Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Small Mammal Update

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Conservation Measures:

- CRCR1 - Conduct research to better define Colorado River cotton rat (*Sigmodon arizonae plenus*) habitat requirements

- CRCR2 - Create 125 acres of Colorado River cotton rat (*Sigmodon arizonae plenus*) habitat (2512 acres creditable habitat created to date)

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Conservation Measures:

- YHCR1 - Conduct research to better define Yuma hispid cotton rat (*Sigmodon hispidus eremicus*) requirements

- YHCR2 - Create 76 acres of Yuma hispid cotton rat (*Sigmodon hispidus eremicus*) habitat (183 acres of creditable habitat created to date)

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Conservation Measures:

- DPMO1 - Conduct surveys to locate desert pocket mouse (*Chaetodipus penicillatus sobrinus*) habitat

Methods

- Sherman live traps set in dense grass understory with nearby overhead cover
- Traps set out to cover most likely area for captures, at least 5 traps per transect depending on habitat
- Set 1-2 hours before sunset and checked 1-2 hours after sunrise
- *Sigmodon* gender and age (juvenile, subadult, adult) were recorded

Big Bend Conservation Area:

- *Sigmodon arizonae plenus* and *Chaetodipus penicillatus* captured in 2018
- Intermittent *Sigmodon arizonae plenus* and *Chaetodipus penicillatus* presence since 2012
- Captured in secondary marsh

Species	Fall 2018
Sigmodon arizonae plenus	1
Chaetodipus penicillatus	9

Beal Lake Conservation Area:

- No *Sigmodon arizonae plenus* captured since 2012
- *Chaetodipus penicillatus* consistently present
- 1 cell with suitable *Sigmodon arizonae plenus* habitat, potentially more around Beal Lake

Species	Spring 2018	Fall 2018
Sigmodon arizonae plenus	0	0
Chaetodipus penicillatus	3	0

Cibola Valley Conservation Area:

- *Sigmodon arizonae plenus* captured in 2018, consistent presence in Phase 1 near grasses and coyote willow

Species	Fall 2018	Fall 2019
Sigmodon arizonae plenus	6	2
Chaetodipus penicillatus	0	0

Palo Verde Ecological Reserve:

- *Sigmodon arizonae plenus* present in multiple phases

Species	Spring 2019
Sigmodon arizonae plenus	1
Chaetodipus penicillatus	1

Cibola NWR Unit #1:

- *Sigmodon arizonae plenus* present in Nature Trail in Fall 2018
- Continued *Sigmodon arizonae plenus* presence in Nature Trail in habitat with Baccharis and Johnson grass

Species	Fall 2018	Fall 2019
Sigmodon arizonae plenus	4	0
Chaetodipus penicillatus	0	2

Hart Mine Marsh:

- 21 *Sigmodon arizonae plenus* captured in Spring 2018! First encounter.

Species	Spring 2018	Spring 2019
Sigmodon arizonae plenus	21	7
Chaetodipus penicillatus	0	1

Laguna Division Conservation Area:

- First *Sigmodon hispidus eremicus* captured Fall 2018!

Species	Spring 2018	Fall 2018
Sigmodon hispidus eremicus	0	5
Chaetodipus penicillatus	3	12

Yuma East Wetlands:

- Consistent detections of *Sigmodon hispidus eremicus* since 2015
- Many areas with suitable habitat

Species	Spring 2018	Spring 2019	Fall 2019
Sigmodon hispidus eremicus	7	0	7
Chaetodipus penicillatus	0	1	0

Hunters Hole:

- Fires periodically open up the site for grasses to grow in

Species	Fall 2018	Spring 2019	Fall 2019
Sigmodon hispidus eremicus	0	1	1
Chaetodipus penicillatus	0	1	1

Additional Captures:

Species	Total Captures (spring 2018 - fall 2019)
Peromyscus eremicus	240
Dipodomys merriami	2
Mus musculus	10
Neotoma albigula	13
Peromyscus maniculatus	24
Reithrodontomys megalotis	46

Future Monitoring Strategy:

- Focus on conservation sites with creditable acres for *Sigmodon*.
- 2 nights/session per recommendations of *Sigmodon* habitat and demography study.
- Once target species are captured in restoration sites, no trapping for a year.

Takeaways:

- Continued *Sigmodon arizonae plenus* and *Sigmodon hispidus eremicus* presence throughout the system.
- Few systemwide locations with *Sigmodon* captures, but continued presence in discontinuous restoration areas suggests source populations and dispersal through sub-optimal habitat.
- *Sigmodon* occupy ephemeral habitat, which poses unique management difficulties.
- *C. penicillatus* widely present. Big Bend Conservation Area likely only one with *sobrinus* subspecies.

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Questions?