

Presentation to



*Bird Surveys on
MSHCP Properties
2017-SWCA-1730C and E*

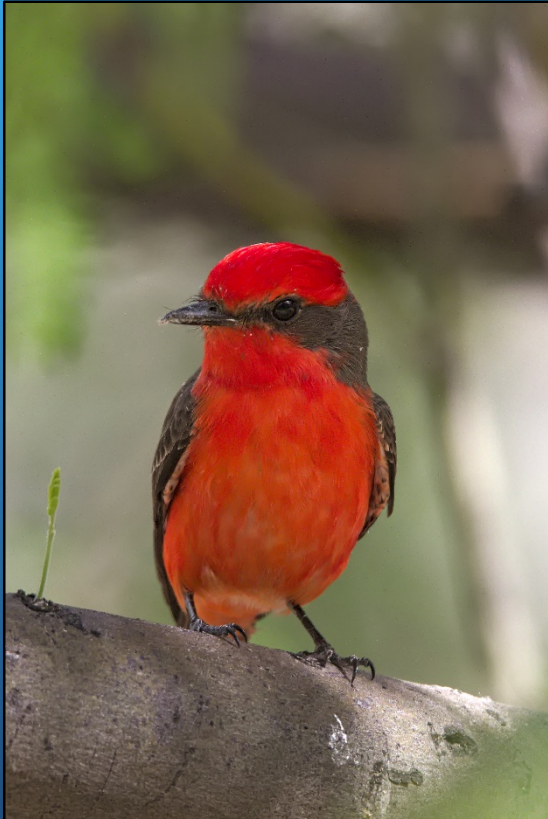
Presented by Justin J. Streit

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ENVIRONMENTAL CONSULTANTS

Sound Science. Creative Solutions.

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

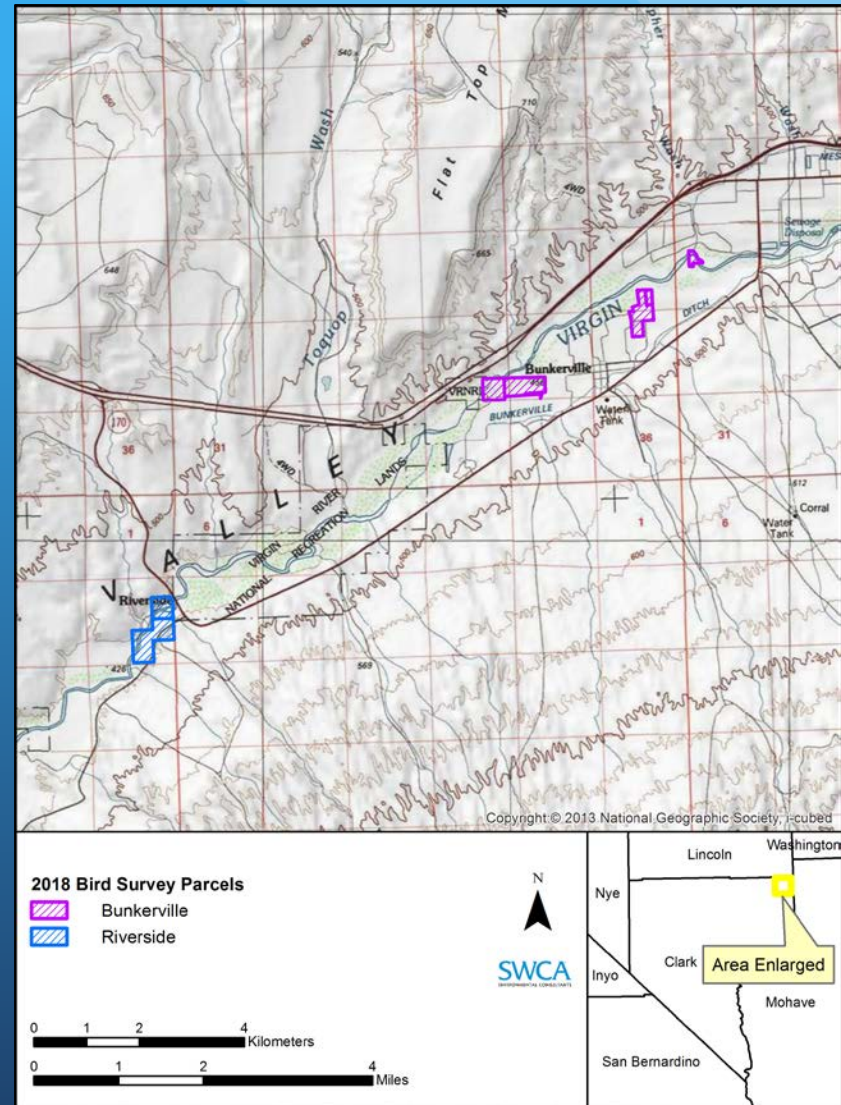


Desert Tortoise (Justin Streit, SWCA)

- Condition P of the MSHCP ITP requires that the DCP take measures necessary to ensure maintenance of connectivity for desert tortoise and other covered species within the Boulder City Conservation Easement
- This potentially includes several avian covered species.

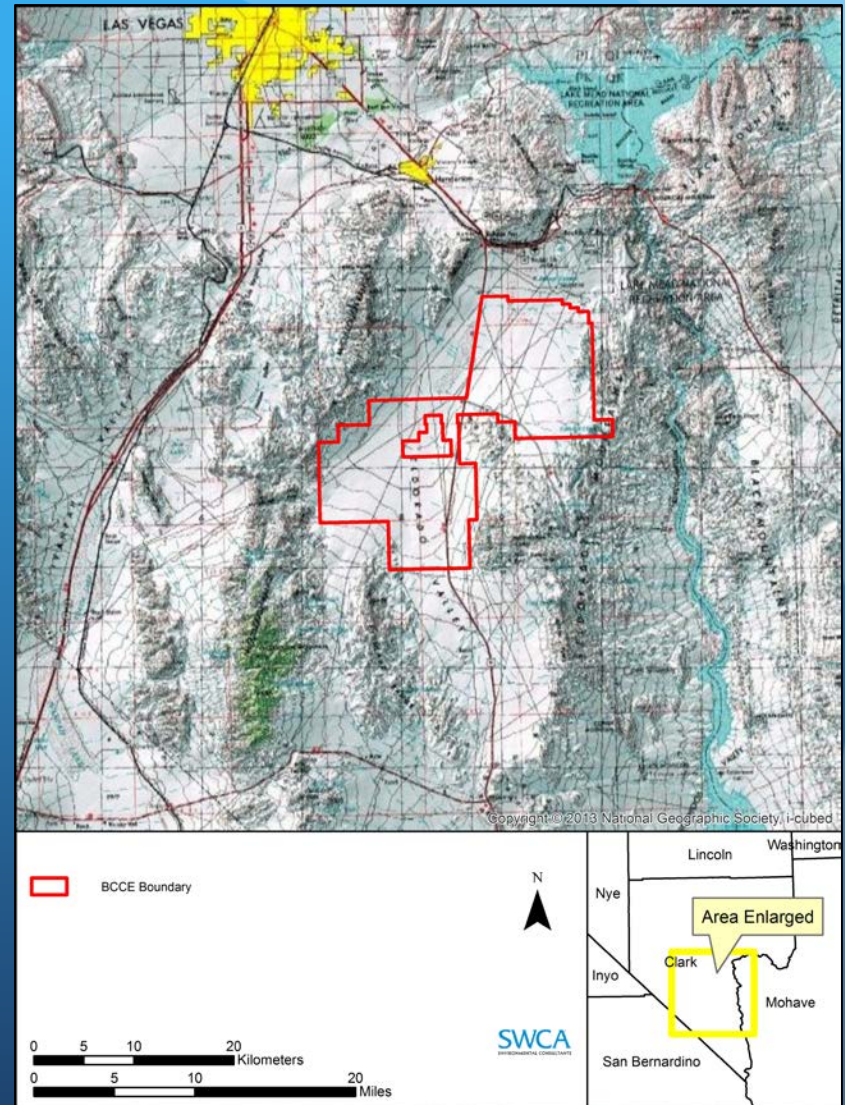
Background and Need

- Since 2017, the DCP has acquired 316 acres along the Virgin River
- Avian surveys conducted on two of the three Virgin River Subunits: Subunit 2 (Bunkerville) and Subunit 3 (Riverside)



Background and Need

- In 1995, as required by the MSHCP and ITP, Boulder City granted the Boulder City Conservation Easement to the DCP
- 86,423 acres comprised of 97% Mojave Desert scrub habitat
- Southwest of Boulder City



MSHCP Property Goals

- 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, to be accomplished through restoration, creation, and enhancement of riparian bird habitat
- A secondary goal of the 2015 Boulder City Conservation Easement Management Plan is to protect and manage for MSHCP covered species other than desert tortoise.

Project Objectives

- The initial objective for both 2017-SWCA-1730C and 2017-SWCA-1730E was to establish a baseline record of both federally listed and non-listed bird species on the DCP's MSHCP properties.
- The long-term objective going forward is to use the baseline record of bird species to track changes in populations and measure the success of future management activities.

Desert Upland Baseline Bird Surveys

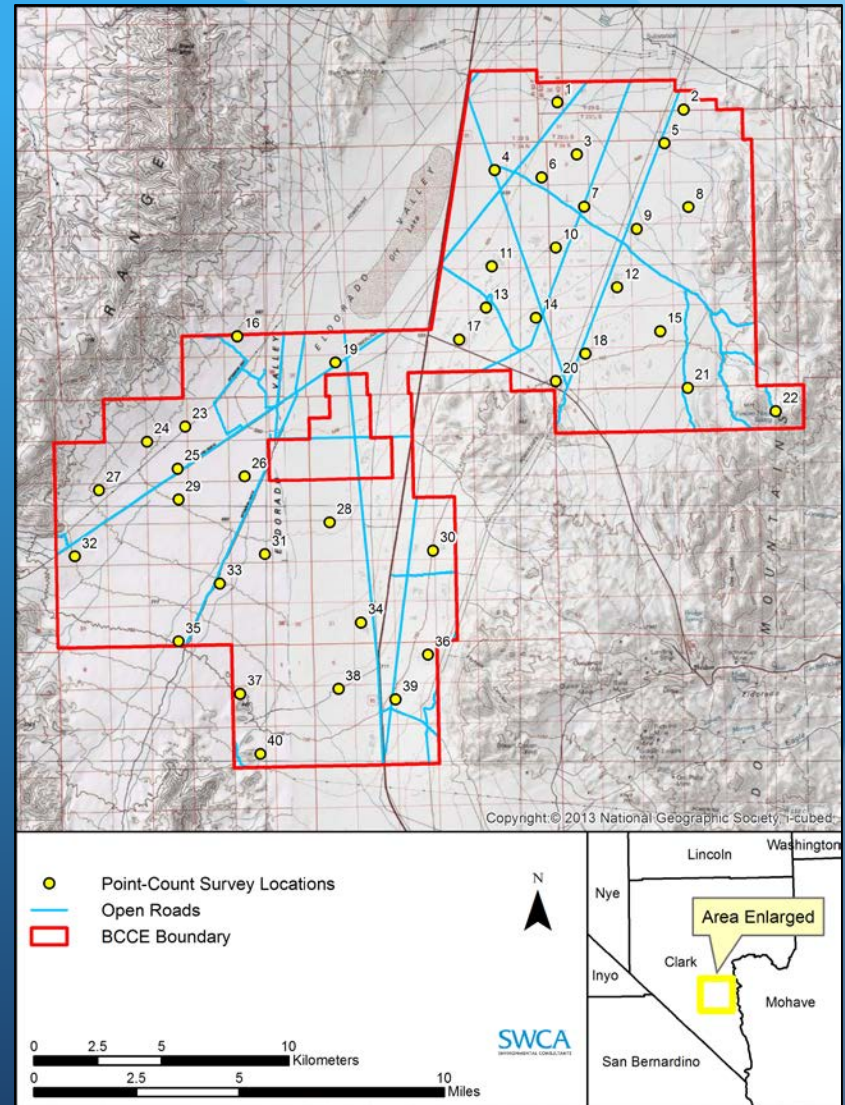
2017-SWCA-1730C

Methods - Avian Point-Counts

- Standard 10-minute unlimited radius point-count survey protocol (GBBO 2010 and Ralph et al. 1993)
- 3 survey visits between May 15 and June 14, 2018
- 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

Desert Upland Point-Count Locations

- 40 randomly-selected survey locations
- Most in Mojave Desert scrub habitat
- Some survey locations were moved to sample unique or less common habitats



Desert Upland Point-Count Results



Black-throated Sparrow (Mike Swink, SWCA)

- No MSHCP covered species
- 2 MSHCP evaluation species
- 23 species recorded across the BCCE
- Most abundant species were Horned Lark, Black-throated Sparrow, and Black-tailed Gnatcatcher

Evaluation Species

LeConte's Thrasher

- Recorded during all three rounds of survey
- Recorded at 9 of 40 point-count locations at the BCCE
- Fifth-most abundant species at BCCE
- Prefers barren desert with scattered vegetation

Loggerhead Shrike

- Recorded during all three rounds of survey
- Recorded from 5 of 40 point-count locations
- Found in a variety of scrubby habitats

Conclusions

- The BCCE does not contain riparian or cliff habitat and, therefore, does not provide habitat for most of the MSHCP covered species.
- Phainopepla could be found on the BCCE, but none were recorded and mistletoe is relatively uncommon on the BCCE.
- Two evaluation species were recorded during surveys, and LeConte's Thrasher were relatively abundant compared to most species recorded on the BCCE.

Avian Surveys on Riparian Properties

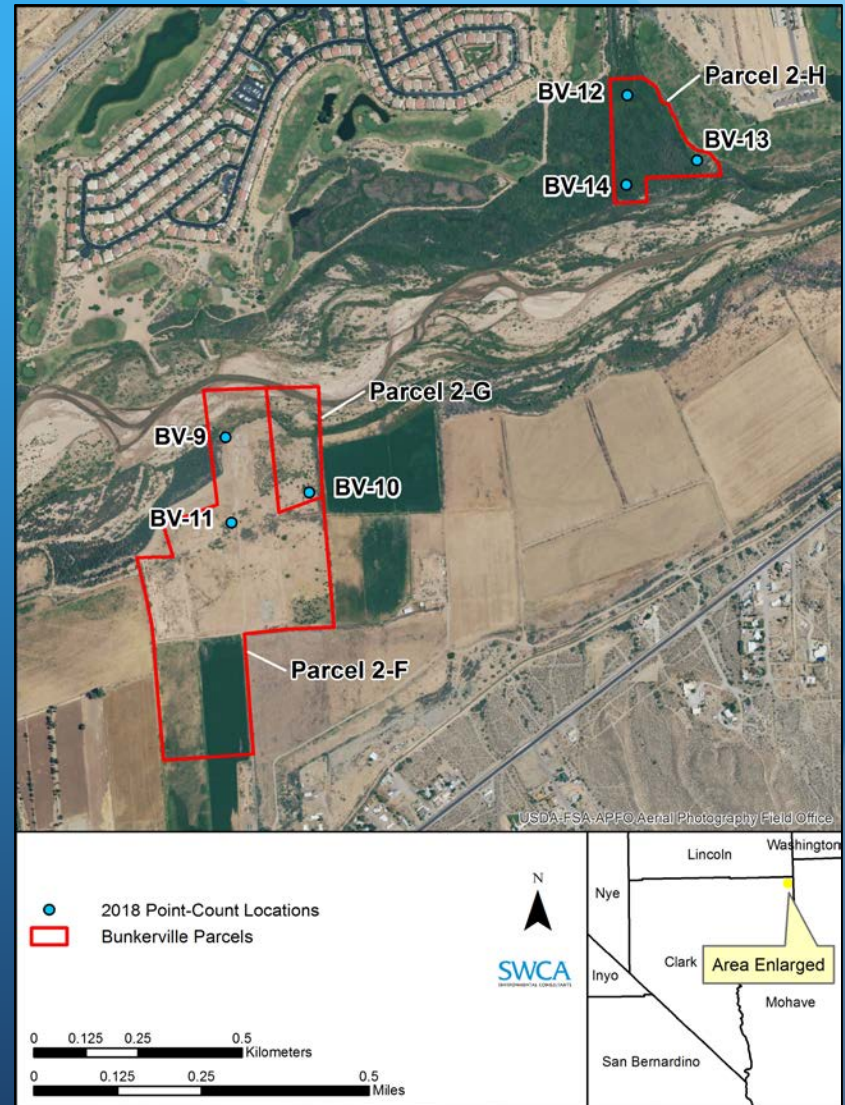
2017-SWCA-1730E

Methods - Avian Point-Counts

- Standard 10-minute unlimited radius point-count survey protocol (GBBO 2010 and Ralph et al. 1993)
- Random survey locations selected by DCP
- 3 survey visits between May 21 and June 22, 2018
- 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

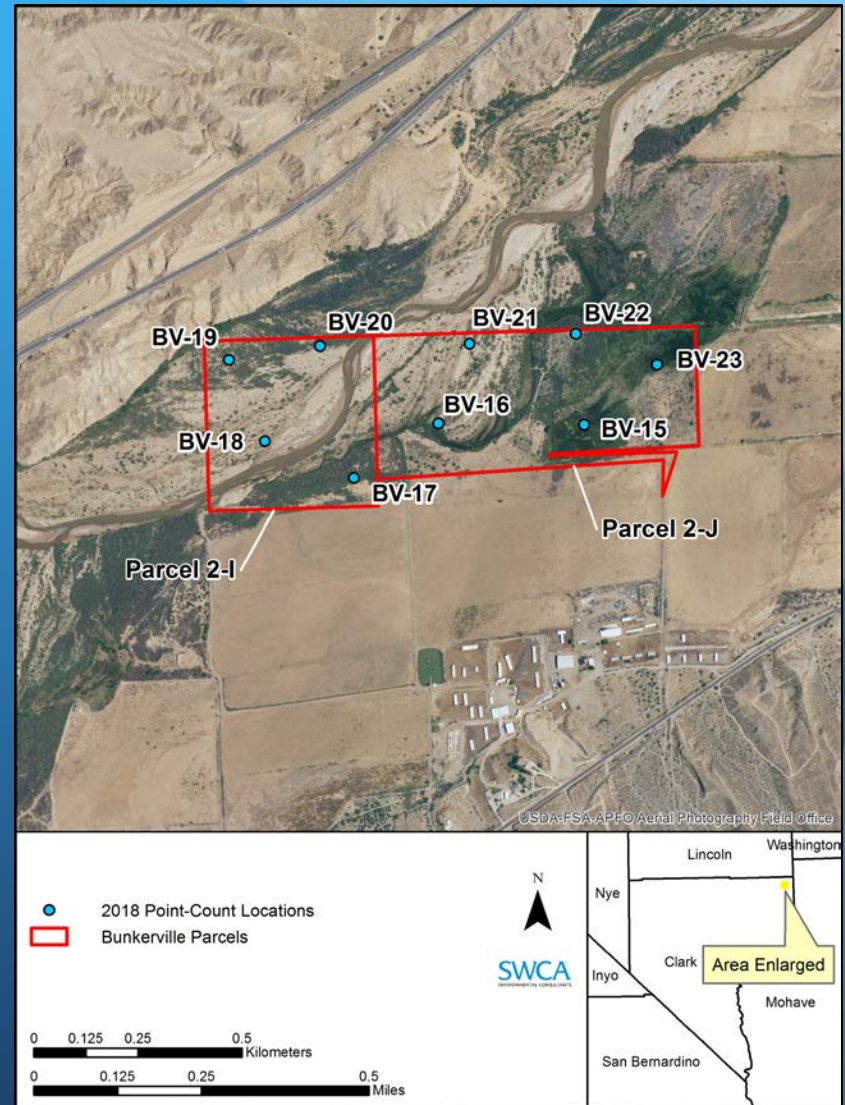
Bunkerville

- Virgin River Subunit 2
- Parcels F-H
- North of Bunkerville, NV
- 6 randomly-selected survey locations



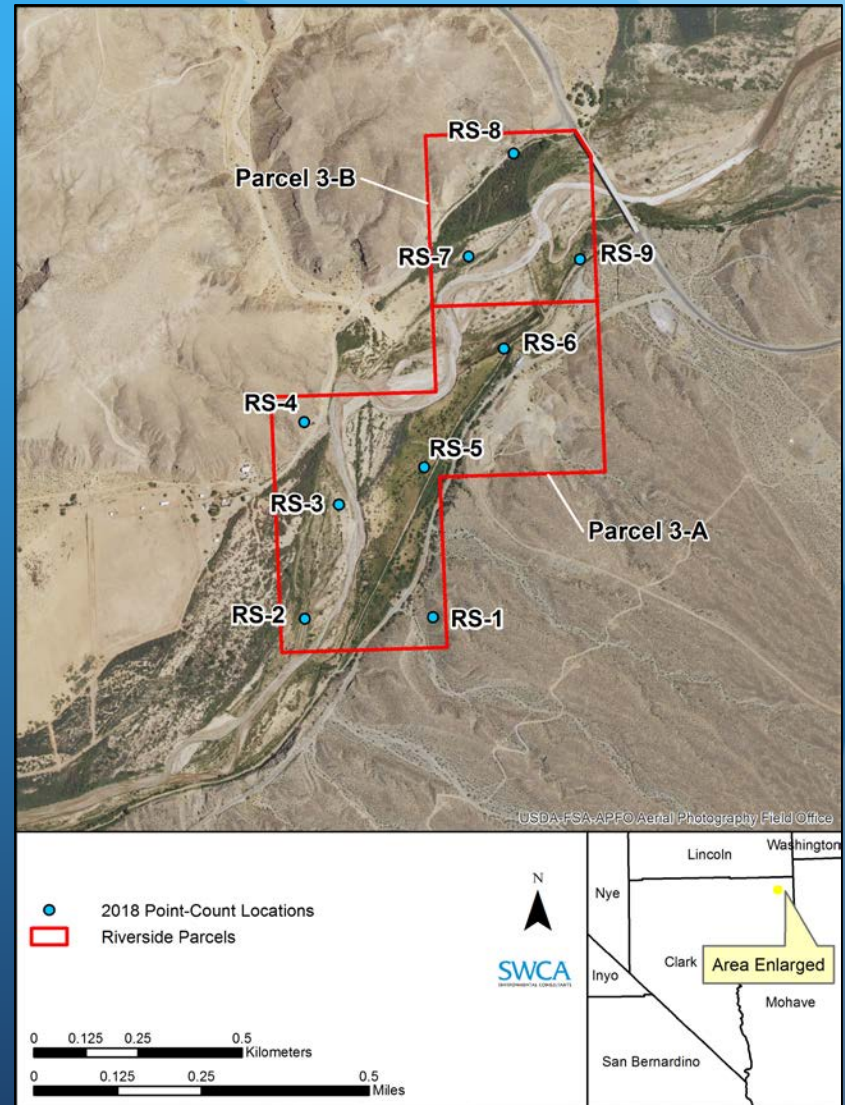
Bunkerville

- Virgin River Subunit 2
- Parcels I-J
- West of Bunkerville, NV
- 9 randomly-selected survey locations



Riverside

- Virgin River Subunit 3
- Parcels A and B
- South of Riverside, NV
- 9 randomly-selected survey locations



Riparian Property Point-Count Results



Phainopepla (Mike Swink, SWCA)

- 8 MSHCP covered species (2 incidentally)
- 2 MSHCP evaluation species
- 53 species recorded across the Bunkerville and Riverside Subunits
- Most abundant species were Cliff Swallow, Red-winged Blackbird, and Northern Rough-winged Swallow

American Peregrine Falcon

- Not a desert riparian habitat obligate - found in many habitats
- One bird observed at one location at Bunkerville
- Not recorded at Riverside



Peregrine Falcon foraging habitat, Bunkerville

Arizona Bell's Vireo

- Desert riparian habitat obligate
- Recorded at 10 out of 15 locations at Bunkerville
- Recorded at all 9 survey locations at Riverside



Arizona Bell's Vireo habitat, Riverside

Blue Grosbeak



Blue Grosbeak (Justin Streit, SWCA)

- Uses desert riparian habitat and more open adjacent habitats
- Recorded at six different point-count locations at Riverside
- Not recorded at Bunkerville

Phainopepla



Phainopepla (Mike Swink, SWCA)

- Not a desert riparian habitat obligate - uses mesquite/acacia habitat
- Recorded at three different point-count locations at Bunkerville
- Majority of observations from BV-22, which has many very large mesquite
- Recorded at one point-count location at Riverside

Summer Tanager



Summer Tanager (Justin Streit, SWCA)

- Desert riparian habitat obligate
- Recorded incidentally at Bunkerville 2-G
- Habitat generally lacking at the Bunkerville and Riverside Subunits

Southwestern Willow Flycatcher

- Desert riparian habitat obligate
- Recorded once at Bunkerville Parcel 2-H (Mesquite West)
- Not recorded during point-count surveys at Riverside



Southwestern Willow Flycatcher habitat, Parcel 2-H

Vermilion Flycatcher

- Inhabits desert riparian habitat, but also uses mesquite/acacia habitat
- Recorded at 3 of 15 Bunkerville locations, all within Parcel 2-J
- Not recorded at Riverside



Vermilion Flycatcher habitat, Parcel 2-J

Western Yellow-billed Cuckoo



Yellow-billed Cuckoo (Justin Streit, SWCA)

- Desert riparian obligate
- Recorded incidentally at Bunkerville 2-H
- Habitat generally lacking at the Riparian Reserve Units due to a lack of mature native vegetation

Evaluation Species

Loggerhead Shrike

- Recorded at 2 of 9 point-count locations at Riverside
- Not recorded at Bunkerville



Loggerhead Shrike (Mike Swink, SWCA)

Crissal Thrasher

- Recorded at 4 of 15 point-count locations at Bunkerville
- Recorded at 4 of 9 point-count locations at Riverside

Methods - Western Yellow-billed Cuckoo

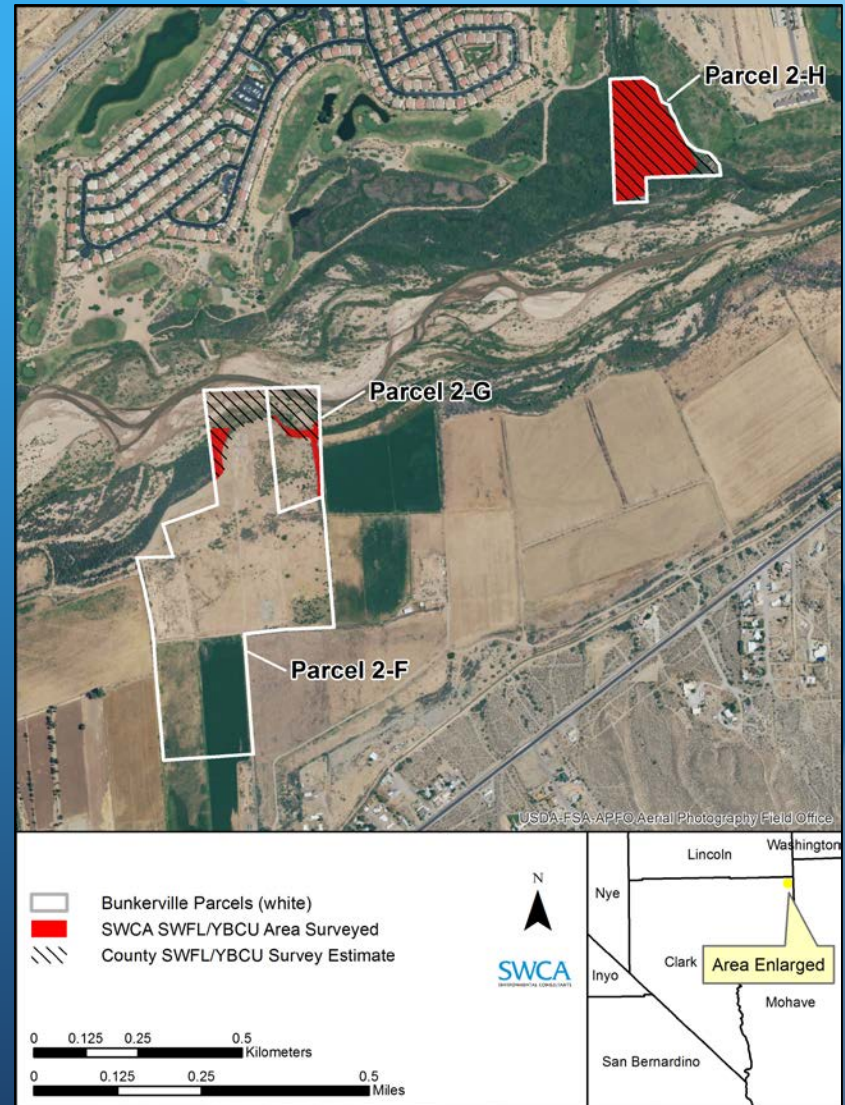
- Protocol followed Halterman et al. 2015
- Four survey visits for Western Yellow-billed Cuckoo
- Call-playback technique at locations spaced 100 m apart in appropriate habitat
- Surveyed from first light to no later than 11:00 a.m. or when ambient temperature reached 40 degrees C
- Changed starting 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 10:00 a.m.
- Changed starting location every survey visit

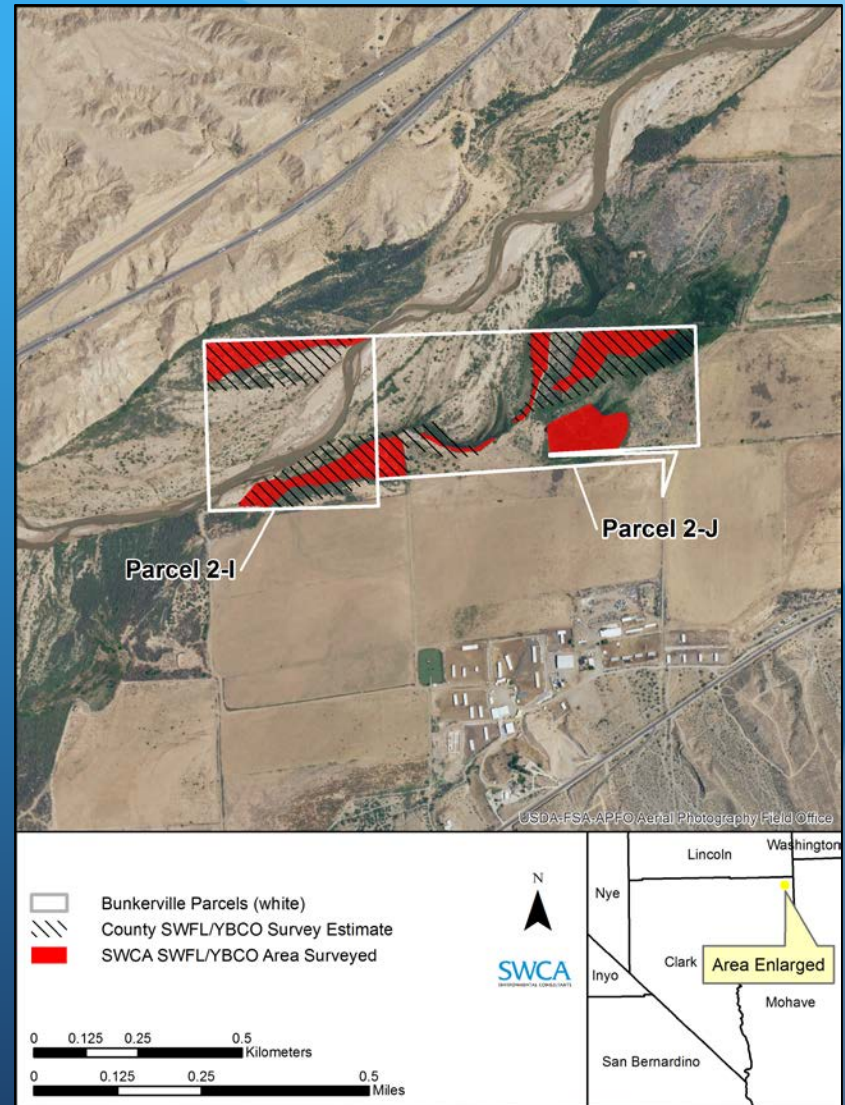
Bunkerville Parcels F-H

- North of Bunkerville, NV
- 11.8 acres surveyed
- Southwestern Willow Flycatcher = 20.4 hours
- Western Yellow-billed Cuckoo = 8.8 hours



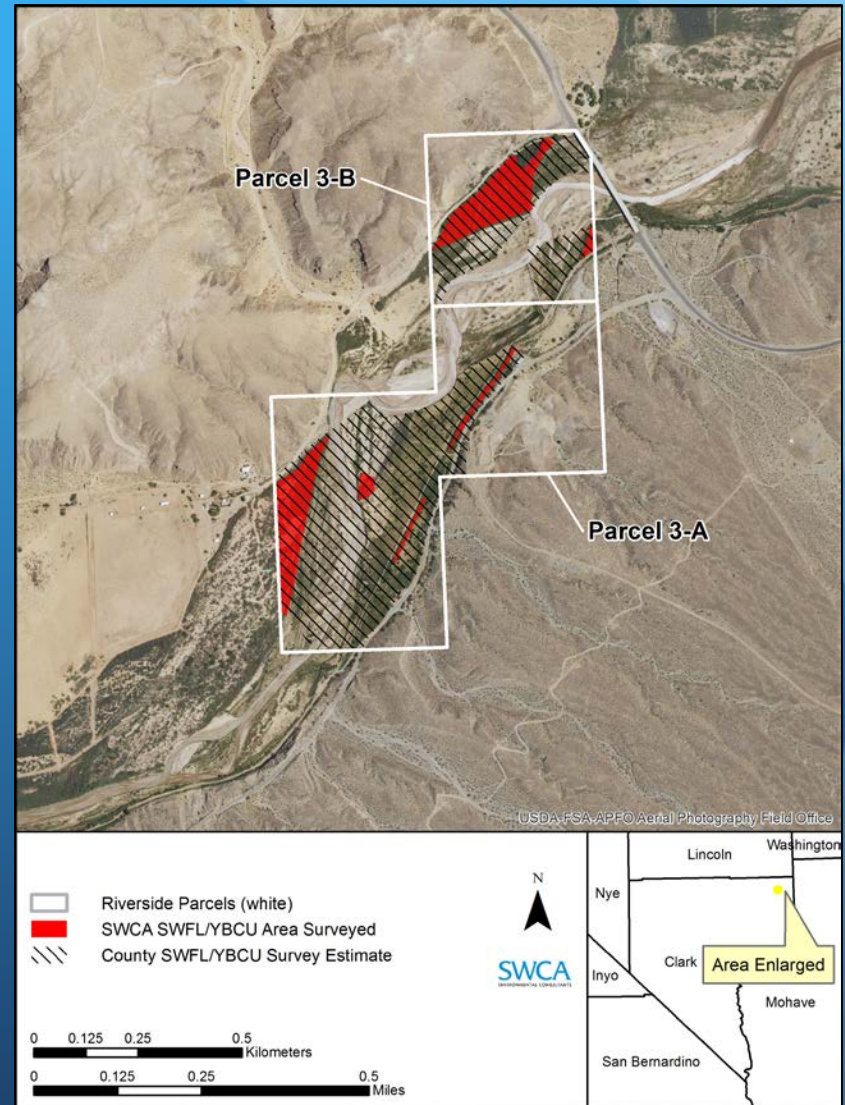
Bunkerville Parcels I-J

- West of Bunkerville, NV
- 20.1 acres surveyed
- Southwestern Willow Flycatcher = 18.3 hours
- Western Yellow-billed Cuckoo = 12.0 hours



Riverside Parcels A-B

- South of Riverside, NV
- 13.1 acres surveyed
- Southwestern Willow Flycatcher = 21.4 hours
- Western Yellow-billed Cuckoo = 14.7 hours



Bunkerville Results

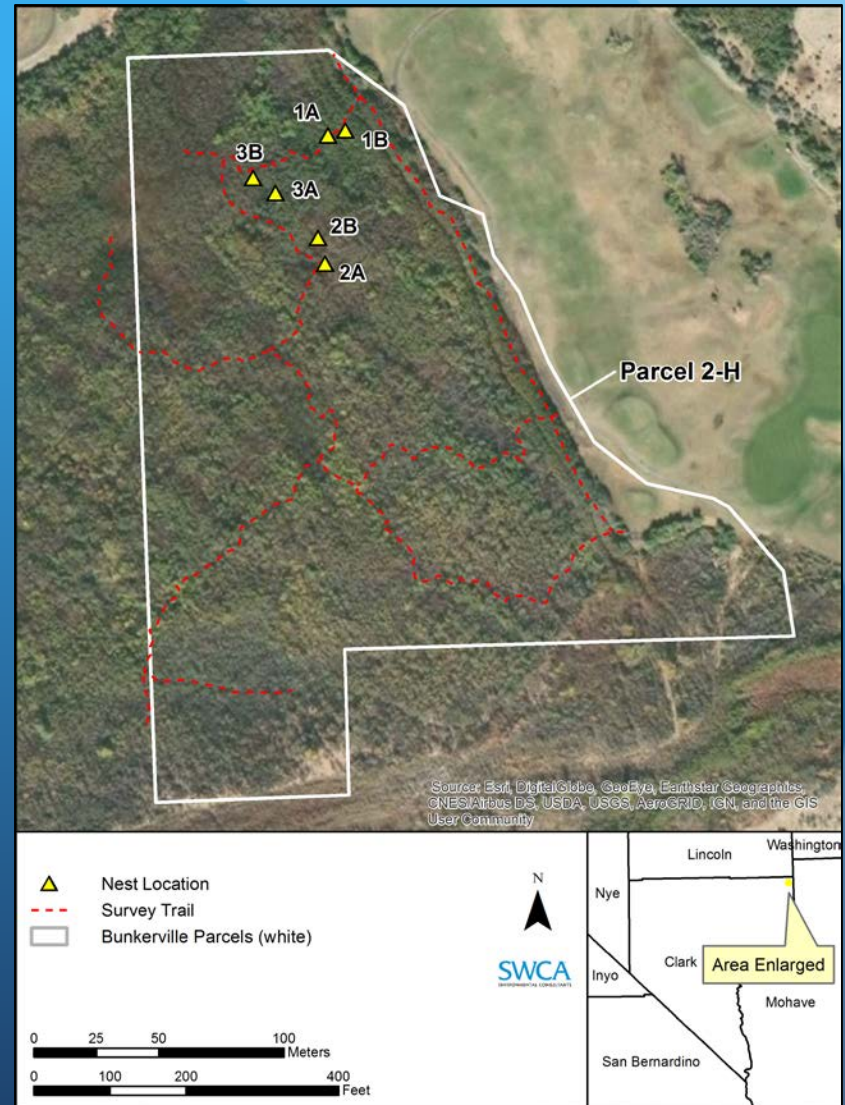
- One Western Yellow-billed Cuckoo detected at Parcel 2-H during the first round of survey only
- At least 7 individual Southwestern Willow Flycatchers detected at Parcel 2-H
- No Yellow-billed Cuckoo or Southwestern Willow Flycatcher were detected at any other Bunkerville parcel



Southwestern Willow Flycatcher nest,
Bunkerville Riparian Reserve Unit Parcel 2-H

Bunkerville Parcel 2-H

- Male “OWO” paired with 3 separate females
- Each female had 2 nesting attempts; each female’s first attempt failed
- A least 6 total known nesting attempts; outcomes of each second attempt unknown



Riverside Results

- No Western Yellow-billed Cuckoo detected at either Riverside parcel
- One migrant Willow Flycatcher detected during the first round of Southwestern Willow Flycatcher Surveys
- Poor quality habitat



Willow Flycatcher detected at the Riverside Riparian Reserve Unit (Justin Streit, SWCA)

Bunkerville Parcels F-G

- Parcel F and G consist of mostly open, scrubby habitat
- Very poor quality habitat with scattered patches of willow and tamarisk
- Four MSHCP covered species recorded: American Peregrine Falcon, Arizona Bell's Vireo, Phainopepla and Summer Tanager



Open scrubby habitat in Parcel 2-F

Bunkerville Parcel H

- Dominated by very dense narrowleaf willow with intermittent tamarisk
- Three MSHCP covered species recorded: Arizona Bell's Vireo, Southwestern Willow Flycatcher, and Yellow-billed Cuckoo
- Little to no restoration necessary



Dense native vegetation in Parcel 2-H

Bunkerville Parcels I-J

- Varied habitat includes monotypic tamarisk stands, arrowweed, honey mesquite, and wet meadows
- Three MSHCP covered species recorded: Arizona Bell's Vireo, Phainopepla, and Vermilion Flycatcher
- Cattle grazing is a major problem preventing native vegetation growth in 2-J



Varied habitat at Parcel 2-J

Riverside

- Variable patches of arrowweed, mesquite, tamarisk, and willow
- Three MSHCP covered species recorded: Arizona Bell's Vireo, Blue Grosbeak, and Phainopepla
- Cattle grazing could be a major obstacle to success of restoration efforts at Riverside



Open scrubby, but varied habitat at Riverside

Conclusions and Recommendations

- Much of the Riparian Reserve Units do not currently provide habitat for Southwestern Willow Flycatchers, and neither Bunkerville or Riverside currently provide breeding habitat for Western Yellow-billed Cuckoo.
- Bunkerville Parcel 2-H supported at least two Southwestern Willow Flycatcher territories and an estimated 4 breeding pairs in 2018; this breeding habitat should be preserved.



Southwestern Willow Flycatcher (Chance Hines, SWCA)

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, wherever present.
- Remove cattle and erect cattle exclusion fencing anywhere there is native vegetation at both Virgin River Riparian Reserve Units.
- Side channels and perched water tables provide excellent opportunities for successful restoration at Bunkerville Parcels I and J.

Conclusions and Recommendations

- Preserve areas of honey and screwbean mesquite in drier, less-saturated areas of the Riparian Reserve Units and consider earthwork to lower the depth to the water table and protect restoration efforts from minor flood events.
- Monotypic stands of tamarisk provide less habitat for MSHCP covered species and should be removed and restored with native vegetation.
- Continue avian surveys to expand on baseline data and to monitor changes in the avian community in response to restoration efforts.



Questions?