

# Lower Colorado River Multi-Species Conservation Program



*Balancing Resource Use and Conservation*

## Post Development Bat Monitoring

## Transitioning to Long Term Monitoring Protocols 2011



# 2011 Focus:

- **Demo Acoustic Driving Surveys**
- **Establish & Refine Permanent Monitoring Stations**
- **Baseline Surveys Laguna Division Conservation Area**

# Driving Surveys



**Conducted May, July & September**  
**1 Night per Habitat Creation Area**



## Ahakhav Preserve Driving Survey July 26, 2011

- Laxa
- Myoc
- Pahe



# PVER Driving Survey July 26, 2011

- Pahe
- 24-30kHz
- 45-55 kHz
- Myve
- Laxa
- Myoc

## Pro's:

Relatively Inexpensive  
Shows “Hot Spots”

## Cons:

Very small sample effort  
Year-to-year comparisons not robust  
High variability in weather, road/driving  
conditions

## Recommendation for Driving Surveys

Not suitable for statistically robust long-term monitoring

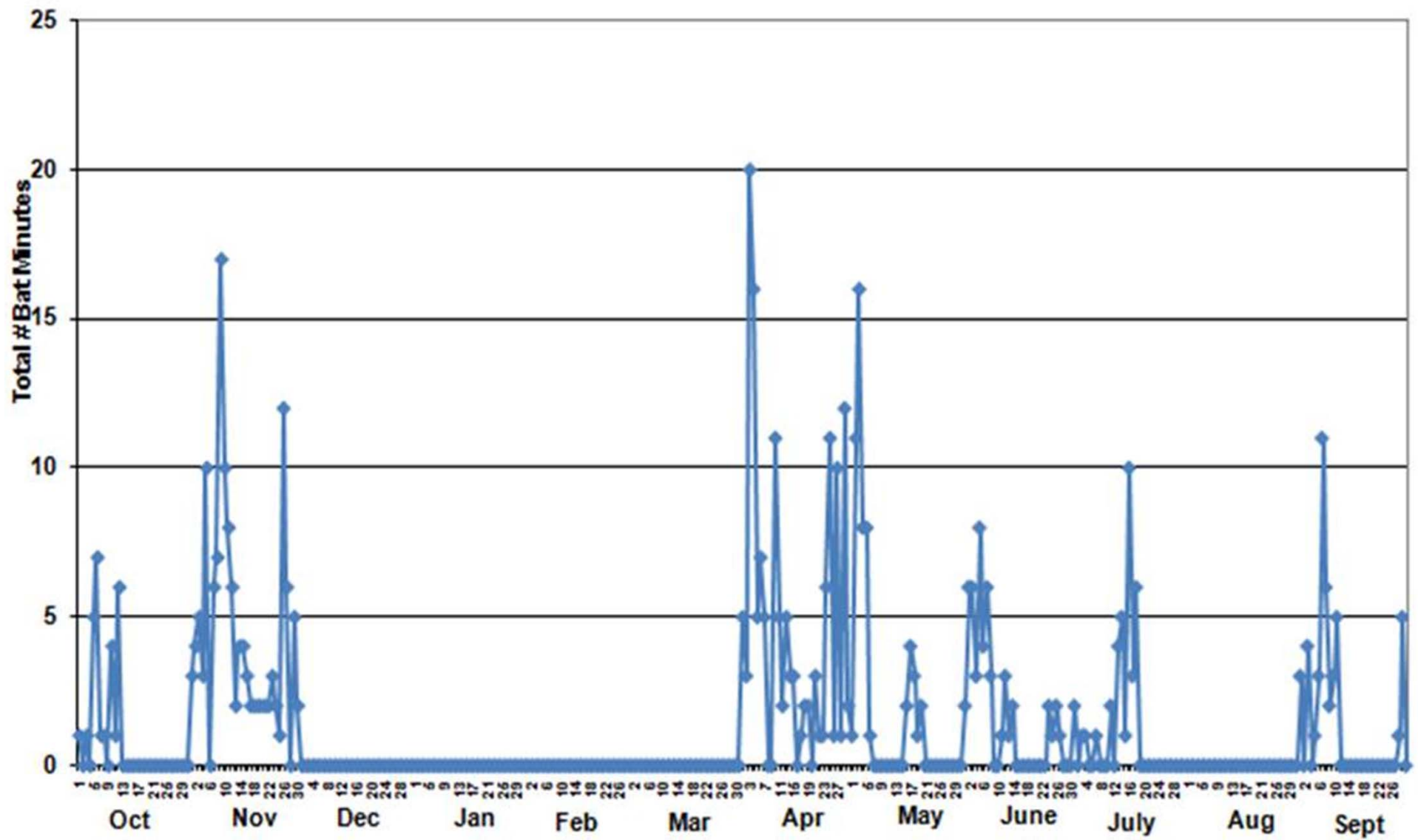
Use for special applications –  
demonstrations, site specific information



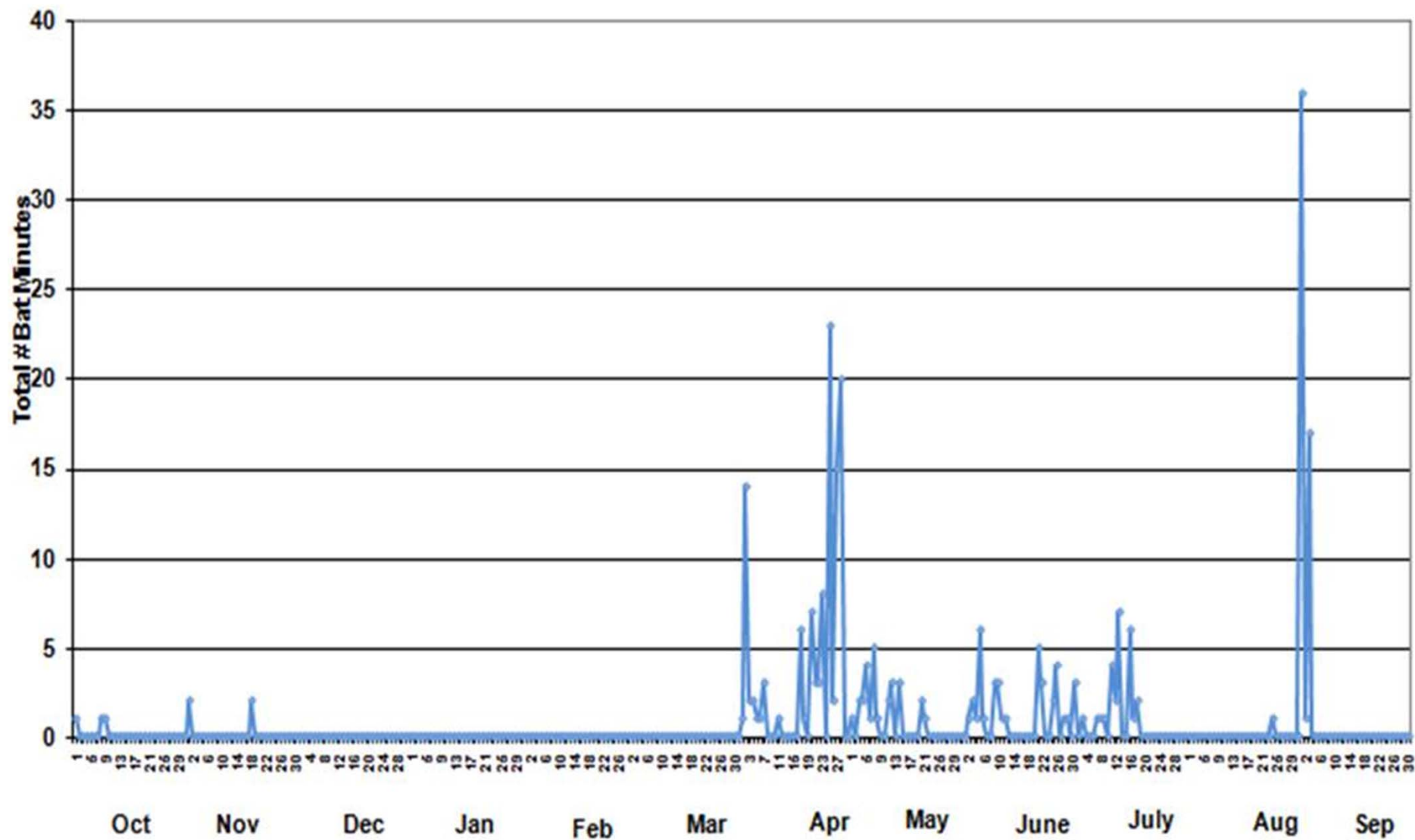
# Permanent Monitoring Stations



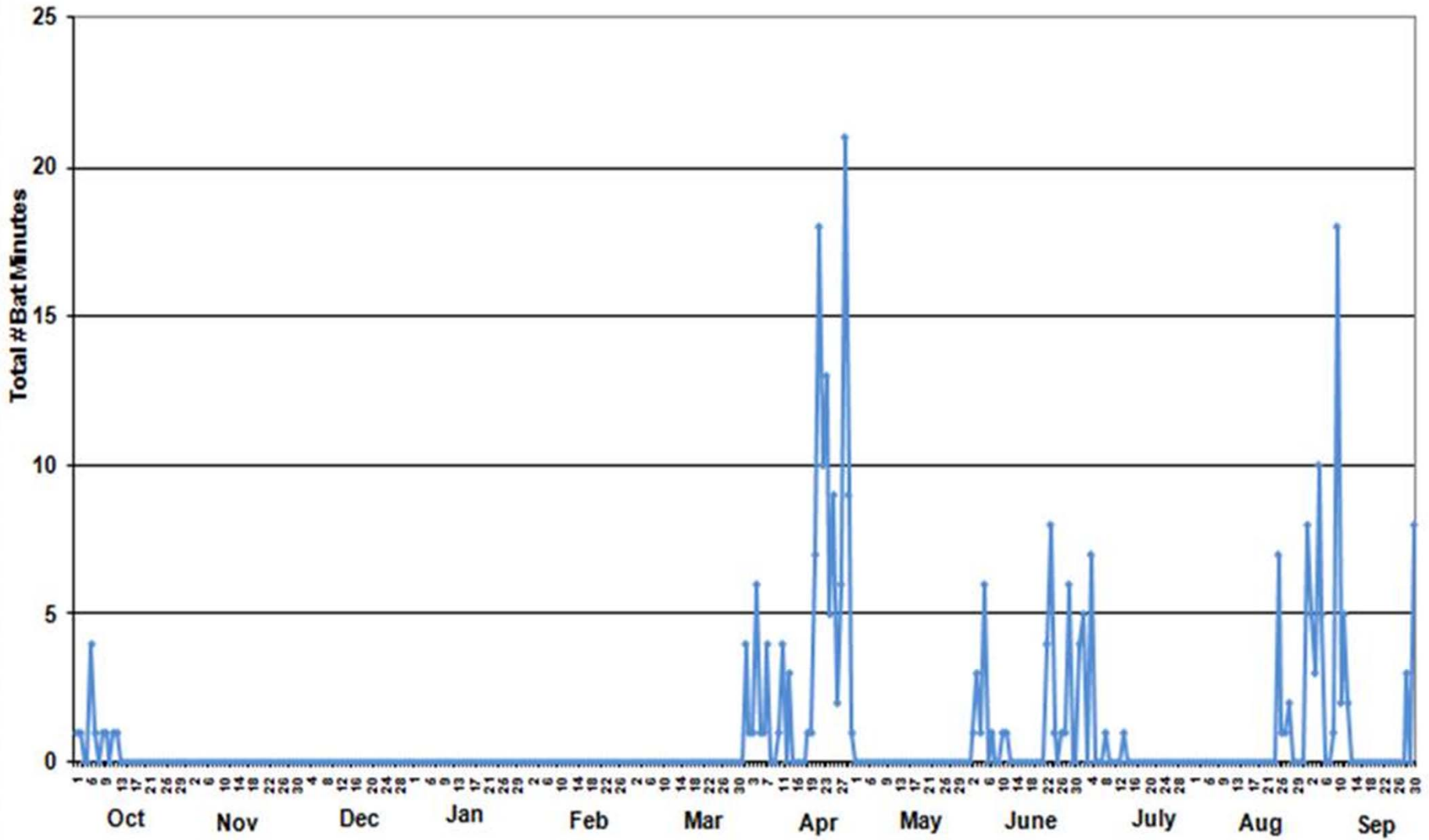
# CVCA Long Term Bat Monitoring Station 2011 Western Red Bat



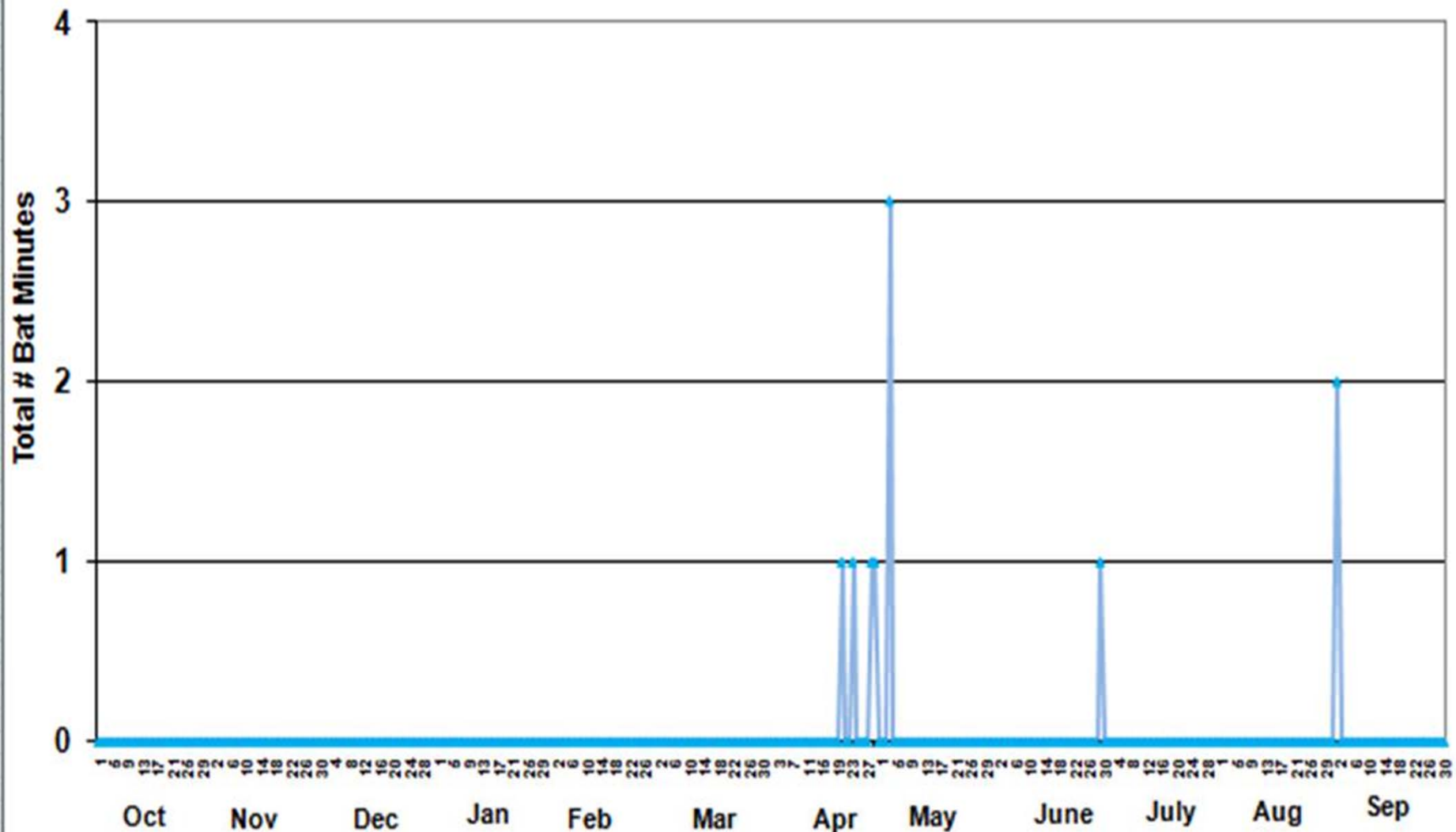
# CVCA Long Term Bat Monitoring Station 2011 Western Yellow Bat

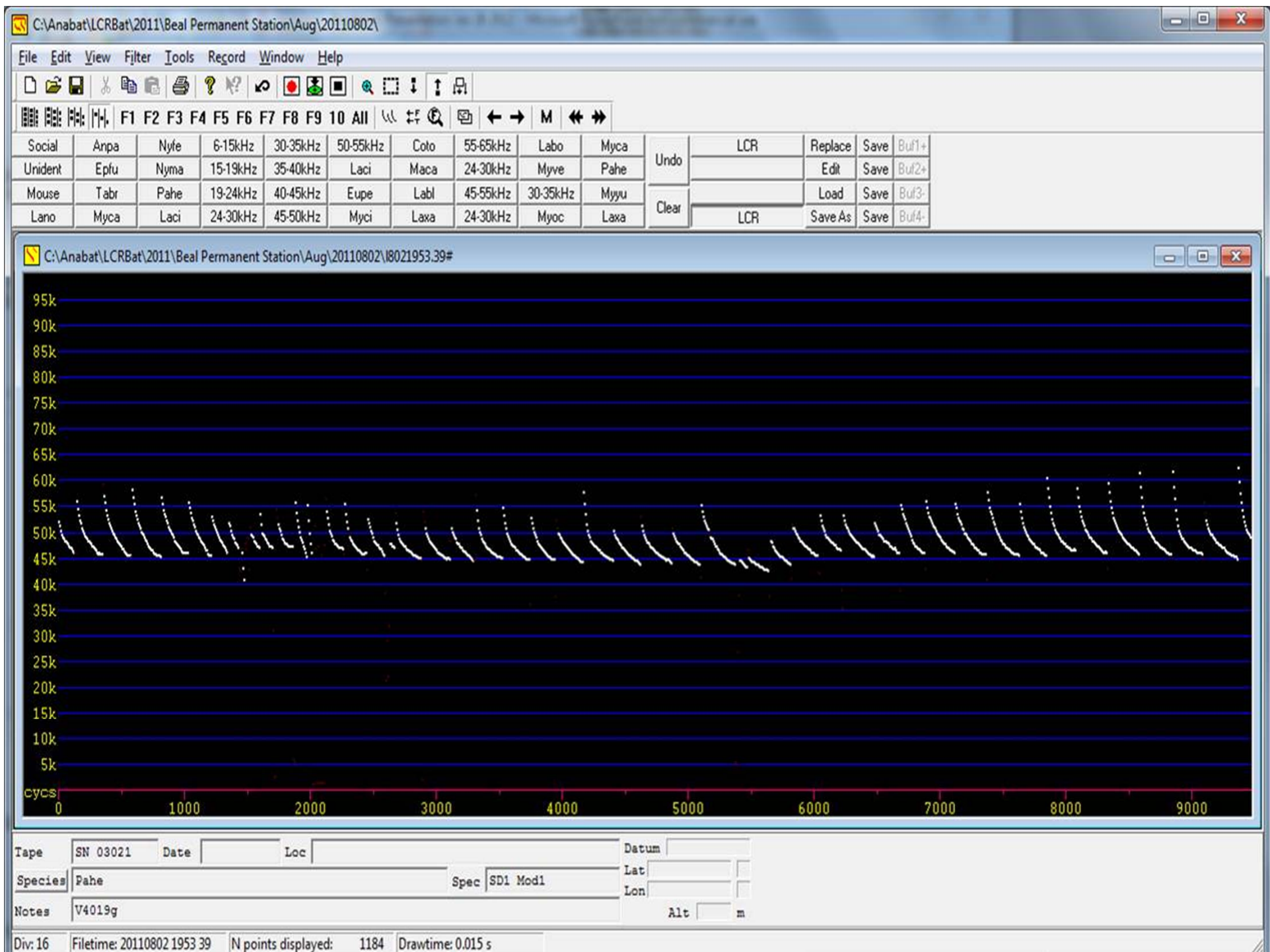


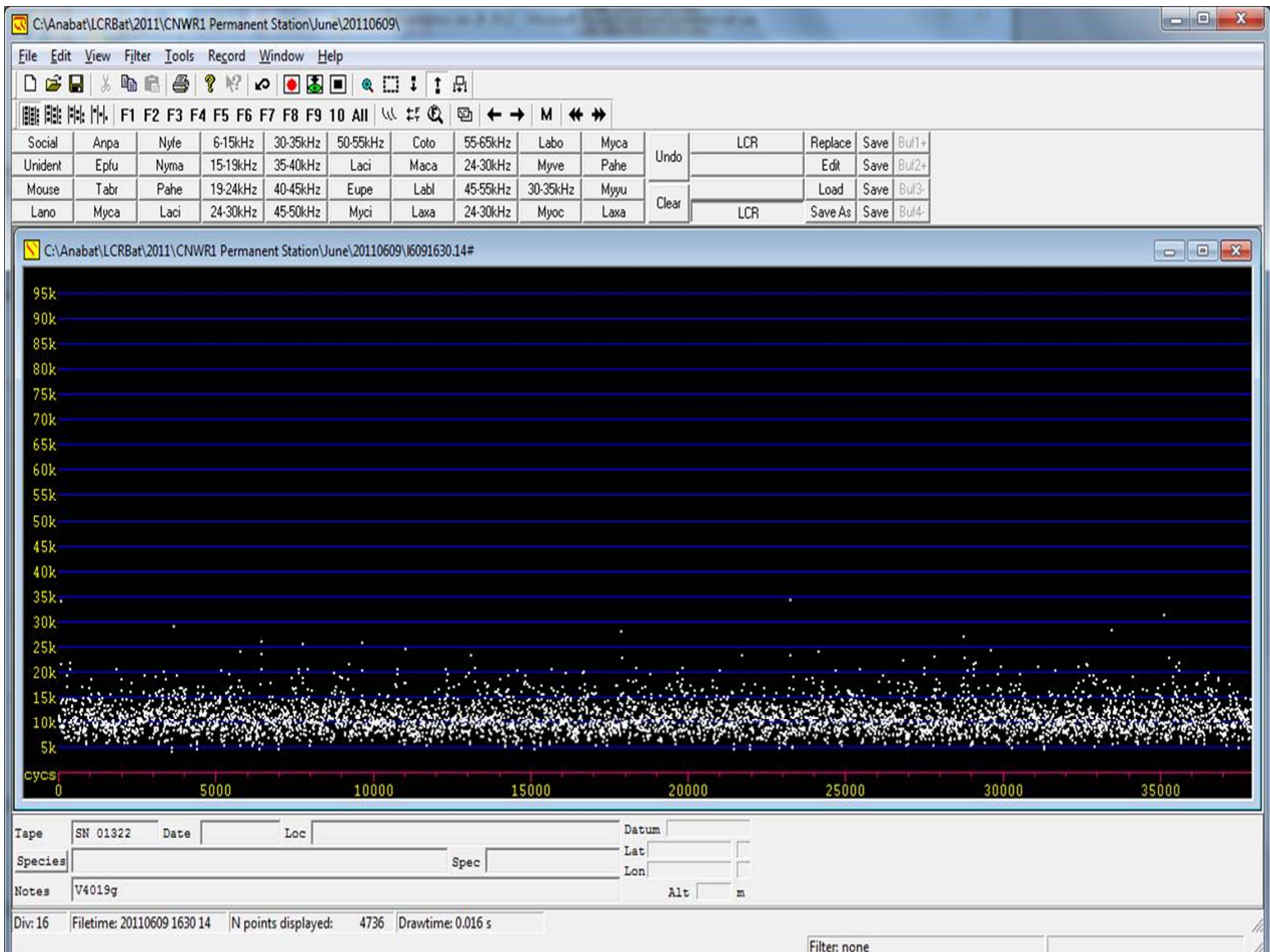
# CVCA Long-Term Bat Monitoring Station 2011 California Leaf-nosed Bat



# CVCA Long-Term Bat Monitoring Station 2011 Townsend's Big-Eared Bat







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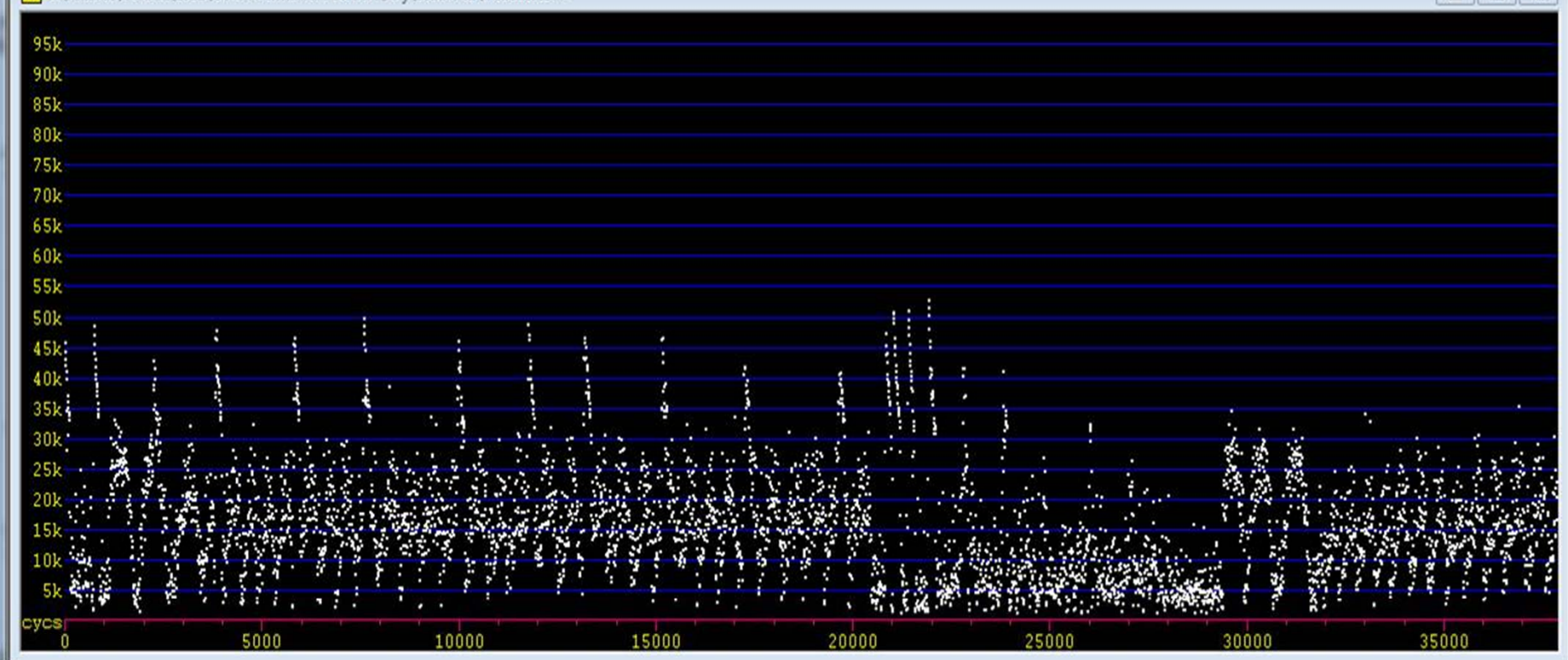
File Edit View Filter Tools Record Window Help



F1 F2 F3 F4 F5 F6 F7 F8 F9 10 All

Social	Anpa	Nyfe	6-15kHz	30-35kHz	50-55kHz	Coto	55-65kHz	Labo	Myca	Undo	LCR	Replace	Save	Buf1+
Unident	Epfu	Nyma	15-19kHz	35-40kHz	Laci	Maca	24-30kHz	Myve	Pahe		Edit		Save	Buf2+
Mouse	Tabr	Pahe	19-24kHz	40-45kHz	Eupe	Labl	45-55kHz	30-35kHz	Myyu	Clear		Load	Save	Buf3-
Lano	Myca	Laci	24-30kHz	45-50kHz	Myci	Laxa	24-30kHz	Myoc	Laxa		LCR	Save As	Save	Buf4-

C:\Anabat\LCRBat\2011\CVCA Permanent Station\July\20110701\7012105.27#



Tape: SN 01312    Date:    Loc:    Datum:    Lat:    Lon:    Alt: m

Species:    Spec:    Notes: V4019g

Div: 16    Filetime: 20110701 2105 27    N points displayed: 4736    Drawtime: 0.016 s    Filter: none    0.000 000s 95.3kHz st= 0











# Laguna Division Conservation Area – Pre Development Acoustic Bat Surveys



**6 sites selected**

**Surveyed January May  
September**

**8 to 20 nights simultaneously**

	Aug-Sep	May	Jan
PAHE	4431	1613	3
TABR	1834	6135	1137
45-55kHz	1778	2528	14
24-30kHz	459		95
30-35kHz	203	337	27
NYFE	56	138	1
EUPE	36	20	
19-24kHz	23	2	1
40-45kHz	14		
MACA	12	4	4
LABL	12	2	
MYOC	11		
LAXA	10	2	
LACI	5	2	2
ANPA	5		
COTO	2		
MYVE	1		
EPFU	1		5
<b>TOTALS</b>	<b>8894</b>	<b>10785</b>	<b>1424</b>

## **CORE OF THE LONG TERM MONITORING PROGRAM**

- **LONG TERM BAT MONITORING STATIONS ALONG WITH MIST NETTING**
- **STATISTICALLY ROBUST**
- **LARGE SAMPLE SIZES**

**SHORT-TERM SAMPLING**

**DETECTORS DEPLOYED IN  
NEWLY ESTABLISHED PHASES  
SINGLE NIGHT**

**DRIVING SURVEYS**