

# ROOST SURVEYS AND MONITORING FOR LCR BATS



Homestake Mine



**Funding provided by  
Bureau of Reclamation &  
Bureau of Land Management**

to Patricia Brown, Ph.D.  
Brown-Berry Biological Consulting

# ROOST SURVEY GOALS

- To monitor and census colonial bat roosts, with emphasis on LCR MSCP covered and indicator species
- To identify potential species-specific threats to bat roost sites
- To assist in the protection of critical roosts

# Mine Selection Criteria

- Historic roosts
- LCR MSCP Species
- Maternity colonies
- Large colonies
- Accessible
- Protected by gates or location
- Different areas along the LCR

# Townsend's big-eared bat



*Corynorhinus townsendii*

## ***Townsend's Big-eared Bat***



**Alice Mine, Riverside Mountains**



**Historically large colonies in abandoned mines along the Colorado River**

**Foraged in cottonwood riparian**

**Marked declines attributable to loss of cottonwood riparian and roost disturbance**



*Macrotus californicus*  
California Leaf-nosed bat



11/11/03





# Winter Roost



# Banded Macrotus released



# Foraging Habitat





**Tree Lizard Chewed by Macrotus**



23 4:02 PM

# Lizard Entrails on Bat Gate



# Cibola NWR Bridge



**Cave Myotis**  
*Myotis velifer*





# Arizona myotis



1  
AC 2457  
*Myotis occultus*  
LOS ANGELES

*Myotis*  
L. A. CO.

*Myotis occultus*



*Myotis occultus* were "shot over water in a back eddy of the river. Here the bats arrived in considerable numbers at early dusk to drink, flitting down to the water's surface and dipping several times before flying off among the willows and cottonwoods" (Grinnell, 1914).

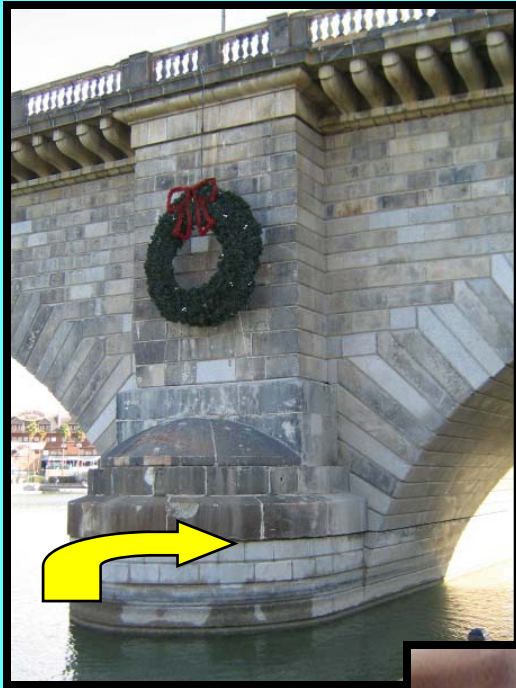


# Palo Verde Bridge



# London Bridge

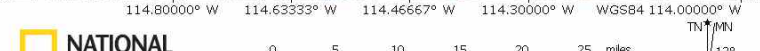
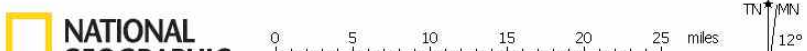
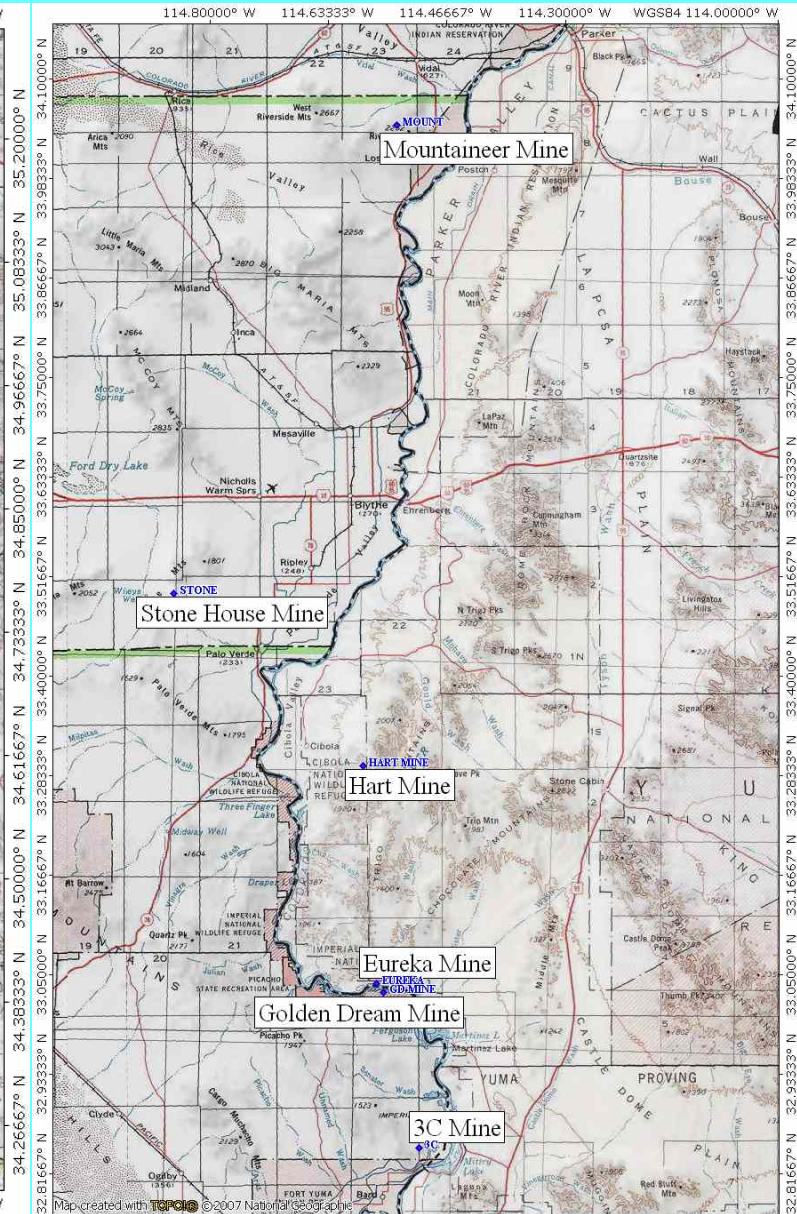
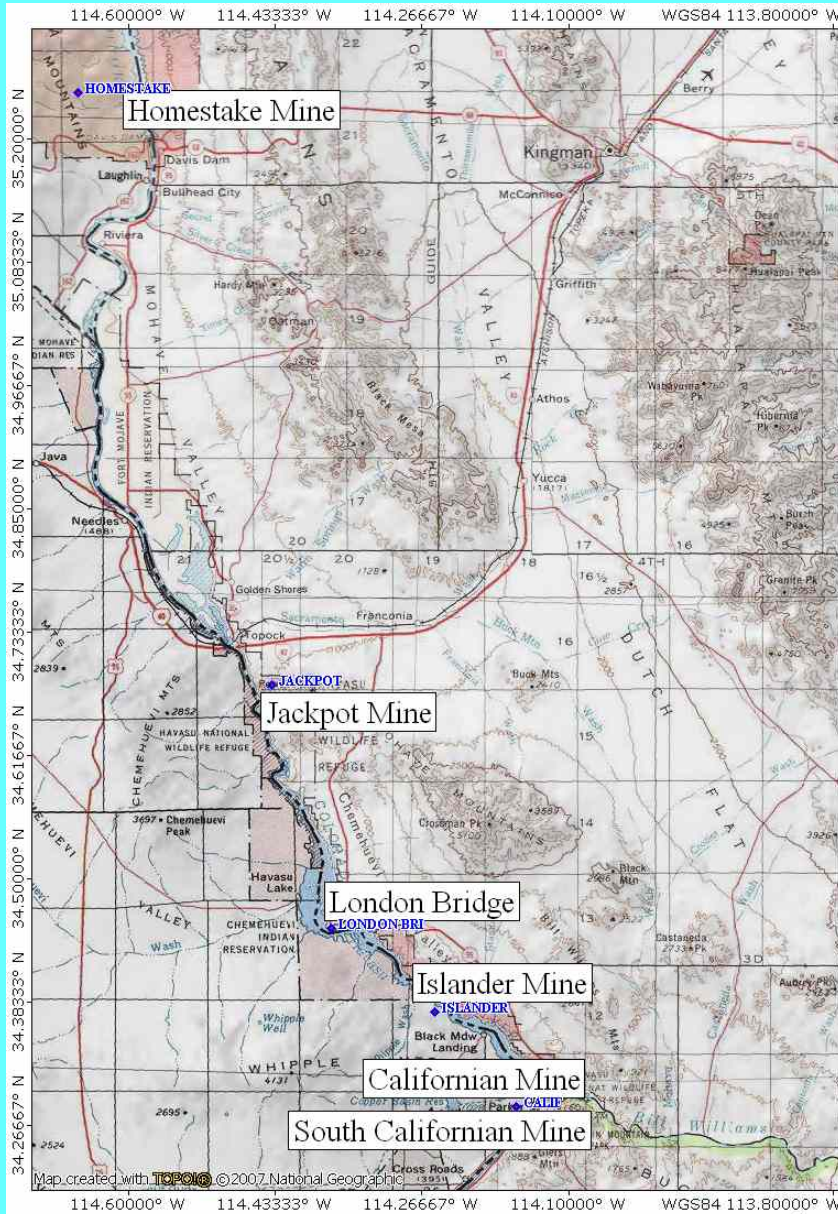
## Yuma Myotis Bat Roost



**Bat Exit Crack**



# LCR Mine Locations



Mine name	Ownership	State	Bat Species	Survey Months	Exit Counts	Gate
Homestake Shafts	LMNRA	NV	<b>Maca</b> , Myve	Ja/F and Ap/May	Ja/F=~250; Ap/My=~75	some
Jackpot	HNWR	AZ	<b>Maca</b> , <b>Myve</b>	Ja/F and Ap/May	Ja/F=~800; Ap/My=~1,000	no
Gold Dome	HNWR	AZ	<b>Maca</b> , Myve, Myyu	Ja/F and Ap/May	Ja/F=~50; Ap/My=~150	no
Islander	Lake Havasu BLM	CA	<b>Maca</b> , <b>Myyu</b> , Tabr	Ja/F and Ap/May	Ja/F=~30*; Ap/My=~5,500	some
Californian	Lake Havasu BLM	CA	<b>Maca</b> , <b>Myve</b>	Ja/F and Ap/May	Ja/F=~500; Ap/My=~4,500	no
South Californian	Lake Havasu BLM	CA	<b>Maca</b> , <b>Myve</b> , <b>Myyu</b>	Ja/F and Ap/May	Ja/F=~25; Ap/My=~300	yes
Mountaineer	Palm Springs BLM	CA	<b>Maca</b> , <b>Coto</b> , <b>Myve?</b> , <b>Epfu</b> , <b>Anpa</b> , Myyu, Tabr	Ja/F and Ap/May	Ja/F=~700; Ap/My=capture	scheduled?
Stonehouse (Hodge)	Palm Springs BLM	CA	<b>Maca</b> , <b>Myve</b>	Ja/F and Ap/May	Ja/F=~4,000; Ap/My=~2,000	yes
Hart	Yuma BLM	AZ	<b>Maca</b>	Ja/F and Ap/May	Ja/F=~2,000; Ap/My=~500	yes
Eureka	INWR	AZ	<b>Maca</b> , <b>Myyu</b>	Ap/May	~3,000	yes
Golden Dream 1	INWR	CA	<b>Myyu</b>	Ap/May	~1,000	no
Golden Dream 4	INWR	CA	<b>Maca</b>	Ap/May	~400	no
3C	EI Centro/Yuma BLM	CA	<b>Maca</b> , <b>Myyu</b>	Ja/F and Ap/May	Ja/F=~2,000; Ap/My=~3,000	yes
Key					* sometimes 1,000s Tabr	
California leaf-nosed	<i>Macrotus californicus</i> (Maca)		<b>red = maternity in April/May</b>			
Cave myotis	<i>Myotis velifer</i> (Myve)					
Yuma myotis	<i>Myotis yumanensis</i> (Myyu)					
Townsend's big-eared	<i>Corynorhinus townsendii</i> (Coto)					
Pallid bat	<i>Antrozous pallidus</i> (Anpa)					
Big brown bat	<i>Eptesicus fuscus</i> (Epfu)					
Mexican free-tailed bat	<i>Tadarida brasiliensis</i> (Tabr)					

## External Mine Surveys



Pat in Californian Mine 1975

# Macrotus Moon Phase Effect

## January 2003

**Mine**

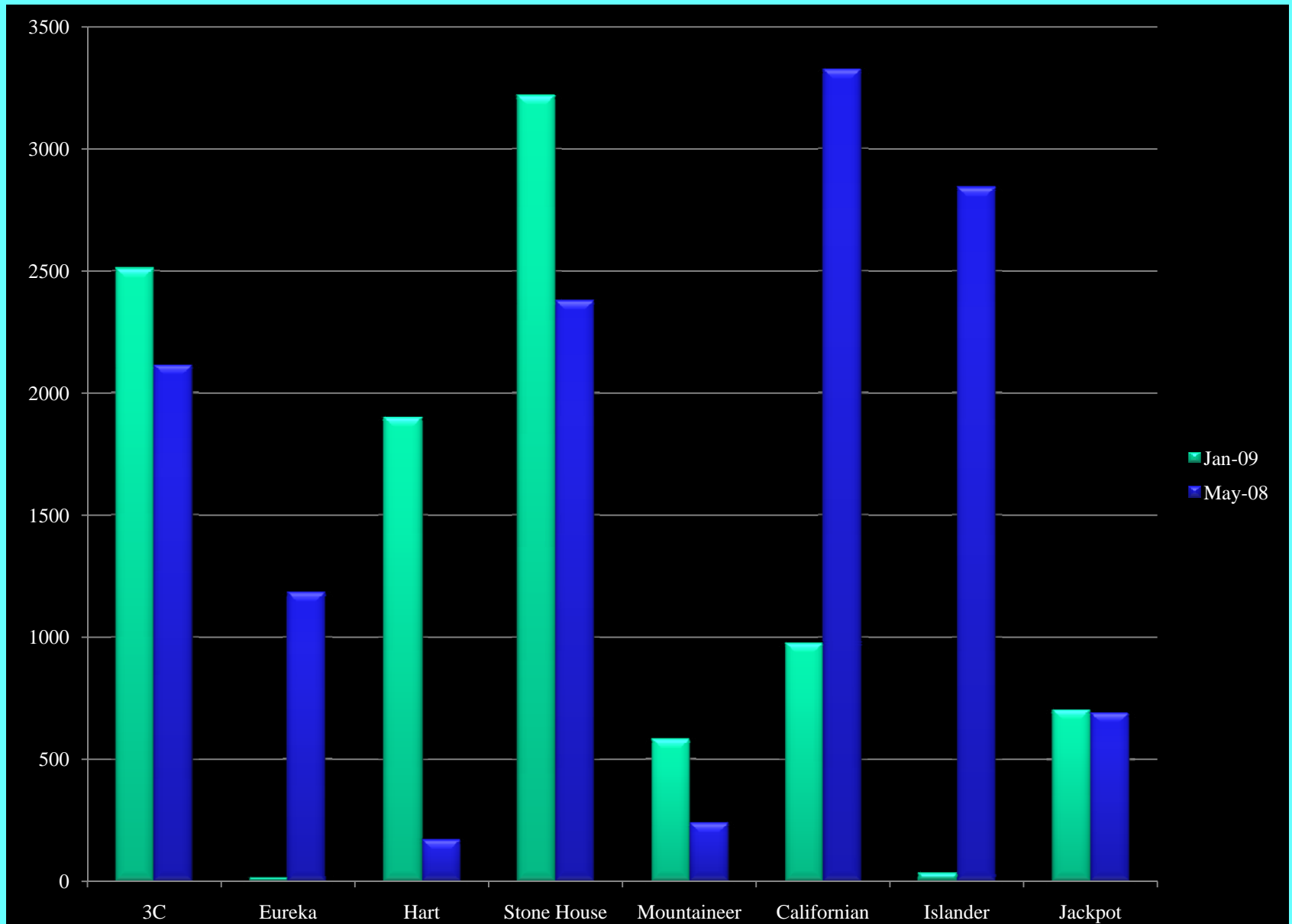
**Exit Count**

		<b>Moon</b>	<b>No Moon</b>
<b>3 C</b>		<b>1515</b>	<b>2491</b>
<b>Queen</b>		<b>26</b>	<b>144</b>
<b>American Boy</b>		<b>12</b>	<b>172</b>





# Spring 2008 and Winter 2009 Bat Census



Mountaineer Mine



near Hart Mine



Upper Stonehouse



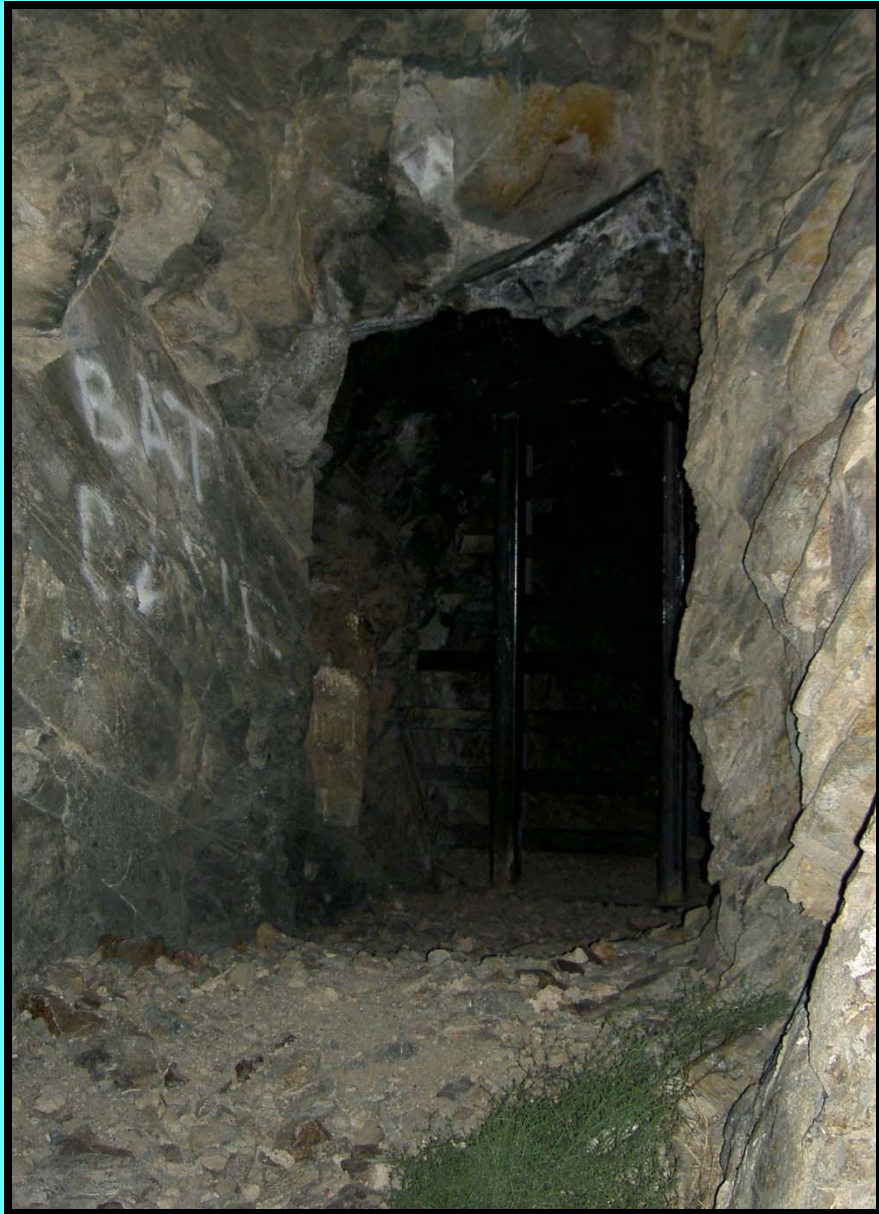
3 C Mine



Eureka Mine



# Stonehouse Mine, Two Gated Adits



# Jackpot Mine



# CONCLUSIONS

- Only three or four known remaining maternity colonies for *Myotis velifer* in mines along the LCR
- Only one known maternity colony of *Corynorhinus townsendii* in a mine along the LCR
- *Myotis yumanensis* has benefited by the creation of lakes and is now ubiquitous along the LCR
- *Macrotus californicus* populations appear to be
- stable in mines along the LCR
- *Myotis occultus* is probably extirpated along the Lower Colorado River

# Field assistance

Angela Gatto, Christine & Greg Bates (Lake Havasu BLM); Dr. Kathleen Blair (Bill Williams River NWR); John Earle, Greg Wolf, Jack Allen & Aimee Haskew (Havasus NWR); Joe Barnett, Dominic Barrett, Brenda Zaun, Geary Hund, & Tom Alexander (Cibola NWR); Guy Wagner, Ken Edwards, Juliette Gutierrez, Jackie & Jim Ferrier (Imperial NWR); Kirke King (Phoenix FWS); Lin Piest, Beatriz Vizcarra (AGFD); Nancy Andrews & Betsy Bolster (CDFG); Bryan Moore & Tom Cullen (Lake Mead NRA); Joe Kahl, Theresa Olson & Allen Calvert (Bureau of Reclamation); Susanna Henry & Lindsay Smythe (Kofa NWR); Morgan Ruelle & Jason Tinant (Ridgecrest BLM); Mark Massar & Jennifer Taylor (Palm Springs BLM); Grant Harter (Needles BLM); Al Kisner & Laura Stockton



# IN TRIBUTE TO BATMAN BOB

