2009 Willow Flycatcher Surveys at Two Albuquerque Sites: Montano Southwest and the Rio Grande Nature Center

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EXECUTIVE SUMMARY

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is a federally endangered migrant songbird breeding locally in riparian areas of New Mexico. The U.S. Army Corps of Engineers manages riparian habitat in the Rio Grande bosque in the Albuquerque, New Mexico metropolitan area, some of which is potential Willow Flycatcher habitat. Since 2004, they have contracted Hawks Aloft to conduct Willow Flycatcher surveys at two bosque sites: Montano Southwest and the Rio Grande Nature Center. In May 2009, a single Willow Flycatcher was detected at Montano Southwest. However, no further detections were made during two subsequent surveys. Habitat at Montano Southwest and the Rio Grande Nature Center, although offering a fairly dense understory layer relative to other sites in the Albuquerque area, may be suboptimal for breeding Southwestern Willow Flycatchers. But, this year's detection provides evidence that Montano Southwest and the Rio Grande Nature Center could serve as important stopover sites for migrating Willow Flycatchers, including the federally endangered Southwestern subspecies. For this reason, we recommend that the U.S. Army Corps of Engineers continue to maintain as dense a structure of riparian vegetation as possible at these sites.

In June 2009, we observed a territorial Willow Flycatcher on two different occasions during general avian transect surveys northeast of the Rio Bravo Bridge in south Albuquerque. Although the habitat patch where the observations were made is relatively small, it does meet the general criteria for Southwestern Willow Flycatcher breeding habitat in terms of vegetation density and composition, prey availability, and

proximity to water. Based on these factors, we recommend establishing a Willow Flycatcher survey route at Rio Bravo Northeast in 2010.

INTRODUCTION

Riparian corridors provide important habitat for breeding birds in arid regions of the western United States (Ellis 1995). Although western riparian areas occupy less than one percent of the landscape, many support more breeding bird species than surrounding upland habitats (Powell and Steidl 2000, Gates and Giffen 1991, Knopf et al. 1988). Because riparian areas provide breeding habitat for many bird species, it is important to maintain or improve them to the best possible condition. It is especially important to maintain riparian areas that host rare or endangered species.

The Southwestern Willow Flycatcher (*Empidonax traillii extimus*) is a federally endangered migrant songbird which has a relatively large breeding population in New Mexico (Hatten and Sogge 2007, and Ahlers 2005). Southwestern Willow Flycatchers inhabit dense riparian vegetation, including both native (e.g., cottonwood, *Populus* spp., and willow, *Salix* spp.) and exotic (e.g., salt cedar, *Tamarix* spp., and Russian olive, *Elaeagnus angustifolia*) woody plants (Sogge et al. 2003). Suitable habitat for Southwestern Willow Flycatcher is usually in close proximity to water or saturated soils (Sedgwick 2000).

During migration, Southwestern Willow Flycatchers are joined by non-endangered subspecies of Willow Flycatcher (e.g., *E. t. adastus*), which migrate through the state and breed further north (Sogge et al. 1997). Because of morphological and vocal similarities, it is difficult to distinguish between Southwestern Willow Flycatchers and other migrant subspecies of Willow Flycatcher. However, Willow Flycatchers found late in the breeding season in New Mexico (i.e., late June through mid July) are probably territorial birds belonging to the Southwestern subspecies, because migrants belonging to

the other subspecies are not expected during this time (Sogge et al. 1997). Therefore, surveys documenting Willow Flycatcher presence can often provide an indication of local Southwestern Willow Flycatcher status.

The United States Army Corps of Engineers conducts habitat restoration in the Rio Grande bosque in the Albuquerque, New Mexico metropolitan area. They contracted Hawks Aloft to conduct Willow Flycatcher surveys at two bosque sites: Montano Southwest and the Rio Grande Nature Center. At Montano Southwest (formerly known as the Graham Property), we have conducted annual Willow Flycatcher surveys since 2004. At the Rio Grande Nature Center, we conducted surveys in 2004, and 2006-2009. Although we have observed nine Willow Flycatchers during surveys in the migration period or during non-survey visits (see Table 2), we have not documented birds late in the season that would confirm the presence of Southwestern Willow Flycatchers. Continued annual surveys are important to document Southwestern Willow Flycatchers and to ensure that management activities do not impact flycatchers currently present in the habitat. In this report, we present results of 2009 Willow Flycatcher surveys at Montano Southwest and the Rio Grande Nature Center, and provide information on Willow Flycatcher observations at Rio Bravo Northeast during general avian transect surveys.

STUDY AREA

Montano Southwest

Montano Southwest is located near the southeast corner of Coors Boulevard and Montano Road, in the bosque on the west side of the Rio Grande in Albuquerque, New Mexico (Fig. 1). We surveyed all appropriate habitat within a 42-ha woodland patch

(elevation 1500 m) east of the Bosque School. Riparian vegetation consisted of mature cottonwood canopy with dense understory vegetation dominated by Russian olive, willow, and salt cedar. Although the Rio Grande bosque has undergone considerable understory thinning in the Albuquerque area for restoration and fire suppression, clearing within an approximately 100-m strip along the river at Montano Southwest has generally been avoided for the purpose of maintaining potential Willow Flycatcher habitat. In 2009, as in previous years, there was no surface water or saturated soil in the habitat. The Middle Rio Grande Conservancy District drain and the Rio Grande bordered the site on the west and east, respectively.

Rio Grande Nature Center

The Rio Grande Nature Center is located across the river from Montano Southwest, near the west end of Candelaria Road, in Albuquerque, New Mexico (Fig. 1). We surveyed a 7-ha woodland patch (elevation 1500 m) consisting of cottonwoods, willows, Russian olive, and salt cedar. Some understory clearing has been conducted at the Rio Grande Nature Center since 2004, but in fall of 2007, major clearing in the area was conducted for the construction of a minnow channel. This project, to help increase populations of the Rio Grande silvery minnow (*Hybognathus amarus*), had an obvious impact on the vegetation in portions of the survey area. Due to the inherently dynamic nature of understory vegetation, there is a possibility of an increase in potential flycatcher habitat due to this project (Brodhead et al, 2007) within only a few years. The site is bordered by the Rio Grande on the west, and the new minnow channel runs through the surveyed area.

METHODS

Willow Flycatcher surveys followed the standardized protocol developed by Sogge et al. (1997). All observers were trained to follow this protocol and certified to conduct Willow Flycatcher surveys under Hawks Aloft's Federal Fish and Wildlife Permit (TE835139-0). A single observer conducted all surveys at Montano Southwest and the Rio Grande Nature Center in 2009. In accordance with established protocol (Sogge et al. 1997), we conducted surveys during three survey periods: 15-31 May, 1-21 June, and 22 June through 10 July. At both sites we conducted three surveys, one in each of the three survey periods. Our survey dates at Montano Southwest were 22 May, 5 June, and 30 June. At the Rio Grande Nature Center, the survey dates were 29 May, 15 June, and 10 July. We conducted consecutive surveys at each site at least five days apart, beginning within a half-hour of sunrise and concluding within four hours.

During surveys, observers walked slowly through the survey area, stopping every 20-30 m or so to cover potential habitat patches. At each stop, surveyors listened for flycatcher vocalizations. If none were heard, taped vocalizations of a Southwestern Willow Flycatcher were played for 15-30 seconds, followed by one or two minutes of observation. We recorded Universal Transverse Mercator (UTM) coordinates (North American Datum 27) for each Willow Flycatcher observed. Because several species appear similar to Willow Flycatchers (e.g., Dusky Flycatcher, *E. oberholseri*, and Gray Flycatcher, *E. wrightii*), positive identification of a Willow Flycatcher required that the observer hear the distinctive "fitz-bew" song (Sedgwick 2000). To distinguish Southwestern Willow Flycatchers from other subspecies that issue a similar song, we

concluded that if Willow Flycatchers were observed in the third survey period, they were Southwestern Willow Flycatchers. Migrating Willow Flycatchers were not expected during this time (Sogge et al. 1997). Flycatchers observed only during the first two survey periods might also be Southwestern Willow Flycatchers, but the possible presence of the migrating *adastus* subspecies makes identification uncertain during this time. We present a list of all avian species observed during surveys (Appendix 1) and provide copies of original Willow Flycatcher survey data forms (Appendix 2).

RESULTS

We observed no Willow Flycatchers during 2009 surveys at the Rio Grande Nature Center (Table 1). At Montano Southwest, one Willow Flycatcher was identified during the first survey period, on 22 May (Table 1). We also conducted general avian transect surveys three times per month in addition to the standardized Willow Flycatcher surveys. Willow Flycatchers were not observed during these songbird transects. Overall, we observed 42 bird species during flycatcher surveys, 32 at Montano Southwest and 34 at the Rio Grande Nature Center (Appendix 1).

Table 1. Summary of Willow Flycatcher surveys conducted at Montano Southwest and the Rio Grande Nature Center in Albuquerque, New Mexico in 2009.

Site	Survey	Date	Duration (hr)	Number of Flycatchers
Montano Southwest	1	22 May	1:41	1
Montano Southwest	2	5 June	1:13	0
Montano Southwest	3	30 June	1:14	0
Rio Grande Nature Center	1	29 May	1:18	0
Rio Grande Nature Center	2	15 June	1:10	0
Rio Grande Nature Center	3	10 July	0:58	0

On 5 June, a singing Willow Flycatcher was documented northeast of the Rio Bravo Bridge in south Albuquerque (NAD27 UTM coordinates: 347572, 3877220) during a general avian transect survey. On 16 June, a singing Willow Flycatcher was again documented in the same location. Despite the playing of taped vocalizations in an effort to elicit a response, no further conclusive observations of Willow Flycatcher were made during subsequent avian transect surveys. But, on 7 July, a non-vocalizing *Empidonax* flycatcher briefly flew in to the playing of Willow Flycatcher vocalizations at the location of the earlier observations. Based on this behavior, and the fact that no other *Empidonax* species would normally be expected in the bosque during that time, it is possible the responding bird also was a Willow Flycatcher.

Table 2. Number of Willow Flycatchers detected by Hawks Aloft, Inc. at Montano Southwest and the Rio Grande Nature Center in Albuquerque, New Mexico from 2004-2009. We indicate incidental observations (occurring during non-survey visits to the site) of Willow Flycatchers in parentheses. A dash (-) indicates that a survey was not conducted by Hawks Aloft. Survey 1 was conducted 15-31 May; Survey 2 was conducted 1-21 June; and Surveys 3-5 were conducted 22 June – 10 July.

Site	Survey	2004	2005	2006	2007	2008	2009
Montano Southwest	1	0	0(1)	1(1)	0	2	1
Montano Southwest	2	0	0(1)	0(1)	0	0	0
Montano Southwest	3	0	0	0	0	0	0
Montano Southwest	4	0	-	-	-	-	-
Montano Southwest	5	0	-	-	-	-	-
Rio Grande Nature Center	1	0	-	0	0	0	0
Rio Grande Nature Center	2	0	-	0(1)	0	0	0
Rio Grande Nature Center	3	0	-	0	0	0	0
Rio Grande Nature Center	4	0	-	0	0	-	-
Rio Grande Nature Center	5	0	-	0	0	-	-

DISCUSSION

Our surveys offer no evidence that Southwestern Willow Flycatchers breed at Montano Southwest or the Rio Grande Nature Center. In central New Mexico, the presence of singing Willow Flycatchers during the third survey period (i.e., 22 June through 10 July) is considered strong evidence of territorial Southwestern Willow Flycatchers (Sogge et al. 1997). Since 2004, we have observed no Willow Flycatchers during six third-period surveys at Montano Southwest and five third-period surveys at the Rio Grande Nature Center (Table 2).

Location of a Willow Flycatcher near the Rio Grande at Montano Southwest

Habitat at Montano Southwest and the Rio Grande Nature Center is suboptimal for breeding Southwestern Willow Flycatchers. Both survey sites contain understory vegetation, especially Russian olive, but they lack the high density typical of

Southwestern Willow Flycatcher breeding sites (Sogge et al. 1997). Although adjacent to the Rio Grande, these sites were dry and no surface water was present throughout the patches, further limiting suitability for breeding Southwestern Willow Flycatchers. There also is evidence of habitat reduction at both sites. Understory along the west side of the survey area at Montano Southwest has been increasingly thinned in recent years. At the Rio Grande Nature Center, a portion of densely-vegetated drainage was cleared in the fall of 2007 season to install a new Silvery Minnow channel. Although this new minnow ditch was flooded in early summer 2009, it had dried up by the end of June. In addition, Brown-headed Cowbirds were detected numerous times at both sites, and the understory patches at these sites may be too small to protect breeding Southwestern Willow Flycatchers from parasitism (Brodhead et al 2007).

Despite the limited potential for hosting breeding Southwestern Willow Flycatchers, Montano Southwest and the Rio Grande Nature Center still hold potential value for the conservation of this species. Because much of the Rio Grande bosque understory has been thinned in the Albuquerque metropolitan area for fire control or for restoration purposes, these two Willow Flycatcher survey sites are among the few remaining areas with relatively dense understory vegetation. Migrating Willow Flycatchers might be attracted to Montano Southwest and the Rio Grande Nature Center as the best available options along the Middle Rio Grande for refueling and for resting cover. Our observations of Willow Flycatchers at Montano Southwest in 2009, 2008, 2006, and 2005 provide evidence that these sites are used by migrants. Migrating Willow Flycatchers might include the endangered Southwestern subspecies. Yong and Finch (1997) suggested that the Middle Rio Grande provides important stopover habitat for

Southwestern Willow Flycatchers to replenish energy stores. Potential use of these sites by Southwestern Willow Flycatchers, even if only during the migration season, provides strong justification for efforts to maintain these pockets of relatively dense understory. We recommend that the U.S. Army Corps of Engineers continue surveys to gain the most current information on Willow Flycatcher (and Southwestern Willow Flycatcher) status at Montano Southwest. But, we recommend discontinuing flycatcher surveys at the Rio Grande Nature Center, based on the marginal habitat quality and the fact that no Willow Flycatchers have been detected during formal surveys over the past six years. However, we strongly urge the U.S. Army Corps of Engineers to continue to vigilantly protect potential habitat patches at both locations.

In contrast to Montano Southwest and the Rio Grande Nature Center, the habitat present at Rio Bravo Northeast is potentially suitable for breeding Southwestern Willow Flycatchers. Although the habitat patch at Rio Bravo Northeast is small (approximately 0.5 ha), it is densely vegetated, supports standing water through at least the end of June during years of normal run-off, and appears to support a dense insect prey base. The vegetation consists of a dense coyote willow understory generally exceeding 2 m in height, interspersed with intermediate-sized Russian olive and cottonwoods. Because the habitat patch is located below the river bank, it supports standing water throughout the spring run-off, and a moist substrate well into July. The presence of a territorial Willow Flycatcher for at least two weeks during June 2009 supports the idea of the location as a potential breeding site. Thus, we recommend the establishment of Willow Flycatcher surveys at Rio Bravo Northeast beginning in 2010, and urge vigilant protection of this potentially important habitat patch.

Potential Willow Flycatcher habitat at Rio Bravo Northeast

ACKNOWLEDGMENTS

The U.S. Army Corps of Engineers funded this project. We thank Ondrea Hummel for providing logistic support. Gail Garber conducted surveys at Montano Southwest and the Rio Grande Nature Center. This report was written by Trevor Fetz and reviewed by Gail Garber. Photographs on the cover page and page 11 were taken by Trevor Fetz. The photograph on page 8 was taken by Gail Garber. The map of the survey area was created by Lorraine McInnes.

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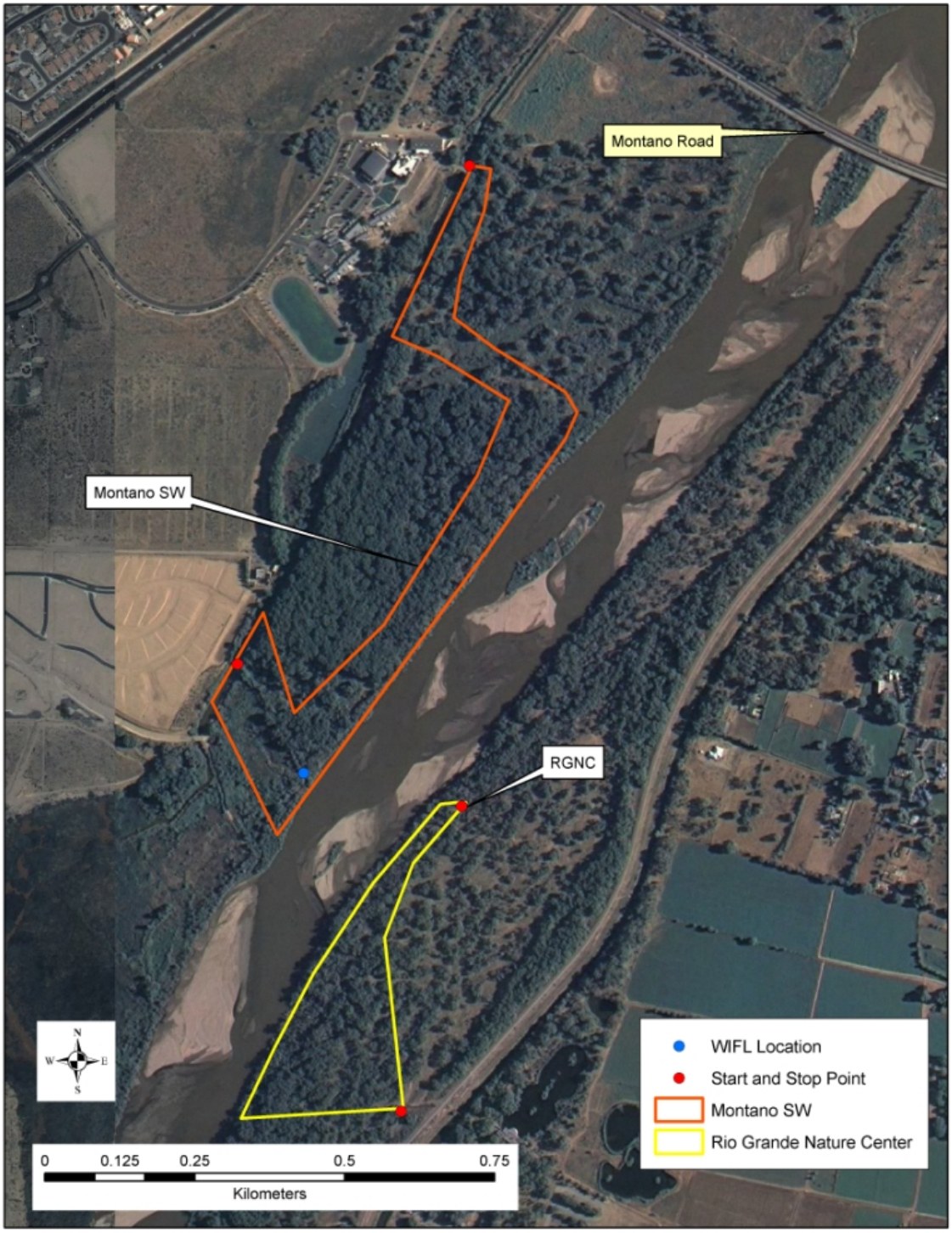

Figure 1. Location of a Willow Flycatcher at Montano Southwest, and survey areas of Montano Southwest and the Rio Grande Nature Center in Albuquerque, New Mexico in 2009.

Appendix 1. List of 42 bird species observed during Willow Flycatcher surveys at two Albuquerque, New Mexico sites in 2009. We indicate species observed (X) during three surveys at Montano Southwest and three surveys at the Rio Grande Nature Center.

	Montano Southwest			Rio Grande Nature Center		
Species	1	2	3	1	2	3
American Crow		X				
American Kestrel						X
American Robin					X	
Ash-throated Flycatcher	X	X	X	X	X	X
Bewick's Wren	X	X	X	X	X	X
Black Phoebe	X	X				X
Black-capped Chickadee	X	X	X	X		X
Black-chinned Hummingbird	X	X	X	X	X	X
Black-headed Grosbeak	X	X	X	X	X	X
Blue Grosbeak	X	X	X	X	X	X
Brown-headed Cowbird	X	X	X	X		X
Canada Goose	X			X	X	X
Cliff Swallow			X			
Common Yellowthroat	X	X	X	X	X	X
Cooper's Hawk	X	X	X		X	
Downy Woodpecker		X	X		X	X
Eastern Bluebird					X	
European Starling				X		
Gray Catbird					X	
Great Egret					X	
Greater Roadrunner					X	
House Finch	X	X		X	X	X
Indigo Bunting	X					
Lesser Goldfinch					X	X
Mallard	X	X	X	X	X	X
Mourning Dove	X	X	X	X	X	X
Northern Flicker	X	X	X		X	X
Northern Rough-winged Swallow		X			X	
Red-winged Blackbird						X
Ring-necked Pheasant	X	X	X		X	X
Spotted Sandpiper			X		X	X
Spotted Towhee	X	X	X	X	X	X
Summer Tanager	X	X	X	X	X	X
Swainson's Hawk			X			
Warbling Vireo		X				
Western Grebe	X			X	X	
Western Kingbird	X					
Western Tanager						X

	Montano Southwest			Rio Grande Nature Center		
Species	1	2	3	1	2	3
Western Wood-Pewee	X	X				
White-breasted Nuthatch	X		X	X	X	X
Wood Duck	X	X	X			
Yellow-breasted Chat	X	X	X	X	X	

Appendix 2. Data forms from 2009 Willow Flycatcher surveys at Montano Southwest and the Rio Grande Nature Center in Albuquerque, New Mexico.

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Montano Southwest State NM County Bernalillo
USGS Quad Name Los Griegos Elevation 1500 feet / (meters) (circle one)

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ☒ *Yes* ☐ *No*

Site Coordinates: Start: N 3890219 E 346574 UTM Datum NAD27 (NAD27 preferred)
Stop: N 3889069 E 346206 UTM Zone 13

*** Fill in additional site information on back of this page ***

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Gail Garber	Date 5/22/09 Start 0552 Stop 0733 Total hrs 1:41	1	0	0	N	Y	N	
2 Gail Garber	Date 6/5/09 Start 0548 Stop 0701 Total hrs 1:13	0	0	0	N	Y	N	
3 Gail Garber	Date 6/30/09 Start 0600 Stop 0714 Total hrs 1:14	0	0	0	N	Y	N	
4	Date Start Stop Total hrs							
5	Date Start Stop Total hrs							

Overall Site Summary (Total **resident** WIFLs only)	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes (No)
Total survey hrs 4:08	0	0	0	0	If yes, report color combination(s) in the comments section on back of form

Reporting Individual Gail Garber Date Report Completed 7/31/09
US Fish and Wildlife Service Permit # TE835139-0 AZ Game and Fish Department (or other state) Permit # _____

Submit original form by August 1st. Retain a copy for your records.

Fill in the following information completely. Submit original form by August 1st. Retain a copy for your records.

Reporting Individual Gail Garber — Phone # (505) 828-9455
Affiliation Hawks Aloft, Inc. — E-mail gail@hawksaloft.org
Site Name Montano Southwest — Date Report Completed 7/31/09

Did you verify that this site name is consistent with that used in previous years? (Yes) / No (circle one)
If name is different, what name(s) was used in the past? called "Graham Property" prior to 2006
If site was surveyed last year, did you survey the same general area this year? (Yes) / No If no, summarize in comments below.
Did you survey the same general general area during each visit to this site this year? (Yes) / No If no, summarize in comments below.

Management Authority for Survey Area (circle one): (Federal) Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) U.S. Army Corps of Engineers

Length of area surveyed: 800 m (specify units, e.g., miles = mi, kilometers = km, meters = m)

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

- ☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)
- ☐ Mixed native and exotic plants (mostly native)
- ☒ Mixed native and exotic plants (mostly exotic)
- ☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: Cottonwood, Russian olive, coyote willow, salt cedar

Average height of canopy (Do not put a range): 5m (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) / No (circle one)
Distance from the site to surface water or saturated soil: 0-100 m (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM
5/22/09	3889208	346298			

Willow Flycatcher Survey and Detection Form (revised April, 2004)

Site Name Rio Grande Nature Center State NM County Bernalillo
USGS Quad Name Los Griegos Elevation 1500 feet / meters (circle one)

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ☒ *Yes* ☐ *No*

Site Coordinates: Start: N 3888448 E 346460 UTM Datum NAD27 (NAD27 preferred)
Stop: N 3889153 E 346417 UTM Zone 13

*** Fill in additional site information on back of this page ***

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign, If Yes, Describe Y or N	Comments about this survey (e.g., bird behavior, evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
1 Gail Garber	Date 5/29/09 Start 0557 Stop 0715 Total hrs 1:18	0	0	0	N	Y	N	
2 Gail Garber	Date 6/15/09 Start 0615 Stop 0725 Total hrs 1:10	0	0	0	N	N	N	
3 Gail Garber	Date 7/10/09 Start 0600 Stop 0658 Total hrs 0:58	0	0	0	N	Y	N	
4	Date Start Stop Total hrs							
5	Date Start Stop Total hrs							

Overall Site Summary (Total resident WIFLs only)	Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No
Total survey hrs 3:26	0	0	0	0	If yes, report color combination(s) in the comments section on back of form

Reporting Individual Gail Garber Date Report Completed 7/31/09
US Fish and Wildlife Service Permit # TE835139-0 AZ Game and Fish Department (or other state) Permit # _____

Submit original form by August 1st. Retain a copy for your records.

Fill in the following information completely. Submit original form by August 1st. Retain a copy for your records.

Reporting Individual Gail Garber Phone # (505) 828-9455
Affiliation Hawks Aloft, Inc. E-mail gail@hawksaloft.org
Site Name Rio Grande Nature Center Date Report Completed 7/31/09

Did you verify that this site name is consistent with that used in previous years? (Yes) / No (circle one)
If name is different, what name(s) was used in the past? _____
If site was surveyed last year, did you survey the same general area this year? (Yes) / No If no, summarize in comments below.
Did you survey the same general area during each visit to this site this year? (Yes) / No If no, summarize in comments below.

Management Authority for Survey Area (circle one): (Federal) Municipal/County State Tribal Private
Name of Management Entity or Owner (e.g., Tonto National Forest) U.S. Army Corps of Engineers

Length of area surveyed: 1.2 Km (specify units, e.g., miles = mi, kilometers = km, meters = m)

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

- ☐ Native broadleaf plants (entirely or almost entirely, includes high-elevation willow)
- ☐ Mixed native and exotic plants (mostly native)
- ☒ Mixed native and exotic plants (mostly exotic)
- ☐ Exotic/introduced plants (entirely or almost entirely)

Identify the 2-3 predominant tree/shrub species: cottonwood, Russian olive, salt cedar

Average height of canopy (Do not put a range): 13 meters (specify units)

Was surface water or saturated soil present at or adjacent to site? (Yes) / No (circle one)
Distance from the site to surface water or saturated soil: 1-50 meters (specify units)

Did hydrological conditions change significantly among visits (did the site flood or dry out)? Yes / (No) (circle one)
If yes, describe in comments section below.

Remember to attach a copy of a USGS quad/topographical map (REQUIRED) of the survey area, outlining the survey site and location of WIFL detections. Also include a sketch or aerial photograph showing details of site location, patch shape, survey route in relation to patch, and location of any willow flycatchers or willow flycatcher nests detected. Such sketches or photographs are welcomed, but DO NOT substitute for the required USGS quad map. Please include photos of the interior of the patch, exterior of the patch, and overall site and describe any unique habitat features.

Comments (attach additional sheets if necessary)

WIFL Detection Locations:

Date Detected	N UTM	E UTM	Date Detected	N UTM	E UTM