

# SURVEYS OF YELLOW-BILLED CUCKOO on the Lower Colorado River, 2009 Field Season

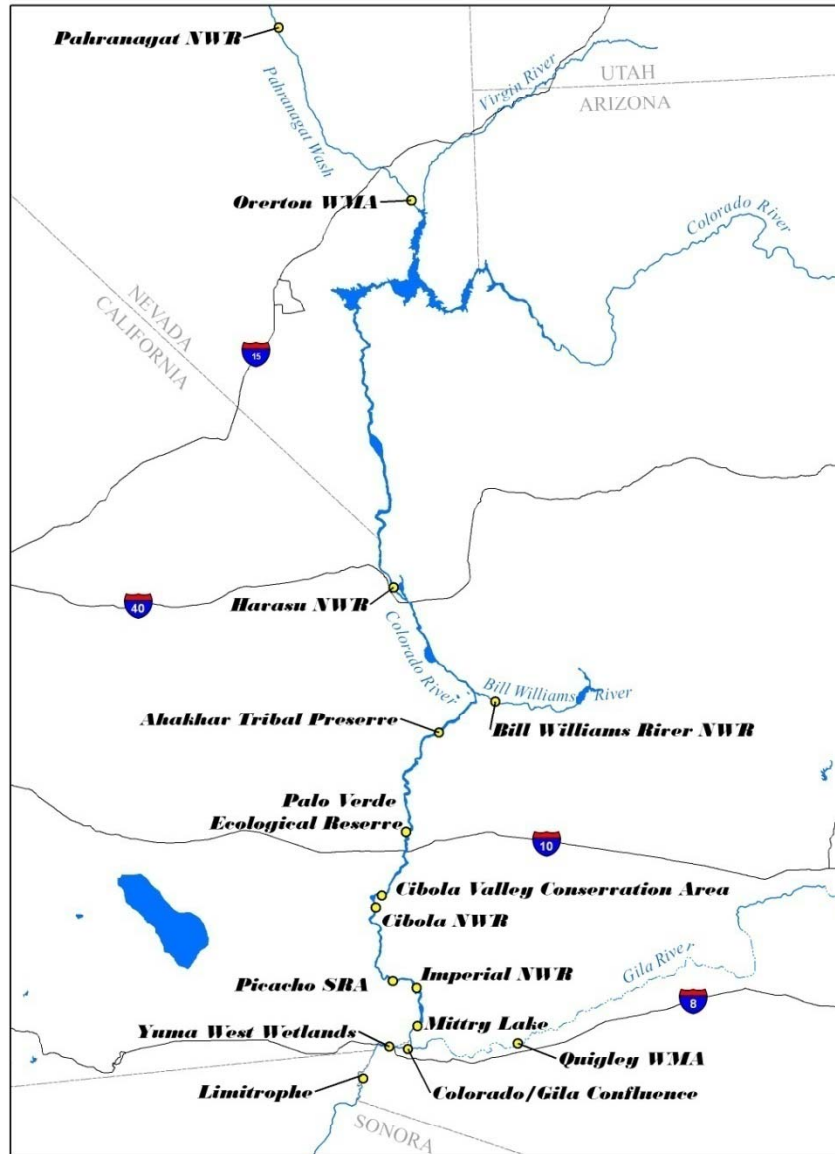


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Diane Tracy.**

**Southern Sierra Research Station**

# Project Objectives

- 1. Conduct comprehensive, repeatable Yellow-billed Cuckoo surveys in all potentially suitable habitat types within the MSCP project boundary, including habitat creation sites.
- 2. Determine breeding habitat selection and preferences in the study area.
- 3. Evaluate the effectiveness of the current breeding season survey methodology and refine it to use over the term of the MSCP.



# Yellow-billed Cuckoo

## *Coccyzus americanus*

- Neotropical migrant
- Breed from June to early September
- Morphologically monomorphic
- Insectivorous
- Vocalize infrequently
- Low response rate to call playback
- Currently candidate for federal *endangered* status



# Survey Protocol – survey using call playback



**-Each route surveyed four times mid June – Early September.**

**- Stops made @ 100 meters.**

**-Contact calls played 5X @ 1 minute intervals.**

**- When cuckoo detected, move 300 m and resume survey.**

YBCU Protocol Training  
First Week of June, LHC  
Check SSRS website



# 2009 Field season

- A total of 278 surveys
- 58 survey routes
- 1,465 ha (3620 acres)
- 14 new sites
- Expanded or modified 9 sites previous sites
- 440 additional ha

# Havasu NWR Overview

- Survey Route
- Site Boundary



Pintail Slough

North Dike

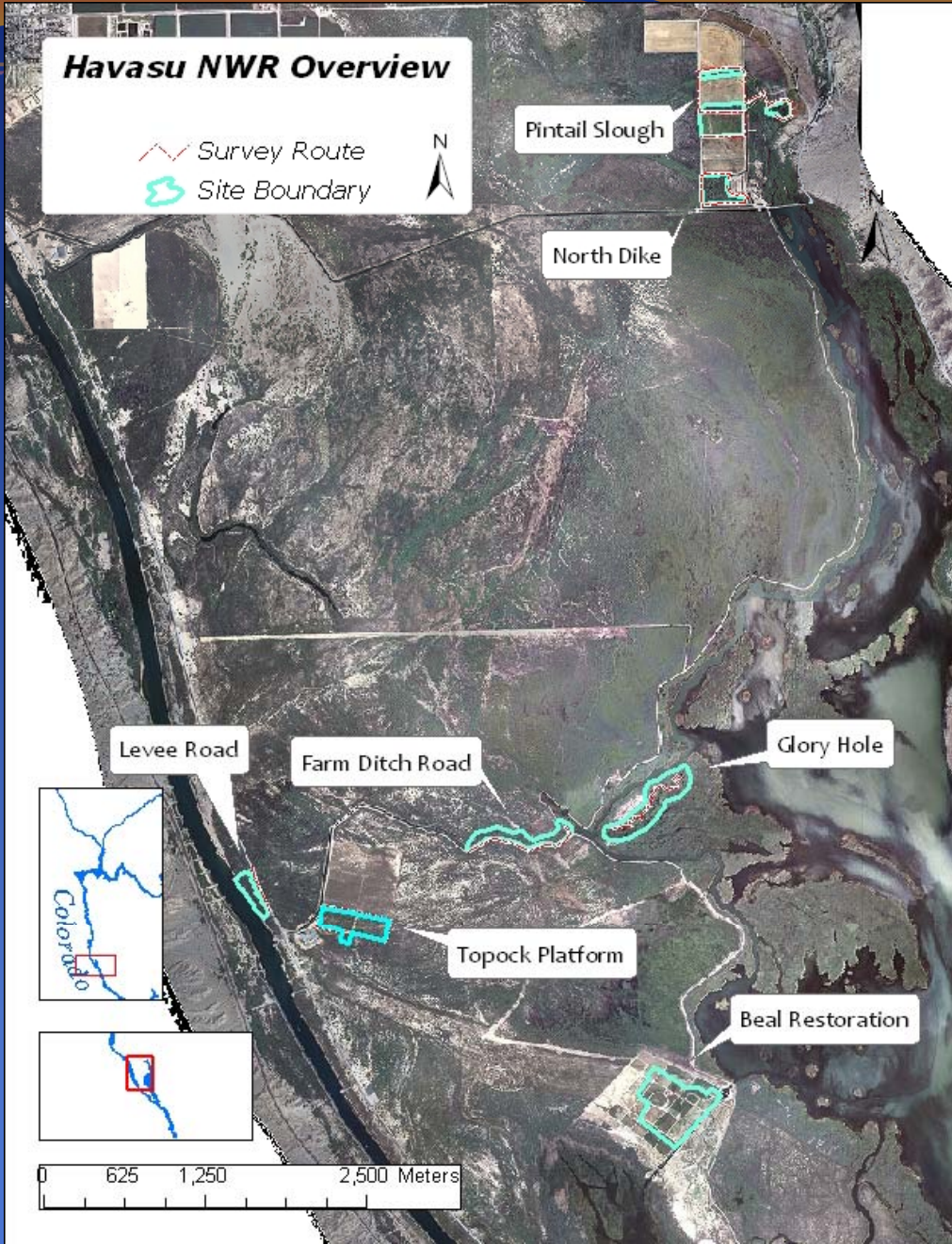
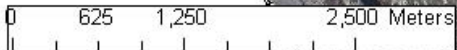
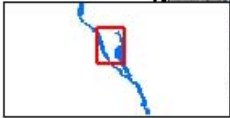
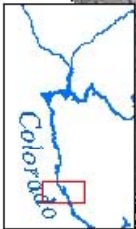
Levee Road

Farm Ditch Road

Glory Hole

Topock Platform

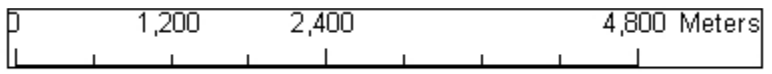
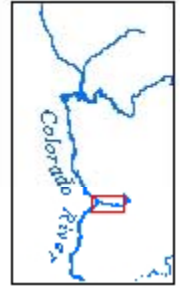
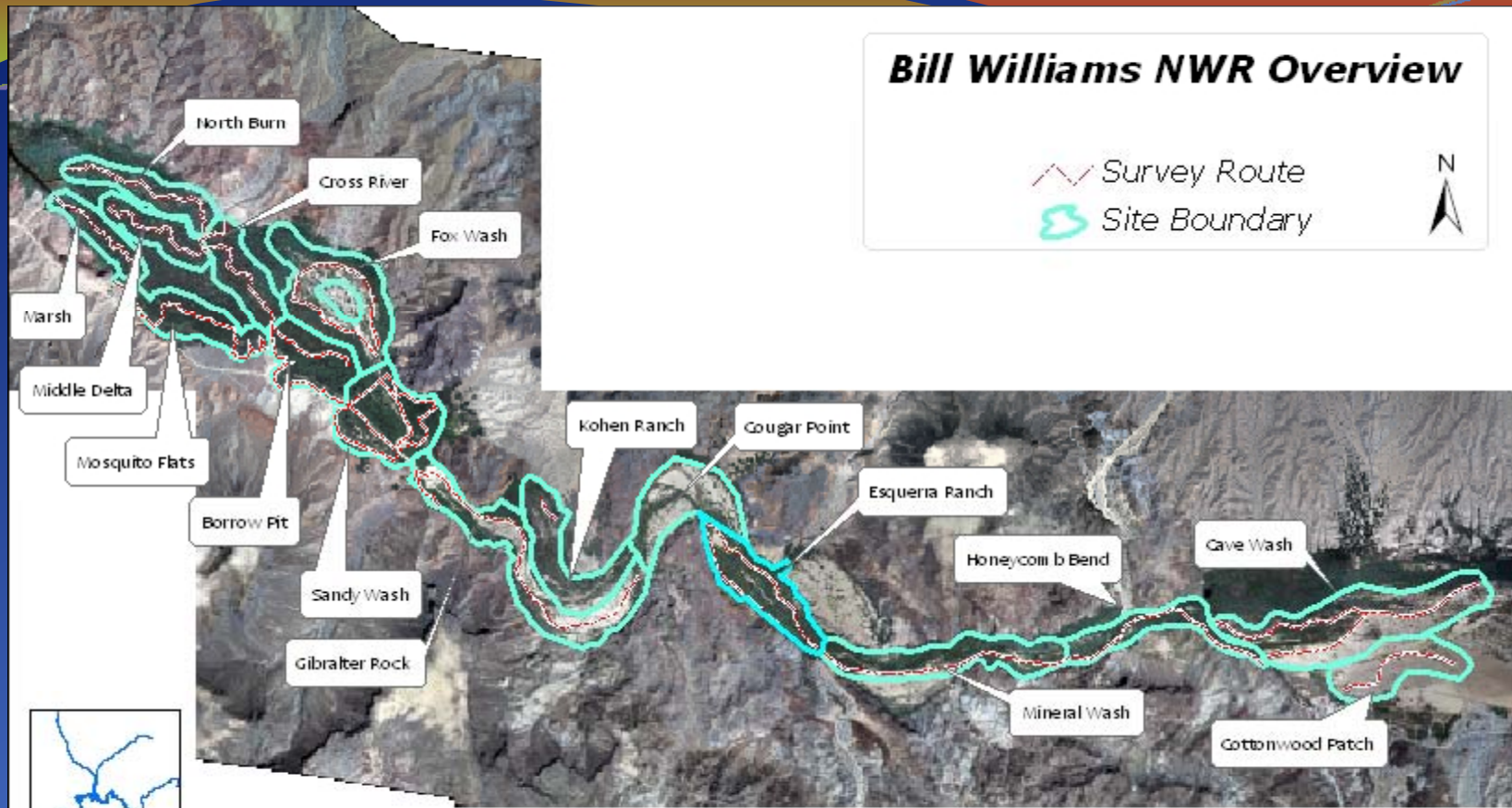
Beal Restoration





# Bill Williams NWR Overview

 Survey Route  
 Site Boundary



## Yellow-billed Cuckoo survey detections and breeding classification on the lower Colorado River by region and period, 2009.

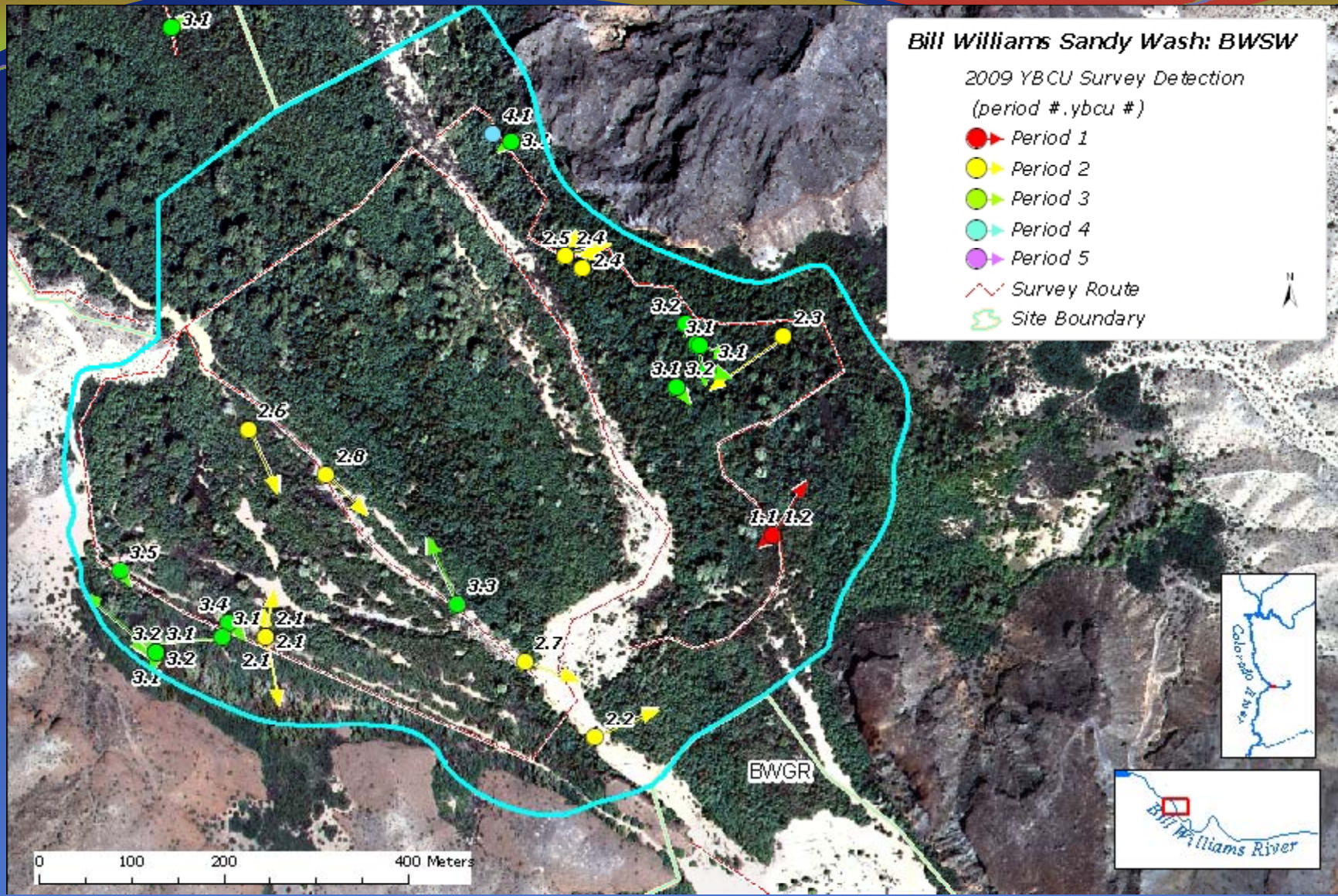
\* POB=possible breeding, PRB=probable breeding, COB=confirmed breeding

Region	Survey Period					Total	Breeding Status*			
	1	2	3	4	5		POB	PRB	COB	Total
Bill Williams River NWR	20	35	43	16	4	118	21	2	7	30
North of Bill Williams River	1	2	1	0	0	4	1	0	0	1
Sites near Blythe/Cibola	5	14	18	4	3	44	4	2	5	11
South Sites – Yuma area	3	5	2	2	0	12	1	1	0	2
Total	21	58	63	24	7	178	27	5	12	44

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## Detection probabilities at restoration and natural sites.

Survey period	Restoration p (±se), n=21	Natural p (±se), n=37	All Sites p (±se), n=58
<b>Total</b>	0.527249 (±0.075008)	0.633271 (±0.055319)	0.593326 (±0.044716)
<b>(PSI)</b>	0.4877 (±0.1120)	0.4353 (±0.0820)	0.4533 (±0.0661)



## Yellow-billed Cuckoo nests found on the lower Colorado River, 2009.

Nest	Location	# eggs	# fledg. (Successful Y/N)	Date Found	Nestlings banded	Nest Tree Species	Tree Height (m)	Nest Height (m)
BWHB_N1_09	Honeycomb Bend	Unk	Y(2)	8/9		Tamarisk	8.2	3.4
BWCP_N1_09	Cottonwood Patch	2	Unk	7/21		Fremont Cottonwood	11	5
BWSW_N1_09	Sandy Wash	Unk	Y	7/17		Fremont cottonwood	22	7.5
CVCA1_N1_09	CVCA	3	Unk	7/16	3 (7/29/09)	Fremont cottonwood	12.9	5.7
CVCA1_N2_09	CVCA	2	N	7/20		Goodding's willow	7.8	4.8
PVER2_N1_09	Palo Verde Ecological	1+	N	8/1		Goodding's willow	10.5	3.9
PVER2_N2_09	Palo Verde Ecological	Unk	Y (1)	8/3		Goodding's willow	9	2.8
CIBSTH_N1_09	Cibola South	Unk	Y (2)	7/24		Tamarisk	6.7	5.1









Mean, standard deviation, and sample size for microclimate variables at vegetation plots with and without nests.

	Temperature (°C)		Humidity (%RH)	
	Diurnal	Nocturnal	Diurnal	Nocturnal
<b>Nests (2007-2009)<sup>1</sup></b>	30.87 ±2.23 (n=15)	25.21 ±2.25 (n=15)	<b>52.81 ±11.60</b> <b>(n=15)</b>	63.19 ±13.33 (n=15)
<b>Nests (2009)</b>	30.38 ±2.98 (n=7)	24.11 ±2.79 (n=7)	<b>56.93 ±14.97</b> <b>(n=7)</b>	69.10 ±16.76 (n=7)
<b>No Nest Occupied (2009)</b>	32.44 ±2.36 (n=35)	26.97 ±2.80(n=35)	<b>45.59 ±10.46</b> <b>(n=32)</b>	53.78 ±13.10 (n=32)
<b>No Nest Unoccupied (2009)</b>	32.99 ±2.53 (n=92)	26.93 ±2.55 (n=92)	44.40±10.79 (n=84)	55.30 ±11.81 (n=84)
<b>No Nest Combined (2009)</b>	32.93 ±2.54 (n=130)	26.99 ±2.63 (n=130)	44.45 ±10.69 (n=119)	54.74 ±12.10 (n=119)

<sup>1</sup> Averages for 2009 iButtons<sup>®</sup> placed at plots where 1 or more cuckoo nest was found over the period 2007- 2009.



# Soil Moisture

- 123 plots measured – 10 points each plots measured 5 times during the field season
- No relationship was found between soil moisture and humidity:
- Diurnal  $r^2=0.012$ ,  $P=0.221$
- Nocturnal ( $r^2=0.018$ ,  $P=0.142$ ) across 123 vegetation plots.
- The same was true for soil moisture and temperature (diurnal;  $r^2=0.014$ ,  $P=0.170$ , nocturnal;  $r^2=0.004$ ,  $P=0.475$ ) across 133 plots.

# Banding Adult YBCU



# 2010 Field season

- More focus on CVCA and PVER restoration sites
- More focus on banding and putting transmitters on cuckoos on restoration sites

## Acknowledgements

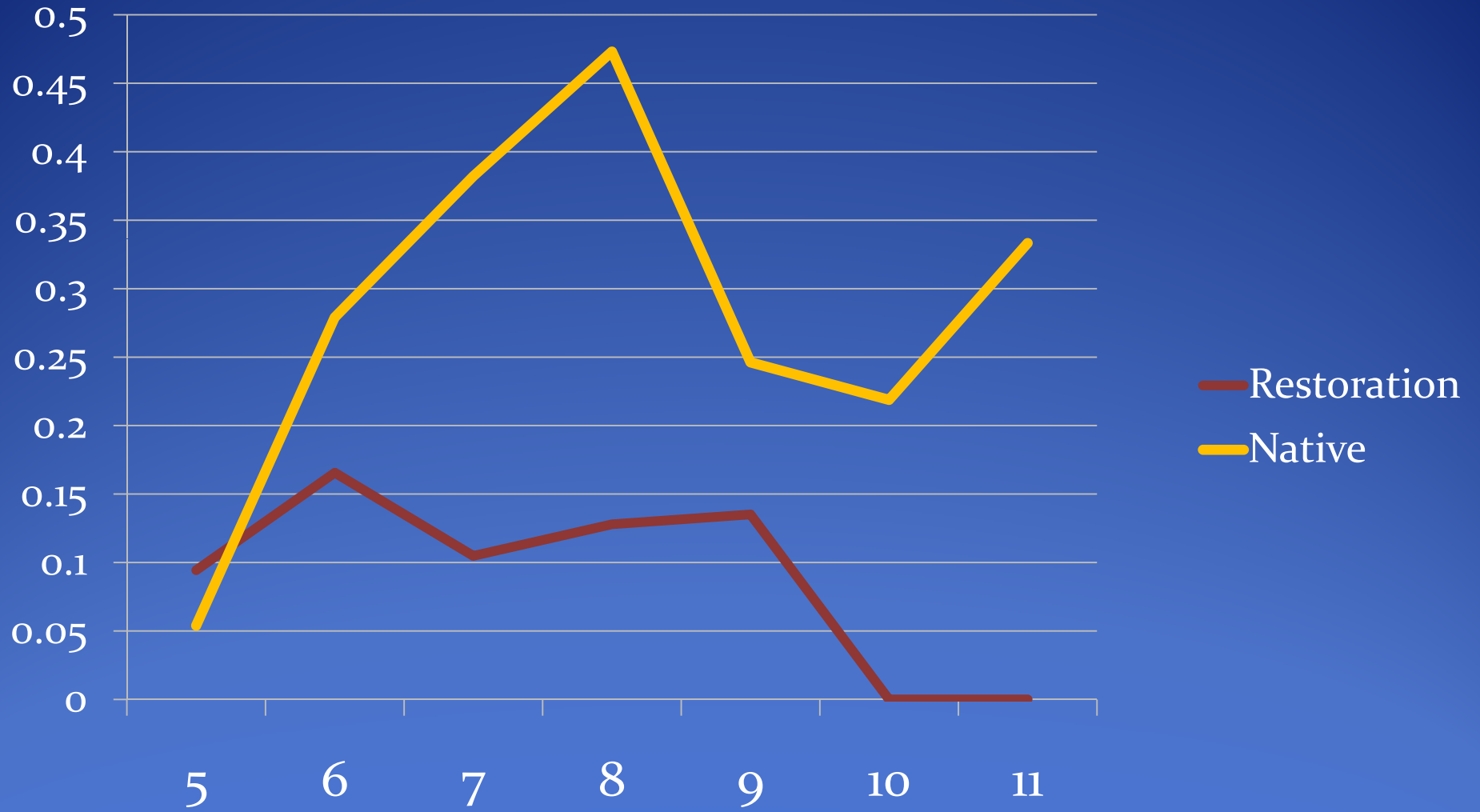
The Southern Sierra Research Station wishes to thank the following organizations and individuals for their support and assistance with this project: Colorado River Indian Tribes and Stephanie Hines, USFWS and Mike Oldham, USFWS and Dominic Barrett, USFWS and Juliette Gutierrez, USFWS and Tina Lynsky, USFWS and Dick Gilbert, USFWS and Kathleen Blair, CAFG and Pam Beare, BOR and Bill Fingleton, AZGF and Troy Smith, USFWS and Jack Allen, USFWS and Ty Benally, NDOW and Keith Brose, USFWS and Merry Maxwell, CAFG and Conrad Jones, AZGF and Bob Achee, BOR and Barbara Raulston, BLM and Fred Wong, BLM and Todd Shoaff, AZGF and Lin Piest, SWCA and Tom Koronkiewicz.

We would also like to thank our field assistants and personnel of the Southern Sierra Research Station, Carlie Henneman, and Mary Whitfield.

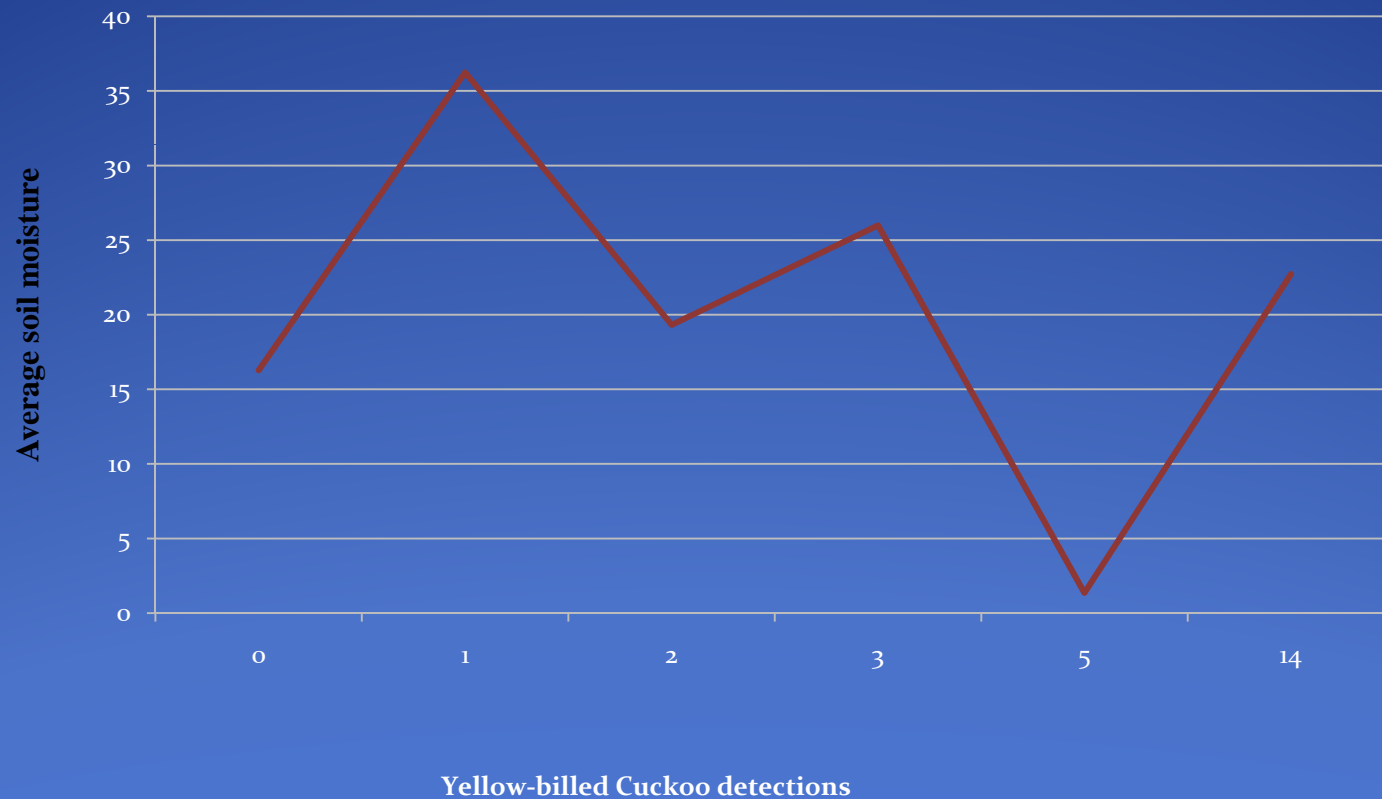
# QUESTIONS?



# YBCU Detections/survey effort by time of day, 2009



**Figure . Yellow-billed Cuckoo detections and soil moisture on survey sites on the Lower Colorado River, 2008.**



	<b>Visit Number</b>					<b>Total detect/region</b>
	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	
<b>Sites North of BWRNWR</b>	<b>1</b>	<b>3</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>8</b>
<b>Bill Williams River NWR</b>	<b>11</b>	<b>30</b>	<b>35</b>	<b>36</b>	<b>18</b>	<b>144</b>
<b>Sites Near Blythe</b>	<b>0</b>	<b>11</b>	<b>5</b>	<b>5</b>	<b>4</b>	<b>25</b>
<b>Sites near Yuma</b>	<b>0</b>	<b>7</b>	<b>5</b>	<b>1</b>	<b>0</b>	<b>13</b>
<b>Total Detections</b>	<b>12</b>	<b>51</b>	<b>49</b>	<b>42</b>	<b>22</b>	<b>190</b>