Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Literature Search and Exploratory Surveys for the Gilded Flicker along the Lower Colorado River, 2012

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

October 2012

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Lower Colorado River Multi-Species Conservation Program

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ACRONYMS AND ABBREVIATIONS

BLM	Bureau of Land Management
GBBO	Great Basin Bird Observatory
HCP	Habitat Conservation Plan
LCR	lower Colorado River
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
NWR	National Wildlife Refuge
Reclamation	Bureau of Reclamation
USGS	U.S. Geological Survey
UTM	Universal Transverse Mercator

Symbols

%	percent

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ABSTRACT

Since 2007, general bird surveys have been conducted annually within the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) planning area, and breeding gilded flickers (*Colaptes chrysoides*) have not been detected during these surveys. Species-specific surveys in targeted gilded flicker habitat that begin much earlier than the general bird surveys are needed to adequately determine their population size and distribution within the LCR MSCP planning area. In 2012, the Bureau of Reclamation (Reclamation) conducted literature reviews, examined reports and data from past bird surveys and field expeditions, examined current incidental sightings (eBird, list serves, conversations with birders, other bird survey efforts), and conducted exploratory surveys. Gilded flickers appear to use the riparian habitat in the lower Colorado River during the non-breeding season and rarely during breeding. During the exploratory surveys in 2012, gilded flickers were readily detected in the saguaro (*Carnegiea gigantean*) habitat adjacent to the LCR MSCP planning area. There were three sightings of gilded flickers within the riparian habitat of the LCR MSCP planning area. There was an incidental sighting in May at the Yuma East Wetlands, a male and female detected at Peter McIntyre County Park (breeding was not confirmed), and a family group detected in the Bill Williams National Wildlife Refuge in the Mineral Wash area. Habitat requirements for the gilded flicker within the riparian zone, especially in the non-breeding season, are relatively unknown. Detecting gilded flicker proved more difficult than anticipated due to large home ranges, infrequent vocalizations, and similar vocalization to the northern flicker. In order to develop an adequate protocol, more research is needed on habitat use during both breeding and non-breeding periods. As a result, in the next few years, instead of developing a monitoring protocol, Reclamation will focus its efforts on a habitat, local movement, and natural history study.

INTRODUCTION

The Lower Colorado River Multi-Species Conservation Program (LCR MSCP) is a partnership of Federal and non-Federal stakeholders created to respond to the need to balance the use of lower Colorado River (LCR) water resources and the conservation of native species and their habitats in compliance with the Endangered Species Act (LCR MSCP Habitat Conservation Plan [HCP] 2004). This is a long-term (50-year) plan to conserve at least 26 species along the LCR from Lake Mead to the Southerly International Boundary with Mexico through implementation of a HCP. The LCR MSCP was implemented in fiscal year 2006. The HCP calls for the creation of over 8,100 acres of Fremont cottonwood (*Populus fremonti*), Goodding's willow (*Salix gooddingii*), coyote willow (*Salix exigua*), honey mesquite (*Prosopis glandulosa*), marsh, and backwater cover types (LCR MSCP HCP 2004). The gilded flicker (*Colaptes chrysoides*) is a covered species under the LCR MSCP and has conservation measures associated with it (LCR MSCP HCP 2004).

Gilded flickers breed from southern Arizona and extreme southeastern California, south into much of Baja California and northwestern Sinaloa (Corman 2005). The LCR MSCP planning area is at the western edge of their range (Phillips et al. 1964). Historically, gilded flickers were known to breed within the LCR MSCP planning area and along the Bill Williams River where they were associated with both cottonwood-willow and saguaro (*Carnegiea gigantean*) habitat (Grinnell 1914; Swarth 1914). Rosenberg et al. (1991) detected a small population at the Bill Williams River Delta nesting in the saguaro habitat and foraging in the riparian habitat. Scattered pairs were detected along the main stem of the LCR at Fort Mohave, Colorado River Indian Tribe land, Cibola and Imperial National Wildlife Refuges (NWR), north of Blythe, California (Water Wheel Resort, Hall Island, and Lost Lake), south of Blythe, Mittry Lake, between Imperial and Laguna Dams, Willow Valley Estates, Imperial Irrigation District, and Clark Ranch in the 1980s (Serena 1981; Hunter 1984; Rosenberg et al. 1991). Rosenberg et al. (1991) thought that pairs breeding along the main stem of the LCR used cottonwood-willow trees or snags for nest cavities because saguaro cactuses were no longer present in the area.

Gilded flickers appear to choose saguaro cactuses for nest cavity construction more often than cottonwood-willow trees or snags (Grinnell 1914; Swarth 1914; Bent 1939; Grinnell and Miller 1994; Rosenberg et al. 1982, 1991; Hunter 1984; Corman 2005; Great Basin Bird Observatory [GBBO] 2011, 2012). In southern Arizona, where saguaro cactuses are found close to riparian habitat, riparian habitat is used more commonly for foraging than for nesting (Corman 2005). Along the Gila River, Gilman (1915) found 90 percent (%) of cavities in saguaro cactuses and 10% in cottonwood and willow trees. Grinnell (1914) detected more pairs with cavities in saguaro cactuses than in cottonwood and willow trees and snags. Gilded flickers appear to be non-migratory (Moore 1995; Short 1965).

Egg laying begins in early to mid-March, with peak nesting from mid-April to mid-May (Corman 2005; Rosenberg et al. 1991). The majority of data on northern flickers (*Colaptes auratus*) suggest that they fledge one brood per season, but will re-nest if first attempts fail. Rosenberg et al. (1991) reported that gilded flickers breeding at the Bill Williams River Delta fledged two broods per season. Koenig (1984) determined that gilded flickers have a significantly smaller clutch size than northern flickers and suggested that gilded flickers must compensate for this by having higher survivorship, younger age at first breeding season, or a higher incidence of two broods.

In 2007, an extensive bird monitoring program was implemented within the LCR MSCP planning area and along the Bill Williams River, system-wide, including the LCR MSCP habitat conservation areas (GBBO 2011). Monitoring is conducted from mid-April to mid-June. No gilded flickers have been confirmed breeding within riparian habitat during these surveys; however, gilded flickers were incidentally observed breeding within the saguaro habitat east of the riparian habitat near Lincoln Ranch (GBBO 2011, 2012). In 2011 and 2012, one pair used the riparian habitat near Lincoln Ranch as foraging habitat (GBBO 2012). There was also one bird observed near Mittry Lake in 2011 (Reclamation, unpublished data, 2011). In 2010, there was a family group observed in the Bill Williams River NWR and a lone female observed near Blythe, California (GBBO 2011). The bird near Mittry Lake and the bird near Blythe did not appear to have nest cavities in the vicinity (GBBO 2011, 2012).

The distribution and population estimates of rare species within an area as large as the LCR MSCP planning area and the Bill Williams River are difficult to detect with random surveys. Gilded flickers begin breeding much earlier than other riparian birds along the LCR. The Bureau of Reclamation (Reclamation) believes species-specific surveys in targeted gilded flicker habitat and surveys that begin much earlier than the general bird surveys are needed to adequately determine their population size and distribution within the LCR MSCP planning area.

The objective of the exploratory surveys in 2012 was to obtain a general understanding of how to survey for the species and what habitat types to target. These were not formal surveys designed to determine population estimates and distribution. Once habitat requirements are determined and a presence/absence survey protocol is developed, system-wide surveys will be conducted.

METHODS

In preparation for species-specific surveys, three activities were undertaken: (1) literature searches, (2) examination of historical and recent locations where gilded flickers were detected, and (3) exploratory surveys.

Literature Searches

Literature searches were conducted on gilded and northern flickers to gather additional information regarding habitat use, natural history, and survey techniques. The information was added to the existing annotated bibliography and species profile and will be utilized to further develop habitat use and presence/absence survey protocols.

Historical and Recent Locations

A review of locations within the LCR MSCP planning area and along the Bill Williams River where gilded flickers were previously detected was conducted. This ranged from detections that were relatively recent (within a year) to detections that were made over 50 years ago.

The following historical and recent reports and accounts were examined for gilded flicker detections within the LCR MSCP planning area and along the Bill Williams River:

- The elf owl in California (Brown 1904)
- An account of the mammals and birds of the Lower Colorado Valley (Grinnell 1914)
- A distributional list of the Birds of Arizona (Swarth 1914)
- The status of selected riparian birds along the lower Colorado River (Serena 1981)
- Status of nine bird species of special concern along the Colorado River (Hunter 1984)
- Atlas of wintering North American birds: an analysis of Christmas Bird Count Data (Root 1988)
- Birds of the lower Colorado River Valley (Rosenberg et al. 1991)
- Birds on the Bill Williams River National Wildlife Refuge, Parker, Arizona, Spring 1993 (Neale et al. 1994)
- Neotropical migratory bird project on the lower Colorado River Valley, Final Report (Lynn and Averill 1996)

- Status, distribution, and habitat affinities of the Southwestern Willow Flycatcher along the lower Colorado River Year 6–2001 (McKernan and Braden 2002)

- Gilded Flicker *In*: Arizona Breeding Bird Atlas (Corman 2005)

- The North American Breeding Bird Survey, Results and Analysis 1966–2005 (Sauer et al. 2005)

- Southwestern Willow Flycatcher surveys, demography, and ecology along the lower Colorado River and tributaries reports, 2008, 2009, 2010 (McLeod and Koronkiewicz 2009, 2010; McLeod and Pellegrini 2011)

- Yellow-billed Cuckoo distribution, abundance and habitat use on the lower Colorado River and tributaries, 2009 and 2011 annual reports (McNeil et al. 2010, 2012)

- Summary and final reports on the lower Colorado River Riparian Bird Surveys 2008–2010 and 2011 (GBBO 2011, 2012)

The following historical and recent data were examined:

- Breeding bird survey routes within the LCR MSCP planning area (U.S. Geological Survey [USGS] 2012a, 2012b)

- The Inland County List Serve, California

- The Christmas Bird Count data (National Audubon Society 2002)

- Data from the Bill Williams River NWR (unpublished data, Bill Williams River NWR).

Exploratory Surveys

The first year of surveys was observational and exploratory in nature. The survey protocol involved arriving at the location and trying to detect the species visually or aurally. A formal call playback survey protocol for the gilded flicker has not been developed. The purpose of the exploratory surveys were to: (1) survey areas of recent and historic detections, (2) survey cottonwood I–III habitat along the LCR and Bill Williams River and adjacent saguaro habitat, (3) try to find additional suitable habitat, and (4) get a better understanding of how to survey for this species (i.e., how vocal are they, do they respond to call playback, how easy

are they to detect). Cottonwood I–III habitat is a classification of the Ohmart and Anderson classification system and is characteristic of mature cottonwood and willow habitat (Anderson and Ohmart 1976, 1984).

Exploratory surveys were conducted from February 1 to September 31 on the following dates: February 1 to 3, February 28 and March 1, March 20 to 24, April 4 and 5, April 9 to 13, April 23 to 27, May 4, June 6 to 8, June 16 to 20, August 7 to 11, August 27 to 29, August 31, September 7, September 14, and September 17 to 21. These surveys were conducted by one crew of one to three people.

Habitat Reconnaissance Surveys

The objective of habitat reconnaissance surveys was to determine if and where suitable habitat existed. Surveys began within an hour of sunrise, either before or after, and ended in the afternoon. Habitat within and adjacent to the LCR MSCP planning area was explored. The majority of places where gilded flickers were historically or recently detected was explored. Habitat along the levee roads was explored. Uplands within the southern portion of the LCR MSCP planning area where desert washes are found were explored. All habitats that consisted of patches of cottonwood and willow trees or saguaro cactuses were considered suitable.

Gilded Flicker Surveys

Surveys to locate breeding gilded flickers were conducted from February 1 to April 31 on the above-mentioned dates. Areas surveyed were: (1) those areas determined suitable during habitat reconnaissance surveys (2) areas of known cottonwood and willow habitat determined by Reclamations 2004 vegetation classification and aerial photographs, and (3) saguaro habitat outside the LCR MSCP planning area. Random areas within the saguaro habitat east of the LCR MSCP planning area near Quartzite, Arizona, and the Kofa NWR and north of the Bill Williams River NWR were selected and surveyed. The saguaro habitat was surveyed to get an idea of how prevalent gilded flickers were in the saguaro habitat and to better understand how to survey for gilded flickers (e.g., response rate to call playback, amount of vocalization, ease of detection). General bird surveys within the LCR MSCP planning area, along the Bill Williams River, and on LCR MSCP habitat conservation took place from mid-April to mid-June. These areas were excluded from the gilded flicker exploratory surveys since they were already being surveyed.

From June 1 to September 31, areas of riparian habitat where historical sightings occurred or habitat looked promising were surveyed again to see if any gilded flickers were moving into those areas as individuals or family groups after breeding. The majority of gilded flicker detections occurred in saguaro habitat.

Seven of the locations where gilded flickers were detected in the spring were revisited in June, July, and September to see if pairs and/or family groups were staying near their breeding locations after the breeding season. The areas were surveyed for around an hour. The surveyor or surveyors walked around the site and tried to detect gilded flickers visually or aurally. The surveys started at sunrise.

A Global Positioning System unit was used to record Universal Transverse Mercator (UTM) locations of all areas surveyed. For each survey, the start time, end time, habitat description, and general location were recorded. The UTMs were recorded for each flicker (*Colaptes* spp.*)* detection—either northern flicker, gilded flicker, or unknown flicker. Breeding evidence, breeding status, and general notes on location and behavior were also recorded.

RESULTS

Historical and Recent Locations

Historical reports, accounts and data, and recent reports and data were examined, and any gilded flicker detections were noted.

eBird Data

Launched in 2002 by the Cornell Lab of Ornithology and the National Audubon Society, eBird is a real time, online checklist program. This program allows recreational birders or professional biologists to record their bird sightings. This information then is available to the public via the eBird Web site (eBird 2012). The location of survey or birding start point, date of survey or birding trip, and a count of species detected are recorded (eBird 2012).

The following are general locations of gilded flicker detections within the LCR MSCP planning area and along the Bill Williams River gathered from the eBird database (eBird 2012):

- Catfish Paradise in the Havasu NWR. One gilded flicker was detected from November 19 to December 29, 2011.*[1]

- Topock Gorge in the Havasu NWR. One gilded flicker was detected on December 28, 2008.*

[1] A * refers to areas surveyed during exploratory surveys in 2012.

- Rotary Park near Lake Havasu City. One gilded flicker was detected on October 24, 2010.

- Copper Canyon to Havasu Palms. One gilded flicker was detected on October 10, 2011.

- Western part of Bill Williams River NWR, including Mosquito Flats. Gilded flickers were detected in July and December 1994, January 1995 (group of four gilded flickers), February and March 2009, and April and November 2010.*

- Kohen Ranch in the Bill Williams River NWR. Gilded flickers were detected in September 1999, July 2006, June 2007, July 2008, September 2009, and January, June, July, and November 2011. A group of six gilded flickers was detected in December 2010 and January 2011.*

- Cougar Point in the Bill Williams River NWR. Gilded flickers were detected in June, July, and August 2011.*

- Mineral Wash in the Bill Williams River NWR. Gilded flickers were detected in January 2001 (group of seven gilded flickers), January 2002, July 2006, April 2007, March 2008 (group of six gilded flickers), July 2008, October 2008, March 2009, July 2009, January 2010, July 2010, October 2010, December 2010, March 2011, June 2011, August 2011, December 2011, and March 2012.*

- Mohave Wash in the Bills Williams River NWR and Planet Ranch. Gilded flickers were detected in July 2006, July 2007, January 2009, April 2009, July 2009, October 2009, January 2010, June 2011, July 2011, and August 2011. A pair was confirmed breeding in April 2008.

- In the upland desert area surrounding Planet and Lincoln Ranch. Gilded flickers were detected in April 2007 and June 2011.*

- Bill Williams Delta west of Mosquito Flats on the Bill Williams River NWR. Gilded flickers were detected in October 2007 and December and July 2009.

- Area adjacent to Parker Dam, excluding the Desilt Wash and Parker Dam Residential Area. One gilded flicker was detected in June 1991, November 2005, March 2009, and December 2010.*

- Parker Dam Residential Area/Government Park. One gilded flicker was detected in December 2010, January 2011, and November 2011.*

- Mittry Lake. One gilded flicker was detected in September 1991 and June 2008.*

- Betty's Kitchen/Laguna Dam. One gilded flicker was detected in November 2009.*

Breeding Bird Survey Data

The breeding bird survey was initiated in 1966 by the U.S. Geological Survey's Patuxent Wildlife Research Center and Environment Canada's Canadian Wildlife Service to monitor the status and trends of North American breeding bird populations (USGS 2012a). Road-side point count routes are located throughout the continent and surveys are conducted during the breeding season annually (USGS 2012a). There have been 10 routes established within the LCR MSCP planning area. Gilded flickers have been detected on the following four routes (USGS 2012b):

- The "Oatman Route" near Fort Mohave. Gilded flickers were detected in May 1994, May 1995, May 2000, and June 2005.*

- The "Riveria Route" near Fort Mohave. Gilded flickers were detected in May 2008.*

- The "Cibola Lake Route" on Cibola NWR. Gilded flickers were detected in May 1993.*

- The "Araby Route" near Mittry Lake. Gilded flickers were detected in May 1996.*

Christmas Bird Count Data

The Christmas Bird Count is coordinated by the National Audubon Society. Surveys take place between December 14 and January 5 annually. The survey consists of volunteers counting birds in a 24-kilometer circle throughout 1 calendar day (National Audubon Society 2002). Gilded flickers were detected on seven circles that were within the LCR MSCP planning area and along the Bill Williams River (National Audubon Society 2002):

- Henderson Nevada "Circle NVHE." One gilded flickers was detected in 2003.

- Topock Havasu NWR "Circle AZOX." Four gilded flickers were detected in 1943, and one was detected in 1947.*

- Havasu NWR "Circle AZHV." One gilded flicker was detected in 2001, and one was detected in 2009.*

- Bill Williams River NWR "Circle AZBW." Seven gilded flickers were detected in 2005, two in 2006, one in 2008, and two in 2009.*

- Parker/Colorado River "Circle AZPC." One gilded flicker was detected in1952, one in 1953, three in 1976, four in 1977, nine in 1978, two in 1980, five in 1981, two in 1983, one in 1984, and one in 1985.*

- Cibola NWR "Circle CABY." One gilded flicker was detected in 2003.*

- Imperial NWR "Circle AZOE." One gilded flicker was detected in1942, one in 1944, one in 1955, one in 1956, one in 1957, two in 1958, three in 1959, four in 1960, and two in 1961.*

- Martinez Lake/Yuma "Circle AZMY. One gilded flicker was detected in 1973, four in 1977, one in 1978, two in 1981, one in 1982, two in 1985, one in 1990, one in 1994, two in 2000, and two in 2006.

Inland County List Serve Data

The Inland County List Serve is a list serve for bird sightings in Riverside, San Bernardino, and Imperial Counties. Gilded flickers were observed by birders at the following locations:

- North of Lake Havasu Palms (fall 2012).

- Parker Dam Landing and Residential/Government Park (winter 2010, 2011, 2012).*

- East of Winter Haven between the levee road and the river (winter 2011).

- Park below border bridge in Blythe, California (fall 2001).

- In park opposite Blythe Marina Mobile Estates (winter 2002).

- In park south of where I-10 crosses the river (winter 2002).*

- Mayflower Park north of Blythe, California (winter 2002, fall 2003).*

- Ferguson Lake at St Paul Episcopal Church (winter 2011).

- Goose Flats (April, July, and November 2002 and winter 2007; two birds).*

- Mittry Lake (May 2005).*

Historical Reports

Various bird surveys have been conducted within portions of the LCR MSCP planning area and along the Bill Williams River from the early 1800s to 2005. The historical reports mentioned in the methods were examined for observations of gilded flickers.

- Breeding pairs of gilded flickers were detected in the areas near Fort Mohave, north of Laguna Dam and Yuma, in the early 1800s and 1900s (Brown 1904; Grinnell 1914).*

- Breeding pairs of gilded flickers were detected from Fort Mohave to Yuma occurring at points where saguaro cactuses were distributed (Grinnell 1914; Swarth 1914).*

- In the 1980 bird surveys along the LCR, breeding birds were detected at the Bill Williams Delta primarily using the saguaro cactuses as nesting habitat and the riparian area as foraging habitat. Along the main stem of the LCR, birds were detected breeding at Fort Mohave, Colorado River Indian Tribe land, Cibola and Imperial NWR, north of Blythe, California (Water Wheel Resort, Hall Island, and Lost Lake), south of Blythe, Mittry Lake, between Imperial and Laguna Dams, Willow Valley Estates, Imperial Irrigation District, and Clark Ranch (Serena 1981; Hunter 1984; Rosenberg et al. 1991). Hunter (1984) estimated there to be less than 100 individuals outside of the Bill Williams Delta, and Serena (1981) estimated there to be 50 to 55 pairs along the main stem of the LCR and an additional 15 to 20 pairs at the Bill Williams Delta.*

- Breeding pairs of gilded flickers were detected in both Mineral and Mohave Wash in the Bill Williams River NWR during surveys in 1993 (Neale et al. 1994).*

- Gilded flickers were detected in Cibola and Imperial NWR during the Arizona Breeding Bird Atlas; however, breeding was not confirmed (Corman 2005).*

Current Bird Surveys along the Lower Colorado River

Surveys for southwestern willow flycatchers (mid-May to early August), yellow-billed cuckoos (mid-June to late September), and general birds (mid-April to mid-June) occur annually within the LCR MSCP planning area and along the Bill Williams River east to Alamo Lake. General bird surveys were initiated in 2007, and southwestern willow flycatcher and yellow-billed cuckoo survey crews started to record incidental sightings of other LCR MSCP covered species in 2008. Gilded flickers have been detected on these surveys (Halterman et al. 2009,

McLeod and Koronkiewicz 2009, 2010; McNeil et al. 2010, 2012; GBBO 2011, 2012; McLeod and Pellegrini 2011). However, the only breeding pairs detected were in the saguaro habitat east of Lincoln Ranch (GBBO 2011, 2012).

- During general bird surveys, breeding pairs were detected in the saguaro habitat adjacent to Lincoln Ranch from 2009–2012. In 2011 and 2012, one gilded flicker was observed foraging in the riparian habitat in Lincoln Ranch. A gilded flicker family group was recorded moving from the uplands to the riparian habitat in mid-June near the Bill Williams River NWR in 2010. Single gilded flickers were detected near Blythe, California (2010) and Mittry Lake (2011), but no breeding or pair confirmations were ever made (GBBO 2011, 2012).

- Gilded flickers were observed at the following locations during surveys for yellow-billed cuckoos: the Bermuda Pasture restoration site on the Havasu NWR (2008), a narrow strip of habitat on the Havasu NWR (2009), and in the restoration site at Picacho Camp State Park. They have been detected in both the Mineral and Mohave Wash sections of the Bill Williams River NWR (2008, 2009, and 2011). The majority of detections was of single birds only observed once or twice. There was one pair on the Bill Williams River NWR in 2011 detected four times, but breeding was not confirmed (Halterman et al. 2009, McNeil et al. 2010, 2012).

- Gilded flickers were observed at the following locations during surveys for southwestern willow flycatchers: the north side of Mosquito Flats on the Bill Williams River NWR (two birds in 2008 and 2009), Three Fingers Lake (2008), and Cibola Lake (three birds in 2008); the California side (2008); and the Arizona side (2010) of Imperial NWR near Adobe Lake (McLeod and Koronkiewicz 2009, 2010; McLeod and Pellegrini 2011).

Gilded Flicker Exploratory Surveys

Exploratory surveys for gilded flickers were completed from February 1 to September 30. Locations where gilded flickers were detected previously and areas of cottonwood I–III habitat that were not being surveyed through the general bird surveys were targeted within the LCR MSCP planning area and along the Bill Williams River. A small portion of saguaro habitat adjacent to the LCR MSCP planning area and the Bill Williams River was surveyed for gilded flickers. There was one family group detected in mesquite (*Prosopis* spp.*)* habitat within the LCR MSCP planning area north of Mineral Wash Road in August (table 1 and figure 1). They were observed feeding on the mistletoe in the mesquite trees. There was one pair of gilded flickers detected at McIntyre Park in Blythe, California, from May through June (table 1 and figure 2). The nest cavity

Table 1.—Gilded flicker individual or pairs detected during exploratory surveys February 1 to September 30, 2012, within the LCR MSCP planning area, the Bill Williams River, and the adjacent saguaro habitat

Date	Time detected*	UTM easting*	UTM northing*	Number	Sex	Breeding evidence	Habitat description
4/11/2012	1400	758157 11N	3684421	2	Unknown	Probable pair; both birds making the “peah” call.	Near Kings Road on Bureau of Land Management (BLM) land east of Highway 95 adjacent to Kofa NWR. Dense saguaro habitat and other upland desert vegetation.
4/11/2012	1000	762944 11N	3696113	2	Unknown	Probable pair; both birds making the “peah” call.	Near Palm Canyon Road on BLM land east of Highway 95 adjacent to Kofa NWR. Dense saguaro habitat and other upland desert vegetation.
4/12/2012	900	749270 11N	3726940	1	Unknown	Bird making the “peah” call.	Near Quartzite, Arizona, on BLM land, north of I-10 off of Dome Rock Road. Semi-dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.
4/12/2012	1000	753014 11N	3725960	2	Male and female	Probable pair. One bird making the long call, and one bird making the “peah” call. Birds seemed to stay in one place.	Near Quartzite, Arizona, on BLM land, south of I-10 off of Dome Rock Road. Dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.
4/26/2012	900	751821 11N	3722756	1	Unknown	Bird making the long call.	Near Quartzite, Arizona, on BLM land south of I-10 off of Cholla Road. Dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.
4/26/2012	1100	758907 11N	3714342	1	Unknown	Bird making the “peah” call.	Near Crystal Hill Road on BLM land east of Highway 95 adjacent to the Kofa NWR. Dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.
May–August 2012	Various times	726214 11N	3711143	2	Male and female	Definitely pair that seemed to have attempted breeding. Nest cavity was never confirmed. Birds were making a variety of vocalizations throughout the summer.	Pair was seen in Peter McIntyre County Park, a park right along the river; across the river was a sandy wash with about a dozen or so saguaro cactuses, most with numerous cavities present. The park had large grass fields and mulberry trees where the pair was seen foraging.

Table 1.—Gilded flicker individual or pairs detected during exploratory surveys February 1 to September 30, 2012, within the LCR MSCP planning area, the Bill Williams River, and the adjacent saguaro habitat

Date	Time detected*	UTM easting*	UTM northing*	Number	Sex	Breeding evidence	Habitat description
5/4/2012	Morning	249964 12N	3816618	2	Male and female	Nest cavity confirmed. Both birds were vocalizing ("peah" and long call). Birds seem to stay in vicinity of nest cactus.	North of Bill Williams River. Semi-dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.
5/4/2012	Afternoon	771301 11N	3813543	1	Unknown	Bird making the long call.	North of Bill Williams River near Planet Ranch and Casteneda Wash. Wash surrounded by rocky hills and upland habitat. Saguaro cactuses sparsely distributed throughout the wash and surrounding areas.
5/4/2012	Afternoon	768592 11N	3836442	1	Unknown	Bird making the long call.	North of Bill Williams River near Planet Ranch and Casteneda Wash. Saguaro cactuses sparsely distributed in wash. Dense ocotillo in surrounding areas.
8/31/2012	Mid-morning	775342 11N	3795239	5	Pair with at least three fledglings	Long call, "peah "calls, and interaction calls heard. Birds foraging together in the mistletoe on the mesquite.	Eastern portion of Bill Williams River NWR in the Mineral Wash area. The habitat is characterized by well-spaced mature mesquite trees with mistletoe and an herbaceous understory of grasses. The mesquites are surrounded by cottonwood and willow habitat and sparse saguaro upland desert habitat.
9/7/2012	Morning	248772 12N	3813731	1	Unknown	One bird making the "peah" call.	North of the Bill Williams River near Planet Ranch. Semi-dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.
9/7/2012	Late morning	244601 12N	3829785	1	Male	One bird making the "peah" call.	North of the Bill Williams River near Planet Ranch. Dense Joshua tree habitat.
9/7/2012	Late morning	233068 12N	3814182	2+	Unknown	Saw two individuals and heard several more; heard interaction calls, long calls, and "peah" calls.	North of the Bill Williams River near the Planet Ranch cattle gate. Semi-dense saguaro habitat and other upland desert vegetation. A few desert washes were present with mesquite trees and other woody vegetation.

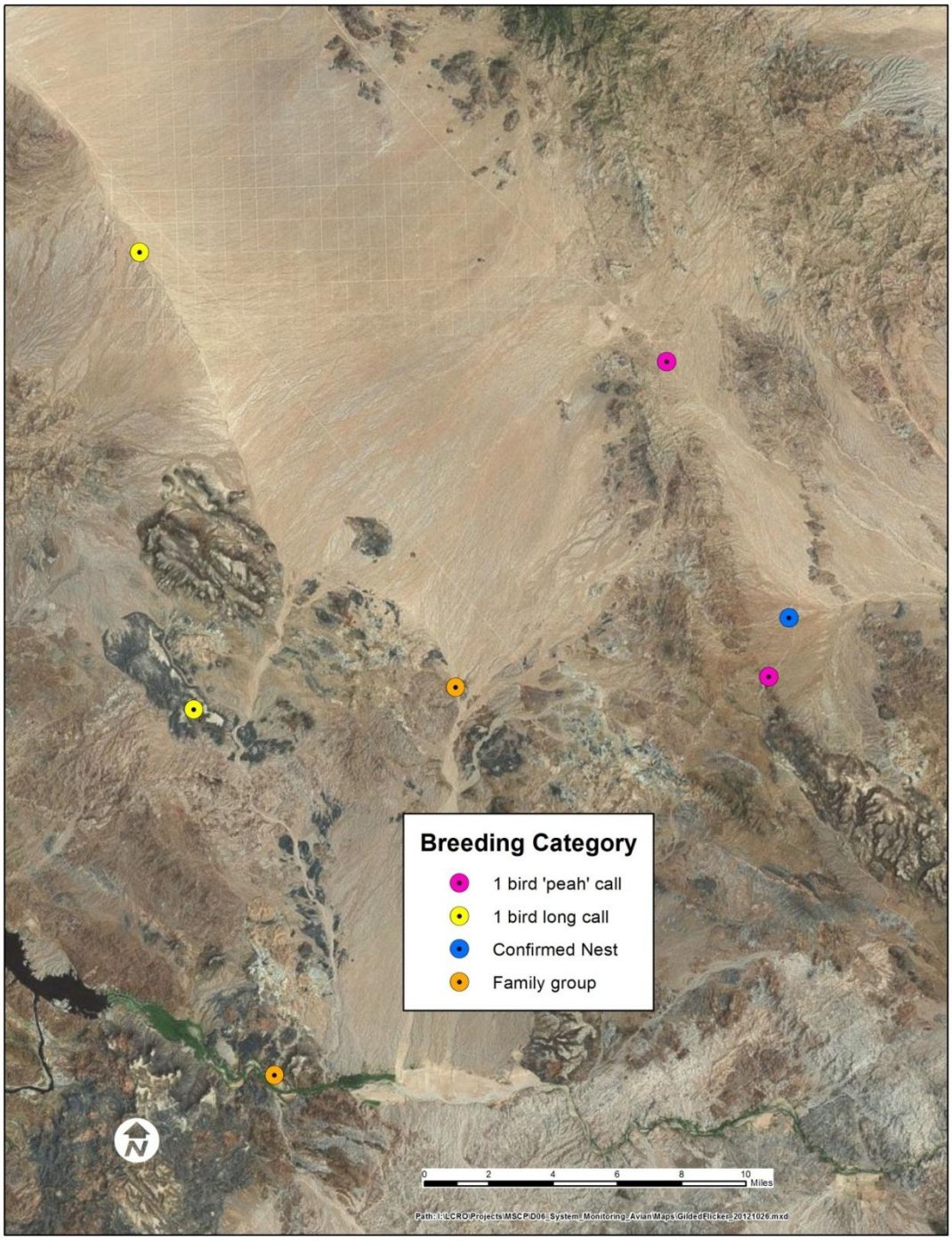

Figure 1.—Locations of gilded flickers in saguaro and riparian habitat near the Bill Williams River detected during exploratory surveys conducted from February to September 2012.

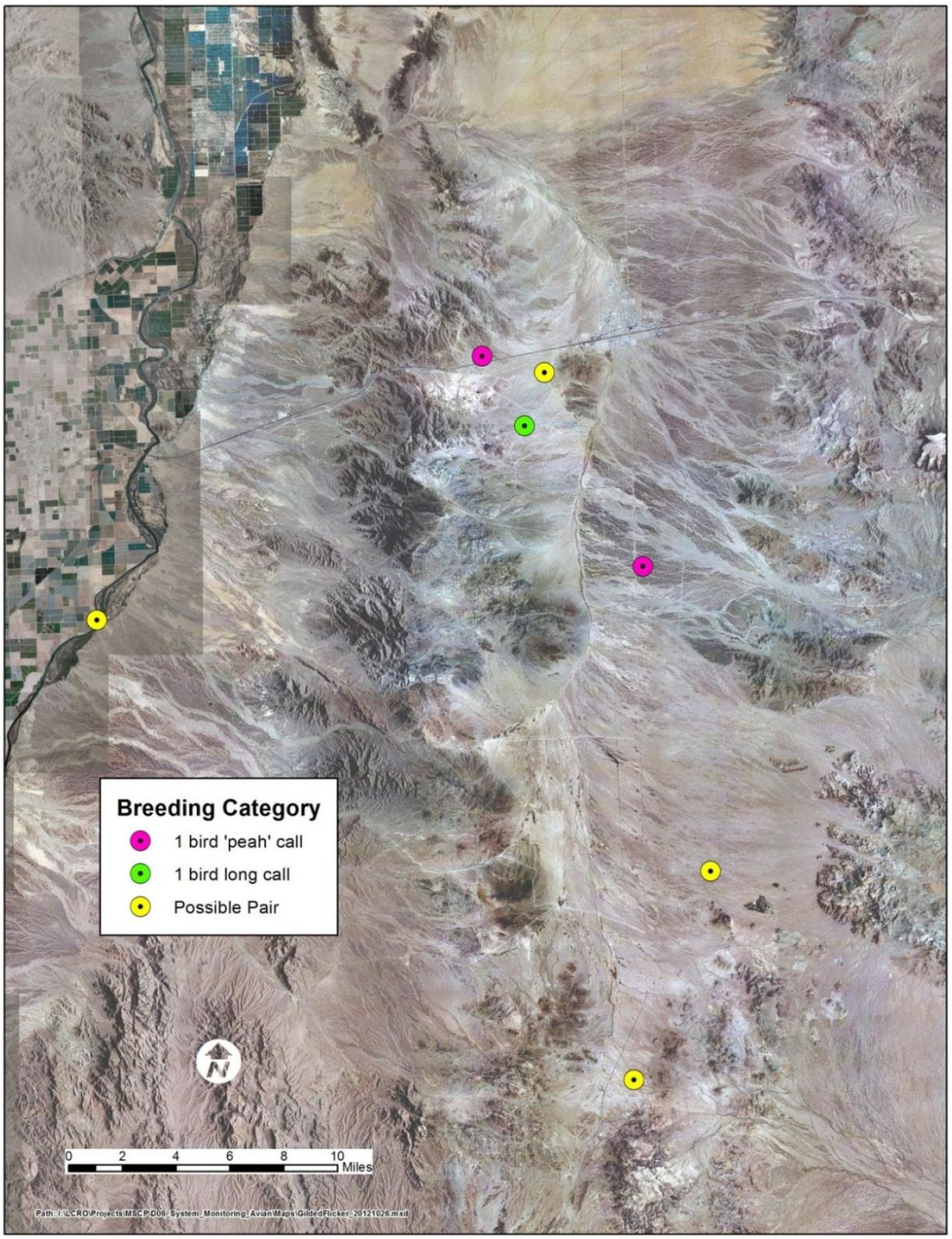

Figure 1.—Locations of gilded flickers in saguaro habitat near Quartzite, Arizona, and KOFA NWR and riparian habitat near Blythe, California, detected during exploratory surveys conducted from February to September 2012.

was never found, so breeding could not be confirmed. However, the pair were probable breeders. Peter McIntyre County Park is an RV park with open fields of grass, mesquite, and mulberry trees that is along the west side of the Colorado River. Across the river on the Arizona side, there were a few washes with saguaros in them. The male and female were seen on both sides of the river. The birds were seen feeding on insects in the dirt and grass within the park. There was an incidental sighting of a gilded flicker at the Yuma East Wetlands restoration site. Gilded flickers were readily detected in the saguaro habitat adjacent to the LCR MSCP planning area by Quartzite, Arizona, and Kofa NWR, Arizona. An individual gilded flicker or gilded flicker pair was detected in every area that was surveyed in the saguaro habitat (tables 1 and 2; figures 1 and 2). Gilded flickers are also breeding north and south of the Bill Williams River in the uplands, though they are more prevalent in the eastern portion of the river adjacent to Lincoln Ranch and Alamo Lake, as saguaro cactuses are present in greater densities in that area.

Table 2.—Gilded flicker individuals or pairs that were detected in March and April and revisited through September 2012

Location	Dates revisited	Dates birds were relocated	Breeding evidence	Vocalizations
King Road	6/6/2012, 7/18/2012, 9/18/2012	9/18/2012	One bird (unknown sex) relocated	Birds were producing the “peah” call on original and subsequent detections.
Palm Canyon Road	6/8/2012, 7/18/2012, 9/18/2012	6/6/2012	One bird (unknown sex) relocated	Birds were producing the “peah” call on original and subsequent detections.
North of I-10 off of Dome Rock Road	9/20/2012	Bird not relocated in September		Bird producing the “peah” call on the original visit.
South of I-10 off of Dome Rock Road	6/8/2012, 7/17/2012, 9/19/2012	6/08/2012	Pair extremely vocal chasing each other	Birds were producing both the long call and the “peah” call on original and subsequent detections.
South of I-10 off of Cholla Road	6/8/2012, 7/17/2012, 9/19/2012	7/17/2012	One bird (unknown sex) relocated	Bird producing a long call and the “peah” call on original detection and “peah” call on subsequent detections.
Crystal Hill Road	6/6/2012, 7/18/2012, 9/20/2012	9/20/2012	One bird (unknown sex) relocated	Bird were producing the “peah” call on original and subsequent detections.
North of the Bill Williams River	9/7/2012	9/7/2012	Possible pair	Birds were producing the long call and “peah” call on the first visit and the “peah” call on subsequent detection.

Five pairs of gilded flicker pairs that were detected in February through April were revisited in June, July, and September, and two additional pairs were revisited in September. At least one of the birds for each pair was detected one time during three of the visits.

With the exception of the one family group detected in the Bill Williams River NWR in August, the pair at Peter McIntyre County Park, and the incidental sighting at the Yuma East Wetlands restoration site, there were no other detections of gilded flickers within the riparian habitat of the LCR MSCP planning area or along the Bill Williams River. The following locations were surveyed from February through September 31, 2012:

- Searchlight, Arizona; date surveyed: March 24
    - Joshua Tree Forest. Dense Joshua tree habitat near Searchlight, Arizona, with some cavities present in dead branches.
- Havasu NWR; dates surveyed: April 4, 5, and August 29
    - The majority of the refuge that is north of I-40. Many large cottonwood and willow trees with cavities present.
    - Bermuda Pasture restoration site. This is an old cottonwood-willow restoration site around 20 acres in size located near the refuge maintenance yard. Gilded flickers have been detected at this location previously.
- Lake Havasu City, Arizona; dates surveyed: April 26 and August 29
    - General area surrounding Lake Havasu City, Arizona. Many large cottonwood and willow trees with cavities present.
    - Patch of cottonwood, willow, and mesquite trees around 20 acres. This site is surrounded by Lake Havasu, upland habitat, and the refuge golf and country club.
- Bill Williams River NWR; dates surveyed: February 2, 3; April 17, 19; August 7, 8, 9, 10, 31; and September 14, 21

  The U.S. Fish and Wildlife Service has established several transects throughout the Bill Williams River NWR refuge in which refuge staff conduct quarterly wildlife surveys. There have been sightings of gilded flickers, including some breeding confirmations at this refuge (transects and other locations) over the years. We surveyed the following transects and other areas for gilded flickers:

- South Bank Esquerra Ranch Transect. This transect is on the eastern portion of the Bill Williams River NWR in the Mineral Wash area. This area is characterized by spaced-out mature mesquite trees with mistletoe with an herbaceous layer of grasses. Surrounding the mesquite habitat is cottonwood-willow habitat, which is surrounded by uplands with a sparse density of saguaros.

- Gate Transect. This transect is at the western edge of Mosquito Flats. The transect traverses the cottonwood and willow habitat starting at the southern part of Mosquito Flats and ending up at the northern edge. This area is characterized by mature cottonwood-willow habitat with snags and an understory of salt cedar.

- Esquerra Ranch Transect. This transect is on the eastern portion of the Bill Williams River NWR in the Mineral Wash area. This area is characterized by spaced-out mature mesquite trees with mistletoe with an herbaceous layer of grasses. Surrounding the mesquite habitat is cottonwood-willow habitat, which is surrounded by uplands with a sparse density of saguaros.

- Kohen Transect. This transect starts at the river and traverses the cottonwood-willow habitat and ends at the mesquite restoration site. This area is characterized by mature cottonwood-willow habitat with snags and an understory of salt cedar.

- Kohen Ranch Re-veg Transect. This transect runs through a very healthy mesquite restoration site. This area is characterized by mature and younger mesquite trees with an herbaceous understory of grasses.

- Mosquito Flats and surrounding uplands. Native riparian habitat with many large cottonwoods and willow trees with cavities present; desert washes with a few saguaros and surrounding hills/mountains.

- Kohen Ranch. The habitat surrounding the river from the western portion of Mosquito Flats to the Kohen Ranch area was surveyed. This area is characterized by mature cottonwood-willow habitat with snags and an understory of salt cedar surrounded by uplands with a sparse density of saguaros.

- North of Mineral Wash. Sandy flood plain adjacent to cottonwood-willow habitat; scattered patches of grass (remnants of fields) with large expansive mesquite trees that have large bunches of mistletoe within them. A family group of gilded flickers was detected at this location on August 31. This location was revisited on September 14, and the family group was gone.

- Cibola NWR; dates surveyed: April 25 and July 19
  - Small patches of cottonwood-willow habitat on the Arizona side of the levee road.
  - Cibola Lake. This area consists mostly of salt cedar and cattail with a few mesquite, cottonwood, and willow trees. Gilded flickers have been detected here in previous years.
  - Small patches of cottonwood-willow habitat and old restoration sites on the California side of the levee road. There is one pretty large restoration site with Eucalyptus trees mixed in, which is adjacent to the refuge on BLM land.

- Parker Dam and Colorado River Indian Tribe land; dates surveyed: April 10, 11, and August 28
  - Parker Dam Residential Park/Government Park. This area was an old residential area for Reclamation employees. A gilded flicker was detected here in the winter of 2010/2011 and 2011/2012. This area is characterized by scattered palm trees, mature mesquite trees, cottonwood and willow trees, and mulberry trees. This area also has remnants of a residential area (telephone poles, roads, sidewalks, and structures) and is adjacent to Desilt Wash.
  - Desilt Wash. This area is adjacent to the Parker Dam Residential Park. This area is characterized by a mature string of cottonwood and willow trees, palm trees, and shrubs such as quail bush and Palo Verde. The effluent from metropolitan water district flows through the wash.
  - Patch of mature cottonwood and willow trees on the Colorado River Indian Reservation between Parker, Arizona, and Blythe, California, adjacent to Colorado River Indian Tribe farms.

- Blythe, California; dates surveyed: March 1; April 13, 27; July 20; and August 30
    - Peter McIntyre County Park. This is a park along the river with grassy fields and mesquite and mulberry trees. Across the river is a desert wash with saguaros. A pair was seen at the park from May to August. Nest cavity was never confirmed, but was a probable breeder.
    - Patch of mature cottonwood trees on Mayflower Park Road off of Highway 95 north of Blythe.
    - Small patch of cottonwoods on the California side of the levee road north of Blythe by Riveria Drive. This area was surveyed on April 27.
    - Small patch of cottonwood and willow habitat on Arizona side of the levee road by Ehrenburg, Arizona.
    - Cottonwood and willow habitat near Lost Lake and Water Wheel Camp. Gilded flickers were detected breeding at these areas in the 1980s. Lost Lake consisted of some cottonwood and willow trees and some snags. Water Wheel Camp consisted mostly of salt cedar and mesquite trees with some cottonwood trees by the trailer park. Both sites appeared to have experienced some habitat loss and degradation since the 1980 surveys.
    - Goose Flats Wildlife Area and old restoration site just south of Blythe on the California side of the levee road. Gilded flickers have been detected at this site in the past. Goose Flats Wildlife Area consists mostly of salt cedar and a few mesquites and a few large cottonwood and willow trees. It seems like habitat has been lost or degraded from what historical reports suggest.
- Imperial NWR; dates surveyed: February 1 and April 24
    - A small patch of cottonwood and willow habitat with snags surrounded by saguaro cactuses off of Red Cloud Mine Road and Joe Young Road.
    - The Imperial Nursery, which is an approximately 10-acre patch of cottonwood and willow habitat. Several old and small cottonwood and willow restoration efforts were also surveyed. These areas are adjacent to the Imperial Ponds Habitat Conservation Area.

- Imperial and Laguna Dam; date surveyed: March 1
    - Arizona side of Imperial Dam. Small patches of cottonwood and willow habitat on Imperial Dam and Laguna Dam Road adjacent to the Mittry Wildlife Area. There are also some washes with saguaro cactuses in them. Gilded flickers have been detected in this area in previous years.
    - California side of Imperial Dam to Yuma. Scattered patches of mature cottonwood-willow trees and palm trees.

There is little suitable habitat in the area surrounding Bullhead City, Kingman, and Oatman, Arizona, and the area from Laughlin, Nevada, to Needles, California. There have been historical sightings of gilded flickers in the area adjacent to Parker Dam. There is suitable habitat in the area by Desilt Wash and the Parker Dam Residential Area and the Bill Williams River NWR. Along the main stem of the LCR, the saguaro habitat in Arizona does not begin until 5 to 10 miles east of the LCR MSCP planning area near the Yuma Proving Ground.

Behavioral Observations

Biologists observed the gilded flickers in the saguaro habitat having large home ranges, and they were non-territorial in the majority of that home range. Flicker vocalizations are distinctive; however, during these observations, gilded flickers did not vocalize very often within the majority of their home range. They can be very difficult to follow due to their infrequent vocalizations and the distance at which they fly. During the preliminary surveys, gilded flickers did infrequently responded to tape playback. After the breeding season during August and September, gilded flickers vocalized very rarely and were difficult to follow and detect, with the exception of family groups. Family groups were very vocal.

DISCUSSION

In the 1980s, the population of gilded flickers was estimated at 50 to 55 pairs breeding along the main stem of the LCR and 15 to 20 pairs breeding at the Bill Williams Delta (Serena 1981; Hunter 1984). From recent system-wide bird surveys that were initiated in 2007, that population has declined dramatically. Habitat along the Bill Williams River is still high-quality mesquite, cottonwood, and willow habitat surrounded by uplands with scattered saguaros on the periphery. However, habitat along the main stem of the LCR has been lost or degraded, including places where gilded flickers were historically detected. There are very few places where saguaros within the LCR MSCP planning area still exist.

Moderate populations of gilded flickers still breed in the saguaro habitat north and south of the eastern portion of the Bill Williams River and around 10 to 15 miles east of the southern portion of the Colorado River. From recent data, the breeding population at the Bill Williams River NWR Delta present in the 1980s has largely declined, especially in the western section (GBBO 2011, 2012). There are still some gilded flickers breeding in the eastern portion of the Bill Williams River near Lincoln Ranch and Alamo Lake (Neale et al. 1994; GBBO 2011, 2012).

Sightings of gilded flickers within the last 10 years have occurred within the LCR MSCP planning area. This could indicate that they are utilizing riparian habitat within the LCR MSCP planning area and along the Bill Williams River in some way (e.g., breeding, overwintering, foraging, and foraging as family groups).

When saguaros are available next to riparian habitat, gilded flickers usually use the riparian habitat to forage and the saguaro cactuses as nesting habitat (Grinnell 1914; Swarth 1914; Grinnell and Miller 1944; Rosenberg et al. 1982, 1991; GBBO 2011, 2012). The populations along the Bill Williams River near Lincoln Ranch and Alamo Lake were using the saguaro cactuses as nest cavities and were detected only foraging in the riparian habitat (GBBO 2011, 2012). Recent data suggest gilded flickers were seen more often along the river during the non-breeding season as family groups or overwintering.

Full-scale, system-wide surveys within the LCR MSCP planning area for gilded flickers may occur in the future; however, more information is needed to establish an accurate survey design. A better understanding of what types of habitat gilded flickers are selecting within the LCR MSCP planning area and for what purposes (e.g., breeding, foraging, or roosting) is needed. Information such as nesting chronology, home range, and responsiveness to call playback is needed to design a survey protocol.

A habitat use study will be conducted to examine habitat use during non-breeding and breeding intervals, local movement, and natural history parameters. The objectives of this study are to determine how far they move during the cycle of a year and to collect more data on their breeding chronology. System-wide surveys within the LCR MSCP planning areas may take place in the future, but more research needs to be done to adequately implement those surveys.

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