

las vegas wash coordination committee

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Yellow-billed Cuckoo Surveys along the Las Vegas Wash, Clark County, Nevada, 2014



December 2014



**Yellow-billed Cuckoo Surveys along the Las Vegas Wash,
Clark County, Nevada, 2014**

**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:

**Deborah Van Dooremolen
Southern Nevada Water Authority
Las Vegas Wash Project Coordination Team
P.O. Box 99956
Las Vegas, Nevada 89193-9956**

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ABSTRACT

The Las Vegas Wash Coordination Committee (LVWCC), 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. In the Southwest, the cuckoo prefers expansive riparian woodlands with cottonwood, willow and mesquite for nesting. 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. Surveys were discontinued due to lack of potentially suitable nesting habitat but recommenced in 2013. This report summarizes data from the 2014 survey season.

Four protocol surveys were conducted from late June through mid-August. Two birds were detected on June 23: one in the Wetlands Park Nature Preserve and one in the Upstream Historic Lateral North revegetation site. Both birds were utilizing patches of Goodding willow. A third bird was detected on August 13, at the Upstream Bostick South revegetation site, calling from an area with cottonwood and mesquite. The three detected individuals were concluded to be migrants.

Habitat quality at the Nature Preserve, which had possibly been the best in the study area, declined due to a fire that burned a few acres of riparian and mesquite habitat in March 2014. That habitat had supported a possible breeder in 2013. Habitat quality at Wash sites was somewhat improved due to further maturation of native riparian vegetation at the passive site on the north bank below Historic Lateral Weir. It is recommended that surveys continue in 2015.

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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).

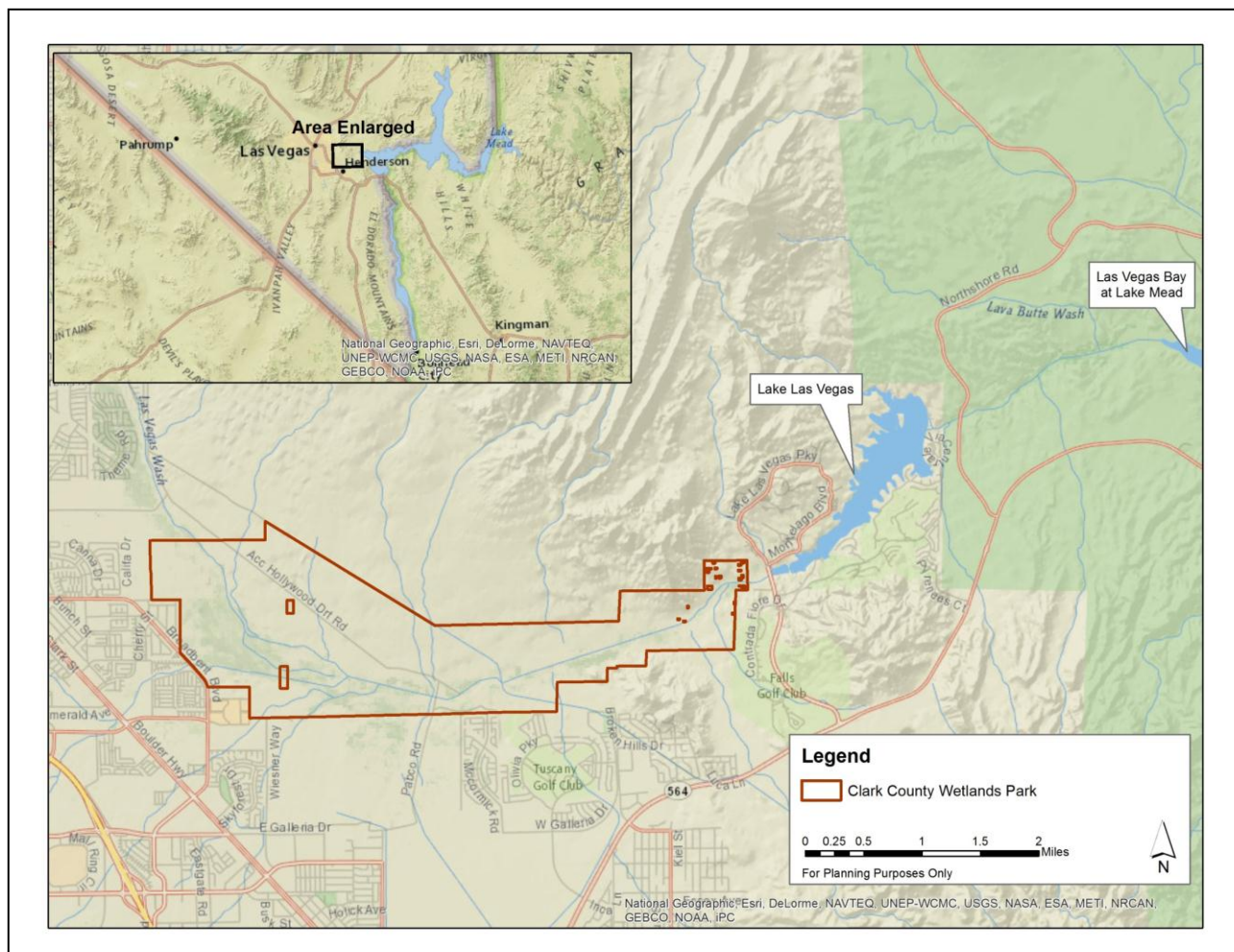


Figure 1. Las Vegas Wash location and general study area map.

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 hundreds of acres of native wetland, riparian, and upland habitat. As of June 2014, 16 permanent weirs and approximately 400 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 salt cedar (*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 salt cedar clearing and native revegetation has been accomplished through grants. Clark County is also removing salt cedar 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 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 were conducted by members of the Las Vegas Wash Project Coordination Team (Wash Team), the implementation arm of the LVWCC (Van Dooremolen 2014). This report documents the results of the 2014 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). Only potentially suitable nesting habitat, as described in the natural history summary and survey protocol by Halterman et al. (2011), 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 often abutted the riparian vegetation. Within surveyed areas, salt cedar 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. (2011) recommend a minimum patch size for surveying of 5 hectares (~12 acres); however, many patches in the study area are smaller. Thus, the Wash Team used the 2-hectare (~5-acre) minimum size used for surveys of the yellow-billed cuckoo along the lower Colorado River (McNeil et al. 2013). A patch was further defined as being separated from adjacent patches of potential cuckoo habitat by 300 meters (984 feet).

Several survey transects were established to cover all potentially suitable habitat within the Wash (Figure 2). Patches greater than 200 meters (656 feet) wide required additional transects. Two transects were established in the Wetlands Park Nature Preserve (Nature Preserve). Two transects were established on the Wash, one on the south bank and one on the north, beginning upstream of Pabco Road Weir and continuing downstream to the Calico Emergent revegetation site, just above Calico Ridge Weir. Wash transects periodically violated the rule of proximity, having 1-2 points in small patches greater than 300 meters away. The Lake Las Vegas mitigation wetlands transect was not surveyed based on recommendations in Van Dooremolen (2014).

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. (2011). Each transect was surveyed by a team of two people. The team surveyed the Nature Preserve and south Wash transect on one morning and the north Wash transect on a different morning, with the exception of the second survey when all transects were

surveyed on different days. The team completed four surveys of each transect from mid-June through mid-August, with each survey separated by 12-18 days (Table 1). The protocol identifies five survey periods from mid-June through mid-September, and requires surveys in the first four (to mid-August), but states that fewer than four surveys can be conducted for presence/absence.

Survey Period	Survey Dates
First (mid- to late June)	June 23/24
Second (early to mid-July)	July 15/16/17
Third (mid- to late July)	July 30/31
Fourth (early to mid-August)	August 13/14

Table 1. Yellow-billed cuckoo survey dates for the study area.

Surveys began at sunrise and were completed by 12:00 p.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 listen quietly for approximately one minute, and then, if no cuckoos were heard, they would broadcast five of the species' alarm 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.



Figure 2. Survey transects and yellow-billed cuckoo detection locations; aerial imagery was taken in the spring of 2014.

3.0 RESULTS

3.1 Survey Results

All detections are shown in Figure 2 and GPS coordinates are provided in Table 2.

Date	Easting	Northing	Location (refer to Figure 2)	Comments
June 23, 2014	678211	3997196	Nature Preserve	Bird ~10m E
June 23, 2014	682007	3995639	Upstream Historic Lateral North revegetation site	Bird ~30m NW
August 13, 2014	682592	3995851	Upstream Bostick South revegetation site	

Table 2. Yellow-billed cuckoo detections in 2014.

3.1.1 Nature Preserve

The survey team detected a yellow-billed cuckoo in the Nature Preserve on June 23. The bird responded within the first few minutes of the broadcast, cooing from a patch of Goodding willow south of the middle ponds. The coo call is thought to be a mate attraction call (Hughes 1999). It continued cooing for several minutes, and then gave several contact calls. The bird then flew from one willow to another and perched at the top of the tree for a brief period, clearly visible. It then flew to another willow, and gave the contact, or kowlp, call again.

In addition to the three other official surveys conducted at the site, a follow-up visit was made on June 26, in which the crew listened passively for several minutes and then broadcast the kowlp call several times. The cuckoo was not detected again and was concluded to have been a migrant.

3.1.2 Wash

Two cuckoos were detected during surveys on Wash transects: one on June 23 and one on August 13. The June 23 cuckoo cooed after the first vocalization was broadcast, responding from a patch of Goodding willow on the bank of the Historic Lateral North revegetation site. The bird cooed for several minutes and then flew to a bigger patch of willows just to the southwest, gave a contact call and then started cooing again; it was not seen. A follow-up visit to the site on June 24 and the three other official surveys failed to detect the bird again, and it was concluded to have been a migrant. On August 23, a cuckoo gave a contact call in response to the broadcast of the first vocalization, calling from an area of cottonwood and mesquite in the Upstream Bostick South revegetation site. After a few minutes, it gave the contact call two more times but then fell silent; the bird was not seen. It was concluded to have been a migrant.

3.2 Observations on Habitat Quality

3.2.1 Nature Preserve

In 2013, the Nature Preserve offered possibly the best potentially suitable nesting habitat (although likely of just moderate quality) in the study area and hosted a yellow-billed cuckoo that was possibly breeding on the site. In March 2014, a fire burned a few acres of native riparian and mesquite habitat in the area that had been occupied by a cuckoo identified as a possible breeder in 2013 (Van Dooremolen 2014), negatively impacting the suitability of the site. Even with the fire, habitat quality was still fair in 2014. Native-dominated riparian habitat

(cottonwood, Goodding and sandbar willows, and willow baccharis) rings the constructed wetland ponds, of which there are the upper pond, three middle ponds, and Vern's Pond. It also lines the small channels that run between them. A grove of cottonwoods just south of the middle ponds (partially burned in the 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. The mesquite occurs either with quailbush (*Atriplex lentiformis*) and willow baccharis in the understory or in thickets. There are also some areas dominated by dry common reed (*Phragmites australis*). Mesquite trees of various maturity with a saltgrass understory covers approximately eight hectares (~20 acres) just west of the main survey area. There is one small patch of salt cedar off of Vern's Pond, but the majority of the habitat is dominated by natives.

3.2.2 Wash

Habitat quality along the Wash improved somewhat for the species in 2014, but was still just fair. In general, patches of native riparian habitat are strung along either side of the channel. Patch sizes are small, typically 0.5-2 hectares (~1-5 acres), and consist of cottonwood, Goodding and sandbar willows, and some seep willow and willow baccharis. Patches of mesquite, both screwbean and honey, also exist. Little salt cedar remains. The area that saw improvement is a passive revegetation site downstream of the Historic Lateral Weir on the north bank. Enhancements to the weir caused the Wash to flow over more of the site and beavers (*Castor canadensis*) then created a series of dams across it, ponding water around the stands of riparian vegetation. The cottonwoods and willows that established on the site several years ago have matured, and recruitment continues.

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 Discussion

The detection of three migrants in 2014 and the discovery of a possible breeder in 2013 (Van Dooremolen 2014) show that yellow-billed cuckoos are using habitat in the study area. As for the number of individuals detected in 2014, it is possible that the detections made in Wash revegetation sites on June 23 and August 13 were of the same bird; yellow-billed cuckoos have large home ranges, and the detections were only about 600 meters (~2,000 feet) apart. However, this does not seem likely given that two surveys passed with no detections. Also, the timing of the detections, one at the beginning of the survey season and one at the end, further supports the conclusion that there were two migrants passing through rather than a single resident individual.

While habitat quality was negatively impacted at the Nature Preserve due to the March fire, the burned area is already starting to show signs of recovery. It will take years for the area to fully regenerate, but the resprouting observed thus far is encouraging.

4.2 Recommendations

It is recommended that surveys for the yellow-billed cuckoo continue in 2015 due to the listing of the species as threatened under the Endangered Species Act and the implications for reconsultation with the U.S Fish and Wildlife Service regarding the Wash project.

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