

las vegas wash coordination committee

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Yellow-billed Cuckoo Surveys along the Las Vegas Wash, Clark County, Nevada, 2017



December 2017



**Yellow-billed Cuckoo Surveys along the Las Vegas Wash,
Clark County, Nevada, 2017**

**SOUTHERN NEVADA WATER AUTHORITY
Las Vegas Wash Project Coordination Team**

Prepared for:

**U.S. Fish and Wildlife Service
Southern Nevada Field Office**

and

Las Vegas Wash Coordination Committee

Prepared by:

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December 2017

ABSTRACT

The Las Vegas Wash Coordination Committee, a 29-member stakeholder group, is working to stabilize and enhance the Las Vegas Wash (Wash), the channel that drains flows from the Las Vegas Valley to Lake Mead at Las Vegas Bay. The Wash also flows through the 2,900-acre Clark County Wetlands Park (Wetlands Park). Enhancements to riparian habitat associated with the Wash program and with other activities ongoing within the Wetlands Park may benefit the yellow-billed cuckoo, which was listed as threatened under the Endangered Species Act as of November 3, 2014. A cuckoo was detected along the Wash during surveys for the southwestern willow flycatcher in 1998. Protocol surveys were conducted for the yellow-billed cuckoo from 2002 through 2004; no cuckoos were detected (SWCA 2002, 2003, 2005). Surveys were discontinued due to lack of potentially suitable nesting habitat but recommenced in 2013 (Van Dooremolen 2014a, 2014b, 2015). Following the listing of the species, the U.S. Bureau of Reclamation reinitiated informal Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) on the development of the park and associated erosion control structures. The USFWS concurred that the project may affect but was unlikely to adversely affect the yellow-billed cuckoo and recommended that annual surveys continue to be conducted to determine its occurrence in the project area. This report summarizes data from the 2017 surveys.

Four protocol surveys were conducted at two sites (the Wetlands Park Nature Preserve and the Wash) from late June through mid-August. One probable cuckoo territory was identified along the Wash, resulting from five detections over three survey periods. Detections occurred on June 8 (during southwestern willow flycatcher surveys), June 27, July 11, and August 10. Alarm calls were given on June 27, indicating a possible nest. Potentially suitable nesting habitat quality and extent were similar to 2016 at the Nature Preserve and improved/increased at the Wash.

Annual surveys for the yellow-billed cuckoo should continue in order to comply with informal Section 7 consultation measures. Acoustic monitoring should be explored as a method to passively survey potential cuckoo breeding areas, and it may be advisable to have permitted consultants nest search/monitor should possible or probable territories be identified.

ACKNOWLEDGEMENTS

I would like to thank Nicholas Rice, Timothy Ricks, David Syzdek, and Jess Lillie for assisting with surveys, as well as Rod Bailey for supplying the image of the yellow-billed cuckoo on the cover. I would also like to thank Shannon McNeil and Diane Tracy with Southern Sierra Research Station for assessing our cuckoo alarm calls and providing their opinion on a path forward and Murrelet Halterman on advice for how to search for possible nests in the post season. Finally, I thank the Las Vegas Wash Coordination Committee for their continued support for wildlife monitoring and the implementation of the Las Vegas Wash Comprehensive Adaptive Management Plan and the Las Vegas Wash Wildlife Management Plan. These activities have been conducted by Deborah Van Dooremolen under permit no. TE148556-3 (expires May 24, 2018), Nicholas Rice under permit no. TE64580A-2 (expires May 26, 2021) and Timothy Ricks under permit no. TE67397A-2 (expires May 30, 2021) as issued by the U.S. Fish and Wildlife Service, Sacramento, California.

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project implementation. Project activities include, among others, the planned installation of 21 weirs (i.e., erosion control structures) and extensive revegetation of native wetland, riparian, and upland habitats. As of June 2017, 19 permanent weirs and more than 185 hectares (>460 acres) of native vegetation were in place.

Construction of weirs alters the landscape and changes habitat. Vegetation is cleared before construction begins. The vegetation removed is typically tamarisk (*Tamarix ramosissima*), a non-native, invasive species that dominated the Wash before CAMP implementation began. After erosion control structures are completed, native wetland, riparian, and upland vegetation is planted in appropriate areas in compliance with various permits. Additional tamarisk clearing and native revegetation has been accomplished through grants. Clark County is also removing tamarisk and planting mesquite trees and riparian and wetland vegetation in the Clark County Wetlands Park (Wetlands Park), through which the Wash flows (Figure 1).

The yellow-billed cuckoo (*Coccyzus americanus*) is a neotropical migrant that breeds extensively throughout eastern North America, from Mexico north to Canada, but has a much more limited breeding distribution in the western portion of the continent. The U.S. Fish and Wildlife Service (USFWS) listed the western Distinct Population Segment as threatened under the Endangered Species Act (ESA) on November 3, 2014. In the Southwest, the cuckoo prefers expansive riparian woodlands with cottonwood, willow, and mesquite for nesting. Thus, the cuckoo may benefit from revegetation efforts associated with the Wash project and Wetlands Park.

During Wash surveys for the federally endangered southwestern willow flycatcher in 1998, consultants detected a yellow-billed cuckoo on July 7 (Southwest Wetlands Consortium 1998). In 2002, surveys for the species were initiated to determine its occurrence in the study area (SWCA 2002, 2003, 2005). These breeding season surveys continued through 2004. No birds were identified and habitat was considered suboptimal, so surveys were discontinued. In 2013, the Southern Nevada Water Authority, the lead agency of the LVWCC, reinitiated the surveys. Surveys are conducted by members of the Las Vegas Wash Project Coordination Team (Wash Team), the implementation arm of the LVWCC (Van Dooremolen 2014a, 2014b, 2015, 2016).

Following the listing of the species, the U.S. Bureau of Reclamation reinitiated informal Section 7 consultation with the USFWS on the development of the park and associated erosion control structures. The USFWS concurred that the project may affect but was unlikely to adversely affect the yellow-billed cuckoo and recommended that annual surveys continue to be conducted to determine its occurrence in the project area.

This report documents the results of the 2017 surveys.

2.0 METHODS

2.1 Study Area

The general study area consists of the Wetlands Park and the reach of the Wash contained within its boundaries (Figure 1). Potentially suitable nesting habitat, as described in the natural history summary and survey protocol by Halterman et al. (2016), was surveyed. For the purposes of this

study, potentially suitable habitat is defined as patches of native riparian vegetation with at least some large overstory trees, such as cottonwood (*Populus fremontii*) and Goodding willow (*Salix gooddingii*), and an understory layer, typically with sandbar willow (a.k.a. coyote willow; *S. exigua*), seep willow (*Baccharis salicifolia*), and/or willow baccharis (*B. salicina*). Screwbean and honey mesquite (*Prosopis pubescens* and *P. glandulosa*) thickets of suitable stature are also included. Within surveyed areas, tamarisk comprised only a small portion of the vegetative cover.

Structure and species composition are not the only determinants of potentially suitable nesting habitat. Patch size is also an important variable. McNeil et al. (2013) documented an average breeding home range size of approximately 18 hectares (~45 acres) at sites along the lower Colorado River. Halterman et al. (2016) recommend a minimum patch size for surveying of five hectares (12 acres), but state that yellow-billed cuckoos rarely nest in patches smaller than 20 hectares (~50 acres).

Using these criteria, two survey sites were identified in the study area: the Wetlands Park Nature Preserve (Nature Preserve) and the Wash. Two transects were established at each site to cover all potentially suitable nesting habitat. Individual patch sizes are typically smaller than the recommended minimum at each site but when combined together offer sufficient habitat to survey.

Transects in the Nature Preserve are located in the older eastern and southeastern portions of the preserve (Figure 2). Native-dominated riparian habitat (cottonwood, Goodding and sandbar willows, and willow baccharis) rings the constructed wetland ponds, which include the upper pond, three middle ponds, and Vern's Pond. It also lines the small channels that run between them. Emergent vegetation – cattails (*Typha domingensis*), common reed (*Phragmites australis*), and bulrush (*Schoenoplectus* spp.) – occurs in the wetter portions of the understory. A grove of cottonwoods just south of the middle ponds (partially burned in a fire in March of 2014) transitions to an overstory of Goodding willows with a few cottonwoods interspersed and a dense understory of sandbar willow and willow baccharis. The patches of riparian habitat are connected by patches of honey and screwbean mesquite, which were also partially burned in the fire. In addition, the screwbean mesquite has suffered stress from an unidentified arthropod over the past few years that causes the compound leaves to ball up. Both species of mesquite occur either with quailbush (*Atriplex lentiformis*) and willow baccharis in the understory or in thickets. These areas combine to offer ~7-8 hectares (~17-20 acres) of habitat. In addition, there are some areas dominated by dry common reed, and there is one small patch of tamarisk adjacent to Vern's Pond, which was defoliated by the northern tamarisk beetle (*Diorhabda carinulata*). Mesquite trees of various maturity with a saltgrass (*Distichlis spicata*) understory cover approximately eight hectares (~20 acres) west of the survey area.

Transects along the Wash begin upstream of Pabco Road Weir and continue downstream to Calico Ridge Weir (Figure 2). Stringers of native riparian habitat run along either side of the channel, consisting of cottonwood, Goodding and sandbar willows, and some seep willow and willow baccharis. As at the Nature Preserve, cattails, common reed, and to a lesser extent bulrush occur in the wetter portions of the understory, and patches of mesquite, both screwbean and honey (often with quailbush or baccharis in the understory) connect the riparian habitat.

Virtually no tamarisk remains. The majority of the habitat, approximately 13 hectares (~32 acres), is concentrated from just upstream of Pabco Road Weir to upstream of Historic Lateral Weir (Figure 2). The reach from the toe of Historic Lateral Weir to just upstream of the Calico Ridge Weir (Figure 2) contains approximately seven hectares (~17 acres) of potentially suitable habitat.

2.2 Survey Protocol

Presence/absence surveys were conducted using the protocol drafted by Halterman et al. (2016). The protocol identifies three survey periods from mid-June through mid-August and requires four surveys across those periods, with one survey in the first

Survey Period	1st Survey	2nd Survey
First (June 15-30)	June 26/27	n/a
Second (July 1-31)	July 10/11	July 26/27
Third (August 1-15)	August 9/10	n/a

Table 1. Yellow-billed cuckoo survey dates.

period, two surveys in the second, and one survey in the third (Table 1). Each survey was separated by 14-16 days (the draft protocol specifies a range of 12-15 days but rain delayed one survey). Each transect was surveyed by a team of 2-3 people. The team was composed of a minimum of one of the following permitted individuals: Deborah Van Dooremolen (TE148556-3), Nicholas Rice (TE64580A-2), and/or Timothy Ricks (TE67397A-2). The team surveyed the Nature Preserve on one morning and the Wash on a different morning.

Surveys began at sunrise and were completed by 11:00 a.m. or when the temperature reached 40° C (104° F), whichever came first. Call-playback was used. Within each transect, broadcasts were conducted every 100 meters (328 feet); points on adjacent transects were likewise separated to prevent double counting. At each broadcast point, the survey team would listen quietly for approximately one minute, and then, if no cuckoos were heard, they would broadcast five of the species' contact calls (the kowlp call), with each call separated by one minute, using an MP3 player attached to a portable speaker. If a bird was detected, the surveyors would skip the next two calling stations in an effort to prevent the individual from following the broadcast and being counted more than once.

3.0 RESULTS

3.1 Surveys

3.1.1 Nature Preserve

No cuckoos were detected.

3.1.2 Wash

Five detections were made over the course of the summer in and around a revegetation site on the south bank downstream of Pabco Road Weir (Figure 2, Appendix A).

The field crew detected a cuckoo for the first time on June 8 (Figure 2). The bird called spontaneously from a patch of mature Goodding willows while the crew was conducting a southwestern willow flycatcher survey. A follow-up visit was made on June 15, but no cuckoo was found. Then on the first official survey of the season, on June 27, a cuckoo responded to the

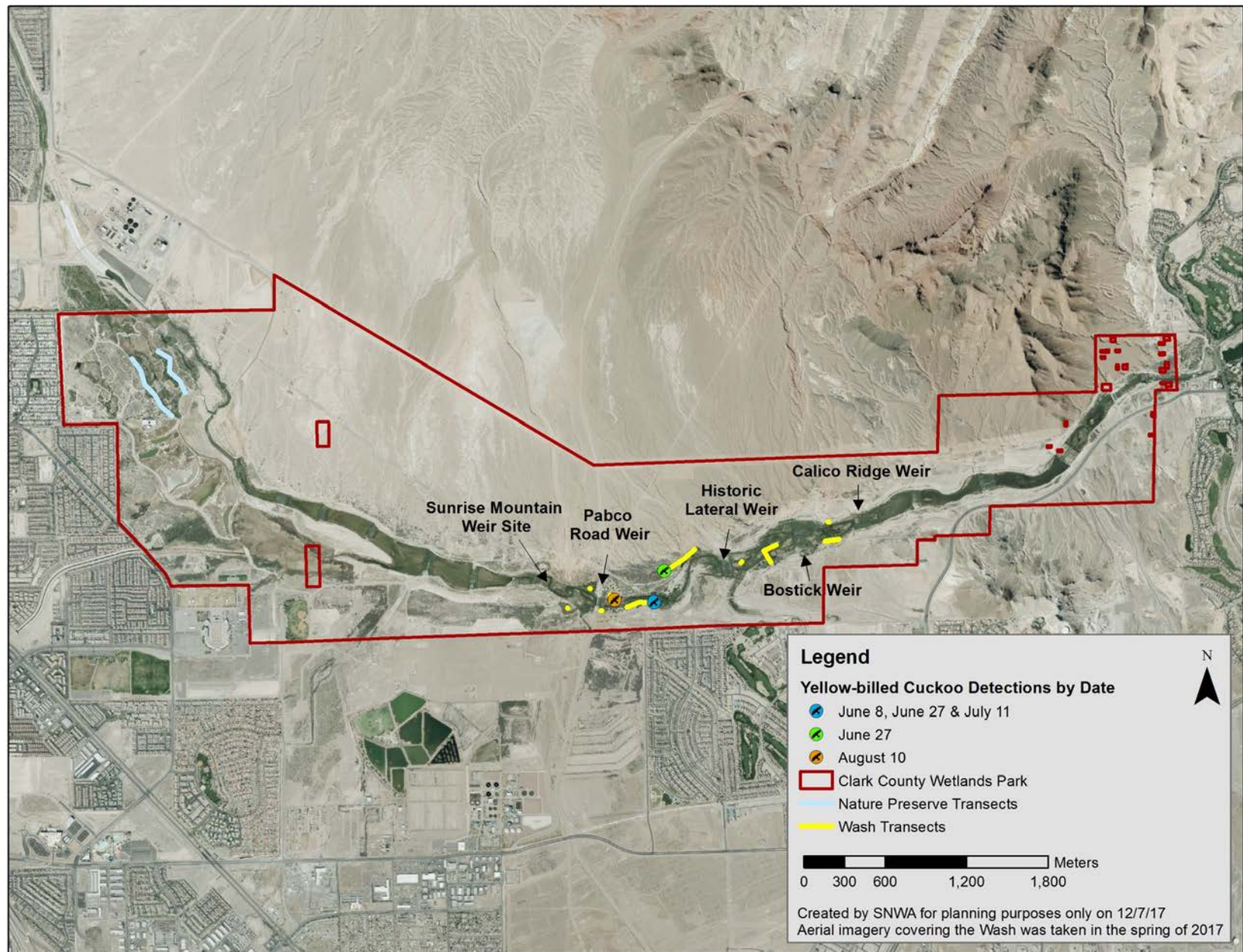


Figure 2. Survey transects and yellow-billed cuckoo detection locations.

first broadcast at 5:53 a.m. from the same location where the June 8 bird had been detected (Figure 2). It flew out from a Goodding willow, perched visibly in an adjacent tree, and gave what were later identified as alarm calls, vocalizing at least five times in 90 seconds (partially recorded). It fell silent for about 10 minutes and then gave the call once more at which time it was found perched in a different Goodding willow. The crew did not see any bands but the legs were partially obscured.

The third detection occurred at 8:43 a.m. on June 27, in a revegetation site on the north bank, about 250 meters to the northeast of the prior detections (Figure 2). The bird responded after the first broadcast with 2-3 kowls from a cottonwood about 30 meters (~100 feet) to the southwest; it then cooed several times. Several minutes later, the cuckoo was heard cooing from cottonwoods about 70 meters (~230 feet) to the northeast. The bird was not seen. The response type was very different than the previously detected individual, leading the crew to wonder whether it was a second bird, possibly a mate to the other, even though the protocol recommends considering all detections within 300 meters (984 feet) of each other the same bird (Halterman et al. 2016).

The recording of the first calls heard on June 27 was sent to Shannon McNeil and Diane Tracy of the Southern Sierra Research Station who have worked extensively with yellow-billed cuckoos. They identified the calls as alarm calls indicating a possible nest, especially as two detections were made at the same location in three weeks (S. McNeil pers. comm.). The decision was made to buffer the location by 300 meters, so no more call playback surveys were conducted there.

On July 11, one of the permitted Wash Team biologists quietly observed the patch with the possible nest from across the Wash on the north bank, camouflaged under a patch of willows about 60 meters (~200 feet) from the location of the first two detections. The observer watched the patch from 5:40 to 8:10 a.m., seeking to confirm whether a pair was present. At about 6:30 a.m., a cuckoo flew in, landed briefly at the top of a Goodding willow that was either the same tree as the prior detections or was next to it, and then disappeared down the backside (Figure 2). There was a brief kuk-kuk-kuk at approximately 7:00 a.m., but it seemed too short a call for a cuckoo. Other than that, no vocalizations were heard and the bird was not seen again.

No detections were made during the official July 11 or July 27 surveys, then on August 10, during the final round, the crew had a detection in a revegetation site on the north bank just downstream of Pabco Road Weir at 6:24 a.m. (Figure 2). The crew called from within a mesquite patch, and the cuckoo responded after the first broadcast with a brief contact call from the cottonwoods and willows approximately 50 meters (~165 feet) to the southeast, along the bank. The calling station was about 330 meters (~1,085 feet) from the possible cuckoo nest site, but the detection itself was just under 300 meters from that location and thus was concluded to be from that territory.

Per the protocol (Halterman et al. 2016), five detections in the same general location from June 8 through August 10 indicate a probable breeding territory (three or more total detections over a minimum of three survey periods, separated by at least 10 days).

3.2 Observations on Habitat

3.2.1 Nature Preserve

Habitat extent and quality (fair) were similar to last year but there was a small fire that burnt some habitat. The area burned in the March 2014 fire (Van Dooremolen 2014b) continued to recover. Several native riparian trees continued to show signs of stress and die-off as was first observed in 2016.

Potential prey items were not heard or seen in any abundance, but this may be related, at least in part, to survey timing. Surveys conclude earlier at the Nature Preserve site as less habitat is covered. At the Wash, Apache cicada (*Diceroprocta apache*) activity increases as the morning progresses.

3.2.2 Wash

Habitat extent increased and quality improved, being fair to moderate. Habitat cleared in 2015 for the then-delayed construction of Sunrise Mountain Weir and the expansion of Historic Lateral Weir recovered somewhat. This habitat had been some of the best quality potentially suitable nesting habitat on the site, and its loss had increased fragmentation. Mesquite-dominated revegetation sites also continued to mature, improving their potential suitability for cuckoo.

Potential prey items were abundant, as in 2016, and include Apache cicadas, green bird grasshoppers (*Schistocerca shoshone*), field crickets (*Gryllus* spp.) and others.

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 Discussion

2017 represents the second year the study area has hosted a probable yellow-billed cuckoo breeding territory (Figure 3), and it is the first territory to occur at the Wash in five years of surveys. Also, the alarm calls given by the cuckoo, while not confirmation of a nest, are highly suspicious (S. McNeil pers. comm.).

While a single probable breeding territory may not seem significant, Nevada was estimated to have less than ten breeding pairs in the proposed ESA listing for the species, 78 Fed. Reg. 61636 (October 3, 2013). Additional context can be provided by summarizing cuckoo detections from other sites in southern Nevada in the 2017 field season, of which there were only four: one at the Coyote Willows golf course in Mesquite in early June (C. Klinger pers. comm.), one at the Pahrangat National Wildlife Refuge in Alamo in late June, and two (likely of the same individual) at the Warm Springs Natural Area in Moapa in early July (A. Pellegrini pers. comm.). The above includes incidental as well as protocol survey detections. Thus, the Wash, with five, had more than half of all known detections in southern Nevada and contained the only probable breeding territory.

In 2013, the probable territory (Figure 3) was at the Nature Preserve and at the time, that site had the highest quality potentially suitable nesting habitat in the study area. Now, the Wash has the higher quality habitat and is the site that hosted the cuckoo territory. It should be noted, though,

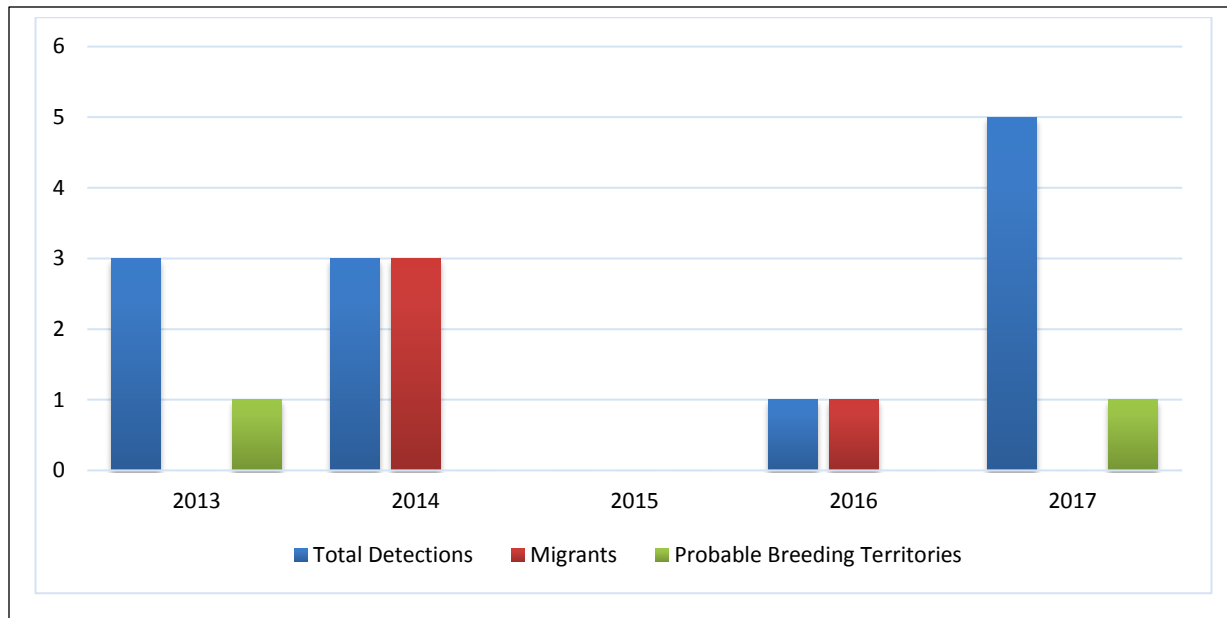


Figure 3. Yellow-billed cuckoo numbers since surveys recommenced in 2013. The 2013 territory was reclassified from a possible to a probable territory due to a change in the protocol.

that the recovering riparian habitat was cleared at the Sunrise Mountain Weir and Historic Lateral Weir expansion sites in the fall, and construction commenced. Although no potentially suitable habitat was cleared within 300 meters of the possible 2017 nest site, the construction has increased the fragmentation of the habitat along the Wash again.

The amount of potentially suitable habitat at each site is at or below the 20 hectares (~50 acres) described by Halterman et al. (2016) as the typical minimum extent required for nesting cuckoos, but with two probable territories between them in five years, the Wash and the Nature Preserve have both shown they provide habitat for potentially breeding individuals, as well as for migrating cuckoos (Figure 3).

4.2 Recommendations

Annual surveys for the yellow-billed cuckoo should continue in order to comply with informal Section 7 consultation measures. In addition, acoustic monitoring should be explored as a method to passively survey potential cuckoo breeding areas, as the Wash Team is not currently permitted to nest search/monitor by the USFWS. Finally, it may be advisable to have permitted consultants nest search/monitor should possible or probable territories be identified, as well as band the cuckoo(s) associated with them. This would provide important additional information on the species and its use of the study area.

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http://www.lvwash.org/assets/pdf/resources_ecoresearch_cuckoo2016.pdf

Appendix A

Survey Datasheets

Yellow Billed Cuckoo Survey Form

Site Name: Nature Preserve, Transect 1				County: Clark				State: NV			
USGS Quad Name: _____				Elevation: 496							
Creek, River, Wetland, or Lake Name: Las Vegas Wash											
Site Coordinates:		Start: E	678226	N	3996929	UTM Zone: 11N					
		Stop: E	677941	N	3997350	Datum: NAD83					
Ownership: BLM Reclamation NPS USFWS USFS Tribal State Private Other (Municipal/County) Clark County											
Was site surveyed in previous year? Yes No Unknown If yes, what site name was used? Same											

Survey # Observer(s) (Last Name, First Initial)	Date (m/d/y) Survey, Time, Total Hours	Total Number of YBCUs detected.	Time Detected (AM):	Detect Type: I=Incidental P=Playback A=aural V=visual B=both	Voc. Type: CN=Contact CO=coo AL=alarm OT=other (describe)	Playback #: Number of times 'Kowlp' call played before YBCU responded	Behavior code	Surveyor Detection Coordinates		Distance (m)	Bearing	C u c k o o #	Corrected Coordinates	
								UTM E	UTM N				UTM E	UTM N
Survey Period #1	Date:	0												
Observer(s):	6/26/2017													
Van Dooremolen, D.; Rice, N.; Ricks, T.	Start:													
	5:11 AM													
	Stop:													
	6:03 AM													
Total hrs:	Total:													
0.9														
Survey Period #2	Date:	0												
Observer(s):	7/10/2017													
Van Dooremolen, D.; Rice, N.; Ricks, T.	Start:													
	5:20 AM													
	Stop:													
	6:06 AM													
Total hrs:	Total:													
0.8														
Survey Period #3	Date:	0												
Observer(s):	7/26/2017													
Van Dooremolen, D.; Rice, N.	Start:													
	5:23 AM													
	Stop:													
	6:12 AM													
Total hrs:	Total:													
0.8														
Survey Period #4	Date:	0												
Observer(s):	8/9/2017													
Van Dooremolen, D.; Syzdek, D. Lillie, J.	Start:													
	5:59 AM													
	Stop:													
	6:49 AM													
Total hrs:	Total:													
0.8														
#5	Date:													
Observer(s):														
	Start:													
	Stop:													
	Total hrs:		Total:											
Survey Summary:		# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:							
Total YBCUs*		0					3.3							
Notes (refer to Cuckoo # associated with individual detections)												*Include justification for these designations.		

VOCALIZATION	CODE	BEHAVIOR	CODE	BEHAVIOR	CODE	BREEDING	CODE
Contact	CON	No visual	NV	Catches Prey	CP	Copulation	COP
Coo	COO	Sitting	ST	Carry Food	CF	Feeds Mate	FM
Knock/Alarm	ALA	Foraging	FO	Eats Food	EF	Carry Nest Material	CN
Juvenile Calls	JUVC	Preening	PRE	At Nest	AN	Brooding/Incubating	BI
Other Vocalization	OV	Flying	FLY	Juvenile	JUV	Feeds Nestling	FN
		Distraction Display	DD	Vocal Exchange	VEX	Feeds Fledgling	FF

NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, US = used, inactive nest with blue-green eggshells.

Yellow-billed Cuckoo Survey and Detection Form, continued

Name of Reporting Individual Deborah Van Dooremolen

Phone # 702-822-3370

Affiliation _____ Southern Nevada Water Authority _____ Email debbie.vandooremolen@snwa.com

Site Name _____ Nature Preserve, Transect 1 _____

[illegible]

Notes - Continued (refer to Cuckoo # associated with individual detections)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Yellow Billed Cuckoo Survey Form

Site Name: Nature Preserve, Transect 2		County: Clark		State: NV	
USGS Quad Name: _____		Elevation: 498			
Creek, River, Wetland, or Lake Name: Las Vegas Wash					
Site Coordinates:	Start: E	678125	N	3997390	UTM Zone: 11N
	Stop: E	678327	N	3997102	Datum: NAD83
Ownership: BLM <u>Reclamation</u> <u>BLM</u> <u>USFS</u> <u>USFS</u> <u>Tribal</u> <u>State</u> <u>Private</u> <u>Other</u> (Municipal/County) Clark County					
Was site surveyed in previous year? <u>Yes</u> No Unknown If yes, what site name was used? Same					

Survey # Observer(s) (Last Name, First Initial)	Date (m/d/y) Survey, Time, Total Hours	Total Number of YBCUs detected.	Time Detected (AM):	Detect Type: I=Incidental P=Playback A=aural V=visual B=both	Voc. Type: CN=Contact CO=coo AL=alarm OT=other (describe)	Playback #: Number of times 'Kowlp' call played before YBCU responded	Behavior code	Surveyor Detection Coordinates		Distance (m)	Bearing	C u c k o o #	Corrected Coordinates	
								UTM E	UTM N				UTM E	UTM N
Survey Period #1	Date:	0												
	6/26/2017													
Observer(s):	Start:													
Van Dooremolen, D.; Rice, N.; Ricks, T.	6:12 AM													
	Stop:													
	6:53 AM													
	Total hrs:	Total:												
	0.7													
Survey Period #2	Date:	0												
	7/10/2017													
Observer(s):	Start:													
Van Dooremolen, D.; Rice, N.; Ricks, T.	6:12 AM													
	Stop:													
	6:47 AM													
	Total hrs:	Total:												
	0.6													
Survey Period #3	Date:	0												
	7/26/2017													
Observer(s):	Start:													
Van Dooremolen, D.; Rice, N.	6:25 AM													
	Stop:													
	6:59 AM													
	Total hrs:	Total:												
	0.6													
Survey Period #4	Date:	0												
	8/9/2017													
Observer(s):	Start:													
Van Dooremolen, D.; Syzdek, D.; Lillie, J.	7:10 AM													
	Stop:													
	7:54 AM													
	Total hrs:	Total:												
	0.8													
Survey Period #5	Date:													
Observer(s):	Start:													
	Stop:													
	Total hrs:	Total:												
Survey Summary:		# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:							
Total YBCUs*		0					2.7							
Notes (refer to Cuckoo # associated with individual detections)												*Include justification for these designations.		

VOCALIZATION	CODE	BEHAVIOR	CODE	BEHAVIOR	CODE	BREEDING	CODE
Contact	CON	No visual	NV	Catches Prey	CP	Copulation	COP
Coo	COO	Sitting	ST	Carry Food	CF	Feeds Mate	FM
Knock/Alarm	ALA	Foraging	FO	Eats Food	EF	Carry Nest Material	CN
Juvenile Calls	JUVC	Preening	PRE	At Nest	AN	Brooding/Incubating	BI
Other Vocalization	OV	Flying	FLY	Juvenile	JUV	Feeds Nestling	FN
		Distraction Display	DD	Vocal Exchange	VEX	Feeds Fledgling	FF

NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, US = used, inactive nest with blue-green eggshells.

Yellow-billed Cuckoo Survey and Detection Form, continued

Name of Reporting Individual Deborah Van Dooremolen

Phone # 702-822-3370

Affiliation _____ Southern Nevada Water Authority _____ Email debbie.vandooremolen@snwa.com

Site Name _____ Nature Preserve, Transect 2 _____

[illegible]

Notes - Continued (refer to Cuckoo # associated with individual detections)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Yellow Billed Cuckoo Survey Form

Site Name: LV Wash (UP to UCE), Transect 1 (No. Bank)				Co: Clark		State: NV	
USGS Quad Name: _____				Elevation: 467			
Creek, River, Wetland, or Lake Name: Las Vegas Wash							
Site Coordinates:		Start: E	681311	N	3995667	UTM Zone: 11N	
		Stop: E	683074	N	3996147	Datum: NAD83	
Ownership: BLM Reclamation NPS USFWS USFS Tribal State Private Other (Municipal/County) Clark County							
Was site surveyed in previous year? Yes No Unknown If yes, what site name was used? Same							

Survey # Observer(s) (Last Name, First Initial)	Date (m/d/y) Survey, Time, Total Hours	Total Number of YBCUs detected.	Time Detected (AM):	Detect Type: I=Incidental P=Playback A=aural V=visual B=both	Voc. Type: CN=Contact CO=coo AL=alarm OT=other (describe)	Playback #: Number of times 'Kowlp' call played before YBCU responded	Behavior code	Surveyor Detection Coordinates		Distance (m)	Bearing	C u c k o o #	Corrected Coordinates	
								UTM E	UTM N				UTM E	UTM N
Survey Period #1	Date: 6/27/2017	1	8:43 AM	P	A	CON	1	NV				YB17-2	681866	3995788
Observer(s):	Start:					COO								
Van Dooremolen, D.; Rice, N.; Ricks, T.	7:52 AM													
	Stop:													
	9:41 AM													
	Total hrs: 1.8	Total:												
Survey Period #2	Date: 7/11/2017	0												
Observer(s):	Start:													
Rice, N.; Ricks, T.	5:14 AM													
	Stop:													
	6:27 AM													
	Total hrs: 1.2	Total:												
Survey Period #3	Date: 7/27/2017	0												
Observer(s):	Start:													
Van Dooremolen, D.; Rice, N.	7:16 AM													
	Stop:													
	8:02 AM													
	Total hrs: 0.8	Total:												
Survey Period #4	Date: 8/10/2017	1	6:24 AM	P	A	CON	1	NV	681461	3995608	50	140 SE	YB17-3	681498 3995574
Observer(s):	Start:													
Van Dooremolen, D.; Syzdek, D.; Lillie, J.	6:06 AM													
	Stop:													
	7:20 AM													
	Total hrs: 1.2	Total:												
Survey Period #5	Date:													
Observer(s):	Start:													
	Stop:													
	Total hrs:	Total:												

Survey Summary:		# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:
Total YBCUs*		2					5.0
Notes (refer to Cuckoo # associated with individual detections)	Assumed that all detections made over the course of the season, including YB17-2 and YB17-3, were from the YB17-1 territory on Las Vegas Wash Transect 1 (south bank), as they were all within 300 meters of each other. Surveyors did wonder whether or not YB17-2 might be mate of YB17-1 since call response and behavior was so different. Whether one or two birds, the 5 total detections over the course of the season (including a pre-season, June 8 detection of YB17-1) were concluded to represent one probable breeding territory.						*Include justification for these designations.

VOCALIZATION	CODE	BEHAVIOR	CODE	BEHAVIOR	CODE	BREEDING	CODE
Contact	CON	No visual	NV	Catches Prey	CP	Copulation	COP
Coo	COO	Sitting	ST	Carry Food	CF	Feeds Mate	FM
Knock/Alarm	ALA	Foraging	FO	Eats Food	EF	Carry Nest Material	CN
Juvenile Calls	JUVC	Preening	PRE	At Nest	AN	Brooding/Incubating	BI
Other Vocalization	OV	Flying	FLY	Juvenile	JUV	Feeds Nestling	FN
		Distraction Display	DD	Vocal Exchange	VEX	Feeds Fledgling	FF

NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, US = used, inactive nest with blue-green eggshells.

Yellow-billed Cuckoo Survey and Detection Form, continued

Name of Reporting Individual Deborah Van Dooremolen

Phone # 702-822-3370

Affiliation _____ Southern Nevada Water Authority _____ Email debbie.vandooremolen@snwa.com

Site Name_____Las Vegas Wash (Upstream Pabco to Upstream Calico Emergent), Transect 1 (North Bank)

[illegible]

Notes - Continued (refer to Cuckoo # associated with individual detections)

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There is no handwriting or other markings on the paper.

Yellow Billed Cuckoo Survey Form

Site Name: LV Wash (UP to UCE), Transect 2 (So. Bank)				Co: Clark		State: NV	
USGS Quad Name: _____				Elevation: 472			
Creek, River, Wetland, or Lake Name: Las Vegas Wash							
Site Coordinates:		Start: E	681135	N	3995508	UTM Zone: 11N	
		Stop: E	683150	N	3996020	Datum: NAD83	
Ownership: BLM <u>Reclamation</u> <u>NPS</u> <u>USFWS</u> <u>USFS</u> <u>Tribal</u> <u>State</u> <u>Private</u> <u>Other</u> (Municipal/County) Clark County							
Was site surveyed in previous year? <u>Yes</u> No Unknown If yes, what site name was used? Same							

Survey # Observer(s) (Last Name, First Initial)	Date (m/d/y) Survey, Time, Total Hours	Total Number of YBCUs detected.	Time Detected (AM):	Detect Type: I=Incidental P=Playback A=aural V=visual B=both		Voc. Type: CN=Contact CO=coo AL=alarm OT=other (describe)	Playback #: Number of times 'Kowlp' call played before YBCU responded	Behavior code	Surveyor Detection Coordinates		Distance (m)	Bearing	C u c k o o #	Corrected Coordinates	
									UTM E	UTM N				UTM E	UTM N
Survey Period #1 Observer(s): Van Dooremolen, D.; Rice, N.; Ricks, T.	Date:	1	5:53 AM	P	B	ALA	1	ST	681789	3995555			YB17-1	681789	3995555
	6/27/2017							FLY							
	Start:														
	5:14 AM														
	Stop:														
	7:01 AM														
	Total hrs:	Total:													
1.8															
Survey Period #2 Observer(s): Rice, N.; Ricks, T.	Date:	0													
	7/11/2017														
	Start:														
	6:49 AM														
	Stop:														
	8:06 AM														
	Total hrs:	Total:													
1.3															
Survey Period #3 Observer(s): Van Dooremolen, D.; Rice, N.	Date:	0													
	7/27/2017														
	Start:														
	5:18 AM														
	Stop:														
	6:51 AM														
	Total hrs:	Total:													
1.6															
Survey Period #4 Observer(s): Van Dooremolen, D.; Syzdek, D.; Lillie, J.	Date:	0													
	8/10/2017														
	Start:														
	7:49 AM														
	Stop:														
	8:45 AM														
	Total hrs:	Total:													
0.9															
Survey Period #5 Observer(s): 	Date:														
	Start:														
	Stop:														
	Total hrs:	Total:													

Survey Summary:	# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:
Total YBCUs*	1					5.6

Notes (refer to Cuckoo # associated with individual detections)	A cuckoo was detected in this location on June 8, 2017, during southwestern willow flycatcher surveys. Following the June 27 detection, we buffered the site by 300 meters in subsequent surveys since alarm calls given by YB17-1 are indicative of a possible nest. We assumed that all detections made over the course of the season, including YB17-2 and YB17-3 on Las Vegas Wash Transect 1 (north bank), were from this territory, as they were all within 300 meters of each other. See July 11, 2017, follow-up observation information on next page.	*Include justification for these designations.
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VOCALIZATION	CODE	BEHAVIOR	CODE	BEHAVIOR	CODE	BREEDING	CODE
Contact	CON	No visual	NV	Catches Prey	CP	Copulation	COP
Coo	COO	Sitting	ST	Carry Food	CF	Feeds Mate	FM
Knock/Alarm	ALA	Foraging	FO	Eats Food	EF	Carry Nest Material	CN
Juvenile Calls	JUVC	Preening	PRE	At Nest	AN	Brooding/Incubating	BI
Other Vocalization	OV	Flying	FLY	Juvenile	JUV	Feeds Nestling	FN
		Distraction Display	DD	Vocal Exchange	VEX	Feeds Fledgling	FF

NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, US = used, inactive nest with blue-green eggshells.

Yellow-billed Cuckoo Survey and Detection Form, continued

Name of Reporting Individual Deborah Van Dooremolen

Phone # 702-822-3370

Affiliation _____ Southern Nevada Water Authority _____ Email debbie.vandooremolen@snwa.com

Site Name _____ Las Vegas Wash (Upstream Pabco to Upstream Calico Emergent), Transect 2 (South Bank)

[illegible]

Notes - Continued (refer to Cuckoo # associated with individual detections)