Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Ch- ch- change is Good for Yellow-billed Cuckoos on the Lower Colorado River

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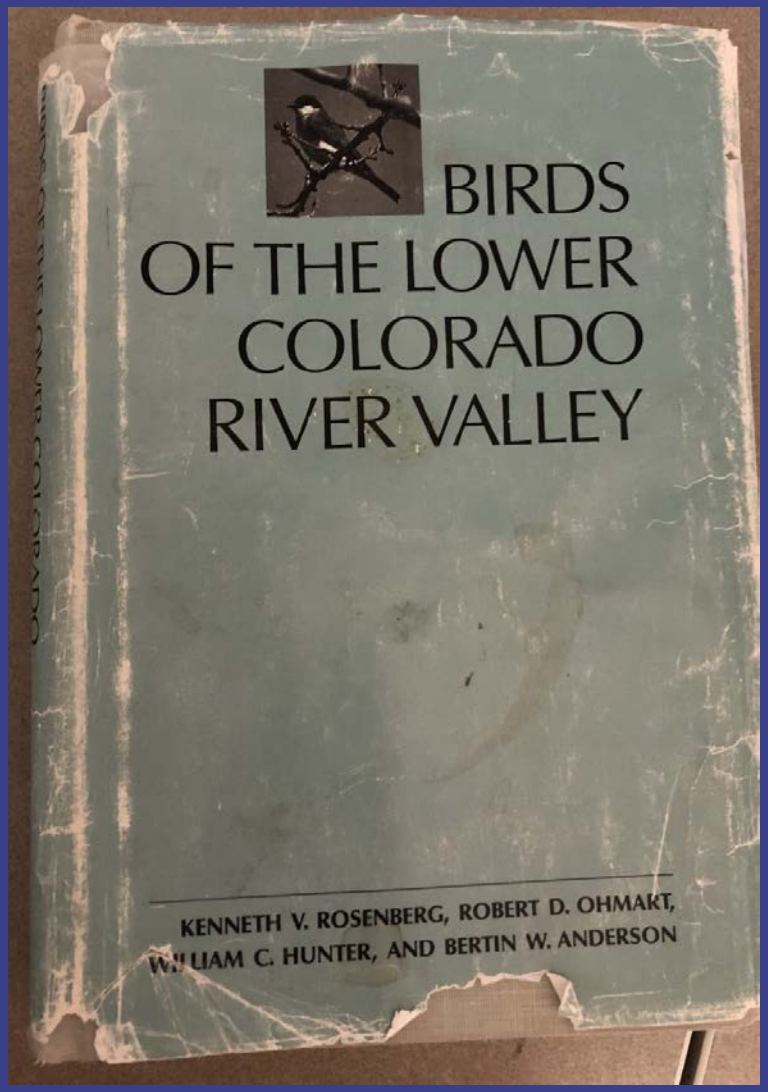
Research for Conservation of Biological Diversity

Parametrix

ENGINEERING . PLANNING . ENVIRONMENTAL SCIENCES

The “Lower Colorado River Project” 1972-1984:

“Mature Cottonwood– Willow stands provide the primary habitat for YBCU in the LCRV.”



1980s

Gaines and Laymon 1984:

- YBCU not restricted to old-growth willows and cottonwoods, inhabits young trees as well
- Suggest maintaining habitat through flooding/thinning

Anderson and Laymon 1988

- avg tree ht 10-15 m, nested >3yr hab

Laymon and Halterman 1989

- canopy height 5–30 m; understory height 1–6 m

2000s

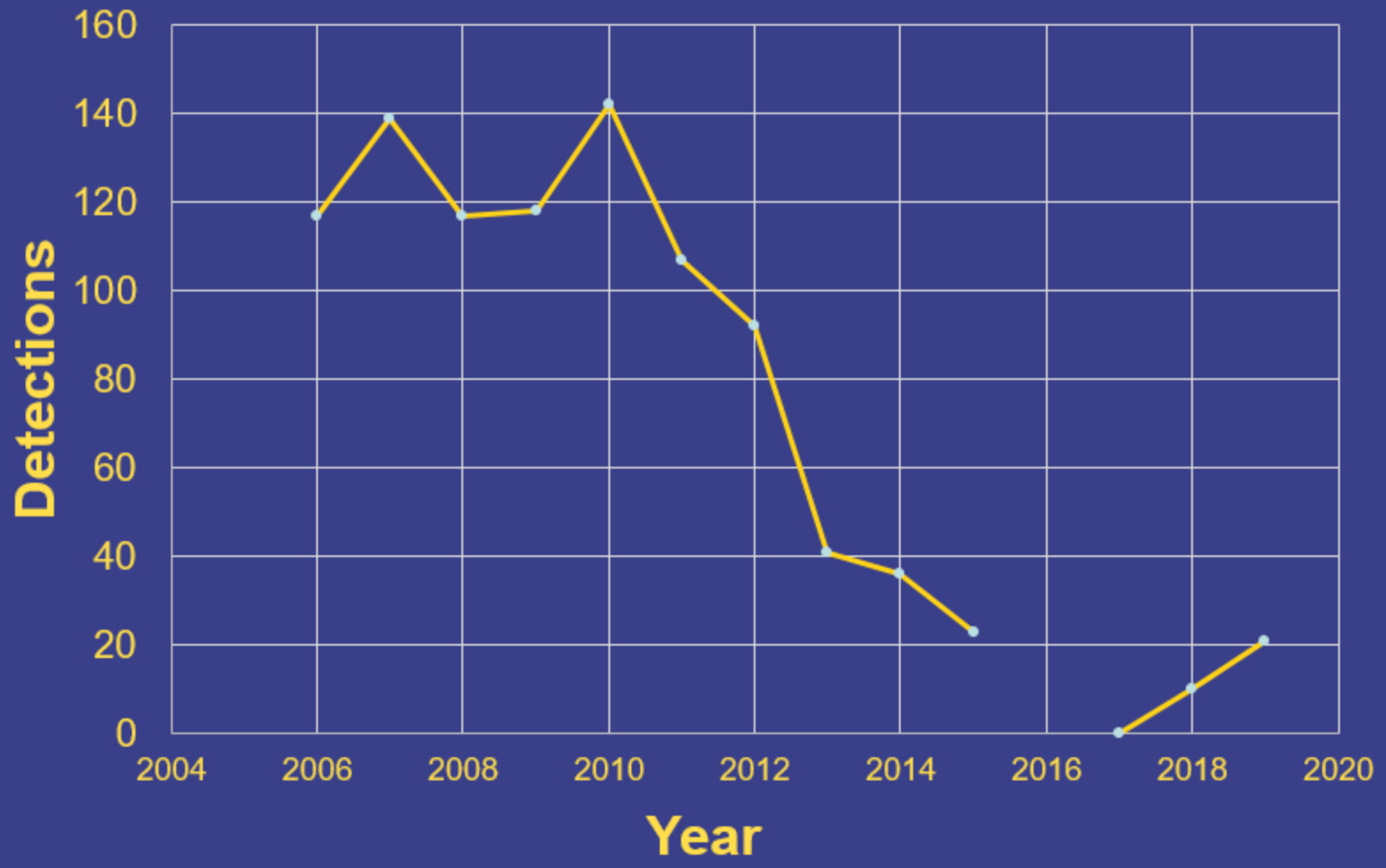
LCR MSCP 2004:

- Cuckoos associated with large patches of mature cw-w, avg overstory height > 4.6 meters (m)…mosaic of uneven aged stands

McNeil et al. 2013 (LCR data from 2006-2012):

- Native small tree stem density and total canopy closure positively associated with cuckoo nest placement
- Native large tree stem density showed a weak positive association with nest placement.

Detections of YBCU on the BWR NWR 2006-2019



Lower Colorado River Multi-species Conservation Program

….is a 50-year partnership responding to the need to balance the legal use of LCR water resources and the conservation of threatened and endangered species and their habitat in compliance with the Endangered Species Act.

www.lcrmscp.gov

57 Steering Committee Members

- Members Include:
  - Federal Resource Agencies
  - California, Nevada and Arizona Resource Agencies
  - Native Am. Tribes
  - Conservation Groups

LCR MSCP HABITAT GOALS

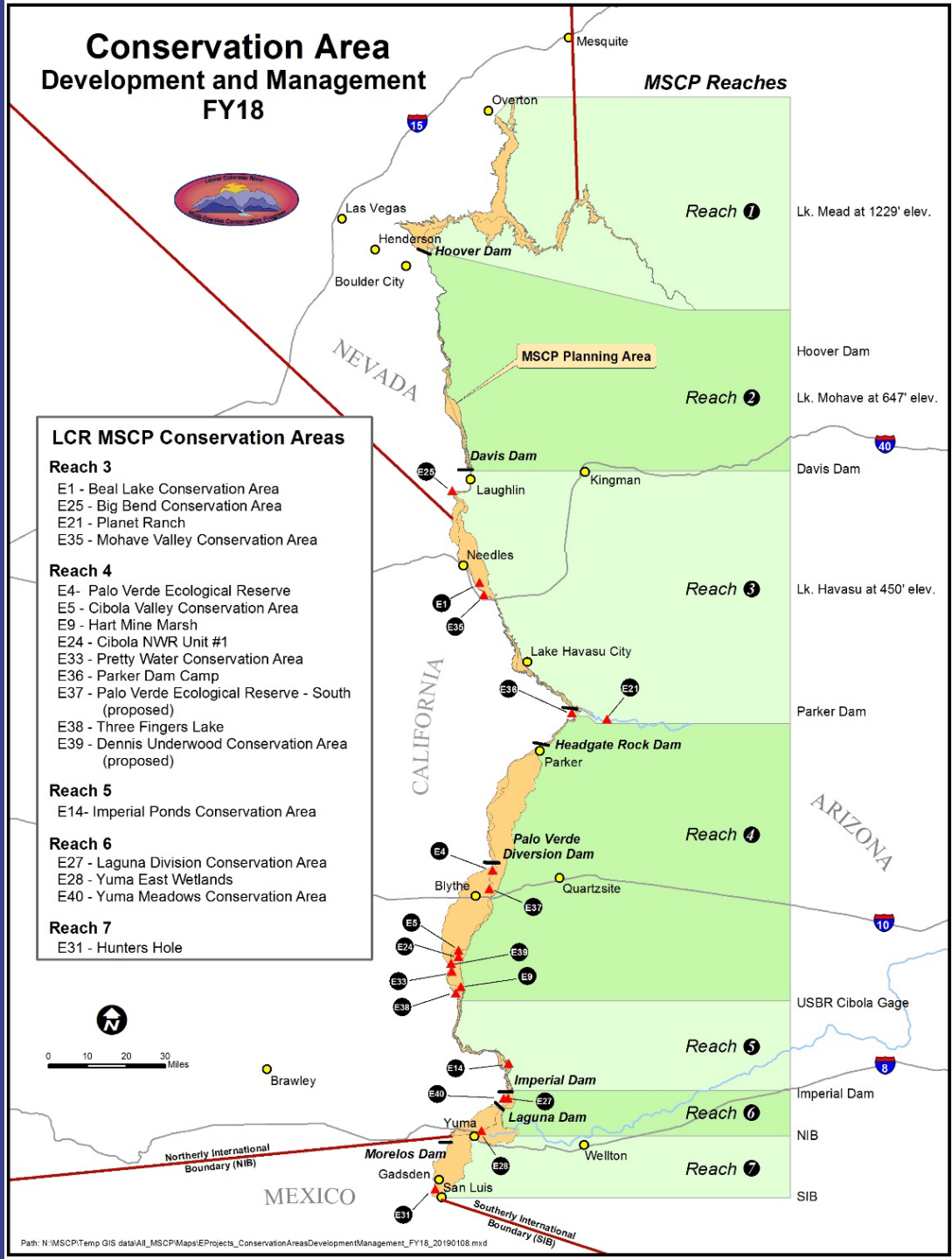
2,404 ha CW-W (1197 ha)

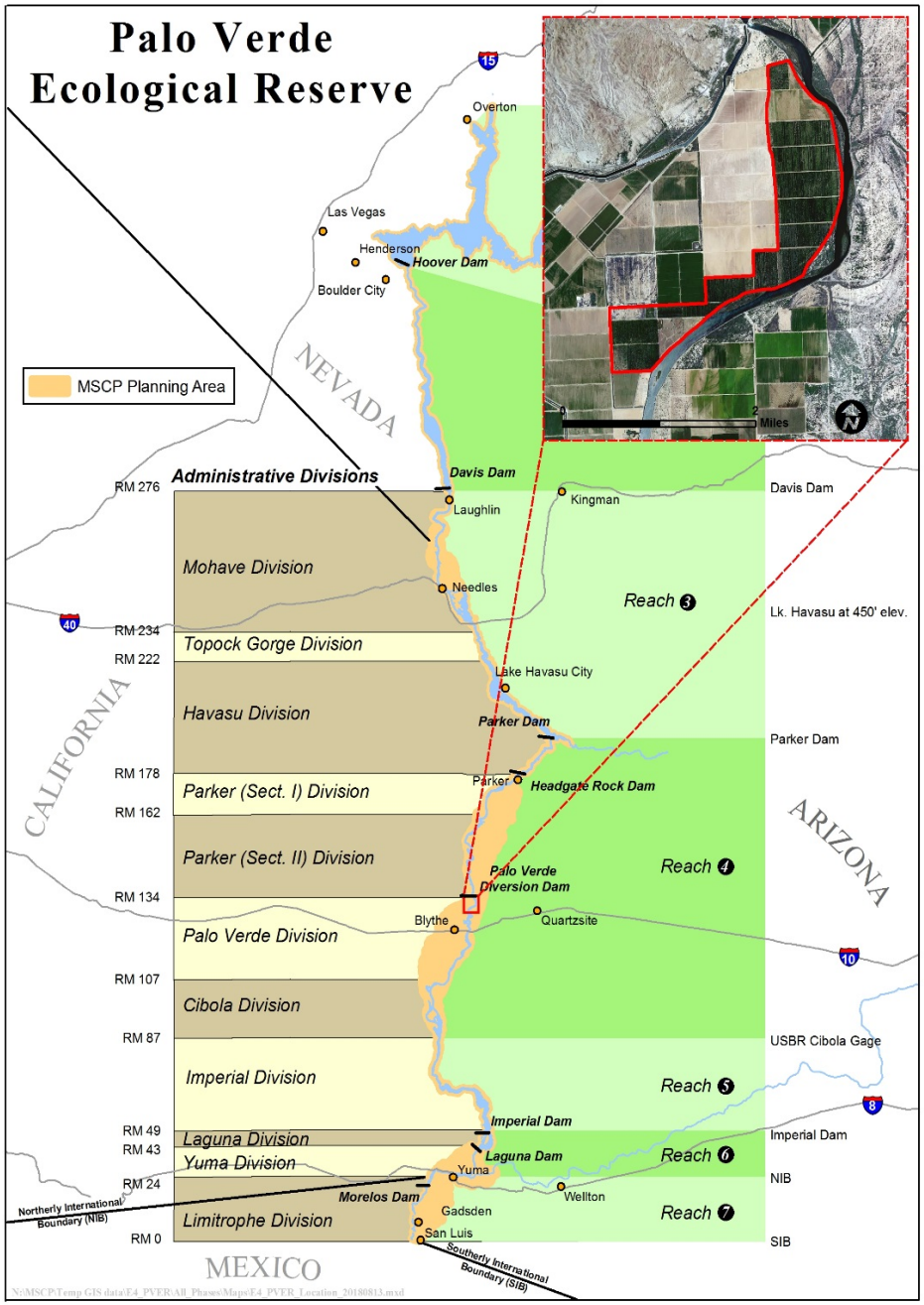
534 ha Honey Mesquite (323 ha)

207 ha Marsh (146 ha)

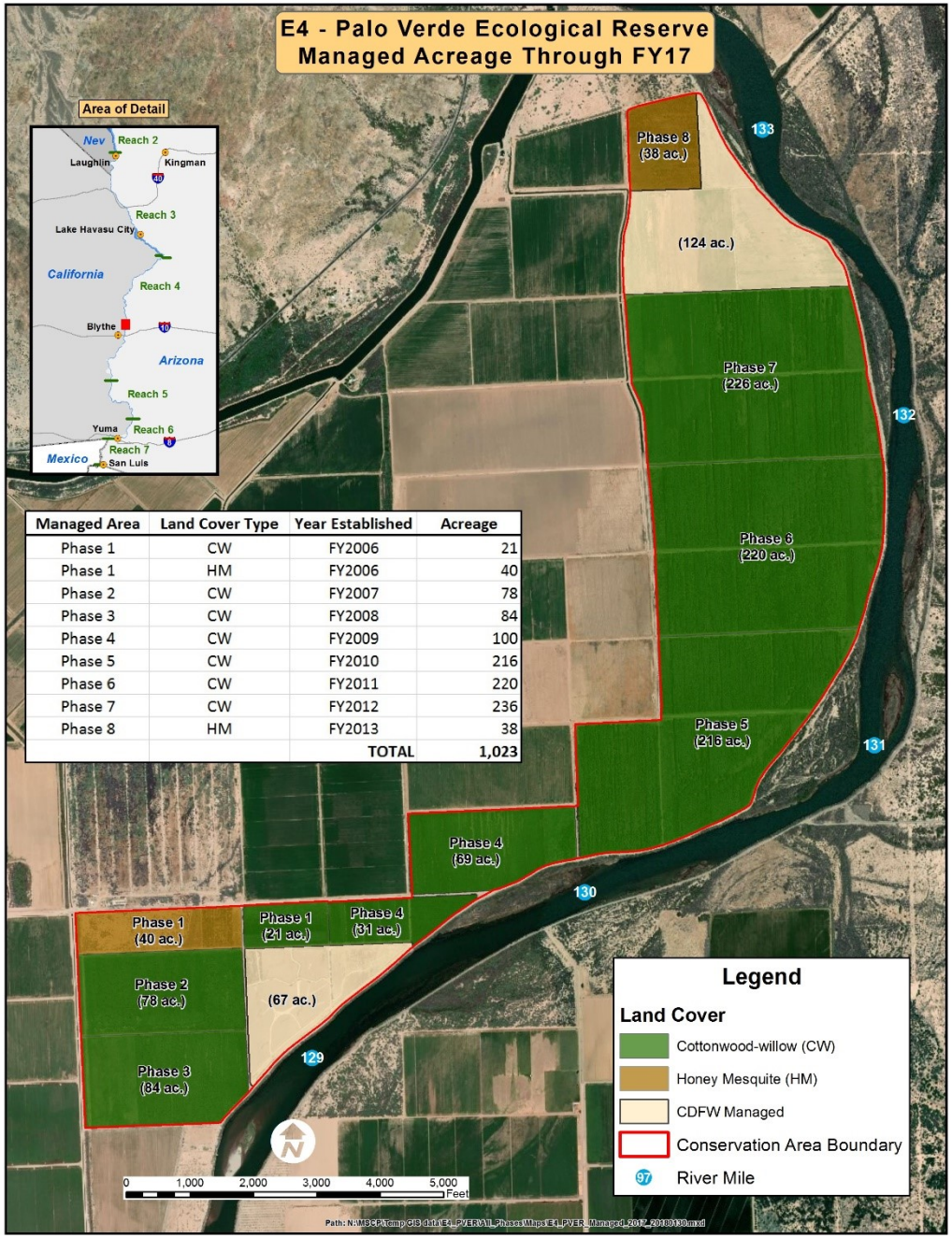
146 ha Backwater (33 ha)

- 17 Restoration sites between Davis Dam and US-MX Border
- Habitat for 28 species covered by the LCRMSCP




Palo Verde
Ecological Reserve
MSCP Planning Area
Overton
Las Vegas
Henderson
Hoover Dam
Boulder City
NEVADA
CALIFORNIA
ARIZONA
MEXICO
Miles
Administrative Divisions
RM 276
Davis Dam
Laughlin
Kingman
Mohave Division
Needles
Reach 3
Lk. Havasu at 450' elev.
RM 234
Topock Gorge Division
RM 222
Lake Havasu City
Havasu Division
Parker Dam
RM 178
Parker
Headgate Rock Dam
Parker (Sect. I) Division
RM 162
Parker (Sect. II) Division
Palo Verde
Diversion Dam
Reach 4
RM 134
Blythe
Quartzsite
Palo Verde Division
RM 107
Cibola Division
RM 87
USBR Cibola Gage
Imperial Division
Reach 5
Imperial Dam
RM 49
Laguna Division
RM 43
Yuma Division
Laguna Dam
Reach 6
Yuma
RM 24
Morelos Dam
Wellton
Gadsden
Reach 7
Limitrophe Division
RM 0
San Luis
Northerly International Boundary (NIB)
Southerly International Boundary (SIB)
NIB
SIB

Palo Verde Ecol. Reserve Planted 2006-2013



Managed Area	Land Cover Type	Year Established	Acreage
Phase 1	CW	FY2006	21
Phase 1	HM	FY2006	40
Phase 2	CW	FY2007	78
Phase 3	CW	FY2008	84
Phase 4	CW	FY2009	100
Phase 5	CW	FY2010	216
Phase 6	CW	FY2011	220
Phase 7	CW	FY2012	236
Phase 8	HM	FY2013	38
		TOTAL	1,023

Palo Verde Ecological Reserve

414 ha planted 2006-13

- >365K Cottonwood
- > 637K Goodding's Willow
- > 477K Coyote willow
- >79 K *Baccharis* spp.
- >52K Quailbush
- >18K Honey mesquite
- 175 K Grasses

By 2015:

- **96% the 414 ha planted at PVER was occupied by YBCU**

- **Up to 80 YBCU breeding territories (at least 2 birds per territory) were estimated**

Photo by SSRS

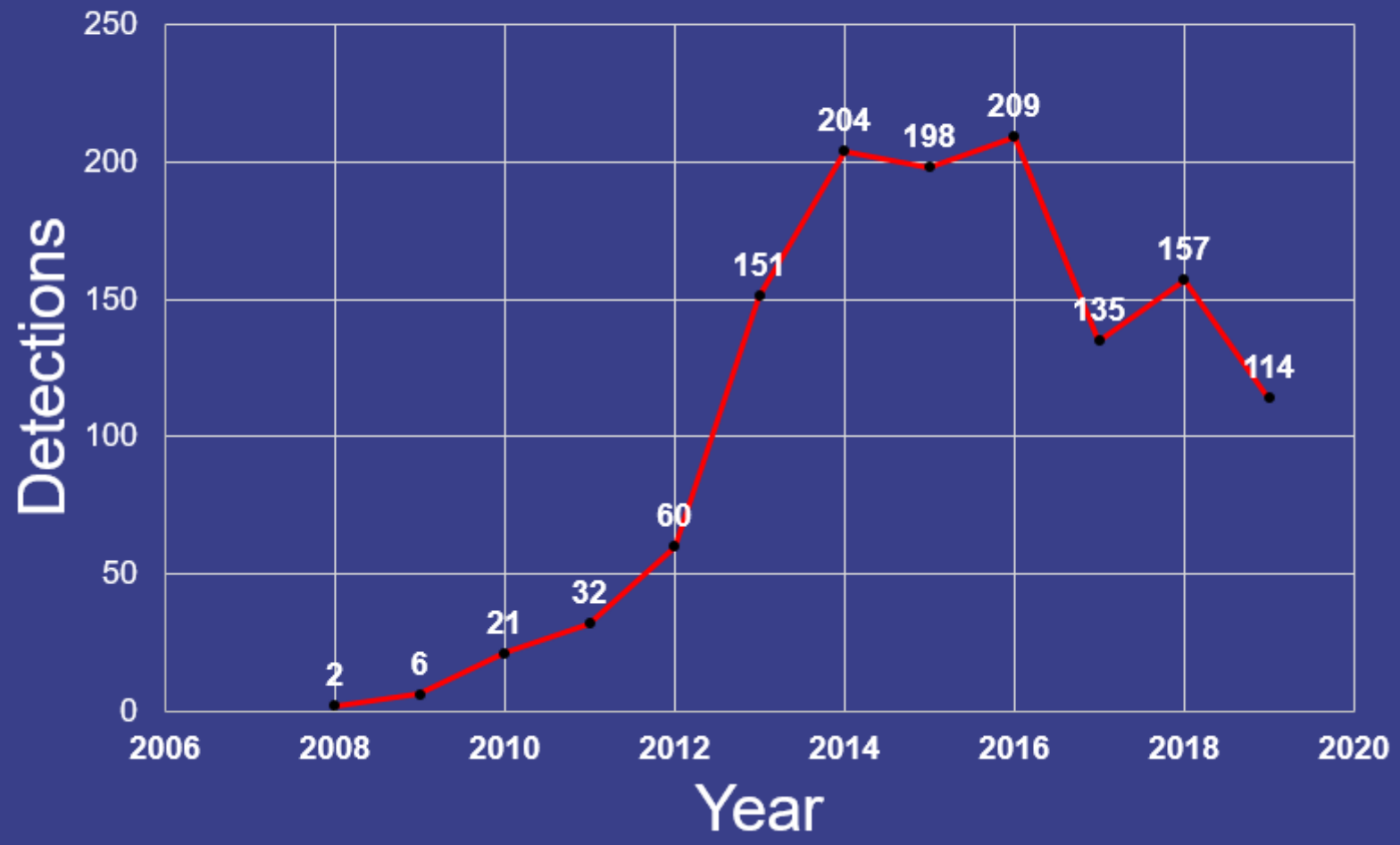
YBCU Use of Restored Habitat

- Standardized surveys (Halterman et al. 2015), most beginning during the 2nd growing season after planting

- YBCUs detected within 2 years after planting, some within 1 year

- Mgmt Concern: By year 5 after planting, detections begin to decline, with cuckoos moving into more recently planted areas.

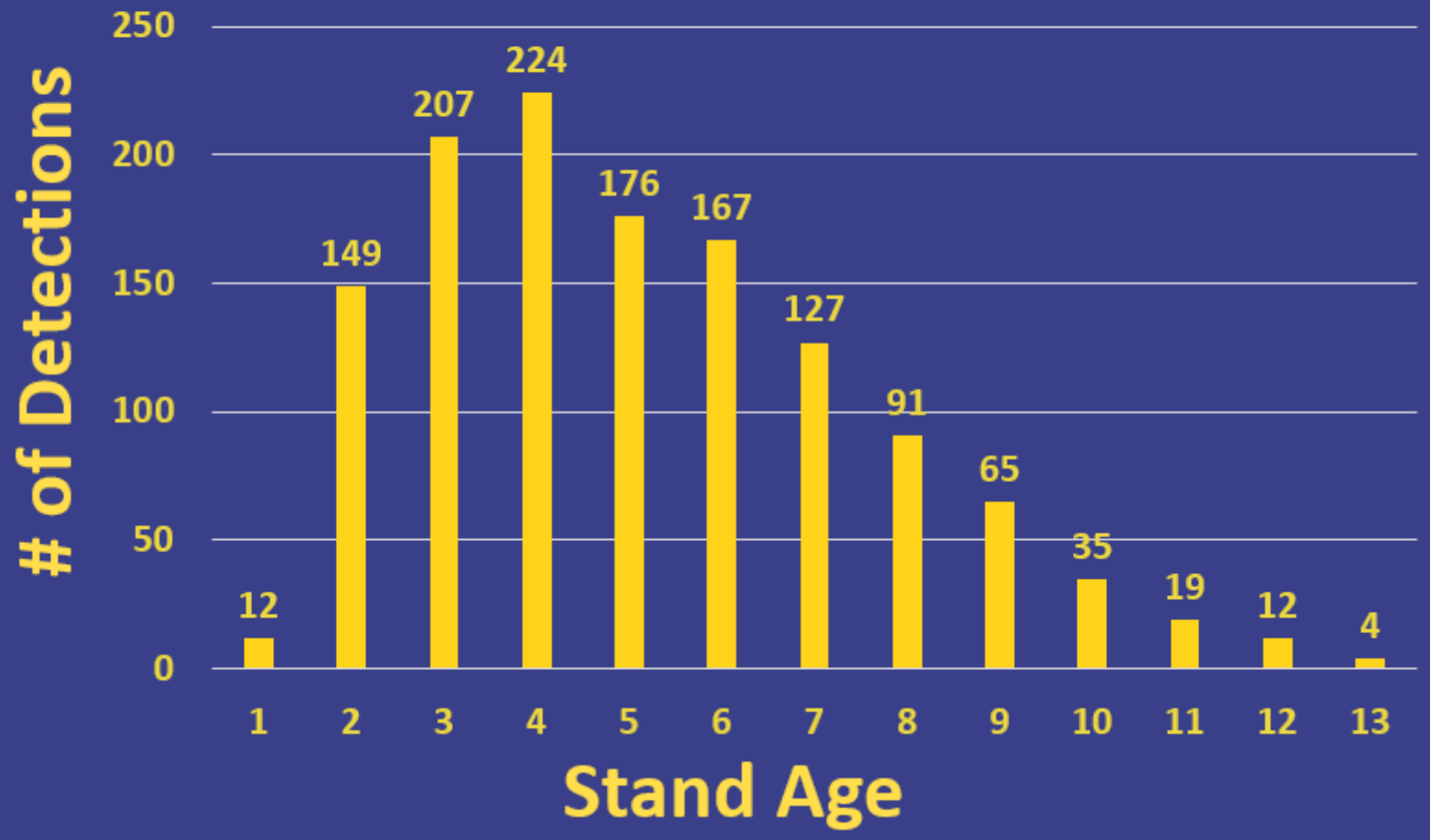
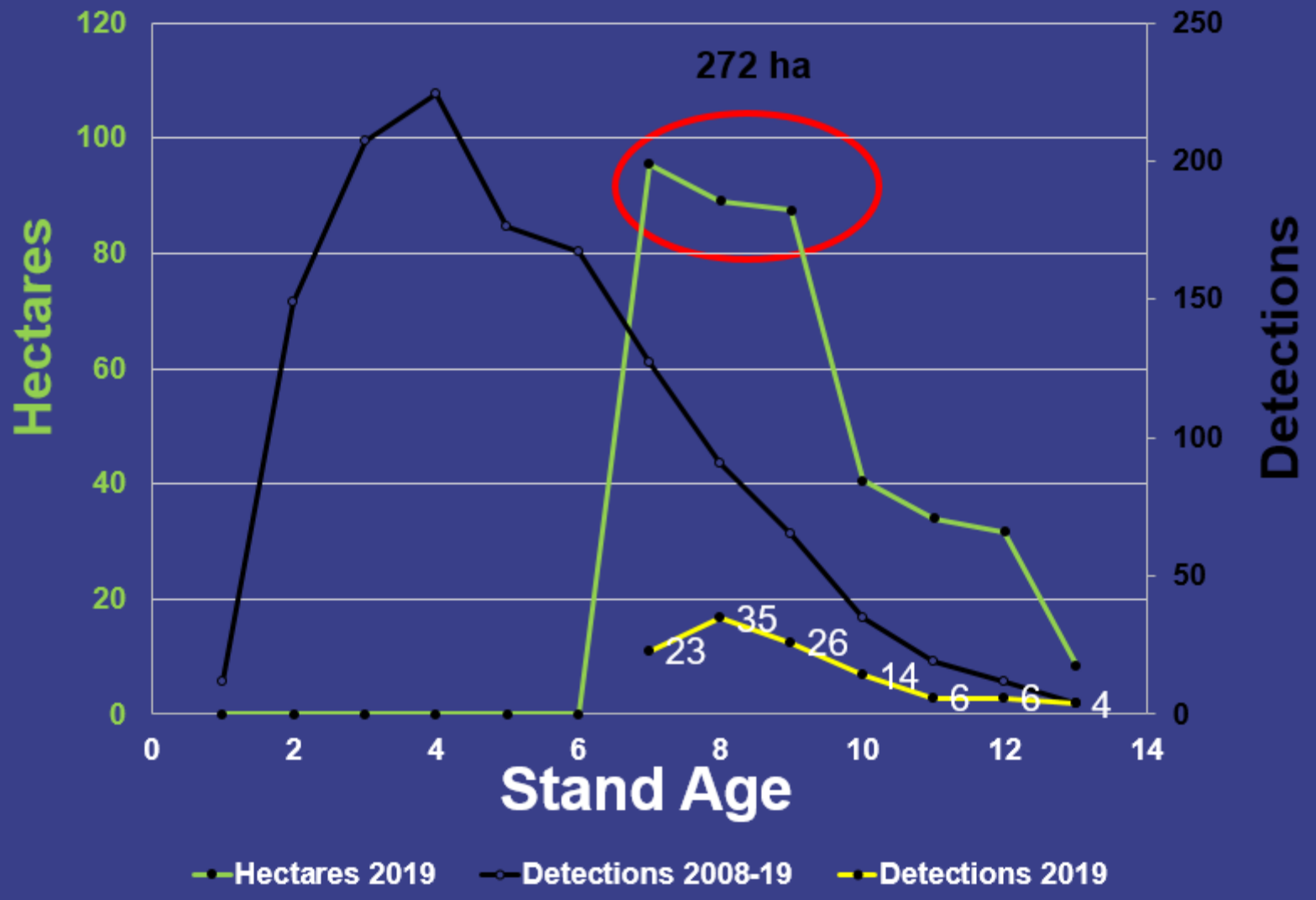
PVER: Year X Detections (2008-2019)



Results: Detections by age + size + age*size

Predicted survey detections by site age for sites 20, 50, and 80 ha.
95% predictive intervals are shown by grey shading around each line.

PVER Surveys 2008-2019
YBCU Detections x Stand Age



Stand Age x Area x Detections