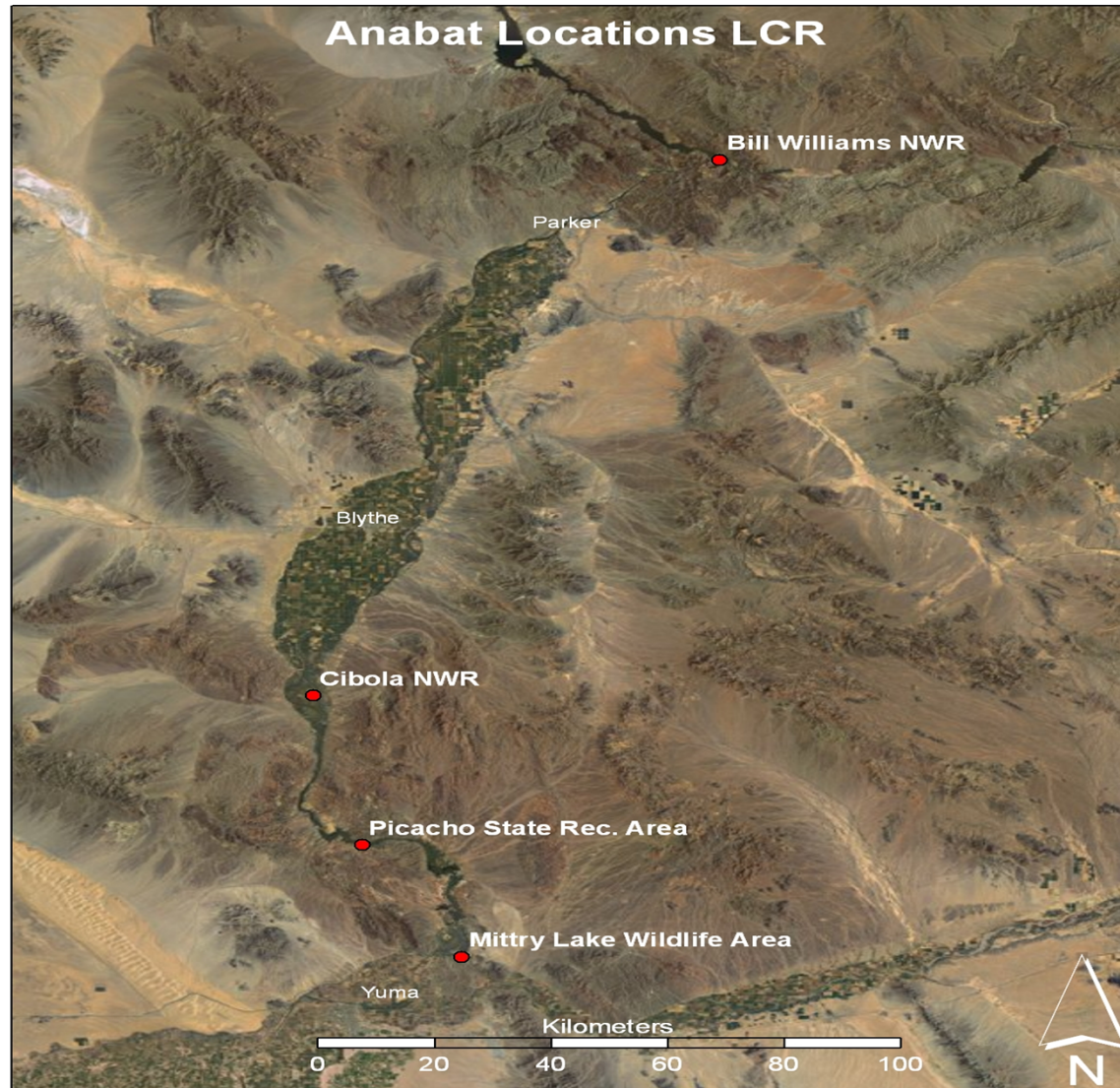
# The LCR MSCP

- A 50-year cooperative Federal-State-Tribal-County-Private partnership responding to the need to balance the use of LCR water resources and the conservation of native species.
- Works toward the recovery of listed species through habitat and species conservation and reduces the likelihood of additional species listings under the Endangered Species Act.
- Permanent acoustic monitoring stations help address the data gaps necessary to implement the conservation needs for the 4 focal species.

# Objectives

- Continue collecting and analyzing acoustic data from four permanent stations along the LCR which started in 2008.
- Better assess seasonal activity of the 4 focal species.

# Anabat Locations LCR



# Methods



# Permanent Anabat Stations

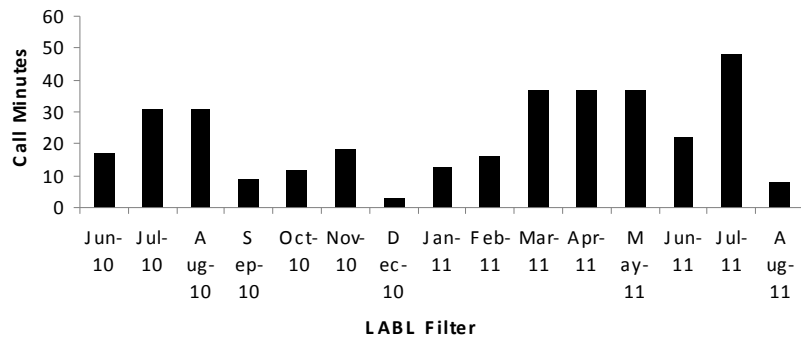
- We placed Anabat detectors at 4 locations with varying habitats along the LCR.
- We recorded calls from June 2010 through July (Picacho), August (Mittry Lake), September (Cibola) and October (Bill Williams) 2011.
- Analyzing Calls
- Call Minutes
- Filtered vs. Verified Data

# Preliminary Results

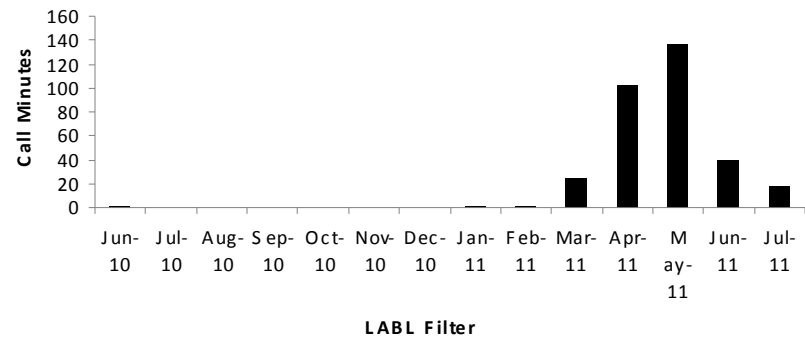
- Picacho and Cibola malfunctions
- 586,559 total call files recorded
- 441,550 (75%) usable call files
- Filtered focal species activity (call minutes)
- Western red bat: Bill Williams
- Western yellow bat: Mittry Lake
- California leaf-nosed/Townsend's big-eared bat: Cibola NWR

# Filtered Western Red Bat Activity

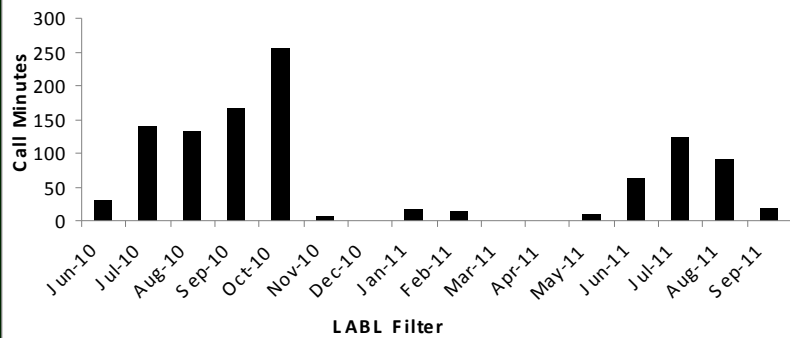
## Mittry Lake



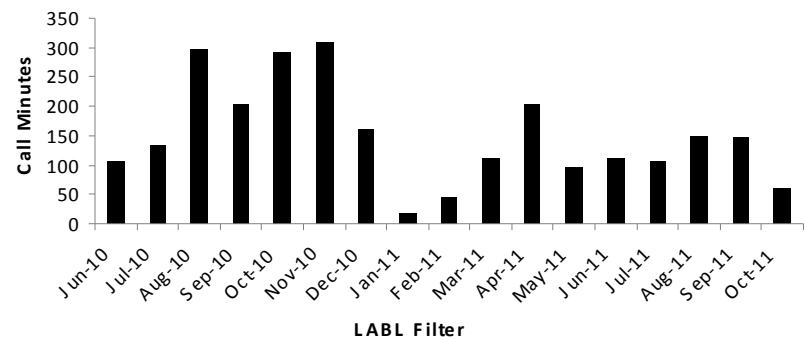
## Picacho



## Cibola NWR



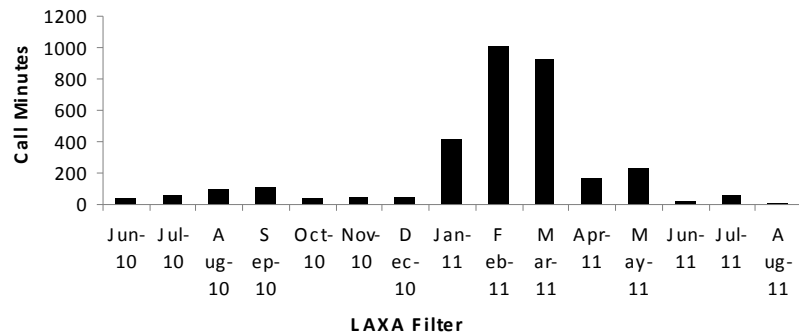
## Bill Williams NWR



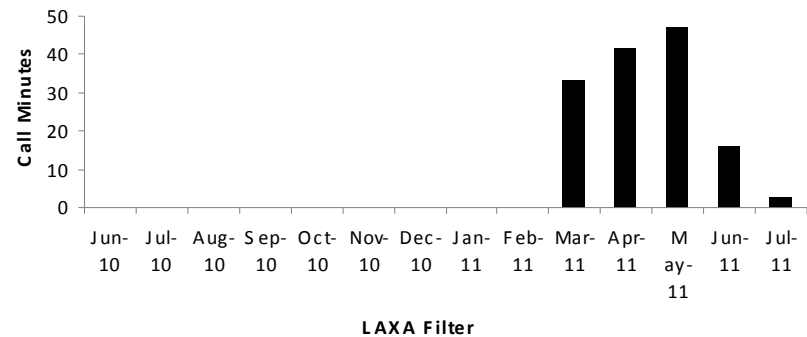


# Filtered Western Yellow Bat Activity

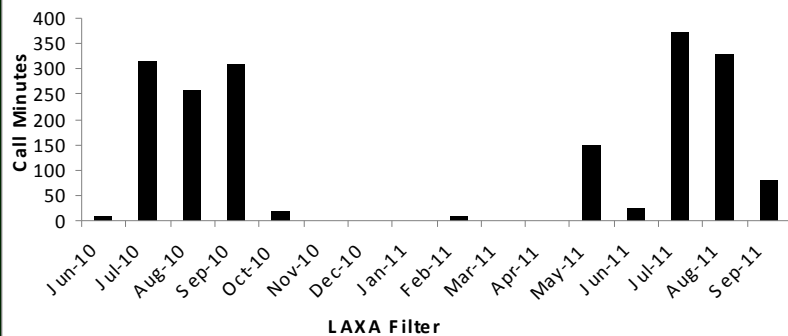
## Mittry Lake



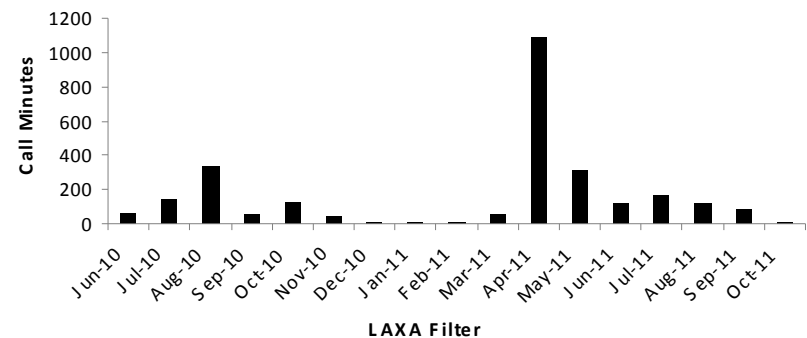
## Picacho



## Cibola NWR

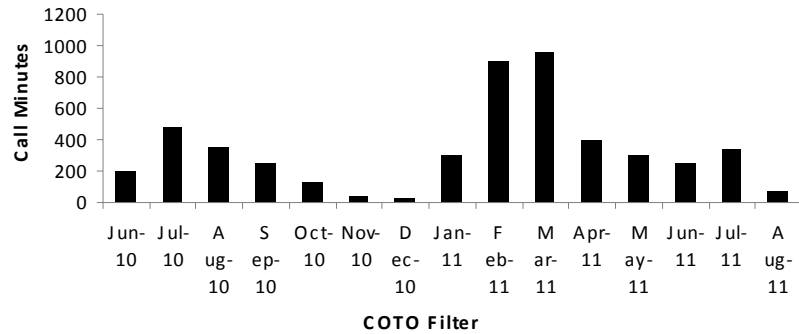


## Bill Williams NWR

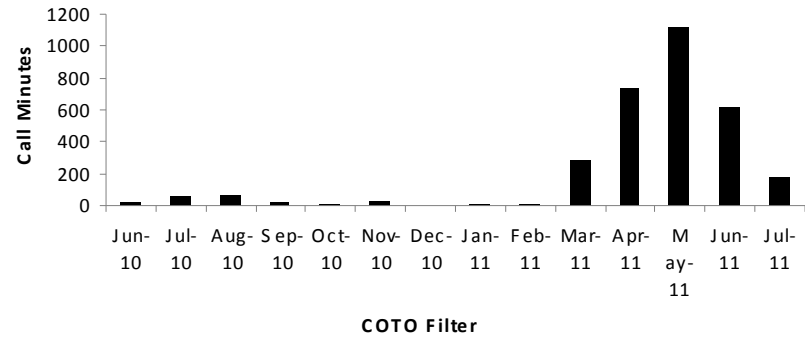


# Filtered Townsend's Big-Eared Bat Activity

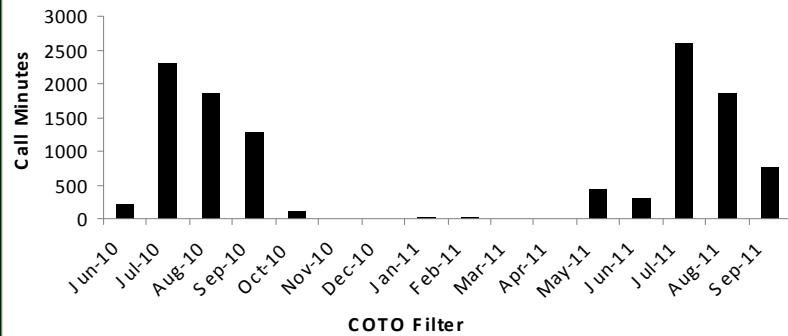
## Mittry Lake



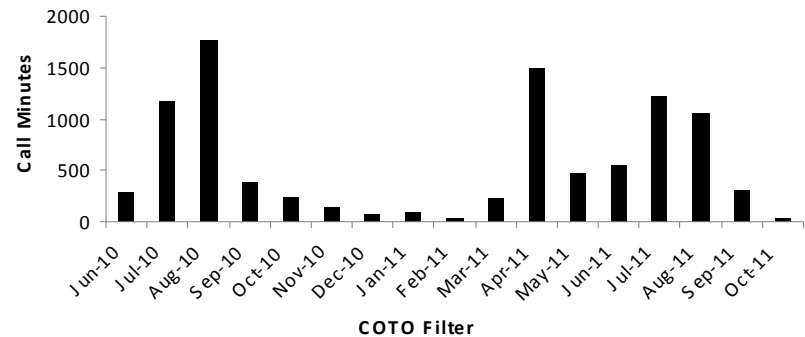
## Picacho



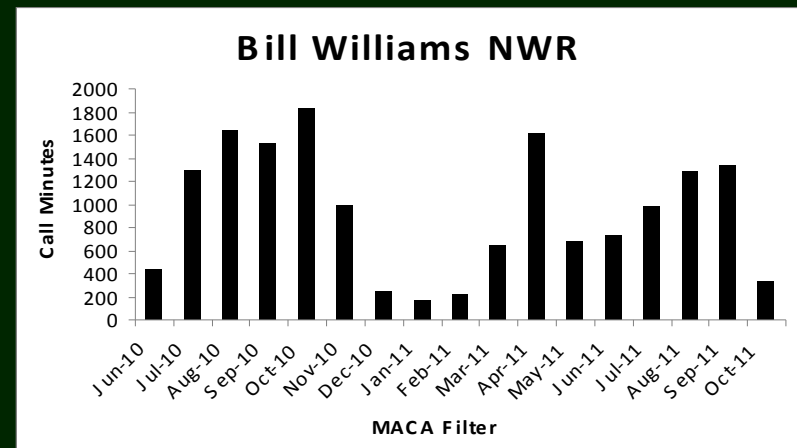
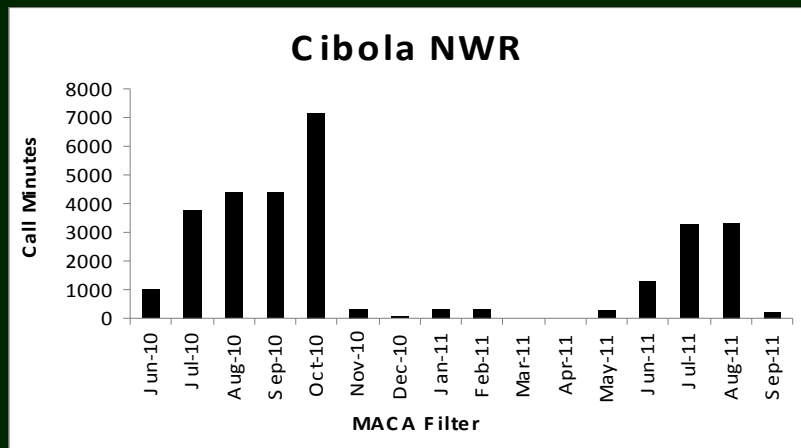
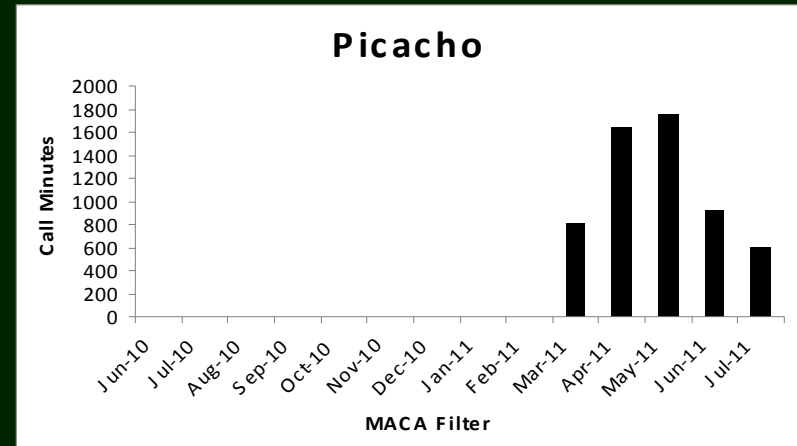
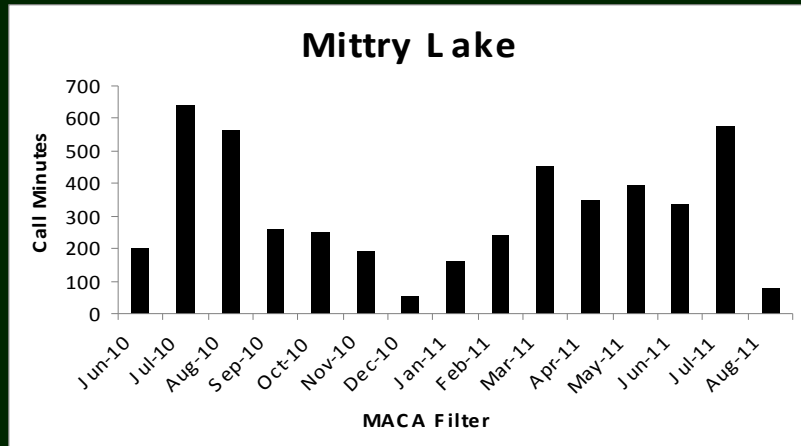
## Cibola NWR



## Bill Williams NWR

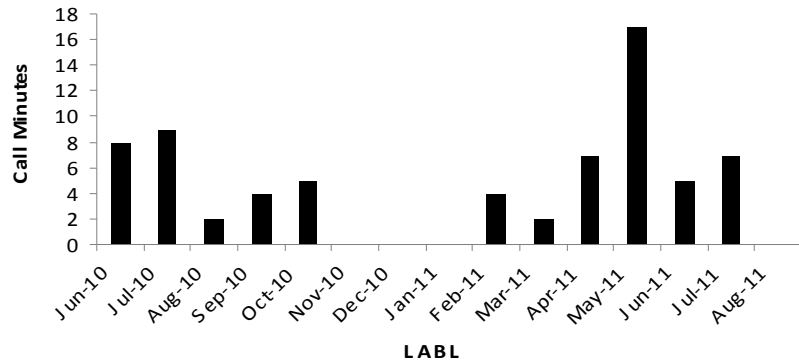


# Filtered California Leaf-Nosed Bat Activity

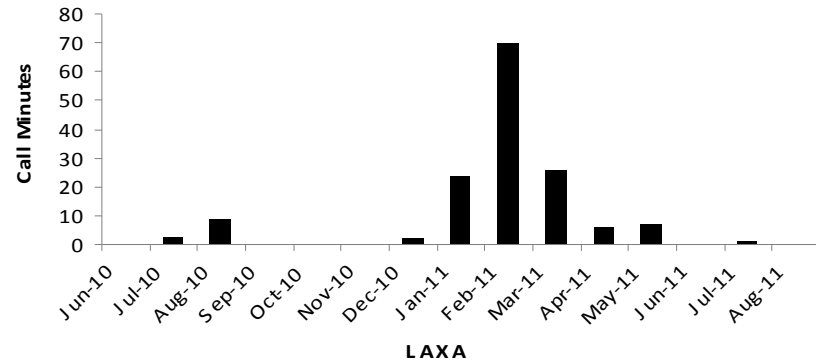


# Verified Mittry Lake Call Minutes

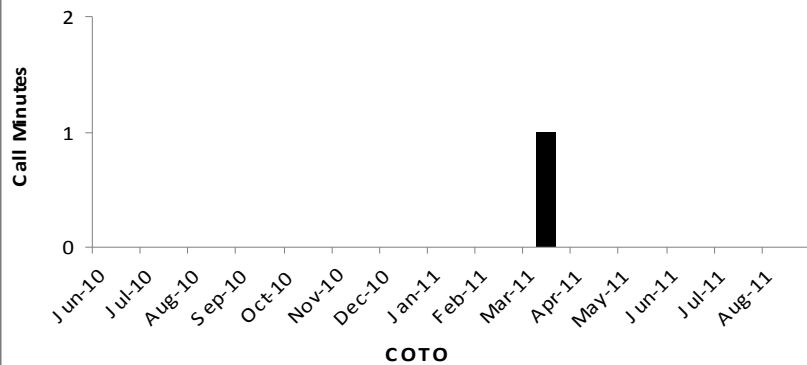
## Western Red Bat



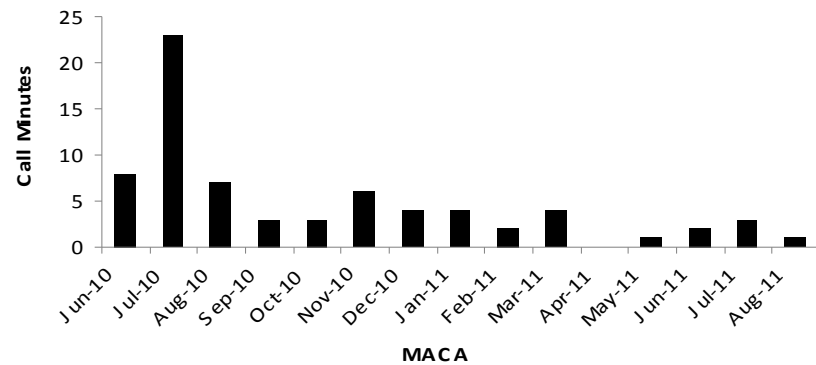
## Western Yellow Bat



## Townsend's big-eared bat

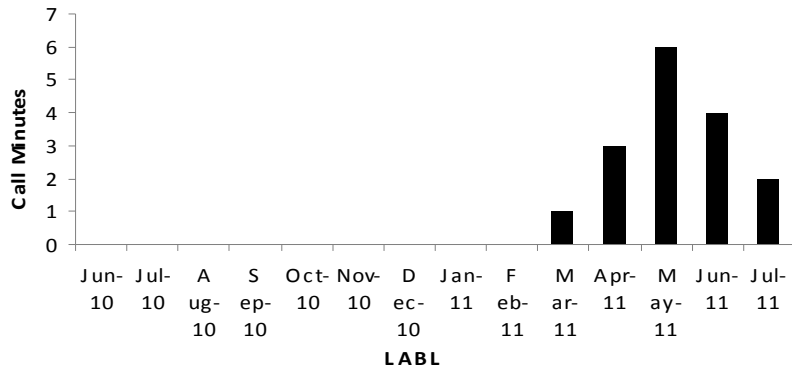


## California Leaf-Nosed Bat

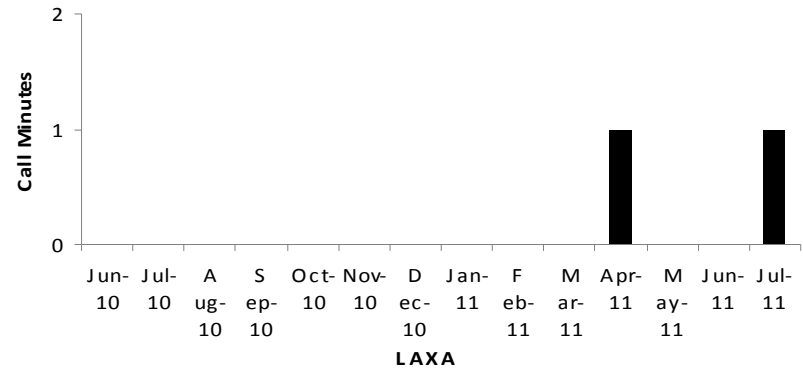


# Verified Picacho Call Minutes

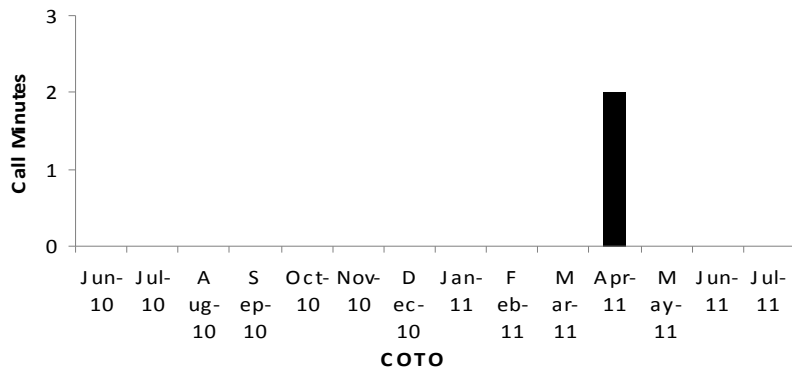
## Western Red Bat



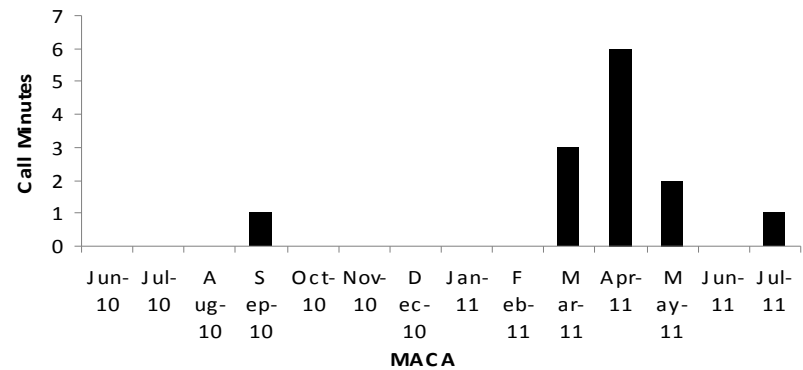
## Western Yellow Bat



## Townsend's Big-Eared Bat



## California Leaf-Nosed Bat



# Acknowledgements

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Questions?