

# RIPARIAN RESERVES

AUGUST 2024



MOJAVEMAX.COM



desert conservation  
PROGRAM

# OVERVIEW



# PROPERTY ACQUISITION MANAGEMENT RESTORATION



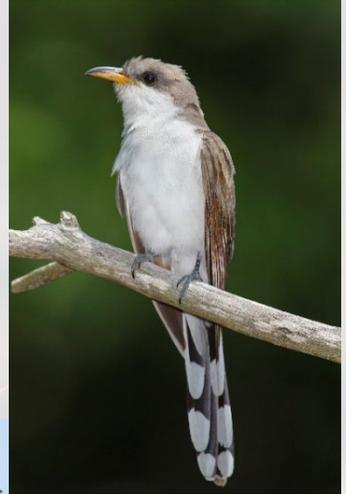
# PROPERTY ACQUISITION

## Incidental Take Permit, Condition K

- Requires DCP acquire private lands in desert riparian habitats along the Muddy and Virgin rivers (and Meadow Valley Wash) to conserve habitat for riparian birds covered by the MSHCP.

Southwestern Willow Flycatcher  
Yellow-billed Cuckoo  
Arizona Bell's Vireo

Vermilion Flycatcher  
Summer Tanager  
Blue Grosbeak



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# PROPERTY ACQUISITION



Acquisition Selection Criteria

## Administrative Criteria

Ease of management

Complexity of land acquisition process

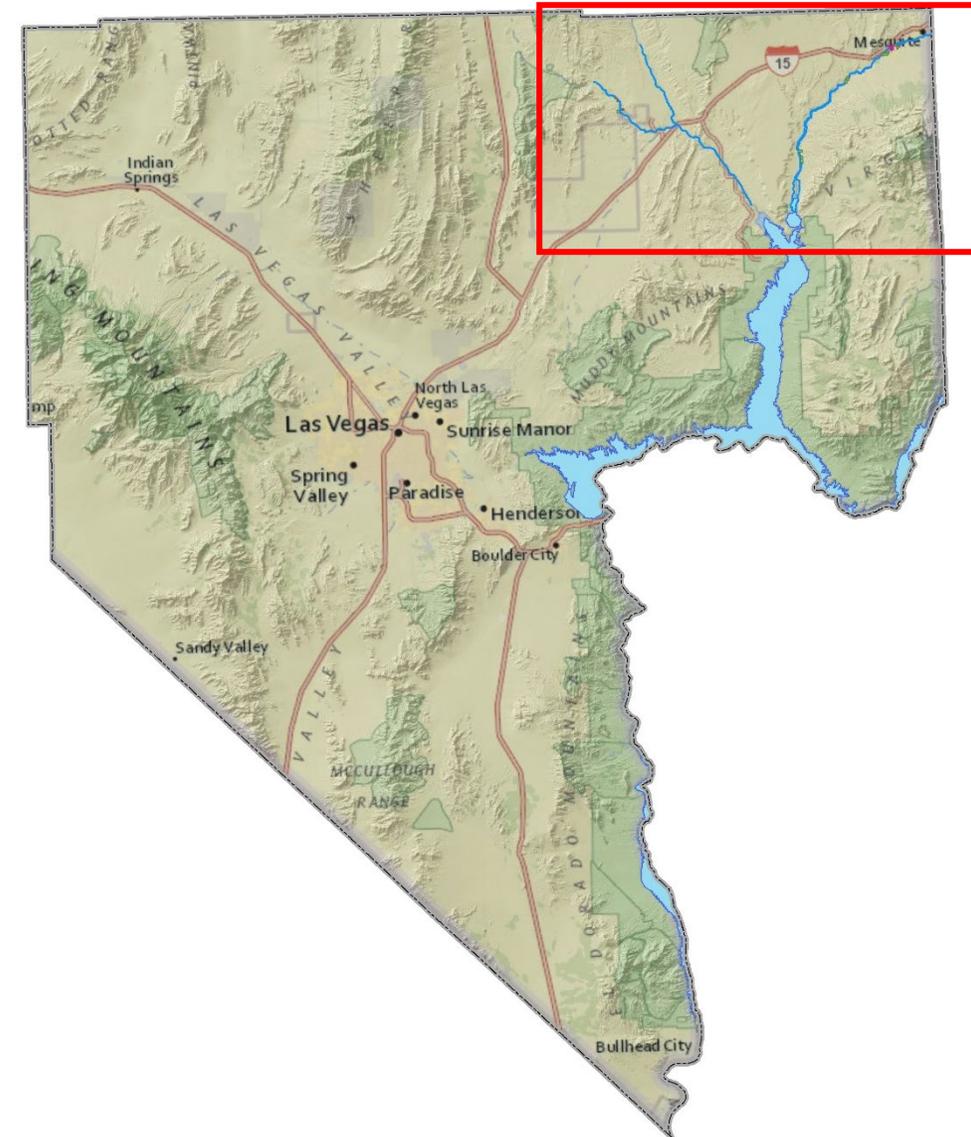
Potential for degradation of habitat if not purchased for conservation

## Environmental Criteria

Species evaluation

Proximity to sensitive lands

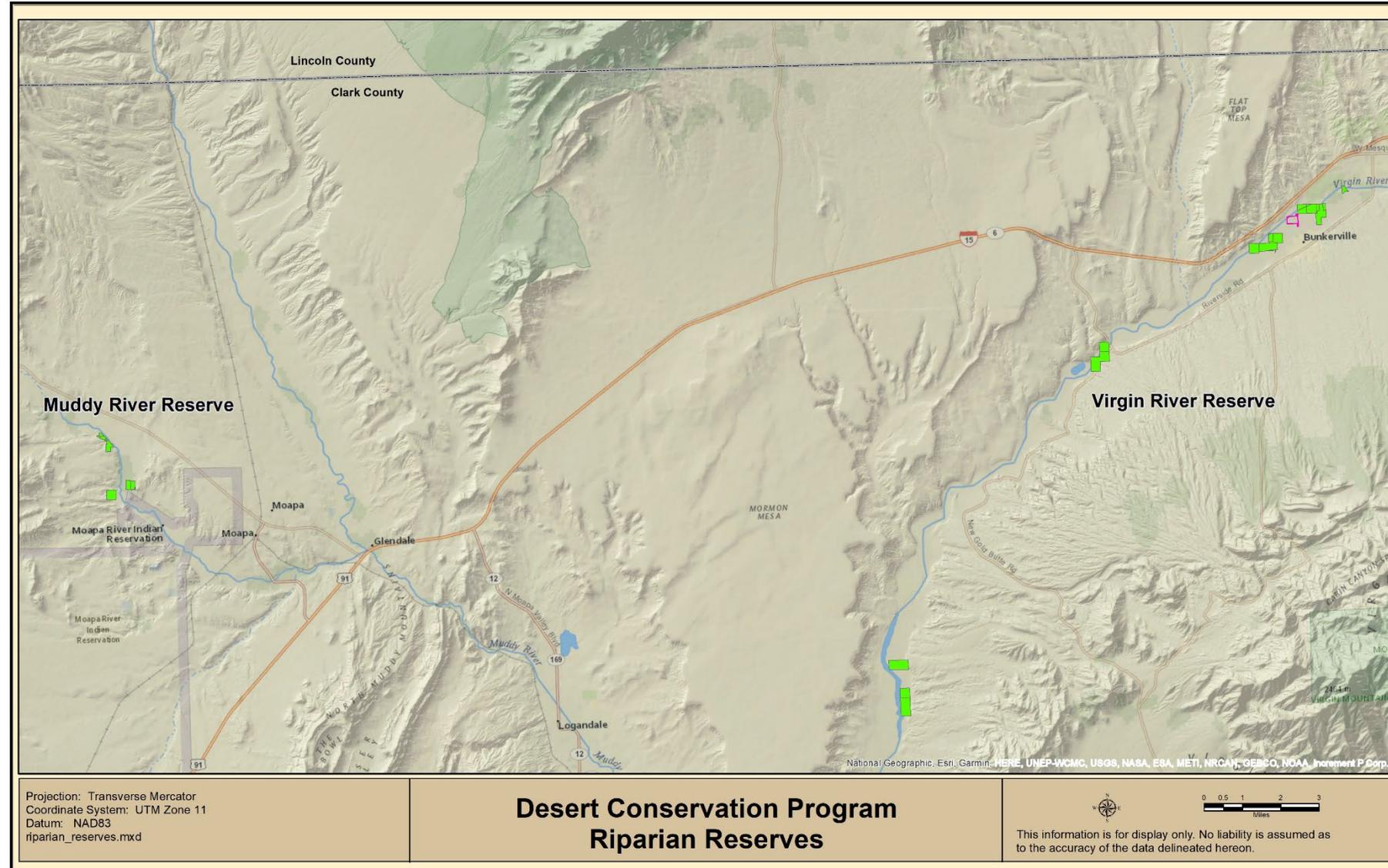
Restoration Potential



# RIPARIAN RESERVES



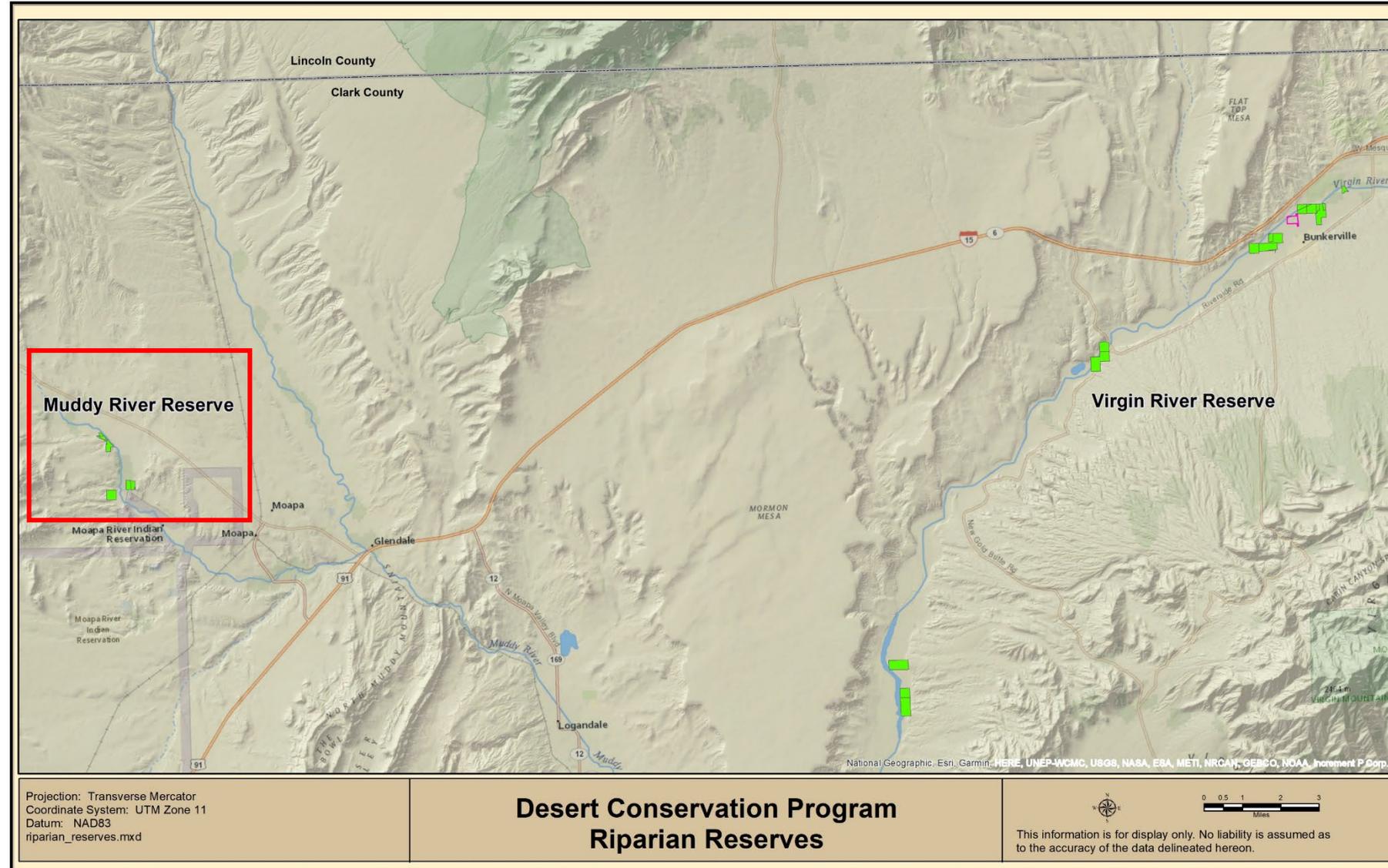
Overview of  
DCP properties  
along the  
Muddy and  
Virgin Rivers



# RIPARIAN RESERVES



Muddy River Reserve Unit - comprised of 9 parcels totaling 116 acres along the Muddy River.

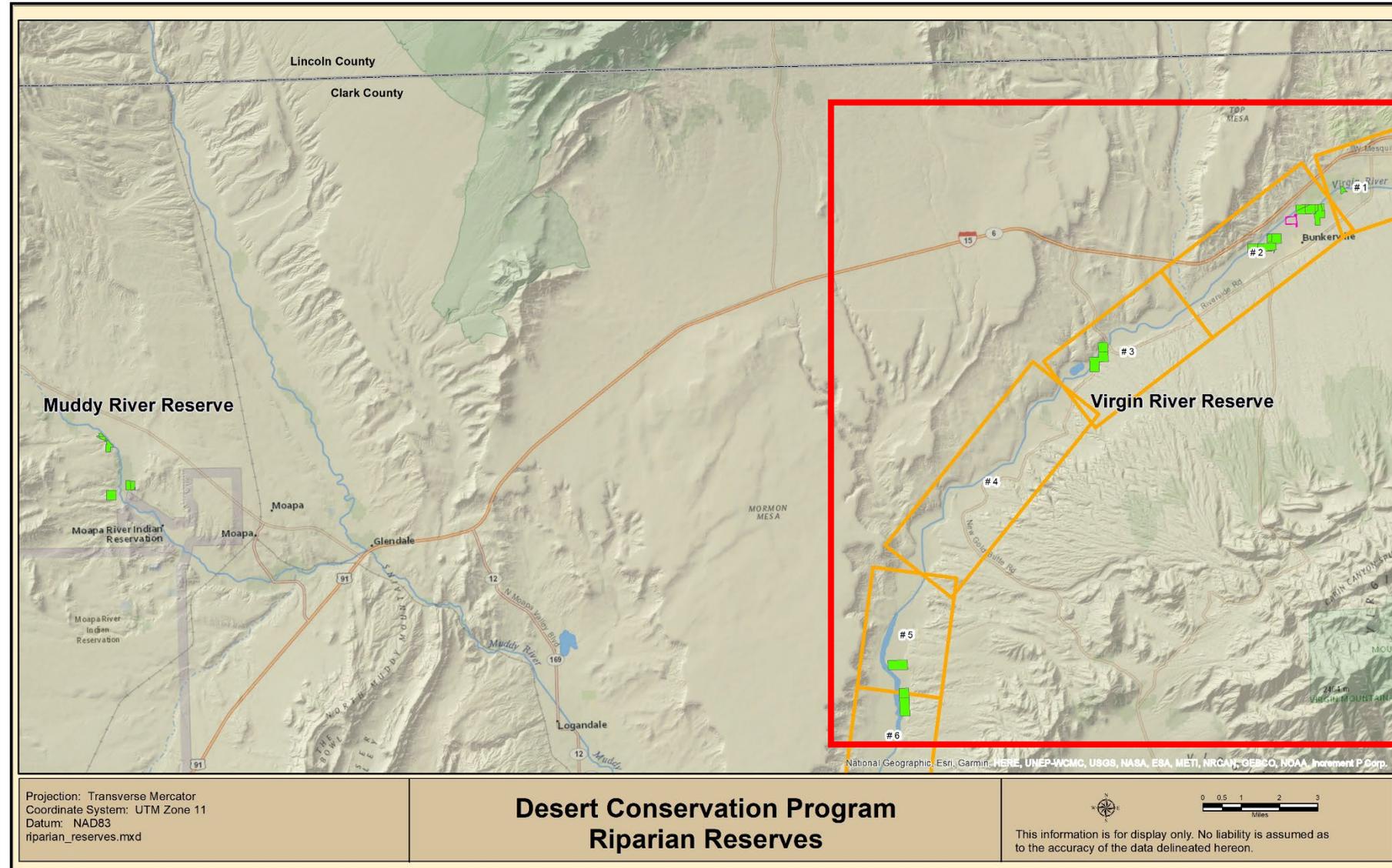


# RIPARIAN RESERVES

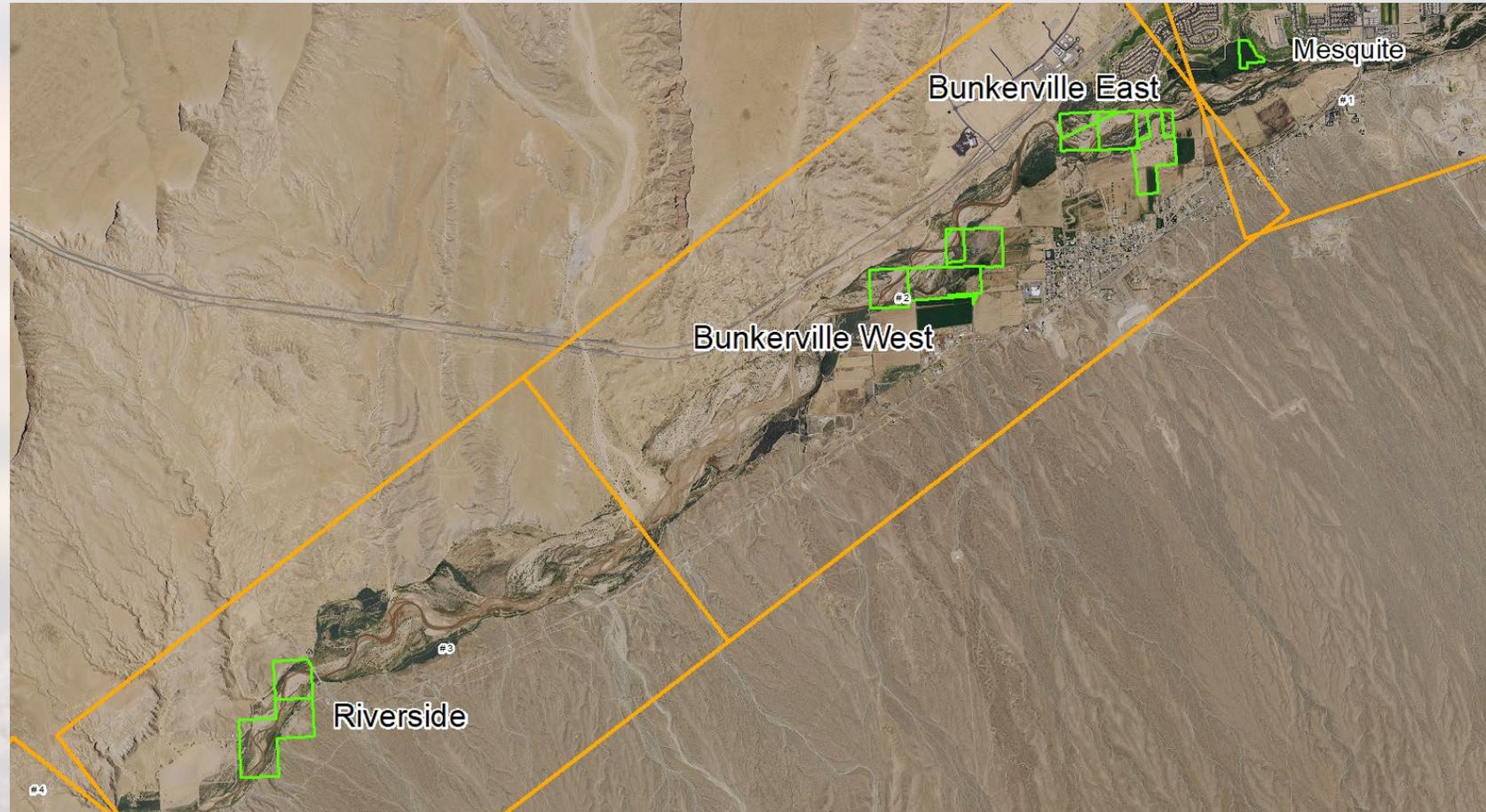
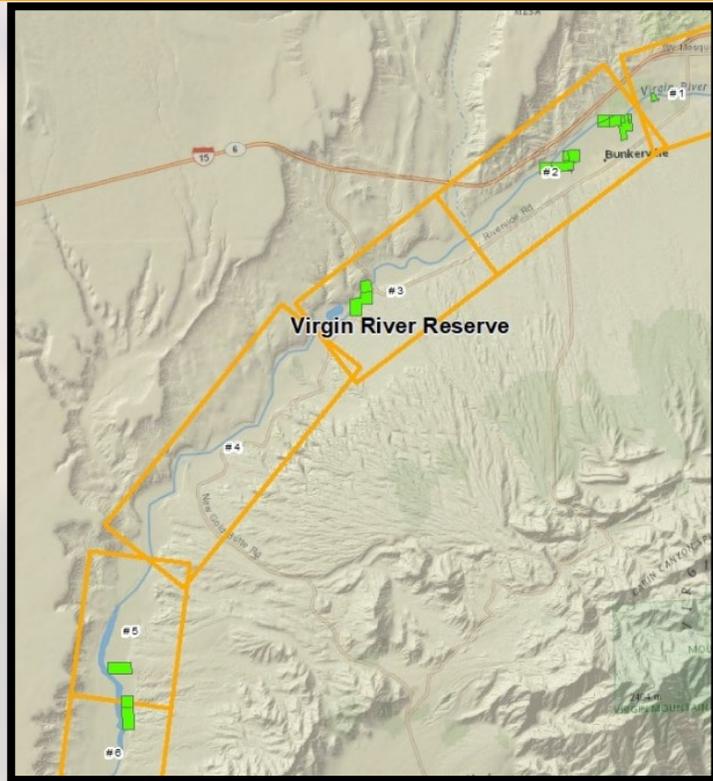


Virgin River Reserve - total of 665 acres.

~500 acres have been added to the Virgin River Reserve since 2018.

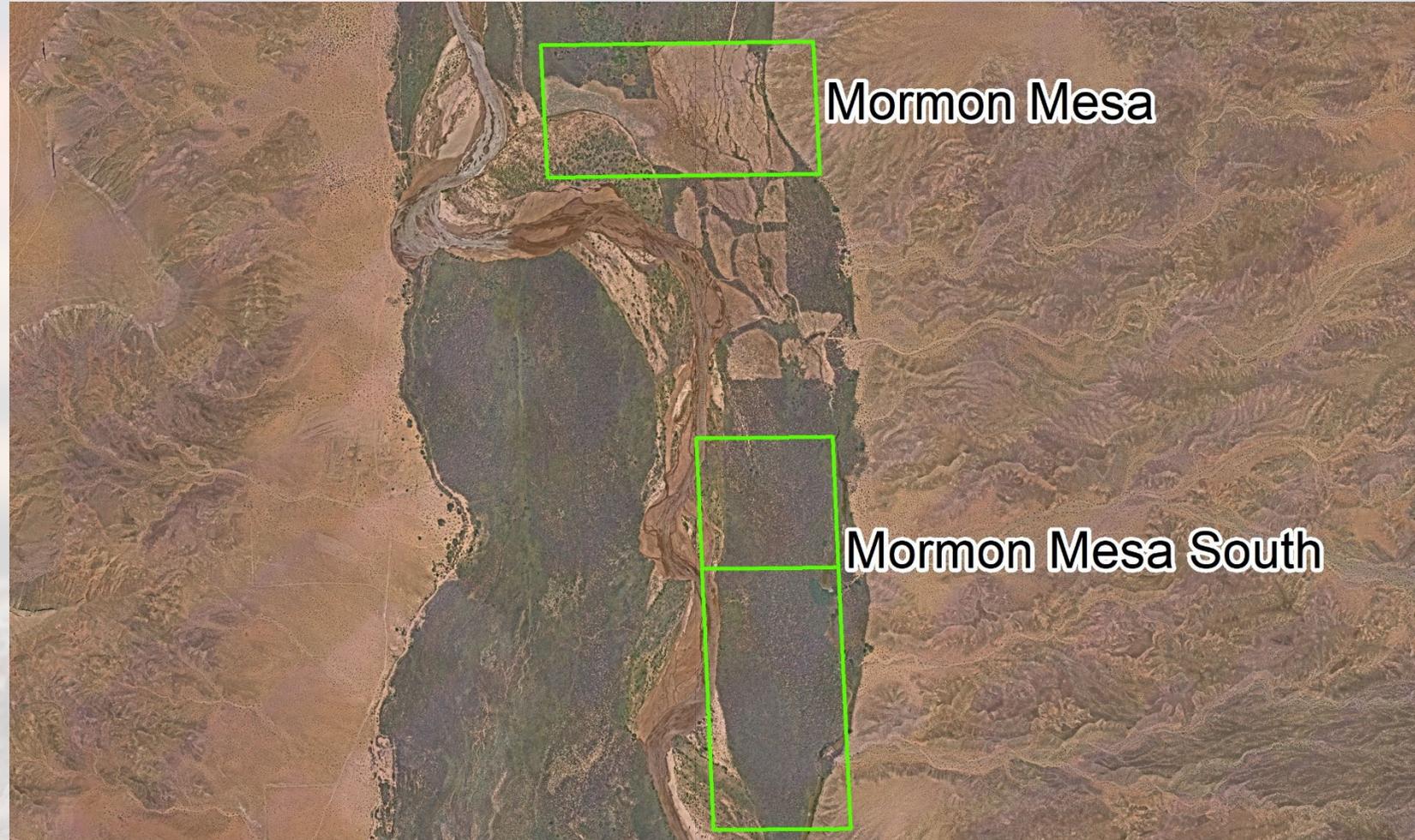
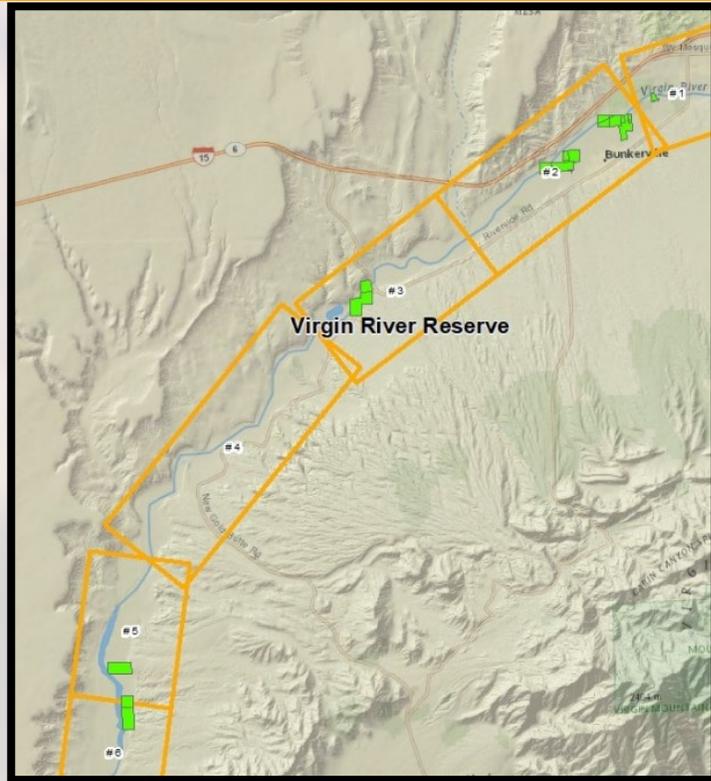


# RIPARIAN RESERVES



Adjacent parcels are aggregated for management actions:  
Bunkerville East, Bunkerville West, Riverside

# RIPARIAN RESERVES



Most recent acquisition, 120 acres adjacent to Mormon Mesa.

# OVERVIEW



## PROPERTY ACQUISITION

- MANAGEMENT RESTORATION



# OVERVIEW - MANAGEMENT

DCP is responsible for planning and implementing management actions for the long-term maintenance of the reserves for the benefit of species covered by the MSHCP.

- Oversee contactors who implement management activities, such as, weed control, fuel management, and site maintenance.
- Coordination/collaboration with neighboring landowners (public and private).
- Coordination/collaboration with federal, state, and/or local agencies.



# MANAGEMENT - VEGETATION



- DCP maintains an agreement with the National Park Service Invasive Plant Management Team
- Conduct regular surveys and treatments on DCP properties
- Priorities are Tamarisk resprout treatments, Camelthorn, and tall whitetop



# MANAGEMENT - MISC

- DCP maintains a contract with a local company for miscellaneous maintenance items, including access road repair, vegetation clearing, fence/gate repair, debris removal, etc.



# OVERVIEW



## PROPERTY ACQUISITION MANAGEMENT

- RESTORATION



# OVERVIEW - RESTORATION

**Restoration** - design, management, implementation, and monitoring of restoration projects to create and/or enhance riparian habitat for the covered bird species.



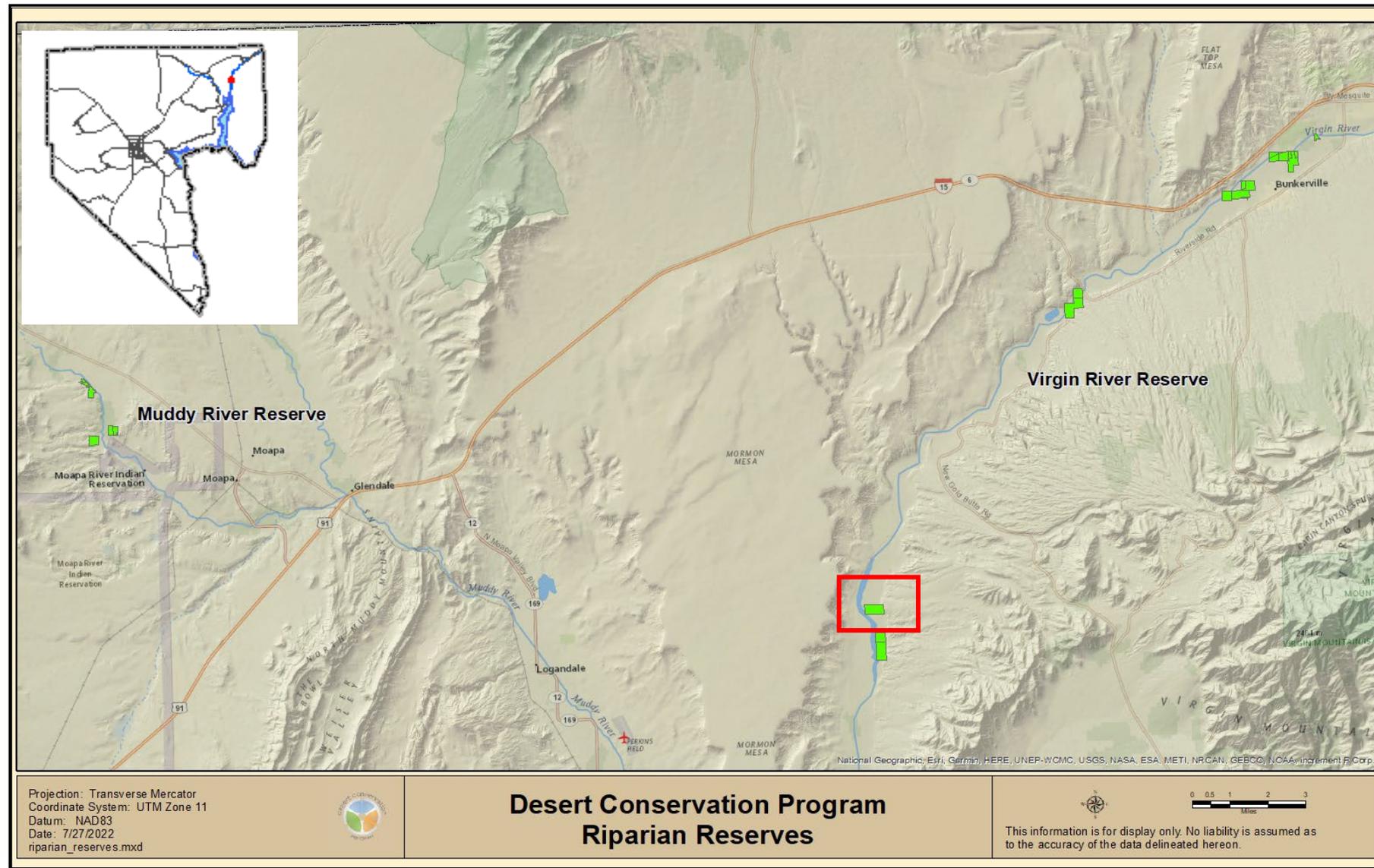
# RESTORATION – VIRGIN RIVER



80-acre parcel east of the Mormon Mesa.

The site has many opportunities for restoration:

shallow water table,  
surface water throughout the site,  
and the borders SWFL occupied habitat.



# RESTORATION – VIRGIN RIVER



40 acres of tamarisk masticated

Pilot restoration sites



# RESTORATION – VIRGIN RIVER



Pre-restoration (2017)



One year post-mastication



# RESTORATION – VIRGIN RIVER



# RESTORATION – VIRGIN RIVER



2021



2022

# RESTORATION – VIRGIN RIVER



2021



2022



2024

# HERBIVORE DETERRENT



Available methods for reducing herbivore damage to plants include:

- animal control (e.g., lethal or non-lethal removal, contraception),
- physical exclusion (e.g., fencing, netting, tubing),
- deterrents (e.g., scaring devices, dogs),
- selection of naturally repellent or highly resistant plant species,
- repellents

Odor-based repellents

- Plantskydd
- Trico Pro

# HERBIVORE DETERRENT



Is Plantskydd and/or Trico Pro effective at deterring grazing to reduce/eliminate the need for exclusion fencing?

Objectives of this study are to:

1) establish baseline data for cattle activity using remote cameras and pellet plots, and 2) determine effectiveness of the deterrents in reducing cattle damage to plants.

## Plot Planting/Deterrent Application - Spring 2024

Plots were planted with the same number of plants per species in the same layout in each plot.

Each plot (20 control, 20 treated with Plantskydd, and 20 treated with Trico Pro) consisted of 25 plants (5 rows of 5).

Deterrent was applied to each plant according to manufacturer's recommendations.

	1	2	3	4	5
1	POFR	SAEX	SAEX	SAEX	SAGO
2	SAEX	SAEX	SAEX	SAEX	SAEX
3	SAEX	SAEX	SAEX	JUCO	JUCO
4	JUCO	JUCO	JUCO	JUCO	JUCO
5	ANCA	ANCA	SCAM	SCAM	FRVE

# HERBIVORE DETERRENT

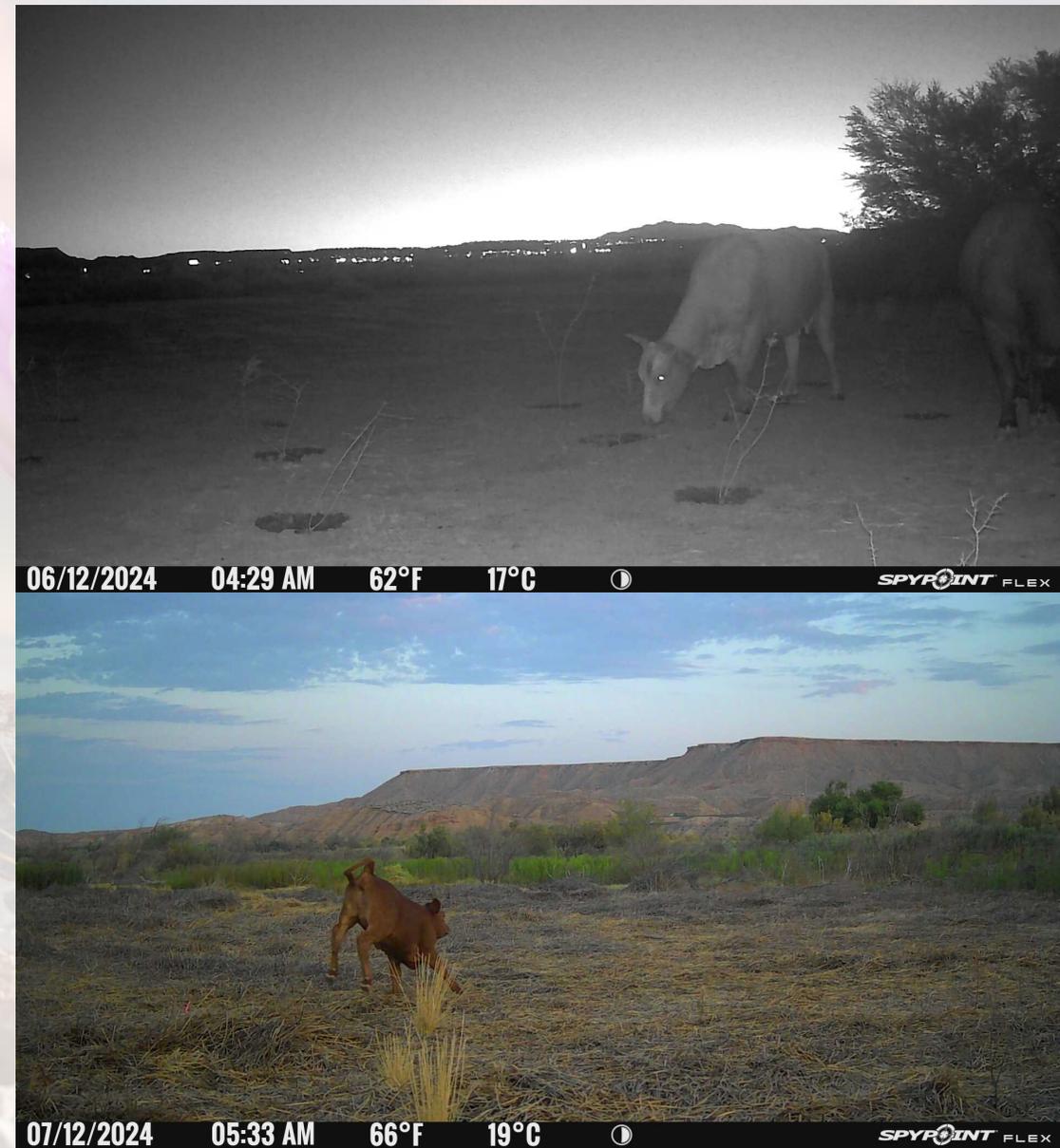


**Camera Installation** - To verify plant damage is caused by cattle rather than other herbivores, and to estimate an index of relative use by ungulate species, one remote camera will be installed at each random 3-plot grouping (20 cameras total).

**Monitoring** – Monthly monitoring/data collection began in May, will continue through October.

- Pellet Counts - (cow patty/dung counts) has been conducted to complement camera and plant damage data, and to assess whether there are differences in cattle activity/densities.
- Plant damage will be determined by counting the number of alive/dead and grazed/ungrazed/trampled plants per species.

Stay tuned for results!



# ONGOING & FUTURE



- Coordinating with RPM on a potential Conservation Easement adjacent to Bunkerville East parcels
- Continued monitoring of previous restoration sites for invasive weeds
- Future restoration projects in the planning stage:
  - Bunkerville West
  - Mormon Mesa South
  - Muddy River
- Parasitism and Avian Nest Monitoring
- Upcoming Habitat Monitoring Project



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SPYPOINT FLEX



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# Thank you to the Permittees

