



NFWF

Ventura Audubon Society Lower Ventura River Cowbird Trapping (amended)

Recipient: Ventura Audubon Society

Project Period: April 1, 2016 – December 31, 2019

Award Amount: \$80,183.60

Project Number: #8006.16.053271

Summary of Accomplishments

Our work entailed two key elements: brown-headed cowbird trapping and baseline bird surveys. The trapping was conducted for three years, the bird surveys over four years. Both of these efforts should be continued and should be coupled with the removal and on-going control of invasive non-native plants, such as giant reed (*Arundo donax*). Of critical importance is the removal of homeless camping (etc.) within the Ventura River, which degrades habitat directly and indirectly.

Project Activities & Outcomes

Three years of cowbird trapping and four years of baseline bird surveys yielded the following results:

Table 1. Cowbird Trapping Summary (2016-2018)

YEAR	TRAPS	Trap Days	Cowbirds Removed
1 (2016)	5	91	53
2 (2017)	6	93	51
3 (2018)	6	92	54

Table 2. Baseline Bird Survey Summary (2016-2019)

YEAR	Total individual birds	Total species of birds
1 (2016)	608	64
2 (2017)	687	67
3 (2018)	746	79
4 (2019)	952	61
TOTALS	2641	94

The only discrepancy between the activities conducted during the grant and the activities agreed upon in our grant agreement was the number of traps used each year. The original plan was for five

traps in 2016 & 2017 and four traps in 2018. Revision of the number of traps used each year was authorized by NFWF on May 22, 2018

Lessons Learned

The key lesson is that attempting biological field work in areas occupied by homeless transients is dangerous. The Ventura River has a homeless population including campsites where dogs, fires, litter and debris are found. Our biologists have been verbally and physical threatened by these people.

Dissemination

Over the course of this grant, we have provided summary reports for publication in the newsletters of the Ventura Audubon Society and the Friends of the Ventura River. We have led field trips to the cowbird traps to explain the program.

Project Documents

The final Ventura River Riparian Bird Surveys (2016-2019) Report is attached. Additional documents including photos, maps, survey data can be provided upon request.

POSTING OF FINAL REPORT: *This report and attached project documents may be shared by the Foundation and any Funding Source for the Project via their respective websites. In the event that the Recipient intends to claim that its final report or project documents contains material that does not have to be posted on such websites because it is protected from disclosure by statutory or regulatory provisions, the Recipient shall clearly mark all such potentially protected materials as "PROTECTED" and provide an explanation and complete citation to the statutory or regulatory source for such protection.*

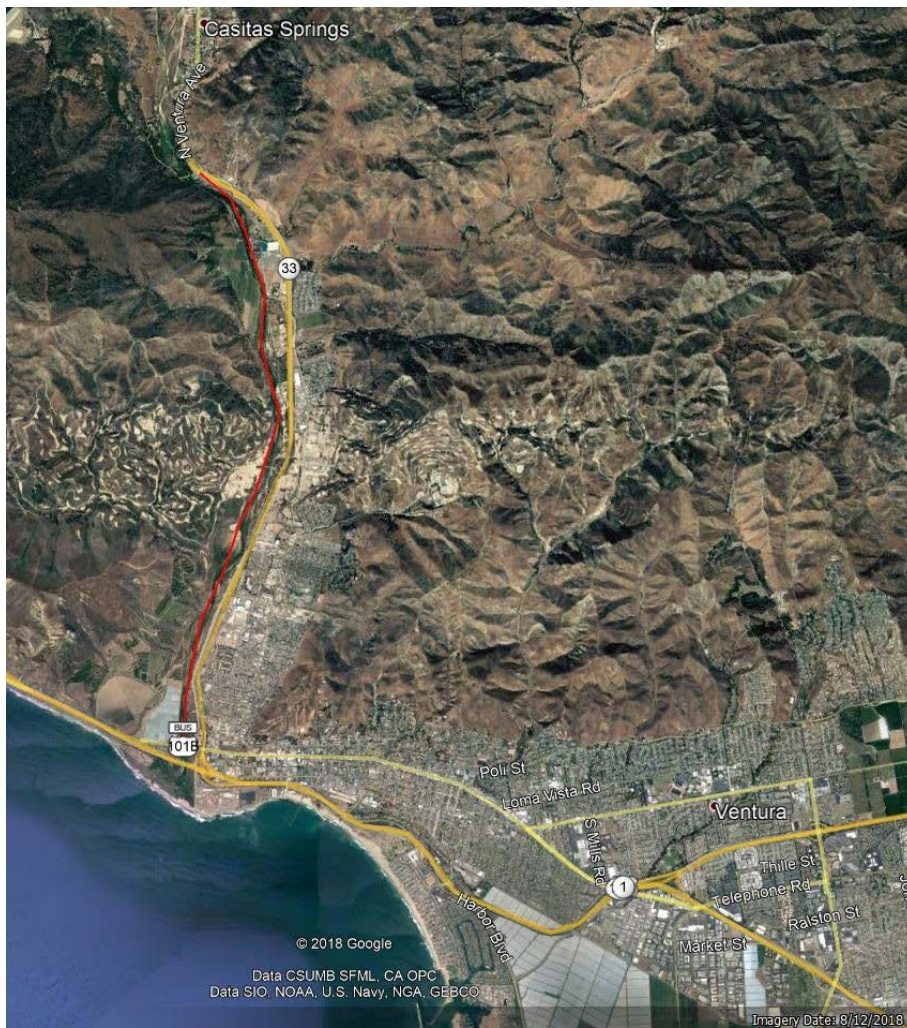


Figure 1. Approximate study area: Foster Park Bridge (Santa Ana Road, west of Highway 33) downstream to the Main Street Bridge

Ventura River Riparian Bird Surveys 2016–2019 (amended)

Prepared by Adam J. Searcy

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For

Ventura Audubon Society



Big Rock Preserve, Spring 2019

INTRODUCTION

In the springs of 2016 through 2019, a series of surveys were conducted on the lower Ventura River to collect baseline avian abundance data. The survey reach is from the Main Street Bridge (near Highway 101) upstream to the Foster Park Bridge. Each point was surveyed three times per year, once each in April, May, and June. Counts were conducted in light winds, low temperatures, and when rainfall and low visibility would not seriously impede detections. Results of the 2019 surveys and a summary of the 2016–2019 findings are reported below. All surveys were conducted by Adam J. Searcy, biologist under contract to Ventura Audubon Society.

2019 Surveys

The 2019 counts were conducted on 25 April, 23 May, and 11 June, resulting in a total of 602 observations of 952 individuals of 61 species. **Table 1** provides the complete list of all 61 species detected during the 2019 surveys. Data summarized across all points on each date are attached as **Appendix 1** (including 2016–2018) and raw count data are attached as **Appendix 2** (including 2016–2018).

Table 1. Complete Species List 2019

SPECIES (COMMON NAME)	SCIENTIFIC NAME
Acorn Woodpecker	<i>Melanerpes formicivorus</i>
Allen’s Hummingbird	<i>Selasphorus sasin</i>
American Crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Spinus tristis</i>
American Robin	<i>Turdus migratorius</i>
Anna’s Hummingbird	<i>Calypte anna</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>
Barn Swallow	<i>Hirundo rustica</i>
Bewick’s Wren	<i>Thryomanes bewickii</i>
Black Phoebe	<i>Sayornis nigricans</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Bullock’s Oriole	<i>Icterus bullockii</i>
Bushtit	<i>Psaltriparus minimus</i>
California Gull	<i>Larus californicus</i>
California Quail	<i>Callipepla californica</i>

SPECIES (COMMON NAME)	SCIENTIFIC NAME
California Scrub-Jay	<i>Aphelocoma californica</i>
California Thrasher	<i>Toxostoma redivivum</i>
California Towhee	<i>Melospiza crissalis</i>
Canada Goose	<i>Branta canadensis</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Common Raven	<i>Corvus corax</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Eurasian Collared-Dove †	<i>Streptopelia decaocto</i>
European Starling †	<i>Sturnus vulgaris</i>
Feral Pigeon †	<i>Columba livia</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Hooded Oriole	<i>Icterus cucullatus</i>
House Finch	<i>Haemorhous mexicanus</i>
House Wren	<i>Troglodytes aedon</i>
Hutton's Vireo	<i>Vireo huttoni</i>
Lazuli Bunting	<i>Passerina amoena</i>
Least Bell's Vireo#	<i>Vireo bellii pusillus</i>
Lesser Goldfinch	<i>Spinus psaltria</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning Dove	<i>Zenaidura macroura</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Nuttall's Woodpecker	<i>Picoides nuttallii</i>
Oak Titmouse*	<i>Baeolophus inornatus</i>
Orange-crowned Warbler	<i>Oreothlypis celata</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Purple Finch	<i>Haemorhous purpureus</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>

SPECIES (COMMON NAME)	SCIENTIFIC NAME
Red-winged Blackbird	<i>Agelaius phoeniceus</i>
Ring-billed Gull	<i>Larus delawarensis</i>
Song Sparrow	<i>Melospiza melodia</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Turkey Vulture	<i>Cathartes aura</i>
Warbling Vireo	<i>Vireo gilvus</i>
Western Gull	<i>Larus occidentalis</i>
Wilson's Warbler	<i>Cardellina pusilla</i>
Wrentit	<i>Chamaea fasciata</i>
Yellow Warbler*	<i>Setophaga petechia</i>
Yellow-breasted Chat*	<i>Icteria virens</i>
Yellow-rumped Warbler (Myrtle)	<i>Setophaga coronata ssp. coronata</i>

Notes: State or federally threatened or endangered taxa are noted with a pound sign (#), California Department of Fish & Wildlife Special Animals are noted with an asterisk (*) (CDFW 2019), species that are known to breed within the immediate study area are in **bold**, and nonnative species are noted with a dagger (†)

Results of 2016—2019 Surveys

From 2016 through 2019, a total of 2,641 observations of 3,621 individuals of 94 species were made. **Table 2** contains all species detected during the entire survey period.

Table 2. Complete Species List 2016—2019

SPECIES (COMMON NAME)	SCIENTIFIC NAME
Acorn Woodpecker	<i>Melanerpes formicivorus</i>
Allen's Hummingbird	<i>Selasphorus sasin</i>
American Crow	<i>Corvus brachyrhynchos</i>
American Goldfinch	<i>Spinus tristis</i>
American Pipit	<i>Anthus rubescens</i>
American Robin	<i>Turdus migratorius</i>
Anna's Hummingbird	<i>Calypte anna</i>
Ash-throated Flycatcher	<i>Myiarchus cinerascens</i>

SPECIES (COMMON NAME)	SCIENTIFIC NAME
Band-tailed Pigeon	<i>Patagioenas fasciata</i>
Barn Swallow	<i>Hirundo rustica</i>
Bewick's Wren	<i>Thryomanes bewickii</i>
Black Phoebe	<i>Sayornis nigricans</i>
Black Swift	<i>Cypseloides niger</i>
Black-chinned Hummingbird	<i>Archilochus alexandri</i>
Black-headed Grosbeak	<i>Pheucticus melanocephalus</i>
Blue Grosbeak	<i>Passerina caerulea</i>
Brown-headed Cowbird	<i>Molothrus ater</i>
Bullock's Oriole	<i>Icterus bullockii</i>
Bushtit	<i>Psaltriparus minimus</i>
California Gull	<i>Larus californicus</i>
California Quail	<i>Callipepla californica</i>
California Scrub-Jay	<i>Aphelocoma californica</i>
California Thrasher	<i>Toxostoma redivivum</i>
California Towhee	<i>Melospiza crissalis</i>
Canada Goose	<i>Branta canadensis</i>
Canyon Wren	<i>Catherpes mexicanus</i>
Cassin's Kingbird	<i>Tyrannus vociferans</i>
Cedar Waxwing	<i>Bombycilla cedrorum</i>
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Common Raven	<i>Corvus corax</i>
Common Yellowthroat	<i>Geothlypis trichas</i>
Costa's Hummingbird	<i>Calypte costae</i>
Dark-eyed Junco	<i>Junco hyemalis</i>
Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Downy Woodpecker	<i>Picoides pubescens</i>
Eurasian Collared-Dove †	<i>Streptopelia decaocto</i>
European Starling †	<i>Sturnus vulgaris</i>
Feral Pigeon †	<i>Columba livia</i>
Great Blue Heron	<i>Ardea herodias</i>

SPECIES (COMMON NAME)	SCIENTIFIC NAME
Great Egret	<i>Ardea alba</i>
Great-tailed Grackle	<i>Quiscalus mexicanus</i>
Green Heron	<i>Butorides virescens</i>
Hairy Woodpecker	<i>Picoides villosus</i>
Hooded Oriole	<i>Icterus cucullatus</i>
House Finch	<i>Haemorhous mexicanus</i>
House Wren	<i>Troglodytes aedon</i>
Hutton's Vireo	<i>Vireo huttoni</i>
Killdeer	<i>Charadrius vociferans</i>
Lark Sparrow	<i>Chondestes grammacus</i>
Lawrence's Goldfinch	<i>Spinus lawrencei</i>
Lazuli Bunting	<i>Passerina amoena</i>
Least Bell's Vireo#	<i>Vireo bellii pusillus</i>
Lesser Goldfinch	<i>Spinus psaltria</i>
Mallard	<i>Anas platyrhynchos</i>
Mourning Dove	<i>Zenaida macroura</i>
Nashville Warbler	<i>Oreothlypis ruficapilla</i>
Northern Flicker (Red-shafted)	<i>Colaptes auratus</i>
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>
Nuttall's Woodpecker	<i>Picoides nuttallii</i>
Oak Titmouse	<i>Baeolophus inornatus</i>
Orange-crowned Warbler	<i>Oreothlypis celata</i>
Osprey	<i>Pandion haliaeetus</i>
Pacific-slope Flycatcher	<i>Empidonax difficilis</i>
Peregrine Falcon	<i>Falco peregrinus</i>
Phainopepla	<i>Phainopepla nitens</i>
Purple Finch	<i>Haemorhous purpureus</i>
Red-shouldered Hawk	<i>Buteo lineatus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>

SPECIES (COMMON NAME)	SCIENTIFIC NAME
Ring-billed Gull	<i>Larus delawarensis</i>
Rufous Hummingbird	<i>Selasphorus rufus</i>
Scaly-breasted Munia †	<i>Lonchura punctulata</i>
Snowy Egret	<i>Egretta thula</i>
Solitary Sandpiper	<i>Tringa solitaria</i>
Song Sparrow	<i>Melospiza melodia</i>
Spotted Sandpiper	<i>Actitis macularius</i>
Spotted Towhee	<i>Pipilo maculatus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>
Swainson's Thrush	<i>Catharus ustulatus</i>
Tree Swallow	<i>Tachycineta bicolor</i>
Turkey Vulture	<i>Cathartes aura</i>
Vaux's Swift	<i>Chaetura vauxi</i>
Violet-green Swallow	<i>Tachycineta thalassina</i>
Warbling Vireo	<i>Vireo gilvus</i>
Western Bluebird	<i>Sialia mexicana</i>
Western Gull	<i>Larus occidentalis</i>
Western Tanager	<i>Piranga ludoviciana</i>
White-breasted Nuthatch	<i>Sitta carolinensis</i>
White-crowned Sparrow	<i>Zonotrichia leucophrys</i>
Wilson's Warbler	<i>Cardellina pusilla</i>
Wrentit	<i>Chamaea fasciata</i>
Yellow Warbler*	<i>Setophaga petechia</i>
Yellow-breasted Chat*	<i>Icteria virens</i>
Yellow-rumped Warbler (Audubon's)	<i>Setophaga coronata auduboni</i>
Yellow-rumped Warbler (Myrtle)	<i>Setophaga coronata ssp. coronata</i>

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TRENDS

Trends are estimated following methodologies outlined (in part) in Nur et al. (1999). Due to low total detections for many species, estimation of detection probabilities and densities was not possible. Trend estimates are based on the high count of each species for each year from all pooled points. Estimates are limited to species that had at least one season with 10 or more detections (with some noted exceptions) and exclude groups/species for which point counts are poorly suited for detection/estimation (e.g., raptors, waders). Flyovers (i.e., species making long flights and clearly not 'connected' to the habitat below them) were excluded. Nonnative species were also dropped from this analysis but are covered in a subsection below. **Figure 1** illustrates the estimated trend for all pooled species, while **Table 3** provides the yearly high counts and trends for species pooled across all survey points and indicates trends by species. Linear regressions for species in Table 3 are attached as **Appendix 3**.

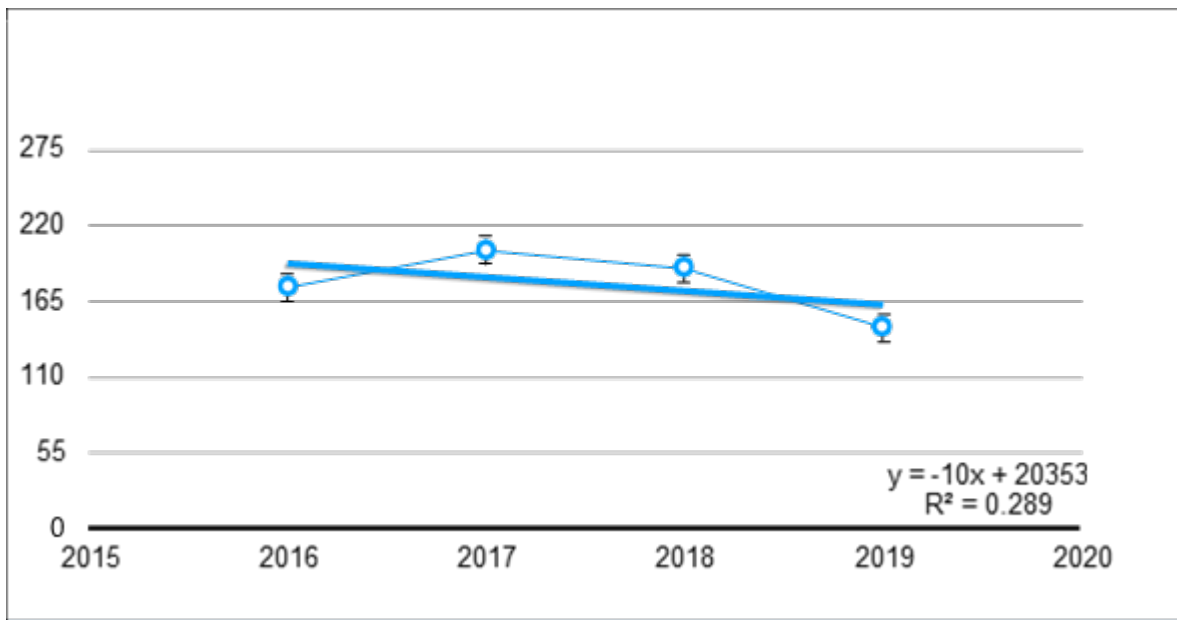


Figure 1. Trend estimate of all pooled species in Table 3 (p=0.46)

Table 3. Yearly High Counts

SPECIES	2016	2017	2018	2019	TREND
American Goldfinch	13	8	6	1	Possibly decreasing
Bewick's Wren	14	15	11	16	Possibly stable
Black-headed Grosbeak	12	8	11	5	Possibly decreasing
California Scrub-Jay	7	5	4	4	Possibly decreasing
California Towhee	9	11	10	7	Possibly decreasing
Common Yellowthroat	15	19	19	9	Possibly decreasing
House Finch	11	19	12	9	Possibly decreasing
Least Bell's Vireo	3	9	11	6	Possibly increasing
Lesser Goldfinch	5	12	7	6	Possibly stable
Orange-crowned Warbler	7	15	18	10	Possibly stable
Pacific-slope Flycatcher	8	9	9	8	Possibly stable
Song Sparrow	18	16	20	16	Possibly stable
Spotted Towhee	12	11	10	8	Possibly decreasing
Wrentit	17	14	15	13	Possibly decreasing
Yellow Warbler	20	26	22	26	Possibly increasing
Yellow-breasted Chat	4	5	4	2	Possibly decreasing
TOTAL INDIVIDUALS	175	202	189	146	Possibly decreasing

Bold entries had no high counts >10 individuals

Brown-headed Cowbirds and Nonnative Species

Brown-headed Cowbirds were seldom detected (outside of BHCO traps) and appeared to persist at stable low densities through the survey period, likely maintained by on-going trapping. A total of seven were detected on four occasions: zero in 2016, two (sex unknown) on 17 May 2017, one male and one female on 22 May 2018, one male on 25 April 2019, and two (sex unknown) on 11 June 2019. The local

population appears to be stable at very low numbers and no dependent young or recently fledged Brown-headed Cowbirds were observed during the survey period.

Nonnative species encountered on the river included Eurasian Collared-Dove (22), Feral Pigeon (83), European Starling (25), and Scaly-breasted Munia (1). The two nonnative dove species were generally encountered on the edges of riparian/disturbed-developed habitat or as flyovers (esp. Feral Pigeon) and not observed using the riparian corridor proper. European Starling detections were mostly along the edges of riparian habitat rather than within it. This species is known to compete with native-cavity nesting species such as Oak Titmouse, Tree and Violet-green Swallows, Western Bluebird, and Woodpeckers. One Scaly-breasted Munia was detected at point seven on 22 May 2018. This species has been slowly expanding in Ventura County and has become more common on the Santa Clara River over the past two years (pers. obs.). It is much more common in Los Angeles and Santa Barbara Counties so may soon become an established member of the Ventura River avifauna.

DISCUSSION

As listed in Table 3, most species analyzed are possibly declining (10) or stable (2), with only two species (Yellow Warbler and Least Bell's Vireo) possibly showing increasing trends. Determining the causes of these possible trends is beyond the scope of these surveys, but potential declines may in part be due to lingering effects of a multi-year drought, decreasing insect populations due to widespread pesticide use, and habitat loss on the wintering grounds of many neotropical migrants. The 2018–2019 rain year brought an end to the drought, but any resultant increase in local populations would probably not be detectable until the following spring at the earliest. Additionally, a high level of transient (human) use of riparian areas was noted throughout the survey period. Encampments would come and go, especially on areas with frequent patrols, e.g., the Ventura Land Trust Willoughby Preserve, adjacent to the Main Street Bridge at the southern end of the survey reach. Other sections of the river have longer-term encampments with greater impacts. The areas with the largest numbers of encampments were on Emma Wood State Park (outside and downstream of the survey area) and some areas upstream of the old Brooks campus. These high levels of occupancy are likely having direct negative impacts on riparian bird species due to noise and human traffic through sensitive habitat, disturbance and clearing of vegetation (see **Figure 2**, below), the presence of dogs and large amounts of refuse and human waste.

Some inescapable difficulties were encountered while surveying. Large swaths of private property that contain high quality habitat (e.g., Taylor Ranch) are not accessible and remain un-sampled. As a result, many points had to be placed on or near habitat edges, rather than nearer the middle of the riparian corridor.

Additionally, high levels of background noise affected detectability at most points. At the lowermost stretches of the river, Highway 101 produces constant background noise. Because the highway makes a crossing perpendicular to the river, noise levels drop quickly as one travels upstream. Highway 33 parallels the entire survey area to the east of the river. While lower in absolute noise production compared to Highway 101, Highway 33 presents significant noise/detectability issues. Consistent decreases in detectability suggest that future surveys should be limited to weekends when morning traffic volume is at its lowest.

Further surveys on the Ventura River should be conducted to better estimate and understand trends in the populations of breeding birds using this system and to attempt to detect ongoing and/or future increases or decreases in populations of breeding species. Nur et al. (1999) suggest point counts as the ideal methodology for such surveys, conducted over a minimum of a five to nine year period. Future surveys should be conducted at more sites (15-20, ideally retaining the 10 points used during these surveys), potentially with two observers counting during each survey day to allow for the surveys to be completed on concurrent days. A larger number of survey points would yield larger samples from which more significant conclusions may be drawn.

REFERENCES

- California Department of Fish and Wildlife, Natural Diversity Database. August 2019. Special Animals List. Periodic publication. 65 pp.
- Nur, N., S.L. Jones, and G.R. Geupel. 1999. A statistical guide to data analysis of avian monitoring programs. U.S. Department of the Interior, Fish and Wildlife Service, BTP-R6001-1999, Washington, D.C.



Figure 2. Cleared trails and felled willow branches at a homeless encampment. A territorial male Least Bell's Vireo had been detected in this arroyo willow (Salix lasiolepis) on 23 May 2019.

Appendices (contact for documents):

Appendix 1: 2016--2019 Data summary

Appendix 2: All raw data 2016--2019

Appendix 3: Linear regressions of species in Table 3

Appendix 4: aerial imagery and all point locations

Appendix 5: all survey dates and weather data