

2010 Willow Flycatcher Surveys at Three Albuquerque Sites: Brown Burn,
Montano Southwest and Rio Bravo Northeast



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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; in 2010, surveys were conducted at three bosque sites: Brown Burn, Montano Southwest and Rio Bravo Northeast. A single Willow Flycatcher was detected at the Brown Burn during the second survey period in June 2010, but no detections were made during the third survey period. Two Willow Flycatchers were detected at different locations at Montano Southwest during the first survey period in May 2010, and a single Willow Flycatcher was detected during the second survey period in June 2010. But, no detections were made during the third survey period. Habitat at the Brown Burn and Montano Southwest, 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 detections provide evidence that the Brown Burn and Montano Southwest 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. Although no confirmed Willow Flycatcher detections were made at Rio Bravo Northeast in 2010, we did observe a territorial Willow Flycatcher at that location on two different occasions in June 2009 during general avian transect surveys. The habitat patch at Rio Bravo Northeast is

relatively small, but 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 protecting and maintaining the vegetation at this site over the long term.

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 (Knopf et al. 1988, Gates and Giffen 1991, Powell and Steidl 2000). 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 (U.S. Fish and Wildlife Service 1995) which has a relatively large breeding population in New Mexico (Moore and Ahlers 2005, Hatten and Sogge 2007). 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 often can 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 three bosque sites: the Brown Burn, Montano Southwest and Rio Bravo Northeast. At Montano Southwest (formerly known as the Graham Property), we have conducted annual Willow Flycatcher surveys since 2004. Willow Flycatcher surveys were initiated at the Brown Burn and Rio Bravo Northeast in 2010. Although we have observed 13 Willow Flycatchers during surveys in the migration period or during non-survey visits (see Table 1), 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 2010 Willow Flycatcher surveys at the Brown Burn, Montano Southwest, and Rio Bravo Northeast.

STUDY AREA

Brown Burn

The Brown Burn is located approximately 5 km south of Rio Bravo Boulevard on the west side of the Rio Grande in Albuquerque, New Mexico (Fig. 1). The site was the location of a bosque fire in 2007, but subsequent re-vegetation efforts by the U.S. Army Corps of Engineers have created patches of potential Willow Flycatcher habitat. We surveyed all appropriate habitat within a 1-ha area (elevation 1500 m). Potential flycatcher habitat occurred along a willow swale, artificial oxbow, and a willow trench. The vegetation was dominated by coyote willow, with scattered Russian olive and young cottonwoods. Although relatively long (~400 m), these habitat patches were quite narrow, varying between 10-30 m in width. Only the artificial oxbow supported standing water into July. The Middle Rio Grande Conservancy District drain and the Rio Grande bordered the site on the west and east, respectively.

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. 2). We surveyed all appropriate habitat within a 42-ha woodland patch (elevation 1510 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 2010,

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 Bravo Northeast

Rio Bravo Northeast is located immediately north of the Rio Bravo bridge on the east side of the Rio Grande, in Albuquerque, New Mexico (Fig. 3). We surveyed a 1.8-ha patch (elevation 1505 m) consisting 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 site is bordered by the Rio Grande on the west and upland cottonwood bosque to the east.

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). Single observers conducted all surveys at the Brown Burn, Montano Southwest, and Rio Bravo Northeast in 2010. 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 all three sites we conducted three surveys, one in each of the three survey periods. Our survey dates at the Brown Burn were 19 May, 4 June, and 30 June. At Montano Southwest, the survey dates were 17 May, 3 June, and 8 July. At Rio Bravo Northeast, the survey dates were 18 May, 5 June,

and 29 June. 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 also might 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 one Willow Flycatcher on 4 June during the second survey period of 2010 at the Brown Burn (Table 2). At Montano Southwest, two Willow Flycatchers were

identified during the first survey period, on 17 May, and one was identified during the second survey period, on 3 June. No Willow Flycatchers were identified at Rio Bravo Northeast during 2010, although a non-vocalizing *Empidonax* flycatcher was documented during the first survey period, on 18 May. In addition to the standardized Willow Flycatcher surveys at both Montano Southwest and Rio Bravo Northeast, we also conducted general avian transect surveys three times per month during June and July. Willow Flycatchers were not observed during these songbird transects. Overall, we observed 50 bird species during flycatcher surveys, including 30 at the Brown Burn, 33 at Montano Southwest and 16 at Rio Bravo Northeast (Appendix 1).

Table 1. Number of Willow Flycatchers detected by Hawks Aloft, Inc. at the Brown Burn, Montano Southwest and Rio Bravo Northeast in Albuquerque, New Mexico from 2004-2010. 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 Survey 3 was conducted 22 June – 10 July.

Site	Survey	2004	2005	2006	2007	2008	2009	2010
Brown Burn	1	-	-	-	-	-	-	0
Brown Burn	2	-	-	-	-	-	-	1
Brown Burn	3	-	-	-	-	-	-	0
Montano SW	1	0	0(1)	1(1)	0	2	1	2
Montano SW	2	0	0(1)	0(1)	0	0	0	1
Montano SW	3	0	0	0	0	0	0	0
Rio Bravo NE	1	-	-	-	-	-	-	0
Rio Bravo NE	2	-	-	-	-	-	(1)	0
Rio Bravo NE	3	-	-	-	-	-	-	0



Location of a Willow Flycatcher at the Brown Burn, 4 June, 2010

Table 2. Summary of Willow Flycatcher surveys conducted at the Brown Burn, Montano Southwest, and Rio Bravo Northeast in Albuquerque, New Mexico in 2010.

Site	Survey	Date	Duration (hr)	Number of Flycatchers
Brown Burn	1	19 May	0:45	0
Brown Burn	2	4 June	0:51	1
Brown Burn	3	30 June	0:40	0
Montano SW	1	17 May	2:00	2
Montano SW	2	3 June	1:00	1
Montano SW	3	8 July	0:53	0
Rio Bravo NE	1	18 May	0:30	0
Rio Bravo NE	2	5 June	0:50	0
Rio Bravo NE	3	29 June	0:30	0

DISCUSSION

Our surveys found no evidence that Southwestern Willow Flycatchers bred at the Brown Burn, Montano Southwest or Rio Bravo Northeast in 2010. 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 (Table 2). Willow Flycatcher surveys were initiated at the Brown Burn and Rio Bravo Northeast in 2010, and no flycatchers were observed during the third-period surveys.



Location of a Willow Flycatcher at Montano Southwest, 17 May, 2010

Habitat at both the Brown Burn and Montano Southwest is likely suboptimal for breeding Southwestern Willow Flycatchers. Although patches of dense understory vegetation are present at the Brown Burn, the width of these patches is extremely narrow (generally 10-30 m wide), limiting the likelihood of nest success. Brown-headed Cowbirds (*Molothrus ater*) were detected numerous times at this site, and the vegetation patches may be too small to protect breeding Southwestern Willow Flycatchers from parasitism (Brodhead et al 2007). In addition, the majority of the site lacks surface water and the substrate is too far above the river bed to provide the moist soil conditions required by breeding Southwestern Willow Flycatchers. Only the artificial oxbow maintained surface water through the end of June, and the vegetation patch width (<10 m) along the artificial oxbow was likely too narrow for nesting.

Montano Southwest contains extensive understory vegetation, especially Russian olive, but lacks the high density typical of Southwestern Willow Flycatcher breeding sites (Sogge et al. 1997). Although adjacent to the Rio Grande, Montano Southwest was 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 this site. Understory along the west side of the survey area at Montano Southwest has been increasingly thinned in recent years.

Despite the limited potential for hosting breeding Southwestern Willow Flycatchers, the Brown Burn and Montano Southwest 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 the Brown Burn and Montano Southwest as the best available options along the Middle Rio Grande for refueling and for resting cover. Our observations of one Willow Flycatcher at the Brown Burn and three Willow Flycatchers Montano Southwest this year 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 both the Brown Burn and Montano Southwest.

In contrast to the Brown Burn and Montano Southwest, the habitat present at Rio Bravo Northeast is potentially suitable for breeding Southwestern Willow Flycatchers. Although the habitat patch at Rio Bravo Northeast is relatively small (approximately 1.8 ha), it is densely vegetated, supports standing water (or at least a moist substrate) into July during years of normal run-off, and appears to support a dense insect prey base. The dense coyote willow understory generally exceeding 2 m in height, interspersed with intermediate-sized Russian olive and cottonwoods on a consistently damp substrate provides prototypical Southwestern Willow Flycatcher habitat (Sogge et al. 1997, Sogge et al. 2003). 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 continuation of Willow Flycatcher surveys at Rio Bravo Northeast, 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. Trevor Fetz conducted surveys at the Brown Burn and Rio Bravo Northeast. Gail Garber conducted surveys at Montano Southwest. This report was written by Trevor Fetz and reviewed by Gail Garber. Photographs on the cover page, page 8 and page 12 were taken by Trevor Fetz. The photograph on page 9 was taken by Gail Garber. Maps of the survey areas were created by Erik Andersen.

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Figure 1. Location of a Willow Flycatcher in the Brown Burn survey area, Albuquerque, New Mexico in 2010.



Figure 2. Location of Willow Flycatchers in the Montano Southwest survey area, Albuquerque, New Mexico in 2010.

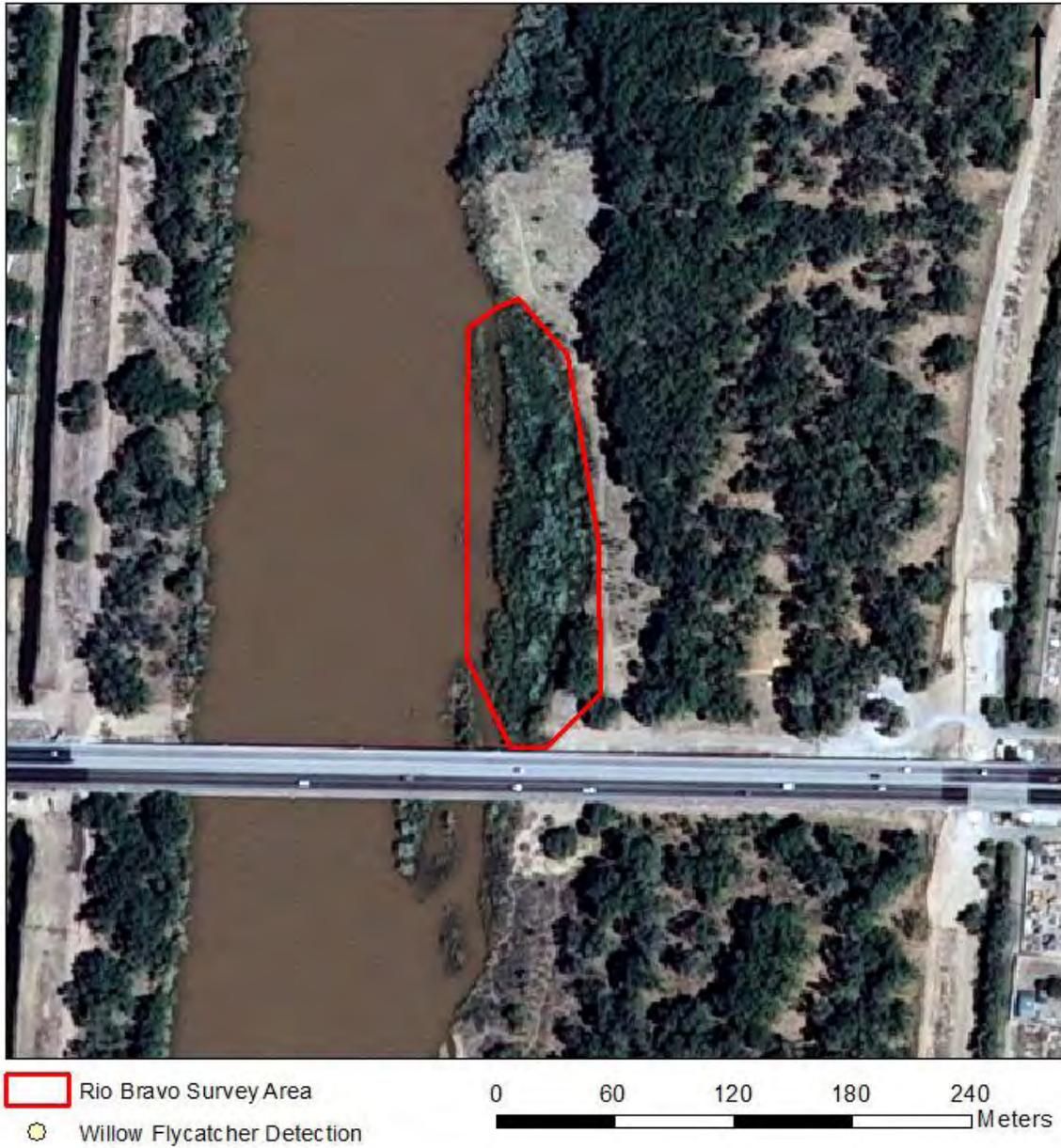


Figure 3. Location of the Rio Bravo Northeast survey area, Albuquerque, New Mexico in 2010.

Appendix 1. Alphabetical list of 50 bird species observed during Willow Flycatcher surveys at three Albuquerque, New Mexico sites in 2010. We indicate species observed (X) during three surveys each at the Brown Burn, Montano Southwest and Rio Bravo Northeast.

Species	Brown Burn			Montano Southwest			Rio Bravo Northeast		
	1	2	3	1	2	3	1	2	3
American Crow					X				
American Kestrel		X							
Ash-throated Flycatcher			X	X	X	X	X		
Barn Swallow		X				X	X	X	
Bewick's Wren				X	X	X			
Black-chinned Hummingbird	X	X	X	X	X	X	X	X	X
Black-headed Grosbeak	X	X	X	X	X	X	X	X	X
Black Phoebe				X		X			
Blue-gray Gnatcatcher				X					
Blue Grosbeak	X	X	X	X	X	X	X	X	X
Brown-headed Cowbird	X	X	X	X			X	X	X
Bullock's Oriole			X						
Bushtit				X					X
Canada Goose				X	X				
Cattle Egret			X						
Cliff Swallow								X	
Common Yellowthroat	X	X		X	X	X			
Cooper's Hawk						X			
Downy Woodpecker					X	X			
<i>Empidonax</i> sp.	X	X					X		
Gray Catbird				X					
Great-tailed Grackle			X						
Green Heron			X						
House Finch				X	X			X	
House Sparrow				X			X	X	
Killdeer		X							
Lesser Goldfinch				X		X	X		
MacGillivray's Warbler	X								
Mallard				X	X				
Mourning Dove	X	X	X	X			X		
Northern Flicker	X				X				

Species	Brown Burn			Montano Southwest			Rio Bravo Northeast		
	1	2	3	1	2	3	1	2	3
Northern Mockingbird	X	X	X						
Red-tailed Hawk	X								
Red-winged Blackbird	X	X	X						
Ring-necked Pheasant	X								
Spotted Sandpiper				X					
Spotted Towhee	X	X	X	X	X	X	X	X	X
Summer Tanager				X	X	X			
Warbling Vireo	X								
Western Kingbird	X	X	X						
Western Tanager				X					
Western Wood-Pewee		X	X		X	X			
White-breasted Nuthatch				X	X	X			
White-crowned Sparrow				X					
White-winged Dove	X	X	X						
Willow Flycatcher		X		X	X				
Wood Duck	X					X		X	
Yellow-breasted Chat	X	X	X	X	X	X	X	X	X
Yellow-rumped Warbler				X					
Yellow Warbler	X	X							

Appendix 2. Data forms from 2010 Willow Flycatcher surveys at the Brown Burn, Montano Southwest and Rio Bravo Northeast in Albuquerque, New Mexico.

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (<http://www.fws.gov/southwest/es/arizona/>) for the most up-to-date version.

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Brown Burn State NM County Bernalillo
 USGS Quad Name Isleta Elevation 1503 (meters)
 Creek, River, Wetland, or Lake Name Rio Grande
 Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes No

Survey Coordinates: Start: E 345816 N 3872005 UTM Datum NAD27 (See instructions)
 Stop: E 345867 N 3872192 UTM Zone 13S

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

**** 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 If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, <i>Diorhabda</i> spp.]). If <i>Diorhabda</i> found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) T. Fetz	Date 5/19/10 Start 0616 Stop 0701 Total hrs 0:45	0	0	0	N	8 BHCO detected.				
Survey # 2 Observer(s) T. Fetz	Date 6/4/10 Start 0620 Stop 0711 Total hrs 0:51	1	0	0	N	3 BHCO detected. WIFL in dense Salix exigua next to standing water. (Artificial ex-bow).	1	U	345765	3872140
Survey # 3 Observer(s) T. Fetz	Date 6/30/10 Start 0605 Stop 0645 Total hrs 0:40	0	0	0	N	2 BHCO detected.				
Survey # 4 Observer(s)	Date Start Stop Total hrs									
Survey # 5 Observer(s)	Date Start Stop Total hrs									
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestings, and fledglings. Be careful not to double count individuals. Total Survey Hrs <u>2:16</u>		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
		0	0	0	0					

Reporting Individual Trevor Fetz Date Report Completed 8/14/10
 US Fish and Wildlife Service Permit # TE835139-0 State Wildlife Agency Permit # _____
 Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

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

Reporting Individual Trevor Fetz Phone # 505-828-9455
 Affiliation Hawks Aloft, Inc. E-mail tfetz@hawksaloft.org
 Site Name Brown Burn Date Report Completed 8/14/10
 Was this site surveyed in a previous year? Yes ___ No Unknown ___
 Did you verify that this site name is consistent with that used in previous years? Yes ___ No ___ Not Applicable
 If site 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 below.
 Did you survey the same general area during each visit to this site this year? Yes No ___ If no, summarize below.

Management Authority for Survey Area: 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: 0.4 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

- Native broadleaf plants (entirely or almost entirely, > 90% native)
- Mixed native and exotic plants (mostly native, 50 - 90% native)
- Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
- Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.

Salix exigua, Elaeagnus angustifolia, Populus fremonti

Average height of canopy (Do not include a range): 3 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Potential WIFL habitat along 150m X 30m Salix exigua swale, 120m X 10m artificial oxbow (location of 6/4/10 WIFL; standing water through 3rd survey period), 130m X 15m Salix exigua trench.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (<http://www.fws.gov/southwest/es/arizona/>) for the most up-to-date version.

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Montano Southwest State NM County Bernalillo
 USGS Quad Name Los Griegos Elevation 1512 (meters)
 Creek, River, Wetland, or Lake Name Rio Grande
 Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes No

Survey Coordinates: Start: E 346574 N 3890219 UTM Datum NAD21 (See instructions)
 Stop: E 346206 N 3889068 UTM Zone 13S

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

**** 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	Estimate d Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior, evidence of pairs or breeding; potential threats [livestock, cowbirds, <i>Diorhabda</i> spp.]). If <i>Diorhabda</i> found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) G. Garber	Date 5/17/10 Start 0620 Stop 0820 Total hrs 2	2	0	0	N	2 BHCO detected.	1	U	346412	3889324
							1	U	346340	3889707
Survey # 2 Observer(s) G. Garber	Date 6/3/10 Start 0600 Stop 0700 Total hrs 1	1	0	0	N	WIFL calling from vegetated island ~ 50m E of listed UTM's. 3 BHCO detected.	1	U	346594	3889569
Survey # 3 Observer(s) G. Garber	Date 7/9/10 Start 0553 Stop 0646 Total hrs 0:53	0	0	0	N	1 BHCO detected.				
Survey # 4 Observer(s)	Date Start Stop Total hrs									
Survey # 5 Observer(s)	Date Start Stop Total hrs									
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs <u>3:53</u>		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, report color combination(s) in the comments section on back of form and report to USFWS.				
		0	0	0	0					

Reporting Individual Trevor Fetz Date Report Completed 8/14/10
 US Fish and Wildlife Service Permit # TE835139-0 State Wildlife Agency Permit # _____
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

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

Reporting Individual Trevor Fetz Phone # 505-828-9455
 Affiliation Hawks Aloft, Inc. E-mail tfetz@hawksaloft.org
 Site Name Montano Southwest Date Report Completed 8/14/10
 Was this site surveyed in a previous year? Yes No Unknown
 Did you verify that this site name is consistent with that used in previous years? Yes No Not Applicable
 If site name is different, what name(s) was used in the past? Graham Property used prior to 2006.
 If site was surveyed last year, did you survey the same general area this year? Yes No If no, summarize below.
 Did you survey the same general area during each visit to this site this year? Yes No If no, summarize below.

Management Authority for Survey Area: 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: 0.8 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

- Native broadleaf plants (entirely or almost entirely, > 90% native)
- Mixed native and exotic plants (mostly native, 50 - 90% native)
- Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
- Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.

Elaeagnus angustifolia, Populus fremonti, Salix exigua

Average height of canopy (Do not include a range): 5 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.)

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTME	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (<http://www.fws.gov/southwest/es/arizona/>) for the most up-to-date version.

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Rio Bravo Northeast State NM County Bernalillo
 USGS Quad Name Albuquerque West Elevation 1505 (meters)
 Creek, River, Wetland, or Lake Name Rio Grande
 Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? Yes No

Survey Coordinates: Start: E 347562 N 3877172 UTM Datum NAD27 (See instructions)
 Stop: E 347533 N 3877397 UTM Zone 13S

If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.

**** 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	Estimate d Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N If Yes, number of nests	Comments (e.g., bird behavior, evidence of pairs or breeding, potential threats [livestock, cowbirds, <i>Diorhabda</i> spp.]). If <i>Diorhabda</i> found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
							# Birds	Sex	UTM E	UTM N
Survey # 1 Observer(s) T. Fetz	Date 5/18/10 Start 0614 Stop 0644 Total hrs 0:30	0	0	0	N	3 BHCO detected. 1 unknown EMPIID-- "whit" call only.				
Survey # 2 Observer(s) T. Fetz	Date 6/5/10 Start 0618 Stop 0708 Total hrs 0:50	0	0	0	N	2 BHCO detected. Still standing water throughout site.				
Survey # 3 Observer(s) T. Fetz	Date 6/29/10 Start 0615 Stop 0645 Total hrs 0:30	0	0	0	N	2 BHCO detected. Substrate damp throughout site.				
Survey # 4 Observer(s)	Date Start Stop Total hrs									
Survey # 5 Observer(s)	Date Start Stop Total hrs									
Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. Be careful not to double count individuals. Total Survey Hrs <u>1:50</u>		Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, report color combination(s) in the comments section on back of form and report to USFWS.				

Reporting Individual Trevor Fetz Date Report Completed 8/14/10
 US Fish and Wildlife Service Permit # TE 935139-0 State Wildlife Agency Permit # _____
Submit form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

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

Reporting Individual Trevor Fetz Phone # 505-828-9455
 Affiliation Hawks Aloft, Inc. E-mail tfetz@hawksaloft.org
 Site Name Rio Bravo Northeast Date Report Completed 8/14/10
 Was this site surveyed in a previous year? Yes ___ No Unknown ___
 Did you verify that this site name is consistent with that used in previous years? Yes ___ No ___ Not Applicable
 If site 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 below.
 Did you survey the same general area during each visit to this site this year? Yes No ___ If no, summarize below.
 Management Authority for Survey Area: 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: 0.3 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

- Native broadleaf plants (entirely or almost entirely, > 90% native)
- Mixed native and exotic plants (mostly native, 50 - 90% native)
- Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)
- Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.

Salix exigua, Elaeagnus angustifolia, Populus fremonti

Average height of canopy (Do not include a range): 5 (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.

Territorial WIFL observed during first two survey periods in 2009 during general songbird surveys, prompting formal WIFL surveys in 2010.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary