

las vegas wash coordination committee

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Yellow-billed Cuckoo Surveys along the Las Vegas Wash, Clark County, Nevada, 2016



November 2016



**Yellow-billed Cuckoo Surveys along the Las Vegas Wash,
Clark County, Nevada, 2016**

**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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November 2016

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 2016 surveys.

Four protocol surveys were conducted at two sites from late June through mid-August. One cuckoo was detected along the Wash, on the second survey. Potentially suitable nesting habitat quality and extent were similar to 2015, but the abundance of prey items increased. Annual surveys for the yellow-billed cuckoo should continue in order to comply with informal Section 7 consultation measures.

ACKNOWLEDGEMENTS

I would like to thank Nicholas Rice and Timothy Ricks for assisting with surveys. I would also like to 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. TE-148556-3 (expires May 24, 2018), Nicholas Rice under permit no. TE-64580A-1 (expires May 26, 2021) and Timothy Ricks under permit no. TE-67397A-1 (expires May 30, 2021) as issued by the U.S. Fish and Wildlife Service, Sacramento, California.

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1.0 BACKGROUND

The Las Vegas Wash (Wash) drains flows, including highly treated wastewater, urban runoff, shallow groundwater, and storm runoff from the Las Vegas Valley into Lake Mead at Las Vegas Bay (Figure 1). The Wash was once an ephemeral stream, but became perennial with the discharge of treated wastewater to the channel in the 1950s. This perennial water created a vast wetland over subsequent decades. However, as the population in the valley increased, so too did flows in the channel. Increased daily flows coupled with runoff from large storm events incised the channel and drained its wetlands. By the late 1990s, the Wash was separated from its former active floodplain by 9-12 meters (30-40 feet) in locations, and wetlands had declined from approximately 800 hectares (~2,000 acres) to less than 80 hectares (200 acres).

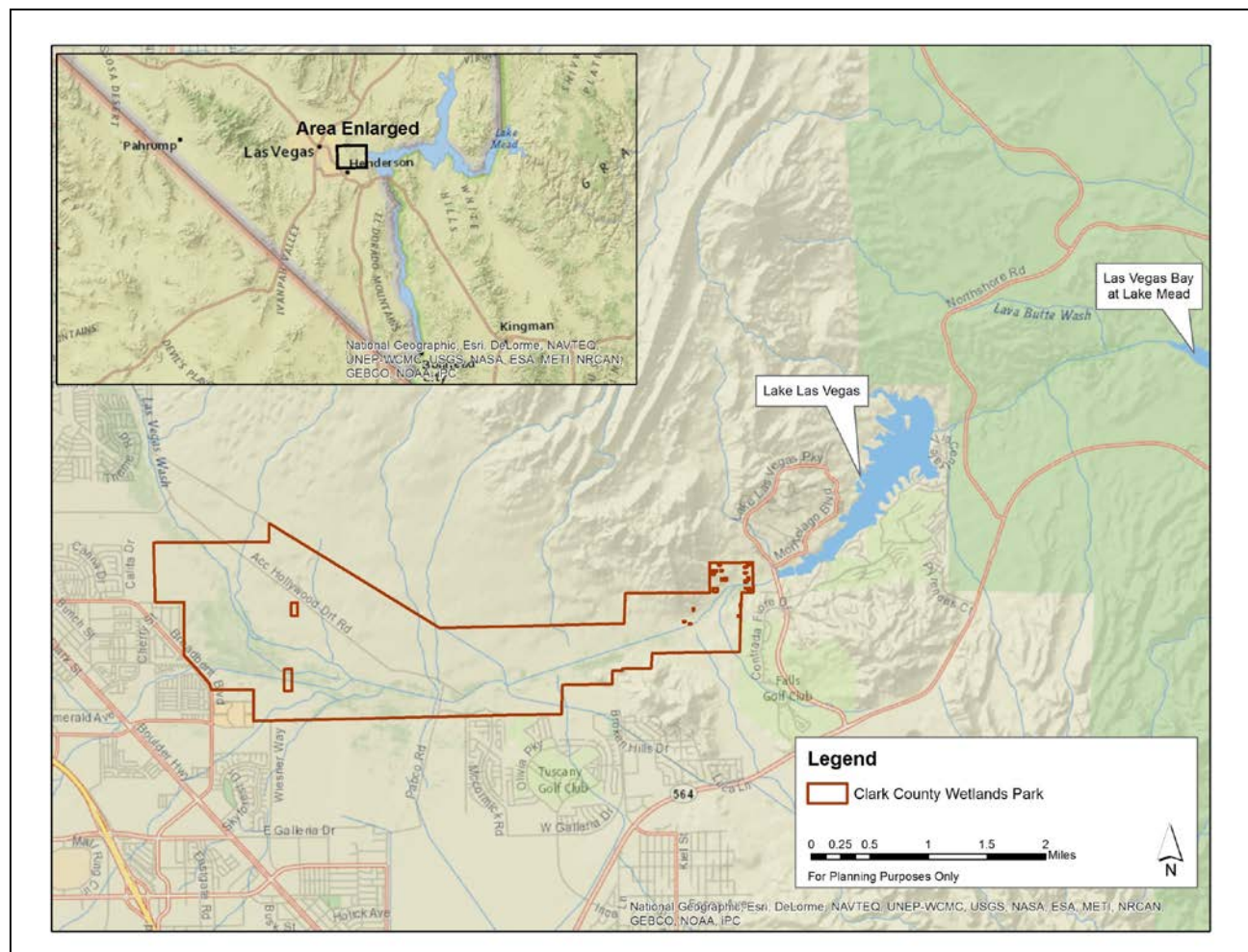


Figure 1. Las Vegas Wash location and general study area map.

The Las Vegas Wash Coordination Committee (LVWCC), a now 29-member stakeholder group, first convened in October 1998 to research the varied issues surrounding the channel and develop a long-term management plan that would stabilize the Wash and enhance its ecological functions. In January 2000, the LVWCC published the Las Vegas Wash Comprehensive Adaptive Management Plan (CAMP). The plan is a roadmap with 44 action items that guide

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 2016, 19 permanent weirs and more than 175 hectares (~440 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 2,900-acre 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 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, the implementation arm of the LVWCC (Van Dooremolen 2014a, 2014b, 2015).

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 2016 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 that abut the riparian vegetation and are of suitable stature are also included. Within surveyed areas, tamarisk comprised only a small portion of the vegetative cover.

Patch 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 (~44 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). A patch was further defined as being separated from adjacent patches of potential cuckoo habitat by 300 meters (984 feet).

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 patches of potentially suitable nesting habitat (Figure 2). Transects in the Nature Preserve are located in the older eastern and southeastern portions of the preserve. Transects along the Wash begin upstream of Pabco Road Weir and continue downstream to the Upstream Calico Emergent revegetation site, just above Calico Ridge Weir. Patches along the Wash periodically violate the rules outlined in the protocol, being both smaller than five hectares and greater than 300 meters apart.

Broadcast points were established every 100 meters (328 feet) along each transect. Points on adjacent transects were likewise separated by a minimum of 100 meters (328 feet) to prevent double counting.

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 27/28	n/a
Second (July 1-31)	July 11/12	July 26/27
Third (August 1-15)	August 10/11	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 12-15 days. Each transect was surveyed by a team of 2-3 people, including Deborah Van Dooremolen (TE-148556-3) Nicholas Rice (TE-64580A-1) and/or Timothy Ricks (TE-67397A-1). 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). At each broadcast point, the survey team would

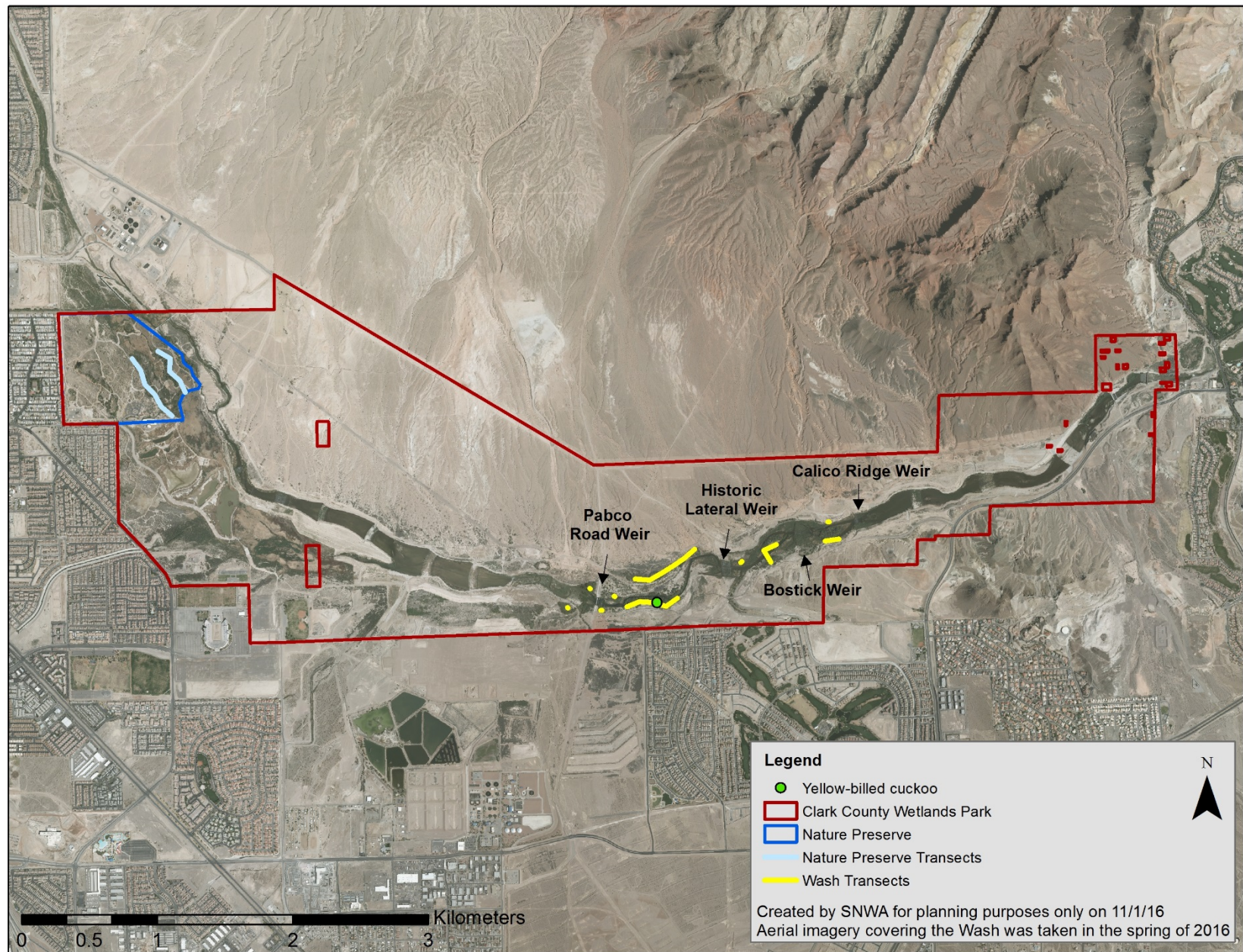


Figure 2. Survey transects and yellow-billed cuckoo detection location.

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

One yellow-billed cuckoo was detected in the Downstream Pabco South revegetation site on July 12, 2016. The bird responded to the second broadcast with a loud, clear contact call from a patch of mature Goodding willows (NAD83, UTM E-681810, N-3995554). The cuckoo was not seen, so banding status could not be determined. It only vocalized once. The field crew returned to the area on July 20 and spread out across the site to listen quietly from 0600 to 0800 Pacific Standard Time. After 90 minutes of passively listening, each of the three members consecutively broadcast a series of three calls, with each call separated by one minute; there was no response. No other detections occurred during the season.

3.2 Observations on Habitat

3.2.1 Nature Preserve

Habitat extent was similar to 2015, but quality, although still averaging fair, declined during the survey season. While the area burned in the March 2014 fire (Van Dooremolen 2014b) continued to recover, native riparian trees elsewhere on the site showed signs of stress that increased in severity and extent over the course of the season; some appeared entirely dead by the last survey and several had extensive deadwood.

In the Nature Preserve, 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 the March 2014 fire) 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 off of Vern's

Pond, which was defoliated by the northern tamarisk beetle (*Diorhabda carinulata*). Mesquite trees of various maturity with a saltgrass understory cover approximately eight hectares (~20 acres) west of the survey area.

3.2.2 Wash

Habitat extent and quality along the Wash were similar to 2015. In that year, approximately five hectares (~12 acres) of native habitat were cleared in preparation for the construction of Sunrise Mountain Weir and the expansion of Historic Lateral Weir. The habitat lost was some of the best quality potentially suitable nesting habitat on the site. Given the increased fragmentation following this loss, habitat quality declined, but still averaged fair overall.

At the Wash, stringers of native riparian habitat run along either side of the channel, typically 0.5-2 hectares (~1-5 acres) in size and separated from each other by a hundred meters or more. They consist of cottonwood, Goodding and sandbar willows, and some seep willow and willow baccharis. Cattails, common reed, and to a lesser extent bulrush occur in the wetter portions of the understory here as well. While the species composition is similar, structural diversity of riparian vegetation is lower at this site than at the Nature Preserve, with reduced cover of understory shrubs and trees (see datasheets in Appendix A). Patches of mesquite, both screwbean and honey also exist, often with quailbush or baccharis in the understory. Virtually no tamarisk remains. The majority of the habitat, approximately 12 hectares (~30 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 less than 5 hectares (~12 acres) of potentially suitable habitat.

While habitat extent and quality appeared largely unchanged from the prior year, prey items increased substantially. All call stations were buzzing with Apache cicadas (*Diceroprocta apache*), and several, including the one from which the cuckoo was detected, had numbers of green bird grasshoppers (*Schistocerca shoshone*).

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 Discussion

One yellow-billed cuckoo was detected in 2016, leaving 2015 as the only year with no detections since surveys recommenced (Table 2). Since the bird was only detected once, it was concluded to be a migrant. While a single cuckoo may not seem impressive, Nevada was estimated to have less than ten breeding pairs in the proposed listing for the species, 78 Fed. Reg. 61636 (October 3, 2013).

Additional context can be provided by summarizing detections from other sites in southern Nevada in the 2016 field season. These include one of a single individual at the Overton Wildlife Management Area, two of a single individual at Mesquite West, and three of a single individual (representing an occupied territory) at the Warm Springs Natural Area (C. Klinger pers. comm., A. Pellegrini pers. comm.). There were also four confirmed and two unconfirmed detections across all survey periods at the Pahrnat National Wildlife Refuge, conservatively

Year	Migrants	Possible Breeders
2013	0	1
2014	3	0
2015	0	0
2016	1	0

Table 2. Yellow-billed cuckoo detections since surveys recommenced in 2013.

presumed to represent three individuals (A. Pellegrini pers. comm.). The above includes incidental as well as protocol survey detections.

As the extent of potentially suitable nesting habitat at each site in the study area is at most 16-18 hectares, the Nature Preserve and Wash can likely, at best, support a single pair of nesting cuckoos each. This may even be a stretch as Halterman et al. (2016) states that cuckoos rarely nest in areas smaller than 20 hectares (~50 acres). Regardless of their potential to host breeding pairs, the sites offer value as habitat to migrating cuckoos.

4.2 Recommendations

Annual surveys for the yellow-billed cuckoo should continue in order to comply with informal Section 7 consultation measures.

5.0 LITERATURE CITED

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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 <u>Reclamation</u> NPS USFWS USFS Tribal State Private Other <u>(Municipal)</u> 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												
	6/27/2016													
Observer(s):	Start:													
	5:21 AM													
Deborah Van Dooremolen	Stop:													
& Timothy Ricks	6:13 AM													
	Total hrs:	Total:												
	0.9													
Survey Period #2	Date:	0												
	7/11/2016													
Observer(s):	Start:													
	5:20 AM													
Deborah Van Dooremolen,	Stop:													
Nicholas Rice	6:08 AM													
& Timothy Ricks	Total hrs:	Total:												
	0.8													
Survey Period #3	Date:	0												
	7/26/2016													
Observer(s):	Start:													
	5:38 AM													
Deborah Van Dooremolen,	Stop:													
Nicholas Rice	6:30 AM													
& Timothy Ricks	Total hrs:	Total:												
	0.9													
Survey Period #4	Date:	0												
	8/10/2016													
Observer(s):	Start:													
	5:40 AM													
Deborah Van Dooremolen & Nicholas Rice	Stop:													
	6:32 AM													
	Total hrs:	Total:												
	0.9													
#5	Date:													
Observer(s):	Start:													
	Stop:													
	Total hrs:		Total:											
Survey Summary:		# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:							
Total YBCUs*		0					3.5							
Notes (refer to Cuckoo # associated with individual detections)														

*Include justification for these designations.

Behavior Codes: AN = at nest, BI = brooding or incubating, CF = adult carrying food, CN = carrying nest material, COP = copulation, CP = catches prey, DD = distraction displays/defense of nesting area, EF = eats food, FL = recently fledged young of species incapable of flight, FLY = flying, FO = foraging, FS = adult carrying a fecal sac, FY = adults feeding nestlings, JUV = juvenile, NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, PR = preening, SI = sitting, US = used, inactive nest with blue-green eggshells.

Fill in the following information completelyName of Reporting Individual Deborah Van Dooremolen Date Report completed 10/20/16Affiliation Southern Nevada Water Authority Phone # 702-822-3370 Email debbie.vandooremolen@snwa.comUSFWS Permit # TE148556-3 State Permit # n/aSite Name Nature Preserve, Transect 1Length of area surveyed 0.5 (in kilometers = km)Did you survey the same general area during each visit to this site this year? ☒ Yes No If no, summarize in comments belowIf site was surveyed last year, did you survey the same general area this year? ☒ Yes No If no, summarize in comments below

Overall Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

Native broadleaf plants (>75% native)

☒ X

Mixed native and exotic plants (mostly native 51%-75%)

Exotic/introduced plants (>75% exotic)

Mixed native and exotic plants (mostly exotic 51%-75%)

Average height of canopy (m) 6(specify units) metersEstimated Canopy Cover (percent) 75%

Overstory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

10%Cottonwood25%Goodding's WillowCoyote WillowOther (specify)TamariskRussian Olive50%Other (specify) MesquiteOther (specify)Average height of understory canopy (m) 3(specify units) metersEstimated Understory Cover (percent) 75%

Understory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

CottonwoodGoodding's Willow50%Coyote WillowOther (specify)TamariskRussian Olive25%Other (specify) QuailbushOther (specify)10%BaccharisNew Mexico OliWas surface water or saturated soil present at or adjacent to site within 300 meters? ☒ Yes No (circle one)Was surface water or saturated soil present at or adjacent to all patches surveyed? ☒ Yes No (circle one)

Comments. Please provide comments regarding differences between the survey patches within the site. For example, if the average canopy for this site is 30% cover, but within one patch it is 60% cover - please note. Also, please note significant differences between dominant overstory and understory vegetation among the patches. Document these differences with photographs whenever possible. Make sure to reference comments to photo number whenever available.

Please change percentages for dominant species to allow for more flexibility, or change to ranges of percentages (1-5, 5-25, 25-50, etc.).

Please provide USGS 7.5 minute quad (or similar) showing survey area to each survey form

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 - Cont. (refer to Cuckoo # associated with individual detections)

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> NPS USFWS USFS Tribal State Private Other <u>(Municipal)</u> 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												
	6/27/2016													
Observer(s):	Start:													
Deborah Van Dooremolen & Timothy Ricks	6:23 AM													
	Stop:													
	7:01 AM													
	Total hrs:	Total:												
	0.6													
Survey Period #2	Date:	0												
	7/11/2016													
Observer(s):	Start:													
Deborah Van Dooremolen, Nicholas Rice & Timothy Ricks	6:15 AM													
	Stop:													
	6:51 AM													
	Total hrs:	Total:												
	0.6													
Survey Period #3	Date:	0												
	7/26/2016													
Observer(s):	Start:													
Deborah Van Dooremolen, Nicholas Rice & Timothy Ricks	6:37 AM													
	Stop:													
	7:21 AM													
	Total hrs:	Total:												
	0.7													
Survey Period #4	Date:	0												
	8/10/2016													
Observer(s):	Start:													
Deborah Van Dooremolen & Nicholas Rice	6:42 AM													
	Stop:													
	7:25 AM													
	Total hrs:	Total:												
	0.7													
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					2.6							
Notes (refer to Cuckoo # associated with individual detections)														

*Include justification for these designations.

Behavior Codes: AN = at nest, BI = brooding or incubating, CF = adult carrying food, CN = carrying nest material, COP = copulation, CP = catches prey, DD = distraction displays/defense of nesting area, EF = eats food, FL = recently fledged young of species incapable of flight, FLY = flying, FO = foraging, FS = adult carrying a fecal sac, FY = adults feeding nestlings, JUV = juvenile, NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, PR = preening, SI = sitting, US = used, inactive nest with blue-green eggshells.

Fill in the following information completelyName of Reporting Individual Deborah Van Dooremolen Date Report completed 10/20/16Affiliation Southern Nevada Water Authority Phone # 702-822-3370 Email debbie.vandooremolen@snwa.comUSFWS Permit # TE148556-3 State Permit # n/aSite Name Nature Preserve, Transect 2Length of area surveyed 0.4 (in kilometers = km)Did you survey the same general area during each visit to this site this year? ☒ Yes No If no, summarize in comments belowIf site was surveyed last year, did you survey the same general area this year? ☒ Yes No If no, summarize in comments below

Overall Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

Native broadleaf plants (>75% native)

☒ X

Mixed native and exotic plants (mostly native 51%-75%)

Exotic/introduced plants (>75% exotic)

Mixed native and exotic plants (mostly exotic 51%-75%)

Average height of canopy (m) 9(specify units) metersEstimated Canopy Cover (percent) 75%

Overstory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

50%Cottonwood50%Goodding's WillowCoyote WillowOther (specify)TamariskRussian OliveOther (specify)Other (specify)Average height of understory canopy (m) 3(specify units) metersEstimated Understory Cover (percent) 75%

Understory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

CottonwoodGoodding's Willow75%Coyote WillowOther (specify)TamariskRussian OliveOther (specify)Other (specify)10%BaccharisNew Mexico OliWas surface water or saturated soil present at or adjacent to site within 300 meters? ☒ Yes No (circle one)Was surface water or saturated soil present at or adjacent to all patches surveyed? ☒ Yes No (circle one)

Comments. Please provide comments regarding differences between the survey patches within the site. For example, if the average canopy for this site is 30% cover, but within one patch it is 60% cover - please note. Also, please note significant differences between dominant overstory and understory vegetation among the patches. Document these differences with photographs whenever possible. Make sure to reference comments to photo number whenever available.

Please change percentages for dominant species to allow for more flexibility, or change to ranges of percentages (1-5, 5-25, 25-50, etc.).

Please provide USGS 7.5 minute quad (or similar) showing survey area to each survey form

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 - Cont. (refer to Cuckoo # associated with individual detections)

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 Observer(s): Deborah Van Dooremolen & Timothy Ricks	Date:	0												
	6/28/2016													
	Start:													
	5:23 AM													
	Stop:													
	7:25 AM													
Total hrs:	Total:													
2.0														
Survey Period #2 Observer(s): Deborah Van Dooremolen, Nicholas Rice & Timothy Ricks	Date:	0												
	7/12/2016													
	Start:													
	5:29 AM													
	Stop:													
	7:10 AM													
Total hrs:	Total:													
1.7														
Survey Period #3 Observer(s): Deborah Van Dooremolen, Nicholas Rice & Timothy Ricks	Date:	0												
	7/27/2016													
	Start:													
	8:32 AM													
	Stop:													
	10:27 AM													
Total hrs:	Total:													
1.9														
Survey Period #4 Observer(s): Deborah Van Dooremolen & Nicholas Rice	Date:	0												
	8/11/2016													
	Start:													
	8:25 AM													
	Stop:													
	10:15 AM													
Total hrs:	Total:													
1.8														
Survey Period #5 Observer(s):	Date:													
	Start:													
	Stop:													
	Total hrs:		Total:											
Survey Summary:		# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:							
Total YBCUs*		0					7.4							
Notes (refer to Cuckoo # associated with individual detections)														

*Include justification for these designations.

Behavior Codes: AN = at nest, BI = brooding or incubating, CF = adult carrying food, CN = carrying nest material, COP = copulation, CP = catches prey, DD = distraction displays/defense of nesting area, EF = eats food, FL = recently fledged young of species incapable of flight, FLY = flying, FO = foraging, FS = adult carrying a fecal sac, FY = adults feeding nestlings, JUV = juvenile, NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, PR = preening, SI = sitting, US = used, inactive nest with blue-green eggshells.

Fill in the following information completelyName of Reporting Individual Deborah Van Dooremolen Date Report completed 10/20/16Affiliation Southern Nevada Water Authority Phone # 702-822-3370 Email debbie.vandooremolen@snwa.comUSFWS Permit # TE148556-3 State Permit # n/aSite Name Las Vegas Wash (Upstream Pabco to Upstream Calico Emergent), Transect 1 (North Bank)Length of area surveyed 2.1 (in kilometers = km)Did you survey the same general area during each visit to this site this year? ☒ Yes ☐ No If no, summarize in comments belowIf site was surveyed last year, did you survey the same general area this year? ☒ Yes ☐ No If no, summarize in comments below

Overall Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

Native broadleaf plants (>75% native)

☒

Mixed native and exotic plants (mostly native 51%-75%)

Exotic/introduced plants (>75% exotic)

Mixed native and exotic plants (mostly exotic 51%-75%)

Average height of canopy (m) 7(specify units) metersEstimated Canopy Cover (percent) 75%

Overstory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

25%

Cottonwood

25%

Goodding's Willow

 Coyote Willow Other (specify) Tamarisk Russian Olive25%Other (specify) **Mesquite** Other (specify)Average height of understory canopy (m) 3(specify units) metersEstimated Understory Cover (percent) 25%

Understory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

 Cottonwood Goodding's Willow10%

Coyote Willow

 Other (specify) Tamarisk Russian Olive10%Other (specify) **Quailbush** Other (specify)10%

Baccharis

 New Mexico OliWas surface water or saturated soil present at or adjacent to site within 300 meters? ☒ Yes ☐ No (circle one)Was surface water or saturated soil present at or adjacent to all patches surveyed? ☒ Yes ☐ No (circle one)

Comments. Please provide comments regarding differences between the survey patches within the site. For example, if the average canopy for this site is 30% cover, but within one patch it is 60% cover - please note. Also, please note significant differences between dominant overstory and understory vegetation among the patches. Document these differences with photographs whenever possible. Make sure to reference comments to photo number whenever available.

Please change percentages for dominant species to allow for more flexibility, or change to ranges of percentages (1-5, 5-25, 25-50, etc.).

Please provide USGS 7.5 minute quad (or similar) showing survey area to each survey form

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 - Cont. (refer to Cuckoo # associated with individual detections)

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 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												
	6/28/2016													
Observer(s):	Start:													
Deborah Van Dooremolen & Timothy Ricks	8:19 AM													
	Stop:													
	10:25 AM													
	Total hrs:	Total:												
	2.1													
Survey Period #2	Date:	1	9:21 AM	P	A	CN	2	NV	681810	3995554		YB16-1		
	7/12/2016													
Observer(s):	Start:													
Deborah Van Dooremolen, Nicholas Rice & Timothy Ricks	7:41 AM													
	Stop:													
	10:11 AM													
	Total hrs:	Total:												
	2.5													
Survey Period #3	Date:	0												
	7/27/2016													
Observer(s):	Start:													
Deborah Van Dooremolen, Nicholas Rice & Timothy Ricks	5:42 AM													
	Stop:													
	8:10 AM													
	Total hrs:	Total:												
	2.5													
Survey Period #4	Date:	0												
	8/11/2016													
Observer(s):	Start:													
Deborah Van Dooremolen & Nicholas Rice	5:45 AM													
	Stop:													
	8:05 AM													
	Total hrs:	Total:												
	2.3													
Survey Period #5	Date:													
Observer(s):	Start:													
	Stop:													
	Total hrs:	Total:												
Survey Summary:		# Det	#PO	#PR	#CO	#Nests found	Total Survey Hours:							
Total YBCUs*		1					9.4							
Notes (refer to Cuckoo # associated with individual detections)	YB16-1 was 50M from call station when detected but we GPS'd tree bird was detected in.													

*Include justification for these designations.

Behavior Codes: AN = at nest, BI = brooding or incubating, CF = adult carrying food, CN = carrying nest material, COP = copulation, CP = catches prey, DD = distraction displays/defense of nesting area, EF = eats food, FL = recently fledged young of species incapable of flight, FLY = flying, FO = foraging, FS = adult carrying a fecal sac, FY = adults feeding nestlings, JUV = juvenile, NB = nest building, NE = active nest with unbroken eggs in it, NY = nest with young seen or heard in it, ON = occupied nest, PR = preening, SI = sitting, US = used, inactive nest with blue-green eggshells.

Fill in the following information completelyName of Reporting Individual Deborah Van Dooremolen Date Report completed 10/20/16Affiliation Southern Nevada Water Authority Phone # 702-822-3370 Email debbie.vandooremolen@snwa.comUSFWS Permit # TE148556-3 State Permit # n/aSite Name Las Vegas Wash (Upstream Pabco to Upstream Calico Emergent), Transect 2 (South Bank)Length of area surveyed 1.8 (in kilometers = km)Did you survey the same general area during each visit to this site this year? ☒ Yes ☐ No If no, summarize in comments belowIf site was surveyed last year, did you survey the same general area this year? ☒ Yes ☐ No If no, summarize in comments below

Overall Vegetation Characteristics: Overall, are the species in tree/shrub layer at this site comprised predominantly of (check one):

Native broadleaf plants (>75% native)

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Exotic/introduced plants (>75% exotic)

Mixed native and exotic plants (mostly exotic 51%-75%)

Average height of canopy (m) 8(specify units) metersEstimated Canopy Cover (percent) 75%

Overstory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

25%Cottonwood25%Goodding's WillowCoyote WillowOther (specify)TamariskRussian Olive25%Other (specify) MesquiteOther (specify)Average height of understory canopy (m) 3(specify units) metersEstimated Understory Cover (percent) 25%

Understory Vegetation: (provide percent estimate of the following dominant species). Use <1%; 10%, 25%, 50%, 75%, 90%, 100%.

CottonwoodGoodding's Willow10%Coyote WillowOther (specify)TamariskRussian Olive10%Other (specify) QuailbushOther (specify)10%BaccharisNew Mexico OliWas surface water or saturated soil present at or adjacent to site within 300 meters? ☒ Yes ☐ No (circle one)Was surface water or saturated soil present at or adjacent to all patches surveyed? ☒ Yes ☐ No (circle one)

Comments. Please provide comments regarding differences between the survey patches within the site. For example, if the average canopy for this site is 30% cover, but within one patch it is 60% cover - please note. Also, please note significant differences between dominant overstory and understory vegetation among the patches. Document these differences with photographs whenever possible. Make sure to reference comments to photo number whenever available.

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Please provide USGS 7.5 minute quad (or similar) showing survey area to each survey form

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 - Cont. (refer to Cuckoo # associated with individual detections)