

Presentation to



*Bird Surveys on  
MSHCP Riparian Properties  
2015-SWCA-1535A and B*

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# Background and Need

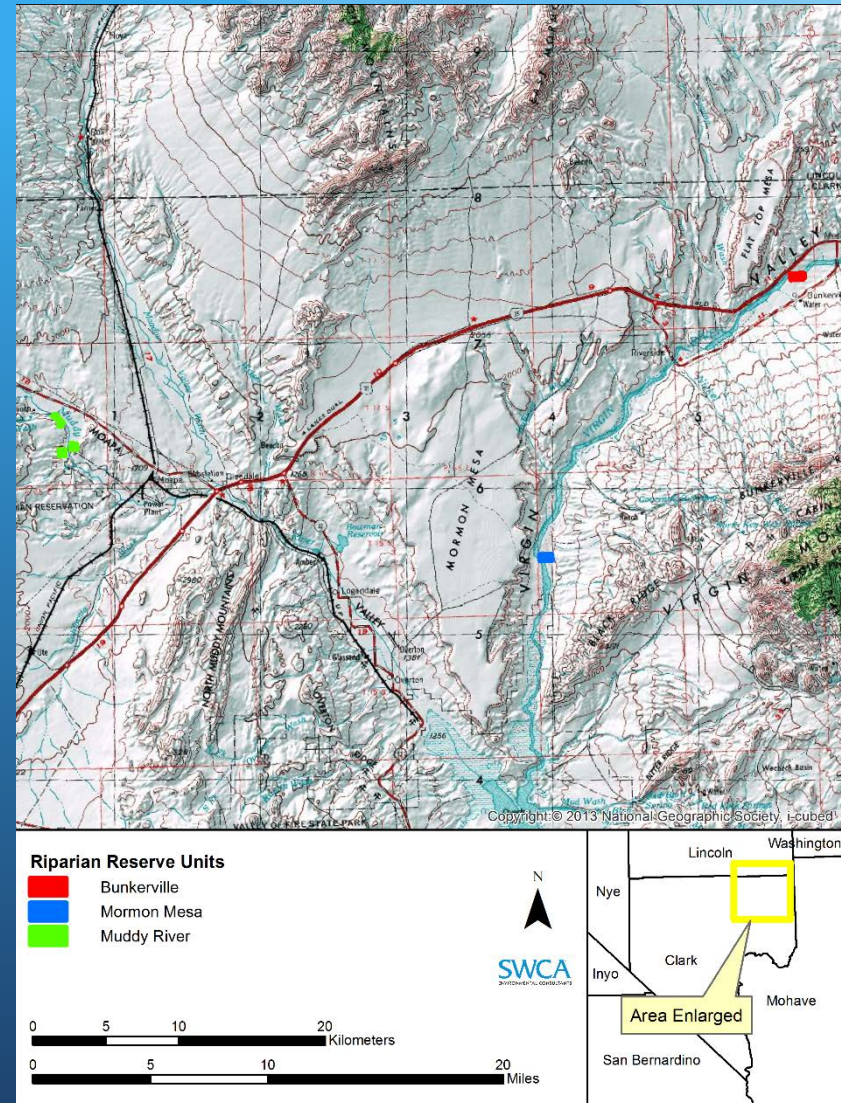


Vermilion Flycatcher (Mike Swink, SWCA)

- Condition K.1 of the Incidental Take Permit for the Clark County Multiple Species Habitat Conservation Plan (MSHCP) requires that the Desert Conservation Program (DCP) acquire private land along the Muddy River, Virgin River, and Meadow Valley Wash
- Condition K.1 included specifically to help conserve desert riparian habitat for 6 MSHCP covered bird species: Arizona Bell's Vireo, Blue Grosbeak, Southwestern Willow Flycatcher, Summer Tanager, Vermilion Flycatcher, and Western Yellow-billed Cuckoo.

# Background and Need

- DCP has acquired 116 acres on the Muddy River and 168 acres along the Virgin River
- The Virgin River properties consist of two subunits: Subunit 1 (Mormon Mesa) and Subunit 2 (Bunkerville)
- Nothing acquired to date along Meadow Valley Wash



# Goals and Objectives

- In 2015, the DCP's Riparian Reserve Unit Management Plan identified its first goal as to "Manage reserve units to provide habitat for the six MSHCP covered bird species" that use desert riparian habitat.
- The objective identified to reach this goal is to "Restore, create, and enhance habitat for riparian bird species."

# Goals and Objectives

- Long-term goal for these projects is to track changes in populations of both federally listed bird species (2015-SWCA-1535A) and all other non-listed bird species (2015-SWCA-1535B) on the Riparian Reserve Units.
- The main objective for these projects was to establish baseline records for bird species present during the 2017 breeding season.
- A secondary objective of 2015-SWCA-1535B was to establish a replicable study design in order to compare data following restoration efforts.

# Federally Listed Bird Surveys

2015-SWCA-1535A

# Methods - Western Yellow-billed Cuckoo

- Protocol followed Halterman et al. 2015
- Four survey visits for Western Yellow-billed Cuckoo
- Call-playback technique at locations spaced 100 m apart in appropriate habitat
- Surveyed from first light to no later than 11:00 a.m. or when ambient temperature reached 40 degrees C
- Changed starting location every survey visit

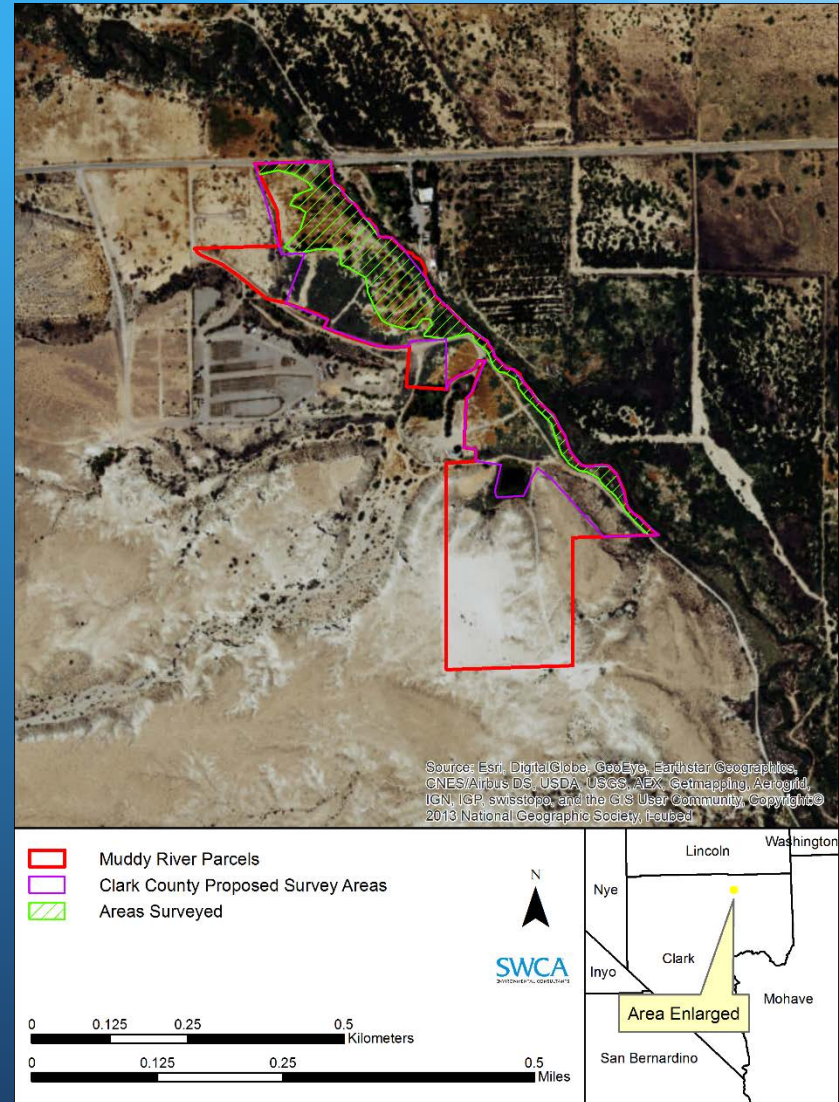
# Methods - Southwestern Willow Flycatcher

- Protocol followed Sogge et al. 2010
- Five survey visits for Southwestern Willow Flycatcher
- Call-playback technique at locations spaced 20-50 m apart depending on quality of habitat
- Surveyed from first light to no later than 10:30 a.m.
- Changed starting location every survey visit



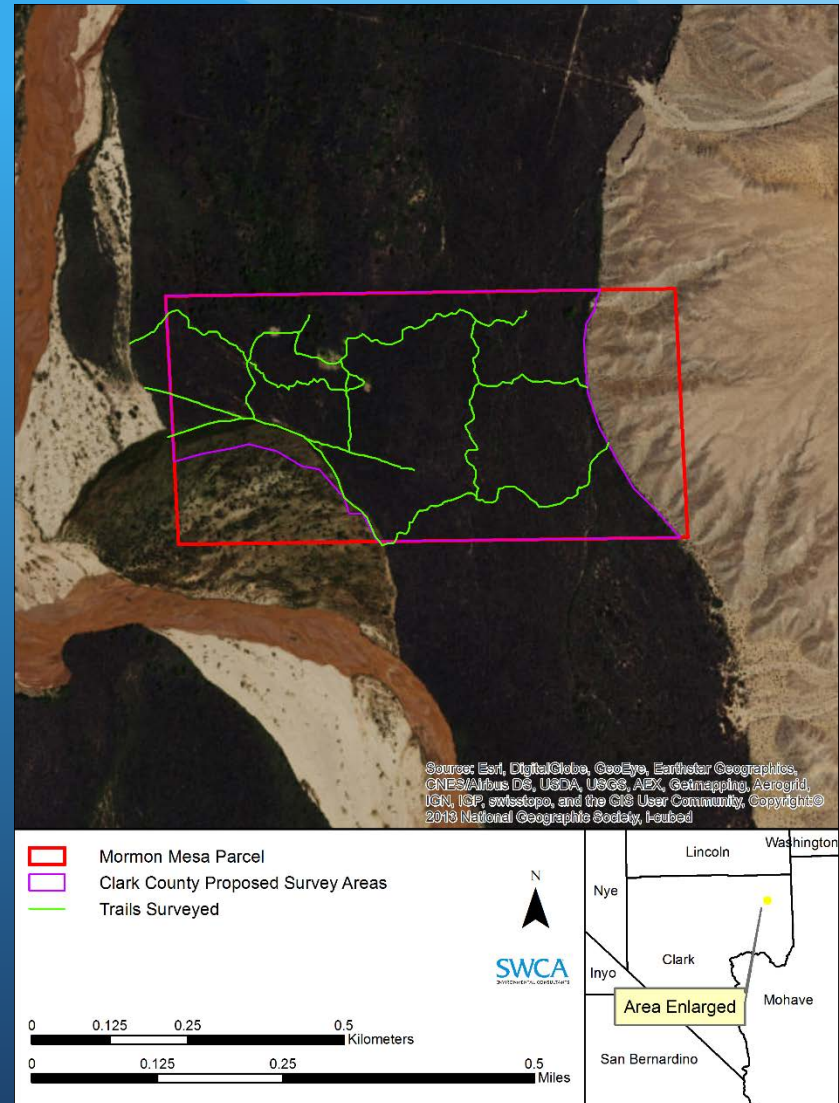
# Muddy River

- West of Moapa, NV
- Only Parcels A, B, and E
- On western bank of Muddy River
- Southwestern Willow Flycatcher = 4.7 hours
- Western Yellow-billed Cuckoo = 5.9 hours



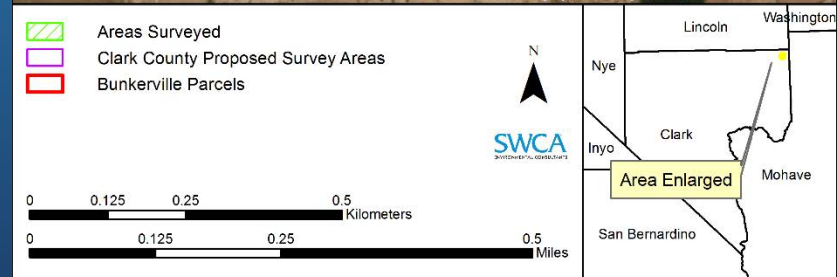
# Mormon Mesa

- Northeast of Overton, NV
- Along eastern bank of Virgin River
- Southwestern Willow Flycatcher = 28.1 hours
- Western Yellow-billed Cuckoo = 20.6 hours



# Bunkerville

- North of Bunkerville, NV
- On both sides of Virgin River
- Southwestern Willow Flycatcher = 17.7 hours
- Western Yellow-billed Cuckoo = 15.0 hours



# Results

- No Western Yellow-billed Cuckoo detected at any of the three Riparian Reserve Units
- No Willow Flycatchers detected at Muddy River or Bunkerville
- A total of 5 Willow Flycatchers detections at Mormon Mesa



Habitat near Willow Flycatcher detections at the Mormon Mesa Riparian Reserve Unit

# Results

- 1 Willow Flycatcher detection on May 20, 2017
- 2 Willow Flycatcher detections on June 8, 2017, but possibly the same individual
- 2 Willow Flycatcher detections on June 21, 2017, but possibly the same individual
- All birds were heard singing at least 60 meters away, near the very northern boundary of the Mormon Mesa Riparian Reserve Unit; none were observed
- C. Klinger (NDOW) recorded 2 or 3 Willow Flycatchers on the Mormon Mesa boundary on May 17, June 9, and June 27, 2017 (C. Klinger, personal communication, August 15, 2017)
- No Willow Flycatcher detections during the last survey rounds by SWCA or NDOW (July 2, 2017 to July 16, 2017)

# Conclusions

- The Muddy River and Bunkerville Riparian Reserve Units do not currently provide habitat for Southwestern Willow Flycatchers, or none of the three Riparian Reserve Units provide habitat for Western Yellow-billed Cuckoo.
- Areas of native desert riparian trees (e.g. narrowleaf and Gooding's willow) at Mormon Mesa currently support at least one Southwestern Willow Flycatcher territory, but this territory was not active for the full 2017 breeding season and is on the very edge of the property.

# Recommendations

- Continue federally listed bird surveys to expand on baseline data and to monitor changes in the avian community in response to restoration efforts.
- The northern boundary of the Mormon Mesa Riparian Reserve Unit provides habitat for Southwestern Willow Flycatchers and those areas should be preserved.
- Areas of monotypic tamarisk provide less habitat for federally listed birds and should be removed and replaced with native vegetation.



Southwestern Willow Flycatcher (Chance Hines, SWCA)

# Point-Count Surveys on Riparian Properties

2015-SWCA-1535B

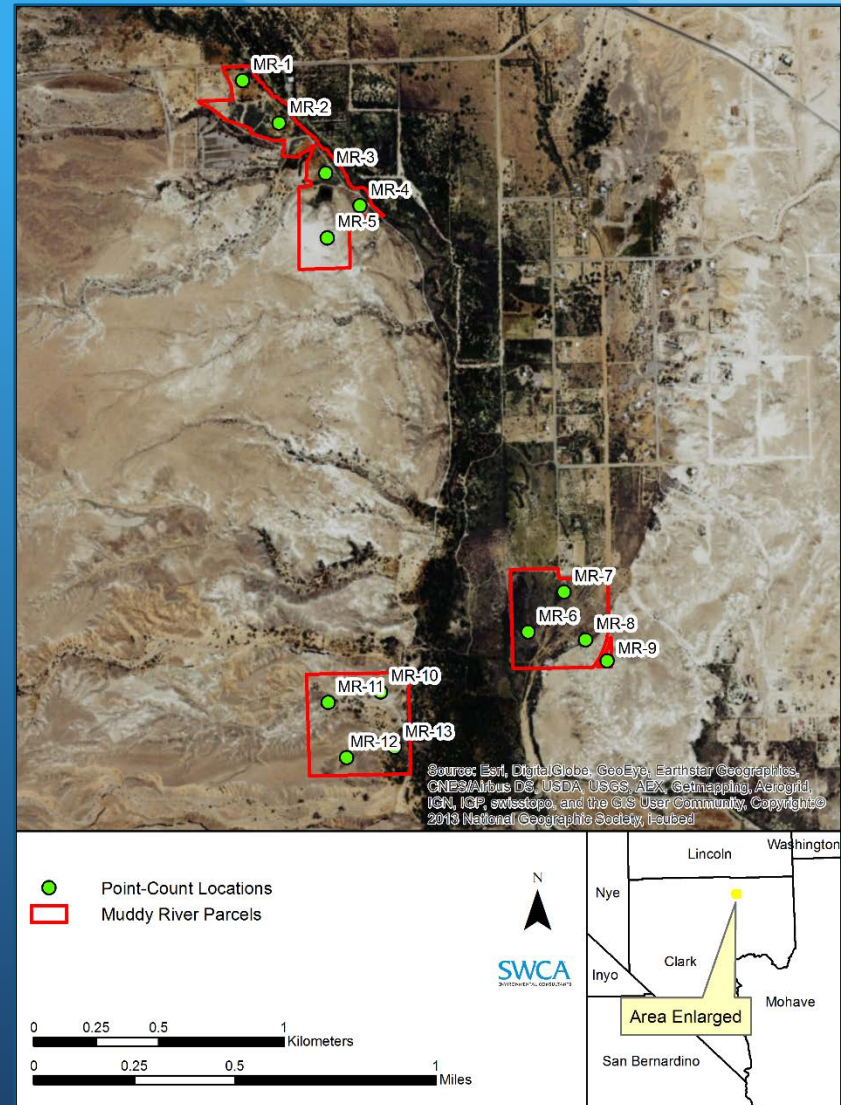


# Methods

- Standard 10-minute unlimited radius point-count survey protocol (GBBO 2010 and Ralph et al. 1993)
- 27 random locations selected by DCP
- 3 survey visits between May 22 and June 30, 2017
- Recorded all species seen and heard, time interval, sex, age, distance, bearing, and behavior
- Surveyed sunrise to no later than 10:00 a.m.
- Changed starting location every survey visit

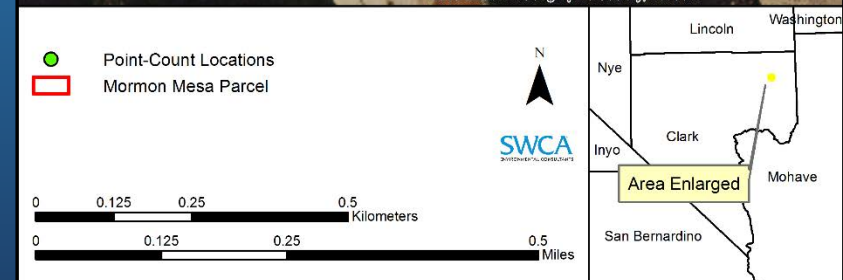
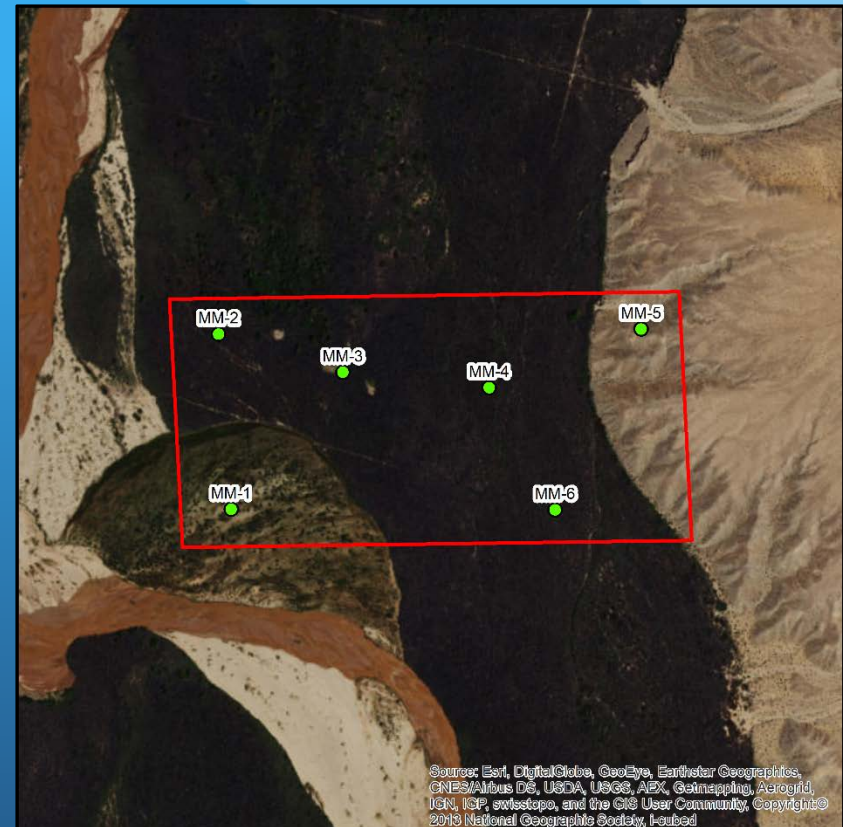
# Muddy River

- West of Moapa, NV
- Parcels A-I
- Along both banks of Muddy River
- 13 Survey Locations



# Mormon Mesa

- Northeast of Overton, NV
- On eastern bank of Virgin River
- 6 Survey Locations

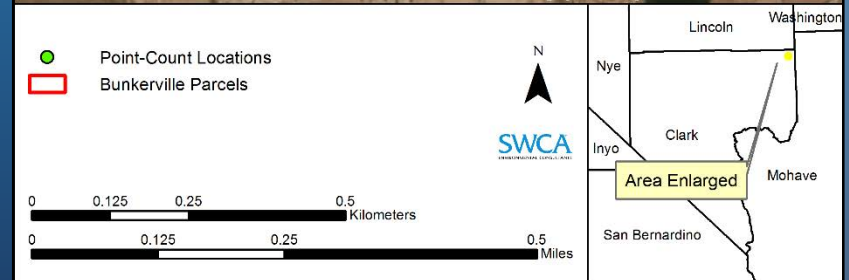


# Bunkerville

- North of Bunkerville, NV
- On both sides of Virgin River
- 8 Survey Locations



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# Results



Phainopepla (Mike Swink, SWCA)

- 5 MSHCP covered species
- 2 MSHCP evaluation species
- No records of Southwestern Willow Flycatcher, Western Yellow-billed Cuckoo, or Vermilion Flycatcher
- 66 species recorded across all three locations

# American Peregrine Falcon

- Not a desert riparian habitat obligate - found in many habitats
- One bird observed at two locations at Bunkerville
- One bird observed at one location at Muddy River
- Not recorded at Mormon Mesa



Peregrine Falcon foraging habitat, Bunkerville

# Arizona Bell's Vireo

- Desert riparian habitat obligate
- Recorded nine times from two locations at Mormon Mesa
- Recorded nine times from four locations at Muddy River – all of these birds were outside of the DCP parcels
- Not recorded at Bunkerville



Arizona Bell's Vireo habitat, Mormon Mesa

# Blue Grosbeak



Blue Grosbeak (Mike Swink, SWCA)

- Uses desert riparian habitat and more open adjacent habitats
- Recorded at all three Riparian Reserve Units
- Recorded at five different point-count locations at Bunkerville
- One bird recorded at Mormon Mesa
- One bird recorded outside the DCP boundary at Muddy River



# Phainopepla



Phainopepla (Mike Swink, SWCA)

- Not a desert riparian habitat obligate - uses mesquite/acacia habitat
- Recorded at six different point-count locations at Muddy River
- Not recorded at Bunkerville or Mormon Mesa

# Summer Tanager



Summer Tanager (Mike Swink, SWCA)

- Desert riparian habitat obligate
- Recorded at two different point-count locations at Mormon Mesa - likely the same individual
- Not recorded at Bunkerville or Muddy River

# Evaluation Species

## Crissal Thrasher

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- Recorded at all three Riparian Reserve Units
- Recorded at 8 of 13 point-count locations at Muddy River
- Recorded at 5 of 8 point-count locations at Bunkerville
- One record outside the DCP boundary at Mormon Mesa

## Loggerhead Shrike

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- One record at Muddy River



Loggerhead Shrike (Mike Swink, SWCA)

# Muddy River

- Highly diverse vegetation
- Dominated by horticultural plants, creosote bush, or big saltbush
- Scattered honey mesquite and tamarisk
- Muddy River forms eastern boundary of northern parcels – doesn't go through the other parcels



Northern Parcels at Muddy River



Southwestern Parcels at Muddy River

# Muddy River

- Six MSHCP species recorded: American Peregrine Falcon, Arizona Bell's Vireo, Blue Grosbeak, Phainopepla, Crissal Thrasher, and Loggerhead Shrike
- Only Phainopepla and Crissal Thrasher recorded within DCP boundary multiple times
- Avian species composition characteristic of scrubby, mesic habitats



Southeastern Parcels at Muddy River

# Mormon Mesa

- Dominated by dead or dying tamarisk
- Four MSHCP species recorded: Arizona Bell's Vireo, Blue Grosbeak, Summer Tanager, and Crissal Thrasher
- MSHCP species only recorded from MM-1, MM-2, and MM-3; these areas have more native vegetation



Goodding's willow at Mormon Mesa

# Bunkerville

- Dominated by sandy bare ground and sapling arrowweed and tamarisk
- Three MSHCP species recorded: American Peregrine Falcon, Blue Grosbeak, and Crissal Thrasher
- Parcel is susceptible to flooding and the vegetation and avian community reflect that



Open, scrubby habitat at Bunkerville

# Conclusions and Recommendations

- Areas of native desert riparian trees (e.g. willow, cottonwood, and mesquite) currently provide habitat for MSHCP covered bird species and should be preserved, particularly at Mormon Mesa.
- Continue avian point-counts to expand on baseline data and to monitor changes in the avian community in response to restoration efforts.
- Areas of monotypic tamarisk provide less habitat for MSHCP covered bird species and should be removed and replaced with native vegetation.



# Conclusions and Recommendations

- Preserve areas of honey mesquite at the Muddy River Riparian Reserve Unit and consider using water rights or earthwork to create and maintain desert riparian habitat.
- Plant additional screwbean mesquite at the Bunkerville Riparian Reserve Unit and consider earthwork to protect restoration efforts from minor flood events.
- Cattle exclusion fencing should be erected anywhere native vegetation is planted at both Virgin River Riparian Reserve Units.



Questions?