Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Small Mammal Captures on the LCR

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Goals of small mammal trapping

- Determine presence of MSCP listed and evaluation species both within the MSCP planning area and within restoration sites
- Determine abundance and population trends of Sigmodon within select restoration areas
- Characterize the habitat preferences of MSCP species

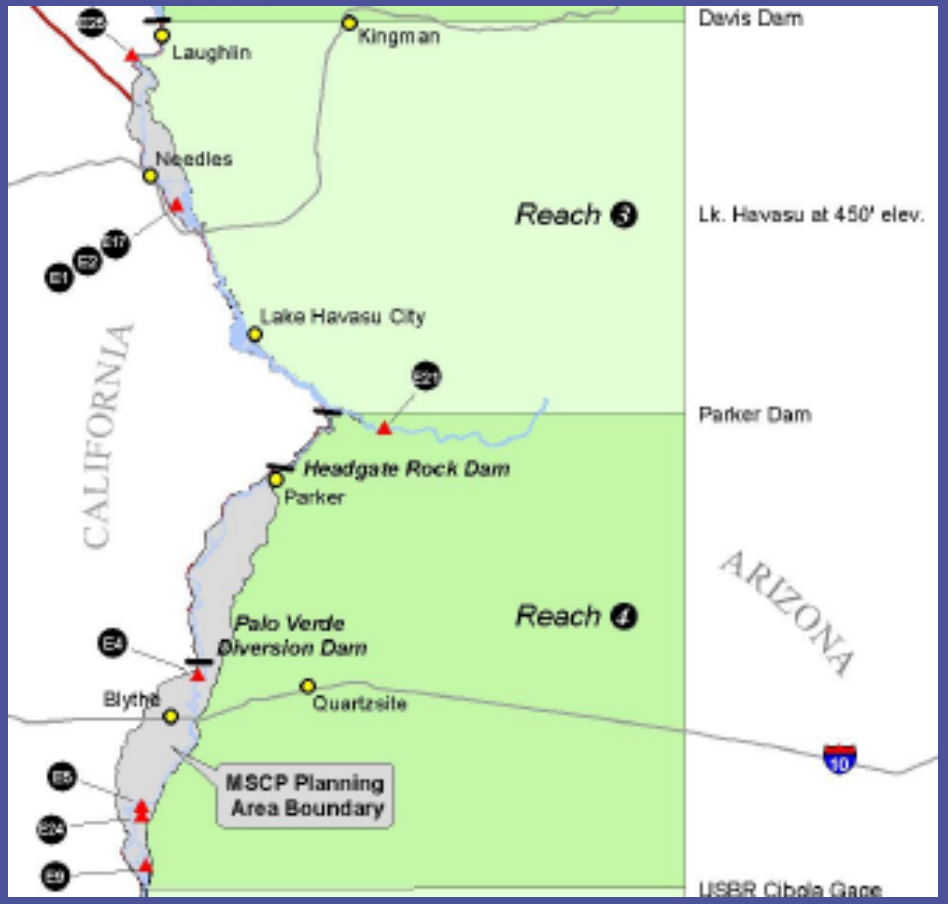
Trapping methods

Sigmodon arizonae plenus (SIAR)

- Subspecies of the Arizona cotton rat
- Occurs in southeastern California, Arizona, and western Mexico
  - Resident population confirmed in Nevada 2012
  - Southern extent of the range still unknown
- Associated with riparian thickets with moderate to dense grass cover

Conservation Measures

- **CRCR1** – Conduct research to better define Colorado River cotton rat habitat requirements
- **CRCR2** – Create 125 acres of Colorado River cotton rat habitat



Sigmodon hispidus eremicus (SIHI)

- Morphologically similar to SIAR
- Restricted distribution from Imperial NWR south to Mexico, Imperial Valley CA

Conservation Measures

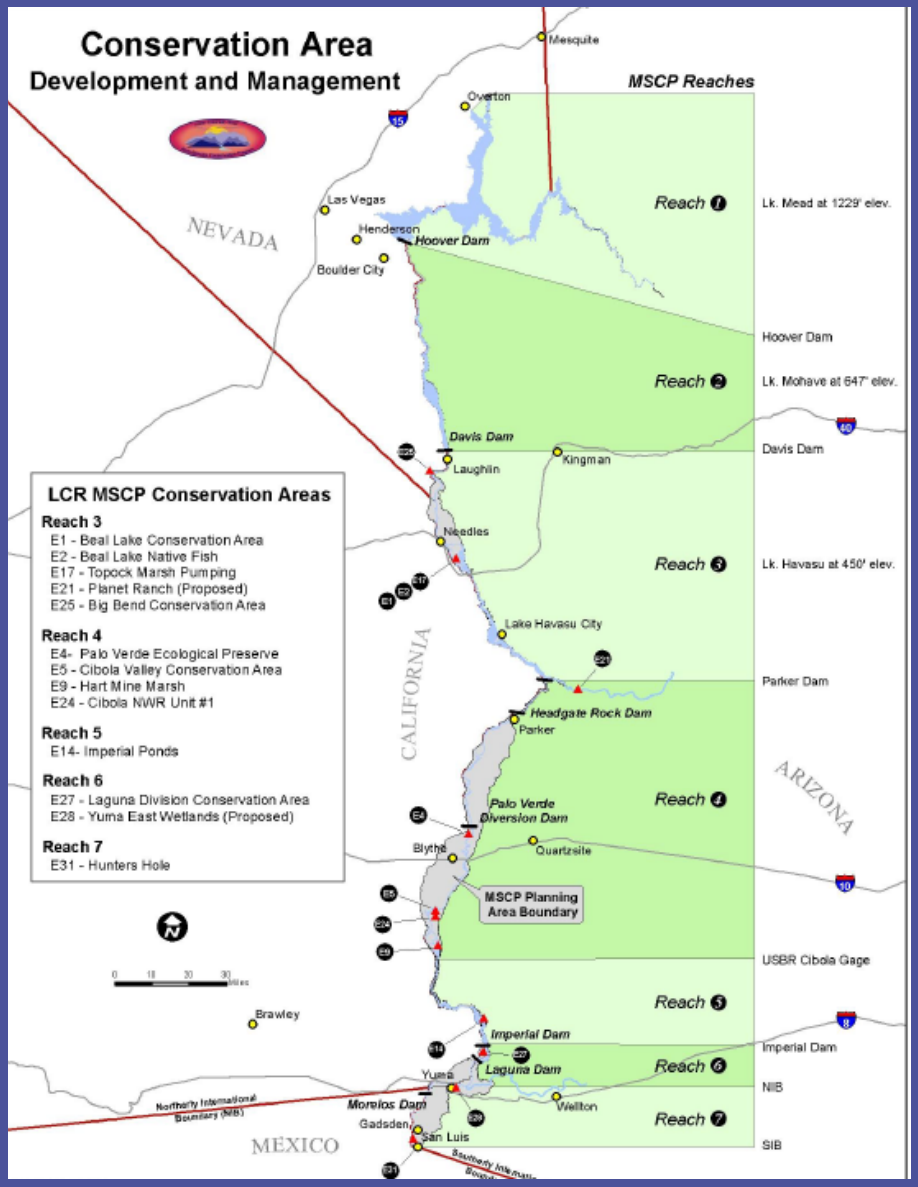
- YHCR1-Conduct research to better define Yuma hispid cotton rat habitat requirements
- YHCR2-Create 76 acres of Yuma hispid cotton rat habitat.

Chaetodipus penicillatus sobrinus (CHPE)

- Evaluation species
- Occurs in xeric communities in southeastern Nevada and northwestern Arizona
- While C. penicillatus is captured, C. p. sobrinus needs to be validated with genetics.

Conservation Measures

- DPMO1-Conduct surveys to locate desert pocket mouse habitat

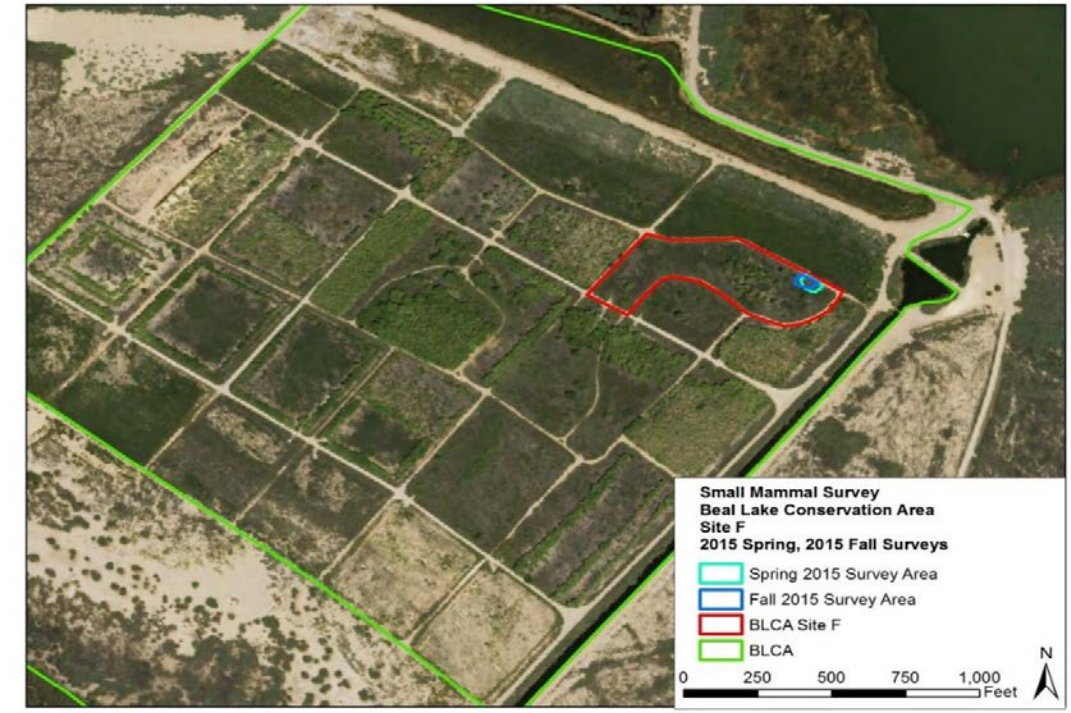


Big Bend

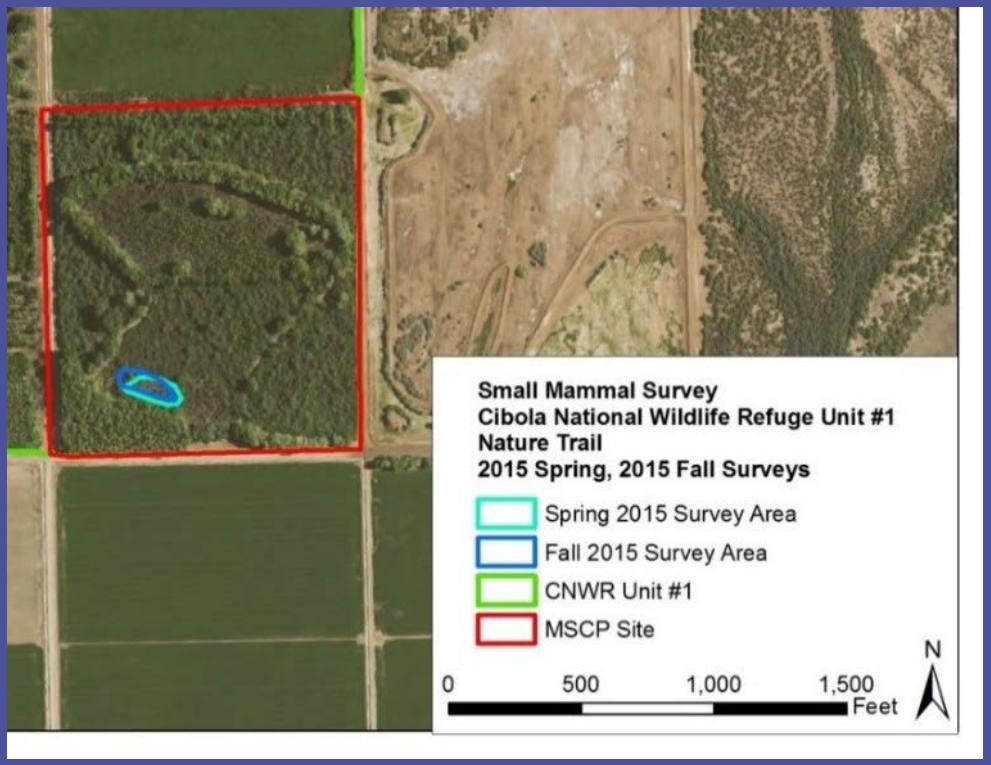
	Colorado River cotton rat	Desert pocket mouse
Spring ’12	2	0
Fall ’12	3	48
Spring ’13	2	3
Fall ’13	1	53
Spring ’14	1	5
Fall ’14	1	14
Spring ’15	4	2
Fall ’15	0	7
Spring ’16	3	1
Fall ’16	0	16

Beal Lake

	Fall '11	Spring '12	Fall '12	Spring '13	Fall '14	Spring '15	Fall '15	Spring '16	Fall '16
Colorado River cotton rat	3	1	1	0	0	0	0	0	0
Desert pocket mouse	1	2	1	1	1	2	2	1	5



Cibola Nature Trail

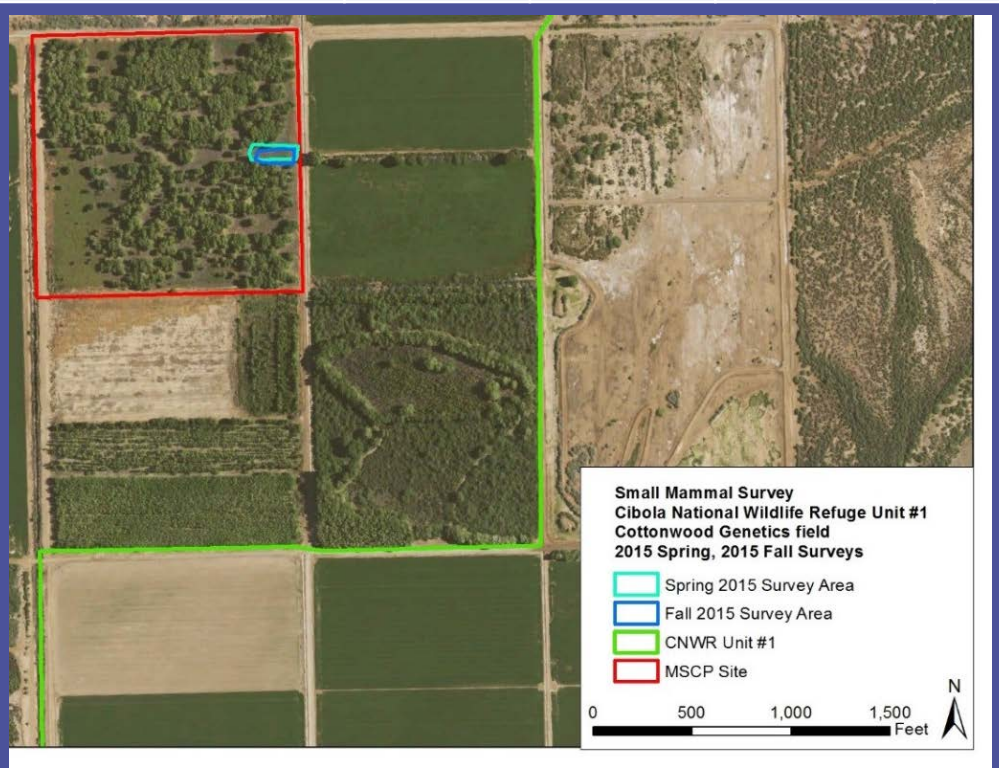


	Spring '11*	Fall '11*	Spring '13	Fall '13*	Fall '14	Spring '15	Fall '15
Colorado River cotton rat	14	10	4	7	6	2	1

* Trapping was conducted over 4 nights instead of 1 night

Cottonwood Genetics

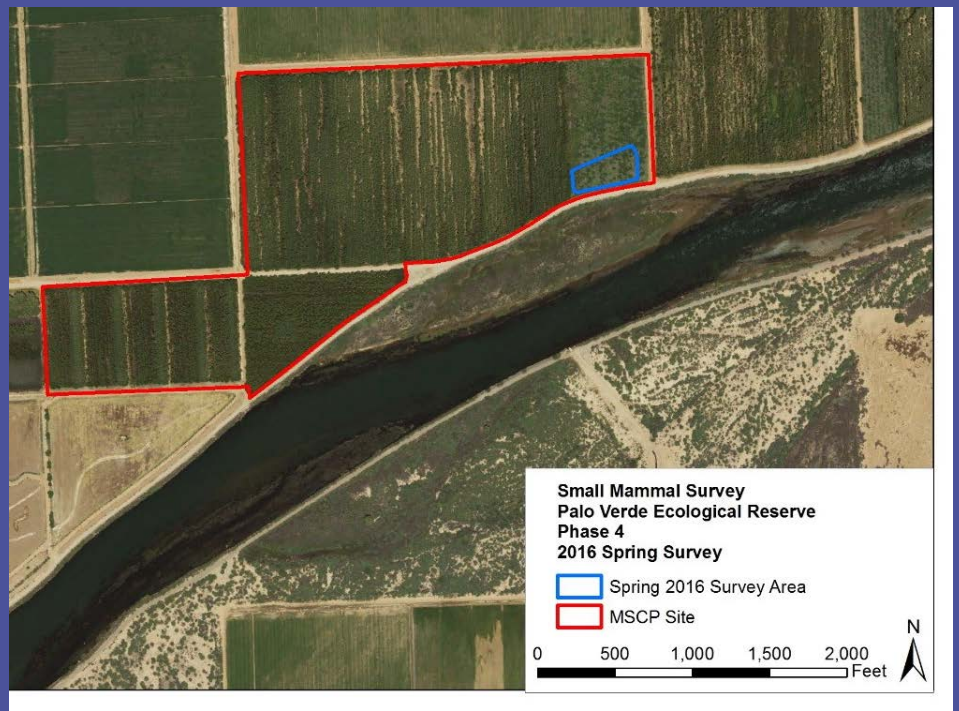
	Spring '11	Fall '11	Spring '13	Fall '13	Spring '14	Spring '15	Fall '15	Fall '16
Colorado River cotton rat	3	2	15	1	7	3	0	0
Desert pocket mouse	0	0	0	1	2	1	2	3



Cibola Valley Conservation Area

	Colorado River cotton rat	Desert pocket mouse
Spring ’11	4	0
Fall ’11	7	2
Spring ’12	10	0
Fall ’12	2	19
Spring ’13	7	0
Fall ’13	2	5
Spring ’14	8	9
Fall ’14	4	6
Spring ’15	10	12
Fall ’15	8	6
Spring ’16	1	14
Fall ‘16	12	10

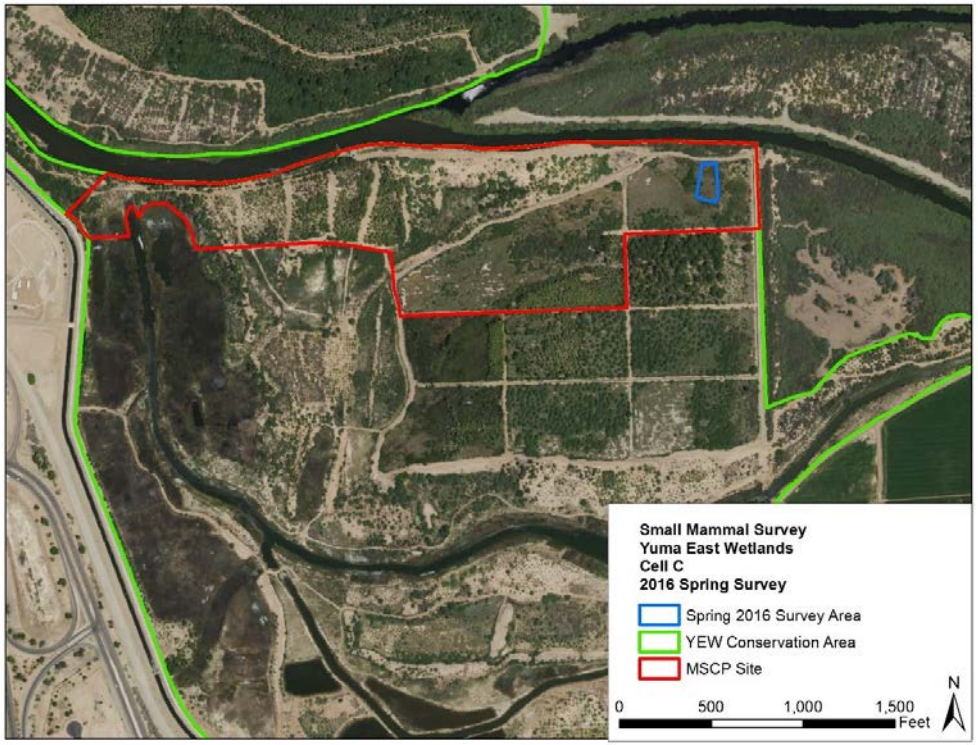
Palo Verde Ecological Reserve



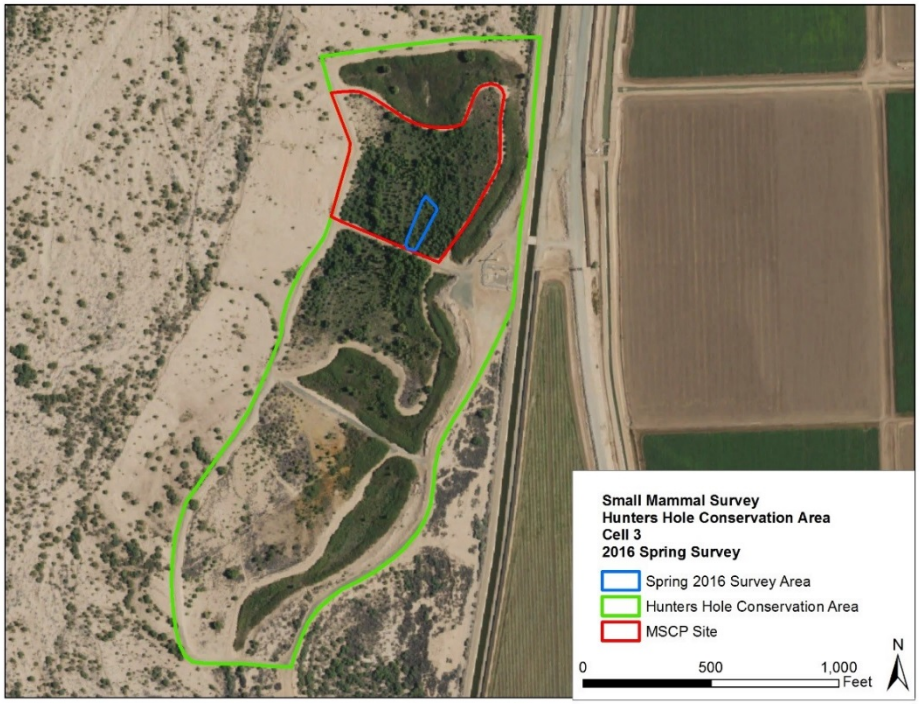
	Colorado River cotton rat	Desert pocket mouse
Spring ’12	12	1
Fall ’12	6	2
Spring ’13	4	1
Fall ’13	2	1
Spring ’14	7	0
Fall ’14	3	3
Spring ’15	26	0
Fall ’15	3	2
Spring ’16	0	0
Fall ‘16	2	1

Yuma East Wetlands

	Fall '12	Spring '13	Fall '13	Spring '14	Fall '14	Spring '15	Fall '15	Spring '16
Yuma hispid cotton rat	2	2	13	3	23	14	8	2
Desert pocket mouse	6	0	0	0	0	0	3	0



Hunter's Hole



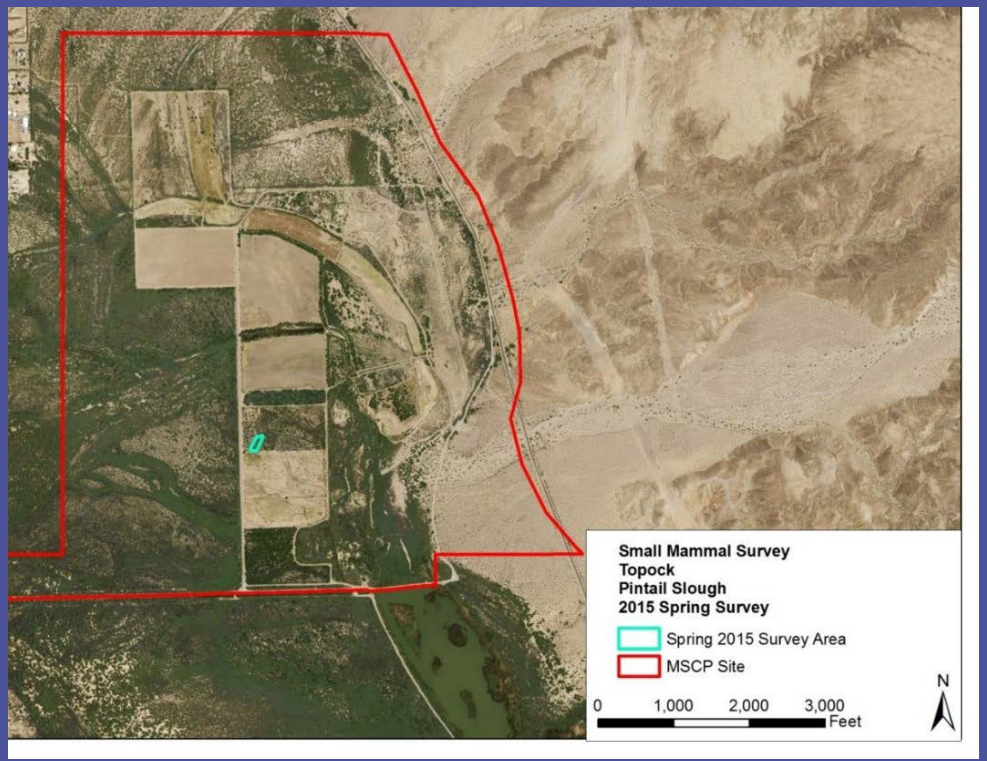
	Fall '12	Spring '13	Fall '13	Spring '15	Fall '15	Spring '16	Fall '16
Yuma hispid cotton rat	0	0	0	0	1	2	12
Desert pocket mouse	3	1	3	0	0	0	0

Systemwide Monitoring

	Spring ‘12	Fall ‘12	Fall ‘13	Spring ‘16	Fall ’16
Laguna Dam/Mittry Lake	1 SIHI	-	-	3 SIHI 4 CHPE	8 CHPE
Gila River at Highway 95	3 SIHI	-	-	-	-
Highline Canal	-	2 SIHI	-	-	-
Yuma Valley Limitrophe	-	-	1 SIHI 1 CHPE	-	-
Imperial Fishers Landing	-	-	-	1 SIHI 1 CHPE	-

Pintail Slough

	Spring ‘13	Fall ‘13	Spring ‘14	Spring ’15
Colorado River cotton rat	1	0	0	1
Desert pocket mouse	2	17	5	4



Takeaways

- Sigmodon present in all restoration sites
  - Dense grass with shrub overstory
- Unstable populations at most sites
  - Still a boom and bust species
- Genetic testing still needs to be completed for pocket mouse subspecies

Thanks!