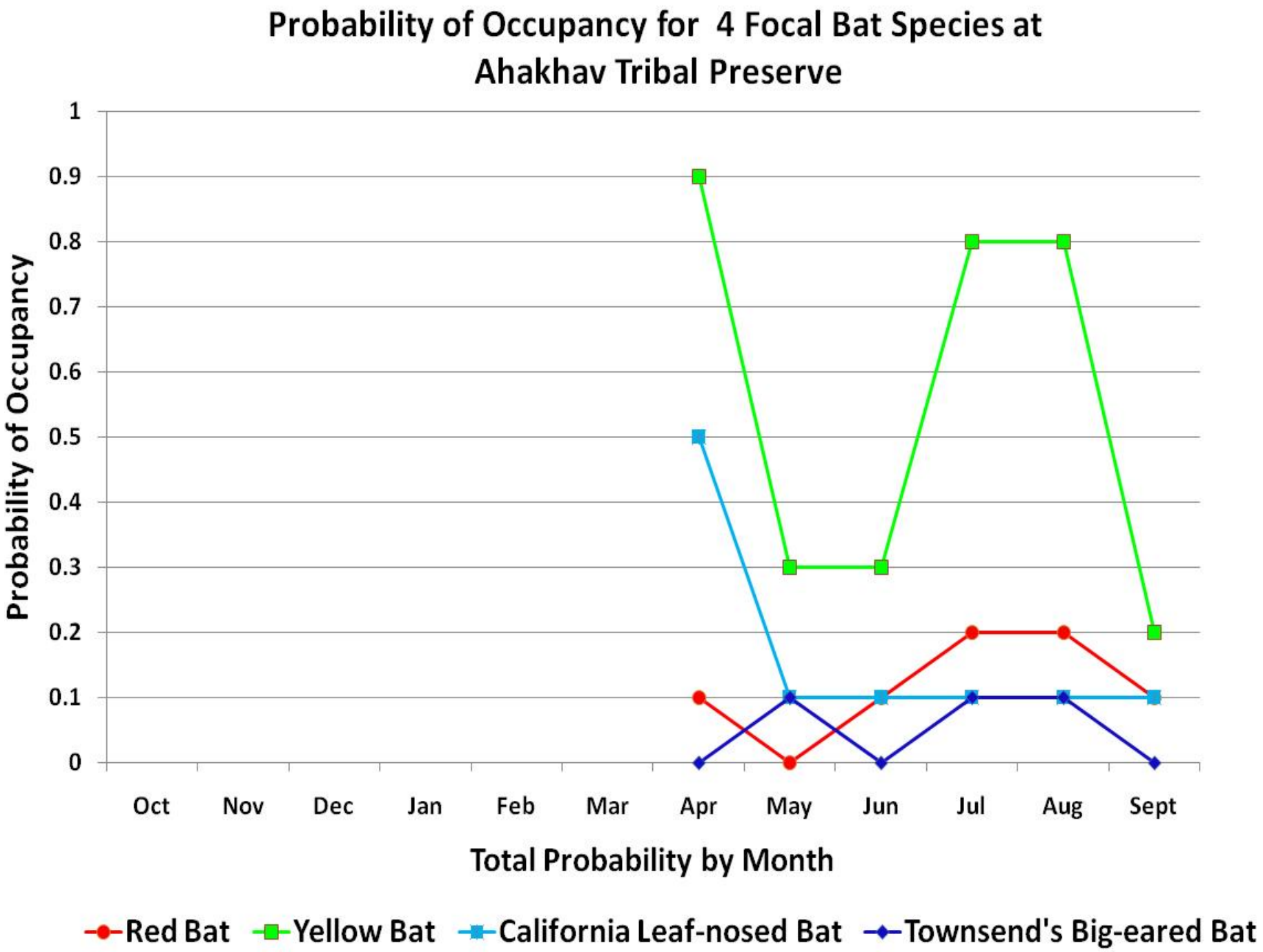
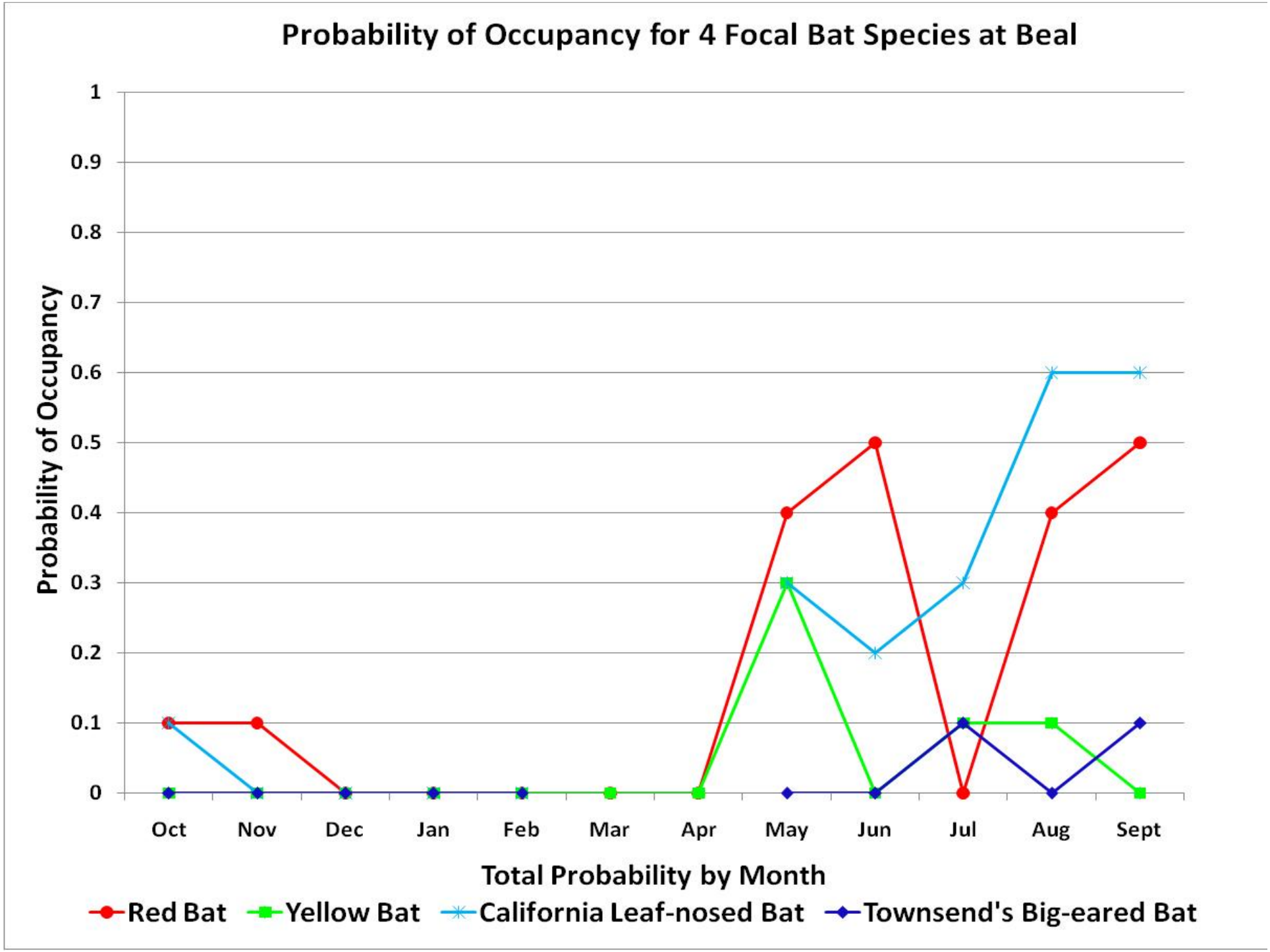
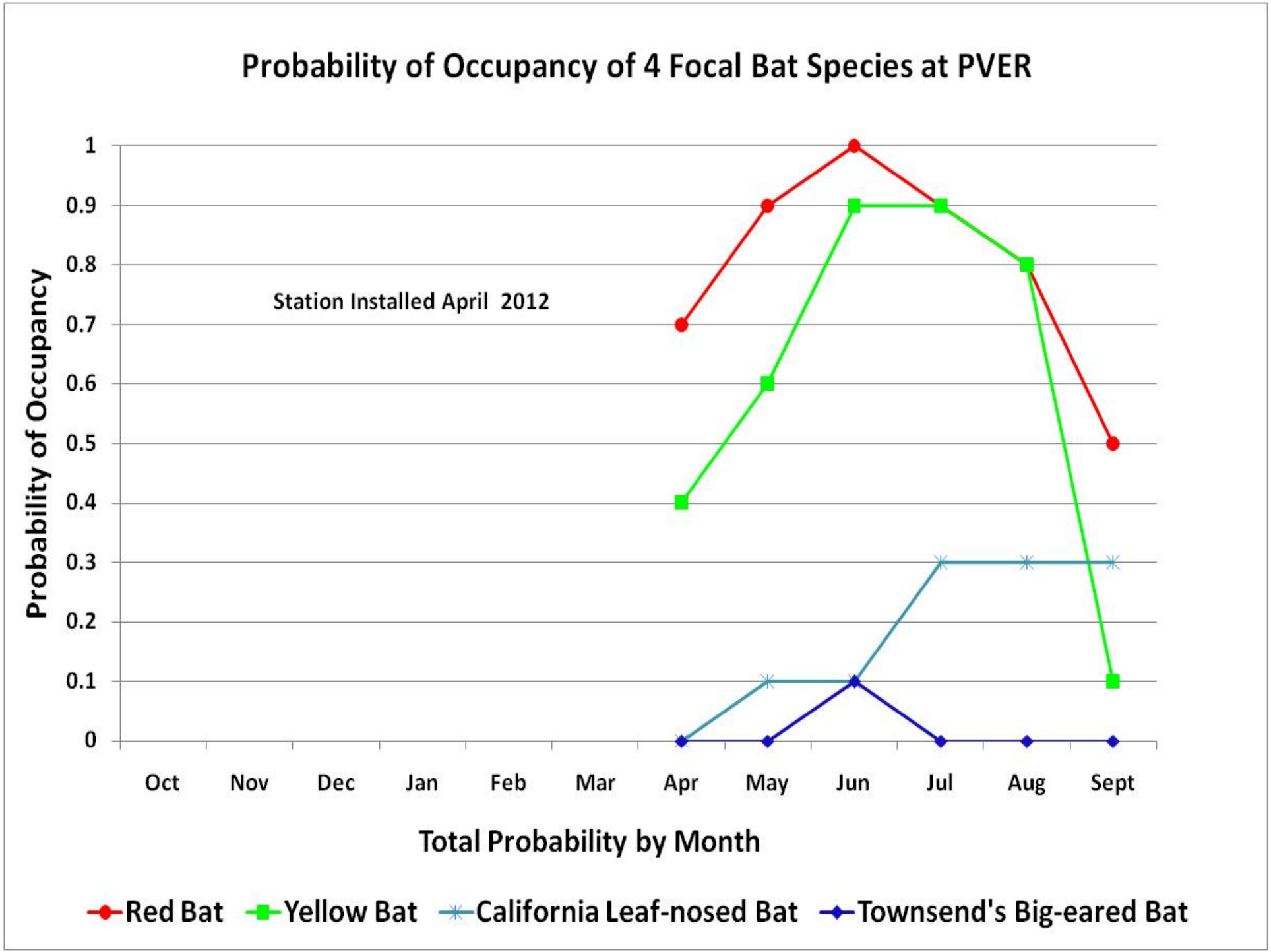
Lower Colorado River Multi-Species Conservation Program

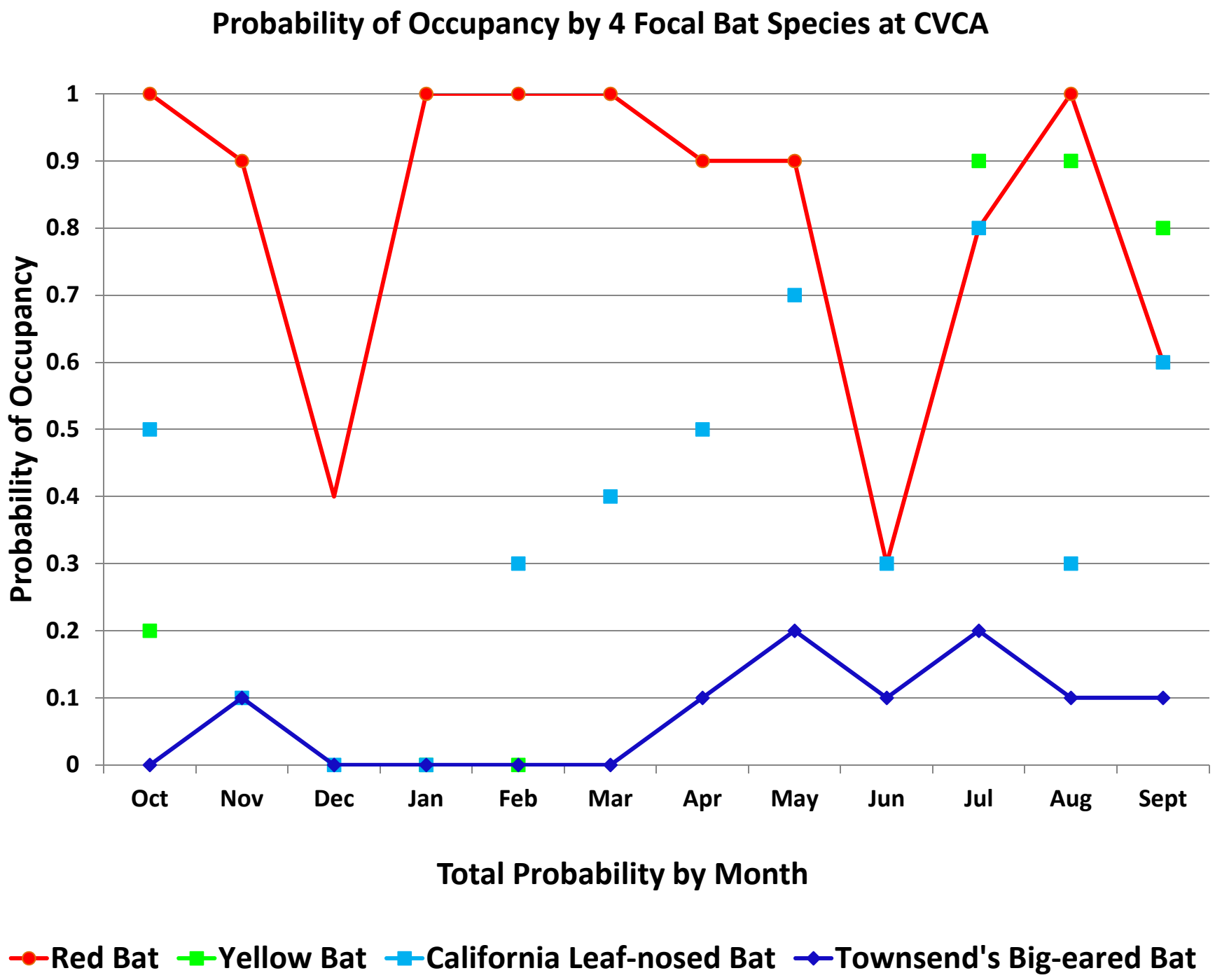
Balancing Resource Use and Conservation

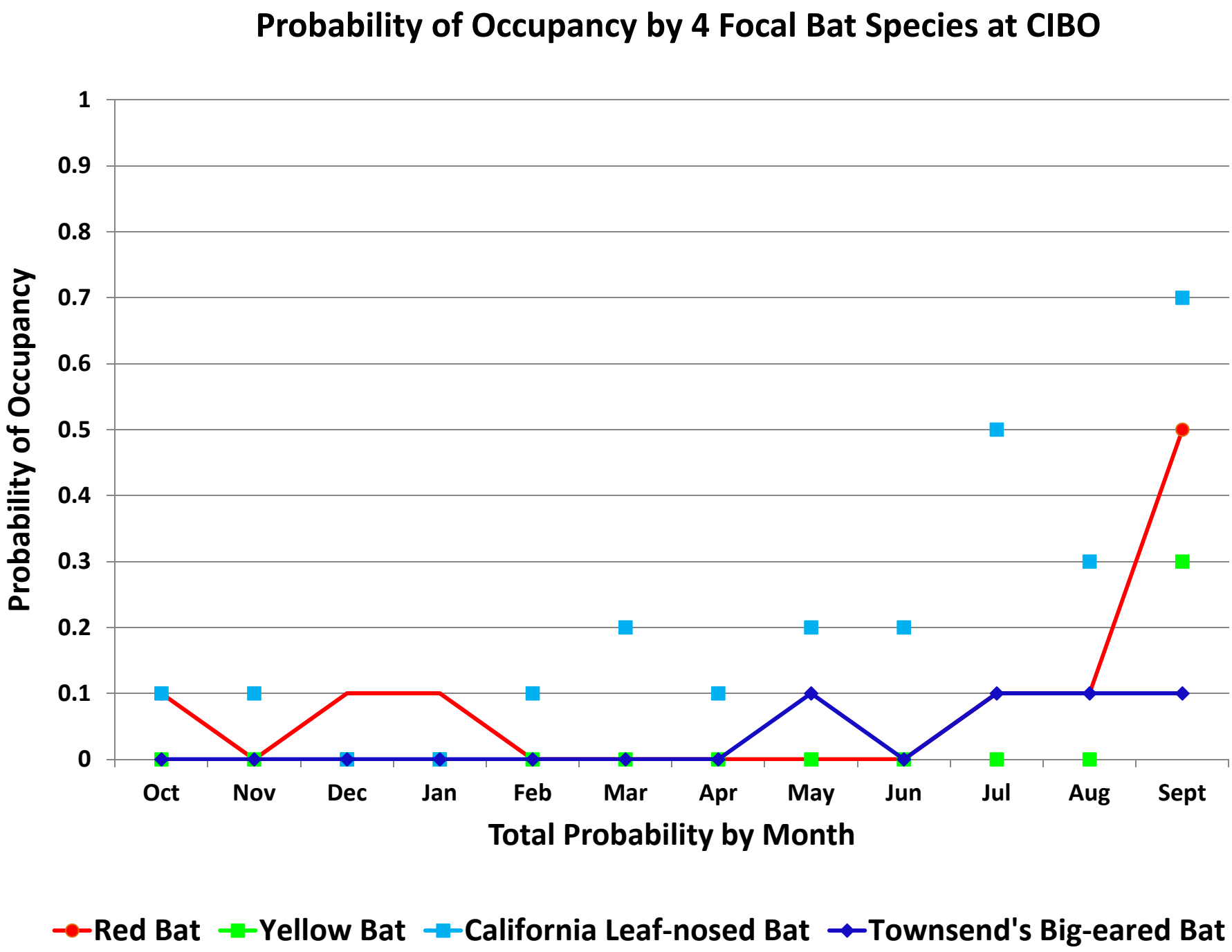
Post Development Acoustic Bat Monitoring - 2012 Results

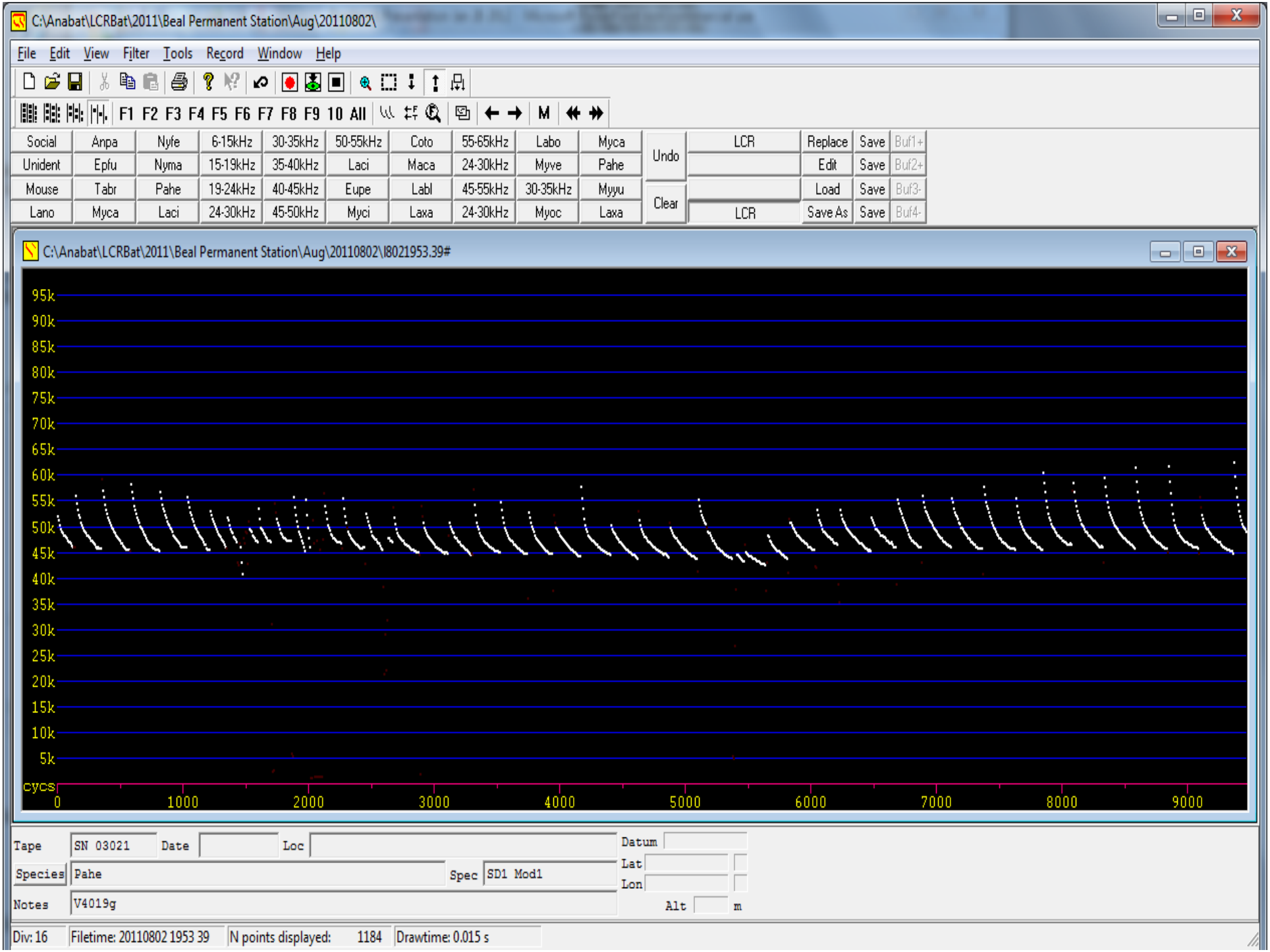

Probability of Occupancy for 4 Focal Bat Species at Ahakhav Tribal Preserve
Probability of Occupancy
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sept
Total Probability by Month
Red Bat
Yellow Bat
California Leaf-nosed Bat
Townsend's Big-eared Bat

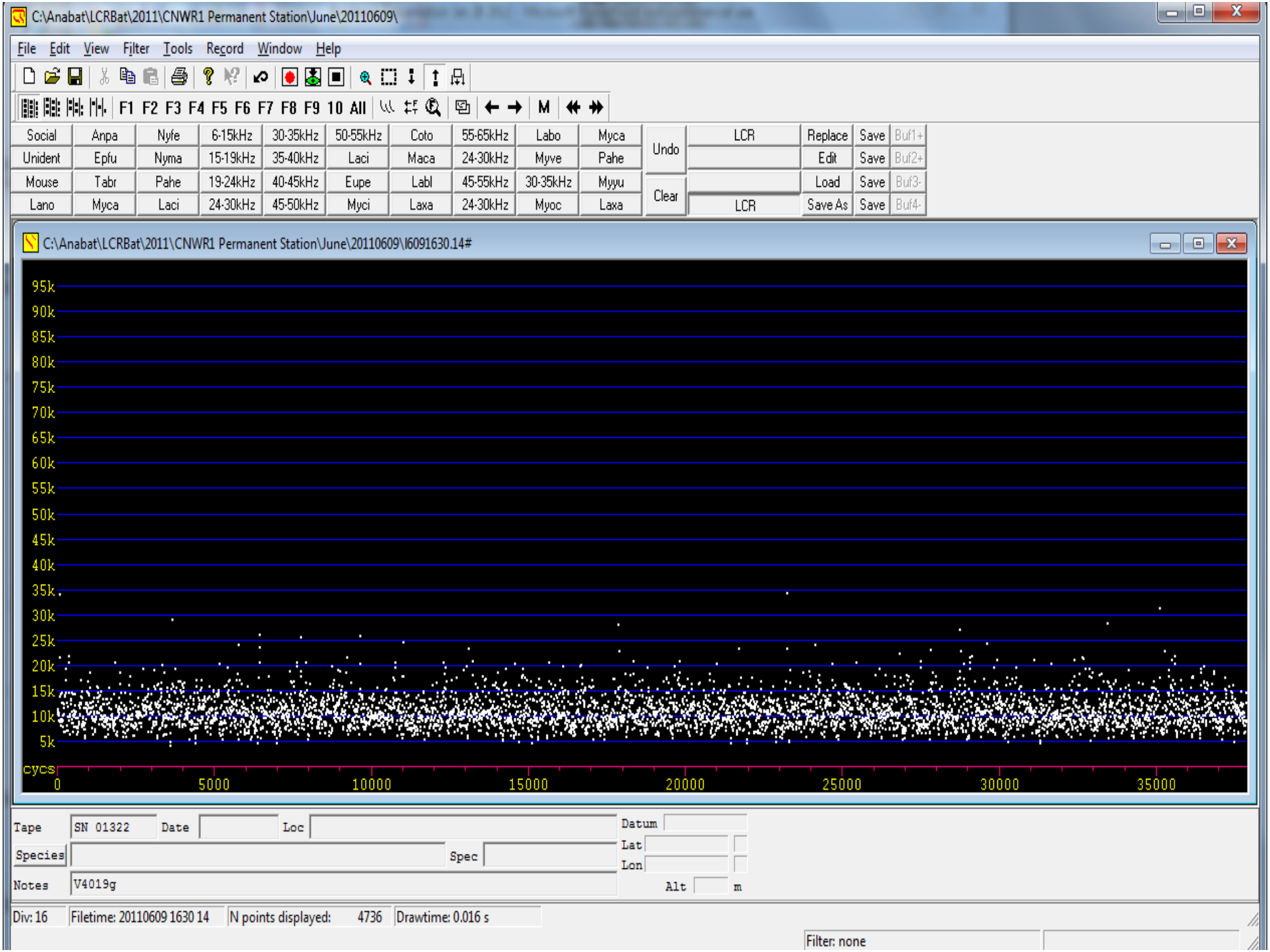

Probability of Occupancy for 4 Focal Bat Species at Beal
Probability of Occupancy
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sept
Total Probability by Month
Red Bat
Yellow Bat
California Leaf-nosed Bat
Townsend's Big-eared Bat

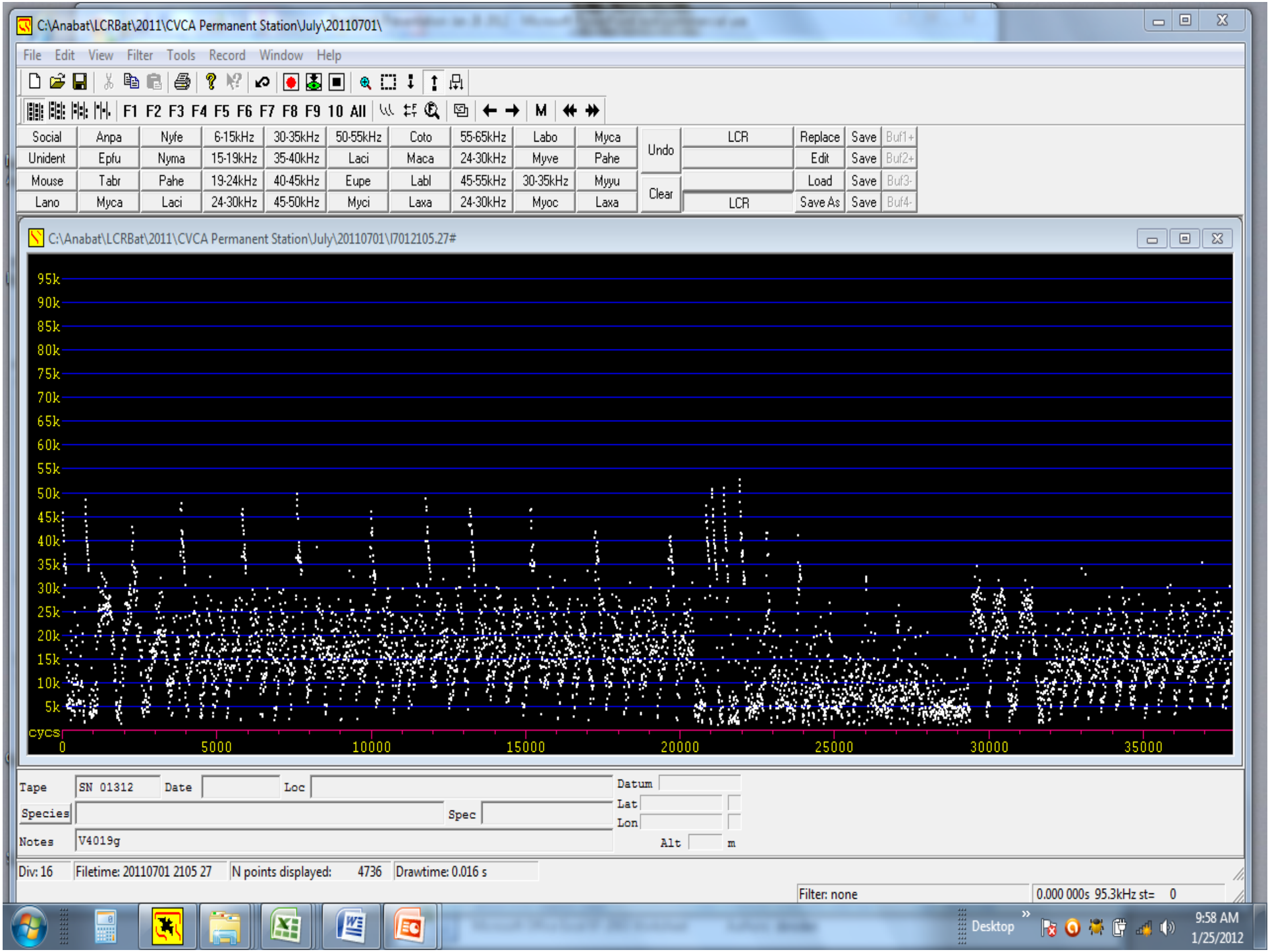

Probability of Occupancy of 4 Focal Bat Species at PVER
Station Installed April 2012
Probability of Occupancy
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sept
Total Probability by Month
Red Bat
Yellow Bat
California Leaf-nosed Bat
Townsend's Big-eared Bat


Probability of Occupancy by 4 Focal Bat Species at CVCA
Probability of Occupancy
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sept
Total Probability by Month
Red Bat
Yellow Bat
California Leaf-nosed Bat
Townsend's Big-eared Bat

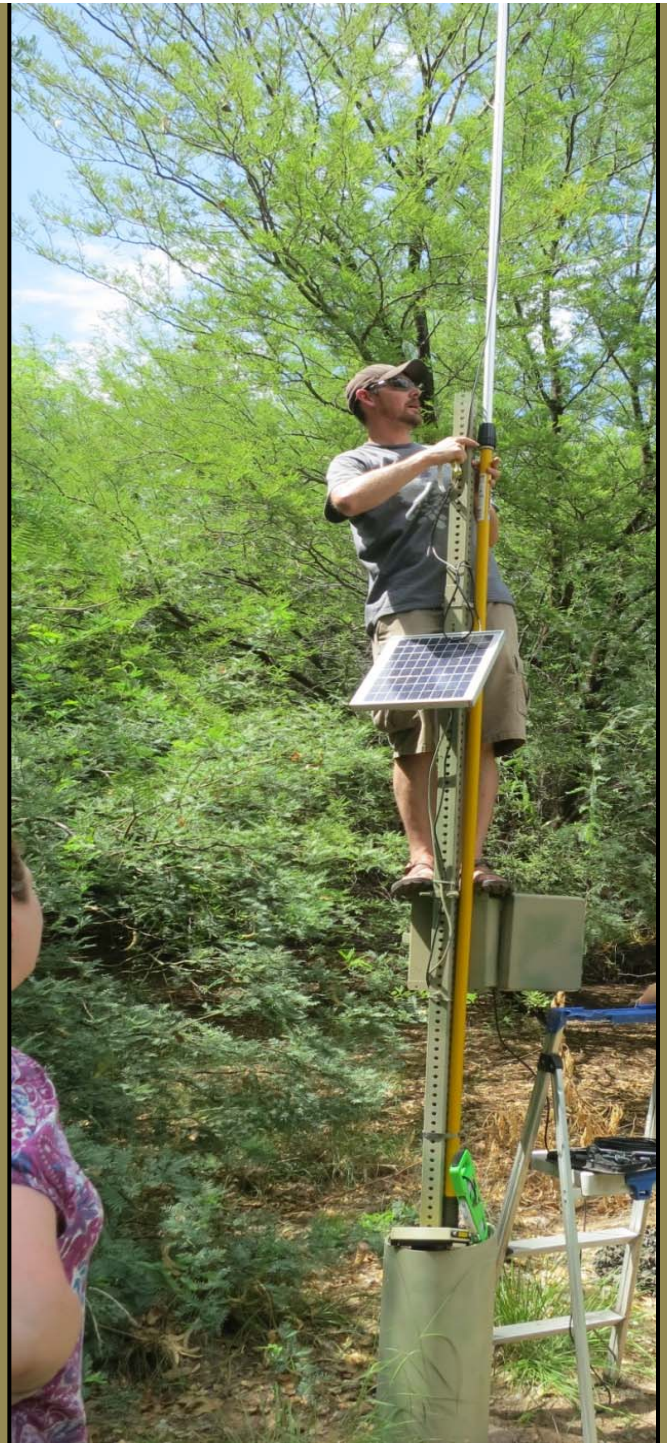

Probability of Occupancy by 4 Focal Bat Species at CIBO
Probability of Occupancy
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sept
Total Probability by Month
Red Bat
Yellow Bat
California Leaf-nosed Bat
Townsend's Big-eared Bat

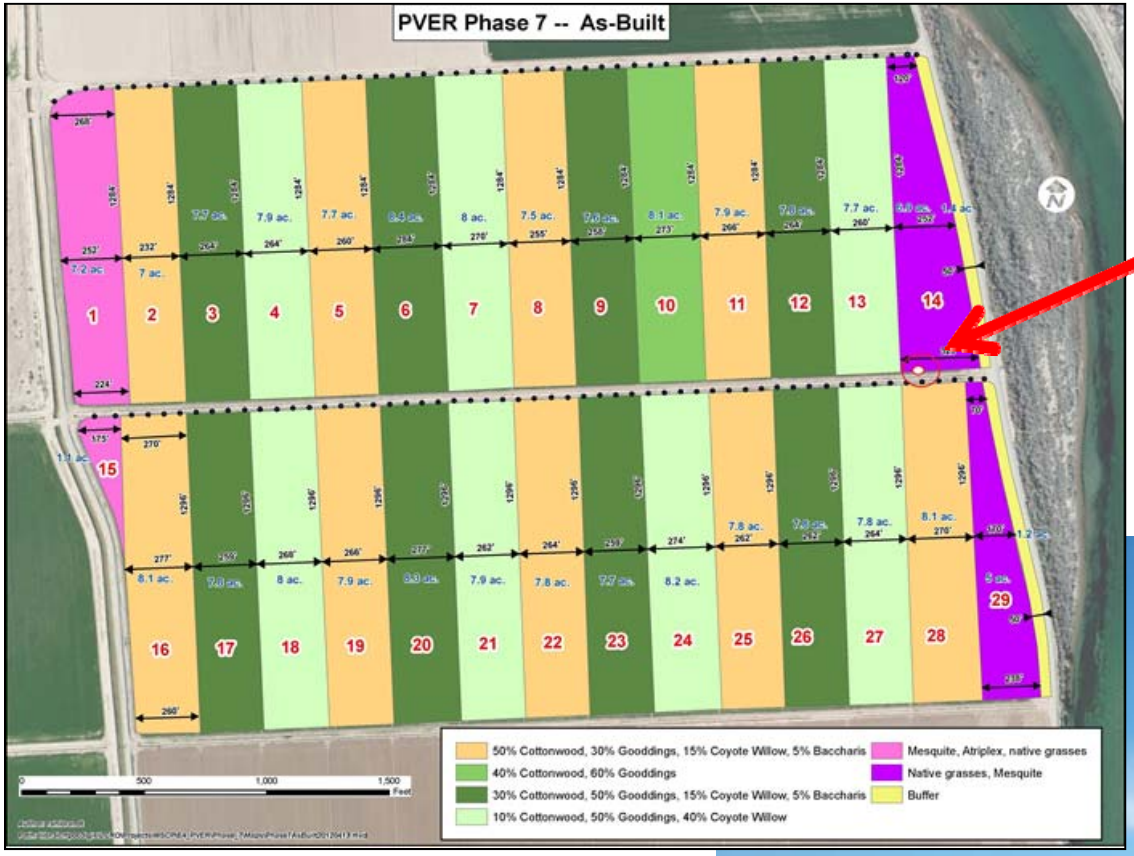

C:\Anabat\LCRBat\2011\Beal Permanent Station\Aug\20110802\
File Edit View Filter Tools Record Window Help
F1 F2 F3 F4 F5 F6 F7 F8 F9 10 All M
Social Anpa Nyfe 6-15kHz 30-35kHz 50-55kHz Coto 55-65kHz Labo Myca
Unident Epfu Nyma 15-19kHz 35-40kHz Laci Maca 24-30kHz Myve Pahe
Mouse Tabr Pahe 19-24kHz 40-45kHz Eupe Labl 45-55kHz 30-35kHz Myyu
Lano Myca Laci 24-30kHz 45-50kHz Myci Laxa 24-30kHz Myoc Laxa
Undo
Clear
LCR
LCR
Replace Save Buf1+
Edit Save Buf2+
Load Save Buf3-
Save As Save Buf4-
C:\Anabat\LCRBat\2011\Beal Permanent Station\Aug\20110802\I8021953.39#
95k
90k
85k
80k
75k
70k
65k
60k
55k
50k
45k
40k
35k
30k
25k
20k
15k
10k
5k
cycs
0 1000 2000 3000 4000 5000 6000 7000 8000 9000
Tape SN 03021 Date Loc
Datum
Species Pahe Spec SD1 Mod1
Lat
Lon
Notes V4019g
Alt m
Div: 16 Filetime: 20110802 1953 39 N points displayed: 1184 Drawtime: 0.015 s


C:\Anabat\LCRBat\2011\CNWR1 Permanent Station\June\20110609\
File Edit View Filter Tools Record Window Help
F1 F2 F3 F4 F5 F6 F7 F8 F9 10 All M
Social Anpa Nyfe 6-15kHz 30-35kHz 50-55kHz Coto 55-65kHz Labo Myca
Unident Epfu Nyma 15-19kHz 35-40kHz Laci Maca 24-30kHz Myve Pahe
Mouse Tabr Pahe 19-24kHz 40-45kHz Eupe Labl 45-55kHz 30-35kHz Myyu
Lano Myca Laci 24-30kHz 45-50kHz Myci Laxa 24-30kHz Myoc Laxa
Undo Clear
LCR LCR
Replace Edit Load Save As
Save Save Save Save
Buf1+ Buf2+ Buf3- Buf4-
C:\Anabat\LCRBat\2011\CNWR1 Permanent Station\June\20110609\l6091630.14#
95k 90k 85k 80k 75k 70k 65k 60k 55k 50k 45k 40k 35k 30k 25k 20k 15k 10k 5k
cycs
0 5000 10000 15000 20000 25000 30000 35000
Tape SN 01322 Date Loc
Species Spec
Notes V4019g
Datum
Lat
Lon
Alt m
Div: 16 Filetime: 20110609 1630 14 N points displayed: 4736 Drawtime: 0.016 s
Filter: none


C:\Anabat\LCRBat\2011\CVCA Permanent Station\July\20110701\
File Edit View Filter Tools Record Window Help
F1 F2 F3 F4 F5 F6 F7 F8 F9 10 All M
Social Anpa Nyfe 6-15kHz 30-35kHz 50-55kHz Coto 55-65kHz Labo Myca
Unident Epfu Nyma 15-19kHz 35-40kHz Laci Maca 24-30kHz Myve Pahe
Mouse Tabr Pahe 19-24kHz 40-45kHz Eupe Labl 45-55kHz 30-35kHz Myyu
Lano Myca Laci 24-30kHz 45-50kHz Myci Laxa 24-30kHz Myoc Laxa
Undo
Clear
LCR
LCR
Replace Save Buf1+
Edit Save Buf2+
Load Save Buf3-
Save As Save Buf4-
C:\Anabat\LCRBat\2011\CVCA Permanent Station\July\20110701\l7012105.27#
95k
90k
85k
80k
75k
70k
65k
60k
55k
50k
45k
40k
35k
30k
25k
20k
15k
10k
5k
cycs
0
5000
10000
15000
20000
25000
30000
35000
Tape SN 01312 Date Loc
Datum
Species Spec
Lat
Lon
Notes V4019g
Alt m
Div: 16 Filetime: 20110701 2105 27 N points displayed: 4736 Drawtime: 0.016 s
Filter: none
0.000 000s 95.3kHz st= 0
Desktop
9:58 AM
1/25/2012

Permanent Monitoring Stations in 2011




PVER Phase 7 -- As-Built
50% Cottonwood, 30% Gooddings, 15% Coyote Willow, 5% Baccharis
40% Cottonwood, 60% Gooddings
30% Cottonwood, 50% Gooddings, 15% Coyote Willow, 5% Baccharis
10% Cottonwood, 50% Gooddings, 40% Coyote Willow
Mesquite, Atriplex, native grasses
Native grasses, Mesquite
Buffer
0
500
1,000
1,500
Feet

- Expanded permanent stations from 3 in 2011 to 8 in 2013
- Improved call identification guide to species that were formerly lumped into species groups:
- Refined species filters & collected more reference calls
- Refined call analysis process to increase efficiency & speed
- Significantly reduced insect interference
- Added 5 new stations to improve coverage at HCAs

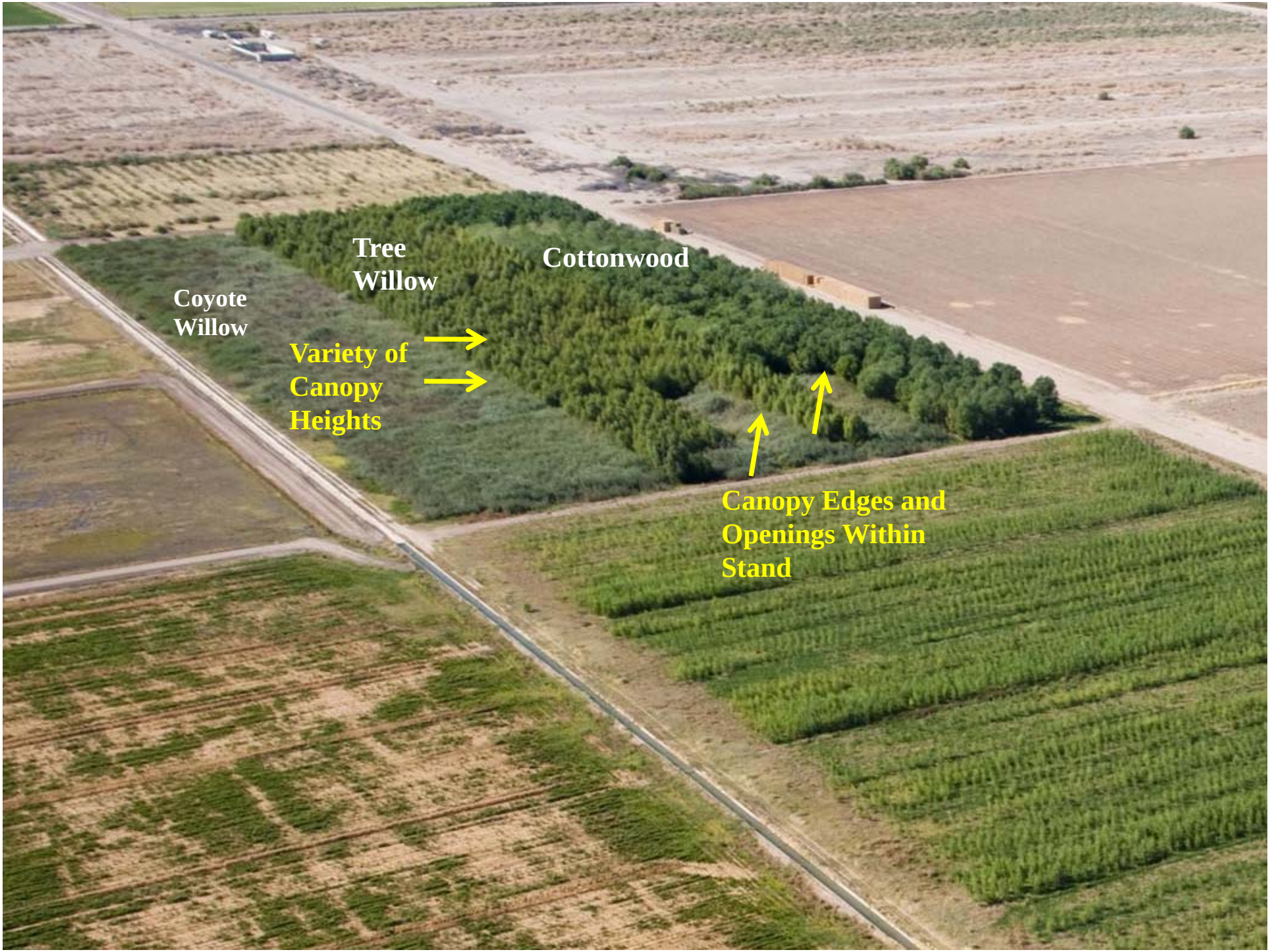
Refine occupancy modeling @ HCA's:

Include covariates specific to post-development monitoring at HCA's:
-Canopy Complexity: # canopy Layers, # & length of flyways,

-Also covariates specific to sampling – insects, minimum temperature, wind

Characteristics of Sites with Tree Roosting Bats

- Complex canopy with different age classes
- Understory dense, complex
- Occurring along stand edges or interior


Tree
Willow
Cottonwood
Coyote
Willow
Variety of
Canopy
Heights
Canopy Edges and
Openings Within
Stand