

Southwestern Willow Flycatcher Surveys at Isleta Pueblo, New Mexico

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submitted to
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Albuquerque District
4101 Jefferson Plaza NE
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Under contract no. WB1G6901437377

15 December 2000

Introduction

The Southwestern Willow Flycatcher (WIFL, *Empidonax trailii extimus*) is an endangered subspecies that nests in riparian areas of the southwestern United States (60 Federal Register 10694, 20 March 1995). The purpose of this study was to conduct protocol WIFL surveys in potential migratory and/or nesting habitat on portions of Isleta Pueblo to determine presence and breeding status. Previous WIFL surveys on the Isleta Pueblo detected three singing males in 1994 at a site referred to as “south of the Isleta Marshes” (Mund et al. 1994); four singing males in 1995 at the same site, named “South of Isleta Marsh” by Mehlman et al. (1995); and four males in May, 1996 and one pair in July, 1996, also at the same site (B. Howe and J. Richardson, 1996 data sheets). The 2000 study was commissioned by the U.S. Army Corps of Engineers, in conjunction with two proposed flood control projects: Middle Rio Grande levees and the Southwest Valley Study.

Methods

On 17 May 2000, a preliminary site visit was conducted by the New Mexico Natural Heritage Program Principal Investigator (PI), Corps of Engineers biologist, and New Mexico Natural Heritage Program field biologist. We visited potential survey sites and planned the field survey schedule.

The field biologist subsequently added one additional survey site on the east bank of the Rio Grande and rejected three sites surveyed by Mehlman et al. (1995) and Mund et al. (1994), because the habitat there was unsuitable. The three excluded sites, located along the Isleta Training Dike, were previously named: East Bank-South of Isleta-6, South of Isleta-East Bank-7, and South of Isleta-East Bank-8 (Mehlman et al. 1995). None of the three sites met the habitat stipulations described in Sogge et al. (1977). A sparse overstory of mature cottonwood (*Populus* spp.) was present, but the understory lacked a well-developed shrub component.

The field biologist returned to the acceptable sites prior to the survey to establish transect routes and to estimate the amount of time that would be required for the surveys. The recommended survey schedule is designed to maximize the probability of detecting flycatchers. The actual sequence of visits to each site fell within the recommended dates: survey 1, 15-31 May; survey 2, 1-21 June; survey 3, 22 June-10 July. An addendum has been drafted to the 1997 protocol, which will require two extra visits under certain circumstances. These modifications will be effective in the 2001 survey year.

We conducted the surveys between 26 May and 29 June 2000. We followed the survey methods prescribed in the U.S. Fish and Wildlife Service survey protocol (Sogge et al. 1997). Monitoring of breeding success was not a goal of this study. We observed territories up to the point at which breeding status was established; thereafter, we collected only incidental observational data.

The Willow Flycatcher survey protocol is based on tape playback of the species' vocalizations. The surveyor walked through the habitat, covering the entire survey site, to ensure that the tape could be heard from any point in the habitat. He stopped every 30 m, listened for WIFL vocalizations, and played the tape twice, listening for a response for five minutes between playing. Observation of birds is used to determine status as migrant, territorial male, unpaired male, pair (breeding/non-breeding), or fledgling. Any bird detected in May that was not present in later surveys was considered to be a migrant. The visits to confirm visually the presence of an active nest were conducted by the PI, who is permitted by the U.S. Fish and Wildlife Service to monitor nests. She was accompanied by the biologist. In the event that a nest was located, we made one observation with a nest pole to determine clutch size and evidence of brood parasitism.

We informed Pueblo of Isleta and Corps of Engineers officials of all survey results as the study progressed. We logged data on standard data sheets from the survey protocol manual (Sogge et al. 1997). At the conclusion of the study, we provided completed data sheets and accompanying topographical maps to the USFWS New Mexico Ecological Services Office. Although the survey protocol recommends photographing survey sites, the Pueblo requested that no photos be taken. All maps, showing locations of migrant birds, territorial males, and nests were created in ESRI ArcView, version 3.2.

We based site names on a nearby recognizable feature on the USGS 7.5-minute quadrangles, except in the case of the previously-surveyed area, which had been named "south of the Isleta Marshes" (or a close approximation, see Introduction) since 1994 (Mund et al. 1994, Mehlman et al. 1995). The area we surveyed in 2000 was much larger than the previously-surveyed South of Isleta Marsh site, and we therefore call it South of Isleta Marsh (expanded), to distinguish the two survey areas.

Results

Survey Sites

We visited each of five sites three times during the survey, once each during each of the three prescribed survey periods (Table 1, Map 1). The Near Atrisco Riverside Drain site (Map 2) was a very small site adjacent to a large marsh. The dominant plant species were cottonwood (*Populus fremontii*) and coyote willow (*Salix exigua*), but the site was less than 10m wide at the widest point. The length of the potential habitat was 30m, and the average canopy height was only about four meters. The soil was dry, but the site bordered surface water in the river on the east and marsh on the west. Brown-headed Cowbirds (*Molothrus ater*) were observed at the site. We nevertheless surveyed the site, because of the limited potential for finding migrants, and we found no WIFLs.

The South of Highway 147 Bridge site (Map 3) also was dry, but it was flanked by a levee on one side and the Rio Grande on the other. Surface water was present in the river channel within 10 m, but the site was too high to flood regularly. The dominant plant species were cottonwood, coyote willow, and Russian olive (*Elaeagnus angustifolia*), with an average canopy height of 15m. The shrub component was patchy and included

species other than coyote willow. The site was about 0.57 km in length and Brown-headed Cowbirds were abundant. This site appeared to hold more suitable habitat than the Near Atrisco Riverside Drain site, and two migrants were detected there (Table 1).

The Isleta Training Dike site (Map 4) did not hold surface water, but it was situated adjacent to the river. The site was approximately 0.95 km in length. A single territory was located in a stand of higher cottonwood density with an average canopy height of 15 m. Dominant plants were cottonwood, Russian olive, and saltcedar (*Tamarix* spp.). Habitat quality was variable across the site. A dense stand of mixed shrubs about 10m tall grew on dry soils and was interspersed with emergent cottonwoods 15-20m in height. Cowbirds were abundant. The habitat at this site appeared suitable for breeding, and one male established a territory there, although he remained unmated (Table 1).

The Isleta Return Channel site (Map 5) was dry throughout the northern third, but moist soil and standing surface water were present throughout the southern two-thirds of the site. The site was approximately 1.2 km in length, with an average canopy height of 15m. The dominant plant species were cottonwood, coyote willow, and Russian olive, occurring in large, monotypic stands. The understory varied from pure coyote willow shrub without canopy to variable densities of Russian olive and coyote willow beneath a closed cottonwood canopy. Cowbirds were abundant. We felt that this site contained the best habitat of the five sites; 12 WIFL established territories there (Table 1).

The South of Isleta Marsh (expanded) site (Map 6) includes the traditional site where WIFLs were known to nest in previous years (Mund et al. 1994, Mehlman et al. 1995; see Introduction), but our surveys included a much larger area to the north of the traditional site. The expanded site contained surface water, including a permanent marsh with open water about one meter deep. The site was about 1.05 km long and had a cottonwood canopy averaging 20m in height. The species composition of the understory was approximately 40% coyote willow and 50% saltcedar mixed with Russian olive. These mixed shrubs were denser than at the other sites we surveyed. Cowbirds were abundant. The northern edge of the traditional site (South of Isleta Marsh) was occupied by one nesting pair (Table 1). The historic breeding site had been inundated in past years, but it was completely dry in 2000, and no birds were detected there.

Table 1. Summary of survey dates and results.

Site	Dates Visited	Adults	Pairs	Territories	Nests
Near Atrisco Riverside Drain	5/27, 6/16, 6/27	0	0	0	0
South of Highway 147 Bridge	5/27, 6/16, 6/28	2	0	0	0
Isleta Training Dike	5/31, 6/16, 6/29	1	0	1	0
Isleta Return Channel	5/29, 6/15, 6/17, 6/28, 6/29	19	7	12	8
South of Isleta Marsh (expanded)	5/28, 6/14, 6/27	2	1	1	1

Nests

We detected nine nests on eight territories (Table 2; Maps 5, 6). No cowbird egg was detected in any of the five nests in which we found eggs, even though cowbirds were abundant at all five survey sites. The nest in Territory 2 had failed by 28 June, and a new nest was under construction nearby. We assumed this nest to be a re-nesting attempt by the Territory 2 pair and named it nest 2b. The nest in Territory 5 was empty by 29 June. We assumed it failed, because unhatched eggs were present on 17 June, the nest was empty on 29 June, and no fledglings were observed on the territory. The nest in Territory 6 was never observed to hold eggs or nestlings, and we assumed that the attempt

Table 2. Summary of nests detected.

Site	Territory No.	Nest No.	Contents	Dates Visited	Status
Isleta Return Channel	1	1	4 eggs	6/17/00	still active 6/29
Isleta Return Channel	2	2a	4 eggs	6/17/00	parents not attending 6/28
			empty	6/29/00	
Isleta Return Channel	2	2b	under construction	6/28/00	likely re-nest from #2 pair
Isleta Return Channel	3	3	3 eggs	6/17/00	parents attending 6/29
Isleta Return Channel	4	4	2 eggs, 2 hatchlings	6/17/00	parents attending 6/29
Isleta Return Channel	5	5	4 eggs	6/17/00	failed
			empty	6/29/00	
Isleta Return Channel	6	6	empty	6/17/00	no re-nest observed
Isleta Return Channel	7	7	unknown	6/28/00	parents attending 6/29
South of Isleta Marsh (expanded)	1	1	possibly small hatchlings	6/27/00	female attending 6/29

failed early in the nesting cycle. No additional nest was observed on that territory. The nest in Territory 7 was discovered late in the survey, and we did not check its contents, but parents were observed attending on 29 June. Nest 7, three other nests at the Isleta Return Channel site, and the one nest at the South of Isleta Marsh (expanded) site were still active on 6/29/00 when last checked. Because chicks would have been near fledging age when last observed, it is likely that these nests were successful. If the single nest under construction were also successful, the maximum possible success rate would be 67%.

Discussion

The eight breeding territories detected in this study have not previously been reported on the Isleta Pueblo. The Isleta Return Channel site is a large, wet area with excellent

vegetation composition and structure. The five nests on Territories 1-4 were located within a 50m radius, which suggests that territories could be more closely packed than they were at the other sites we surveyed. One limiting factor appeared to be females; there were five unpaired males at the Isleta Return Channel and one at the Isleta Training Dike.

It is especially important that cowbird parasitism at the site appeared to be rare or nonexistent. One possible explanation for the absence of cowbird parasitism is that the habitat was so thick and nests so widely spaced that nests were difficult for the parasite to locate. However, the nests on territories 1-4 were quite closely spaced, in addition to being placed near the edge of the habitat patch, and they still suffered no parasitism. We think it more likely that alternative hosts nesting in the area were abundant, such that cowbirds may have been saturated.

The Isleta Pueblo WIFL population shows potential for continued success and growth, and habitat should be managed accordingly. We recommend against any flood control manipulations that would reduce surface water or change vegetation composition or structure at any of the sites except the Near Atrisco Riverside Drain. Also, no construction should occur near occupied territories during the breeding season.

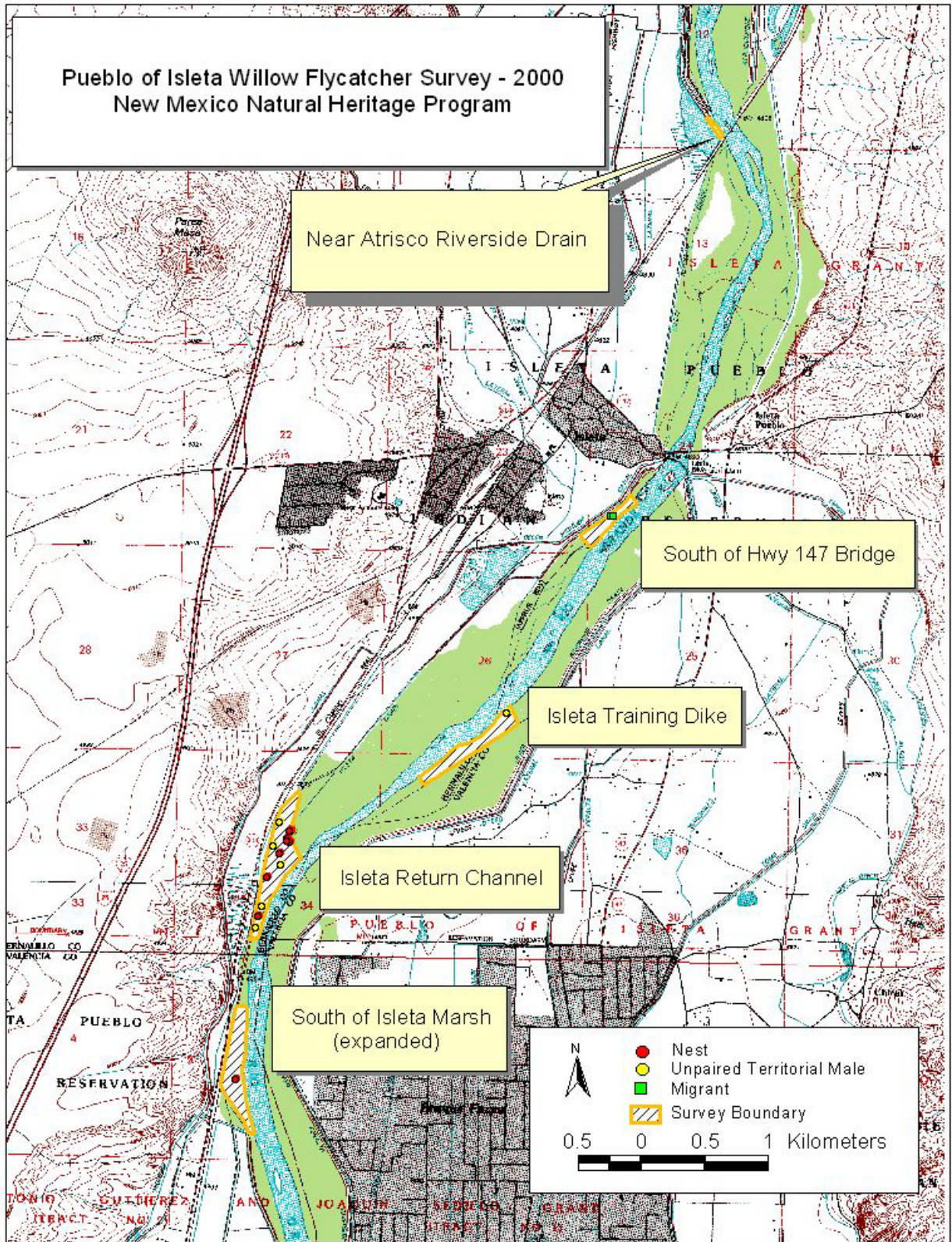
During this study we attempted to minimize the number of visits onto territories and especially to nests, with the goal of reducing investigator-cued depredation and parasitism. Thus, although our data on nesting success are incomplete, it appears that nesting success may have been high. We believe that the best management strategy for this site is to minimize monitoring impacts and to adopt a non-invasive survey protocol and schedule.

Acknowledgments

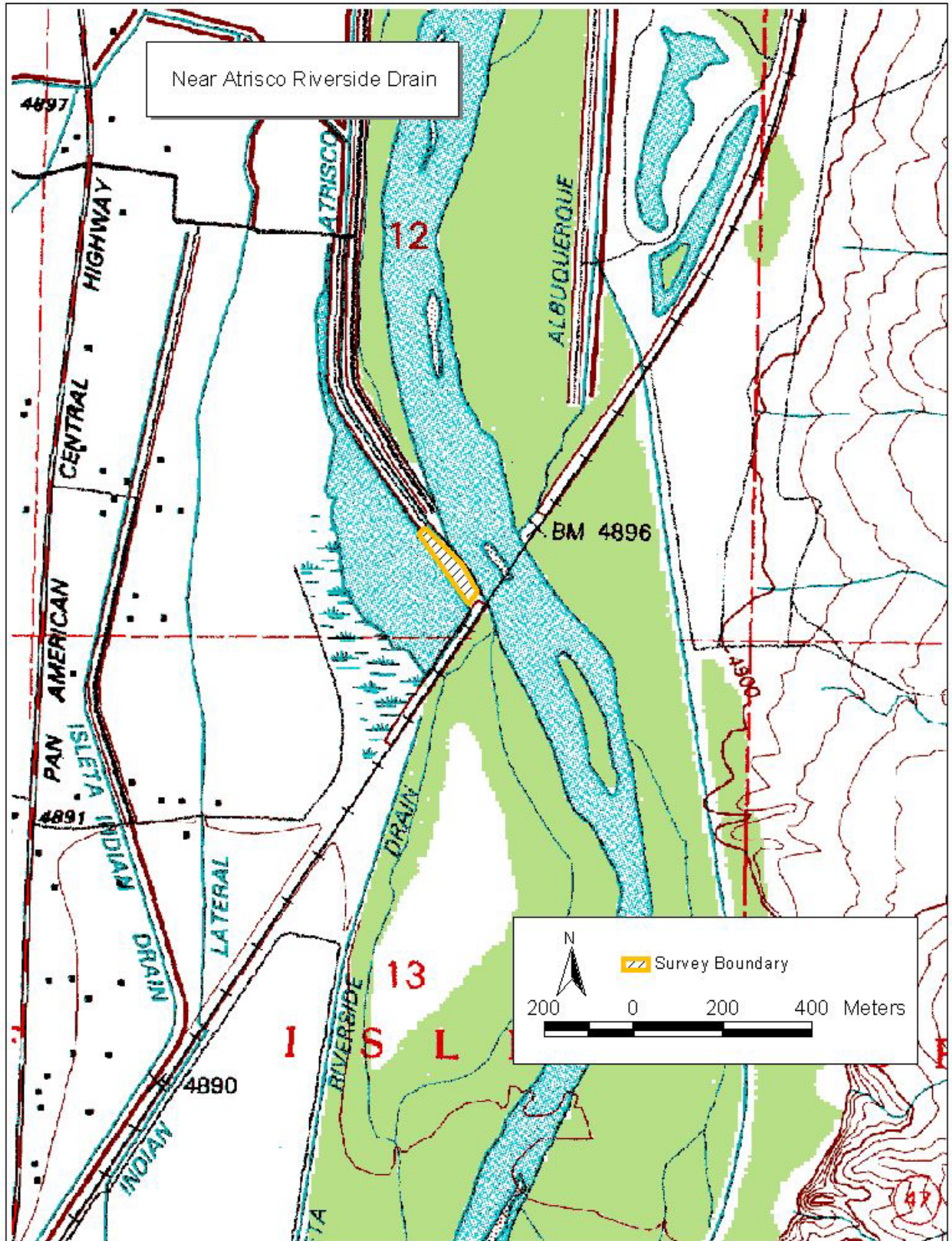
We thank the Tribal Council of Pueblo of Isleta for permission to conduct surveys and Mr. John Sorrell, Tribal Hydrologist, for facilitating access and coordination.

Literature Cited

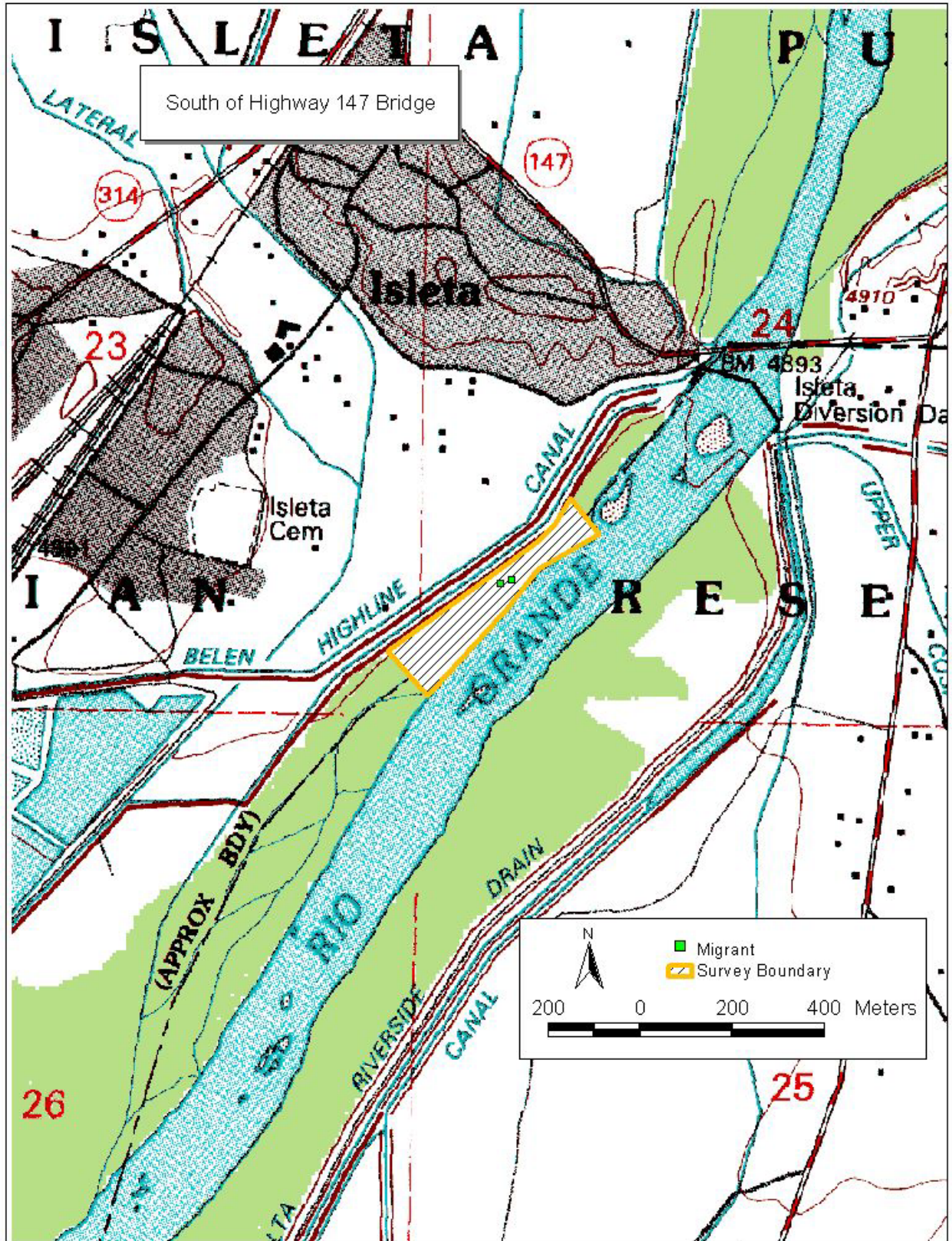
- Mehlman, D., K Gordon, D. Gray, R. Kimball, and M.J. Mund-Meyerson. 1995. 1995 survey for and habitat characteristics of the Southwestern Willow Flycatcher (*Empidonax traillii extimus*) in the Isleta-Belen reach of the Rio Grande, New Mexico. Technical report to U.S. Army Corps of Engineers. 25 pp.
- Mund, M.J., R. Kimball, D. Mehlman, K. Gordon, J. Travis, and D. Gray. 1994. Final report: Survey for the Southwestern Willow Flycatcher, *Empidonax traillii extimus*, in the Middle Rio Grande Flood Protection Project area, Isleta Pueblo to south of Belen. Technical report to U.S. Army Corps of Engineers. 26 pp.
- Sogge, M.K., R.M. Marshall, S.J. Sferra, and T.J. Tibbitts. 1997. A Southwestern Willow Flycatcher Natural History and Summary. Technical report NPS/NAUCPRS/NRTR-97/12. National Park Service. 38 pp.



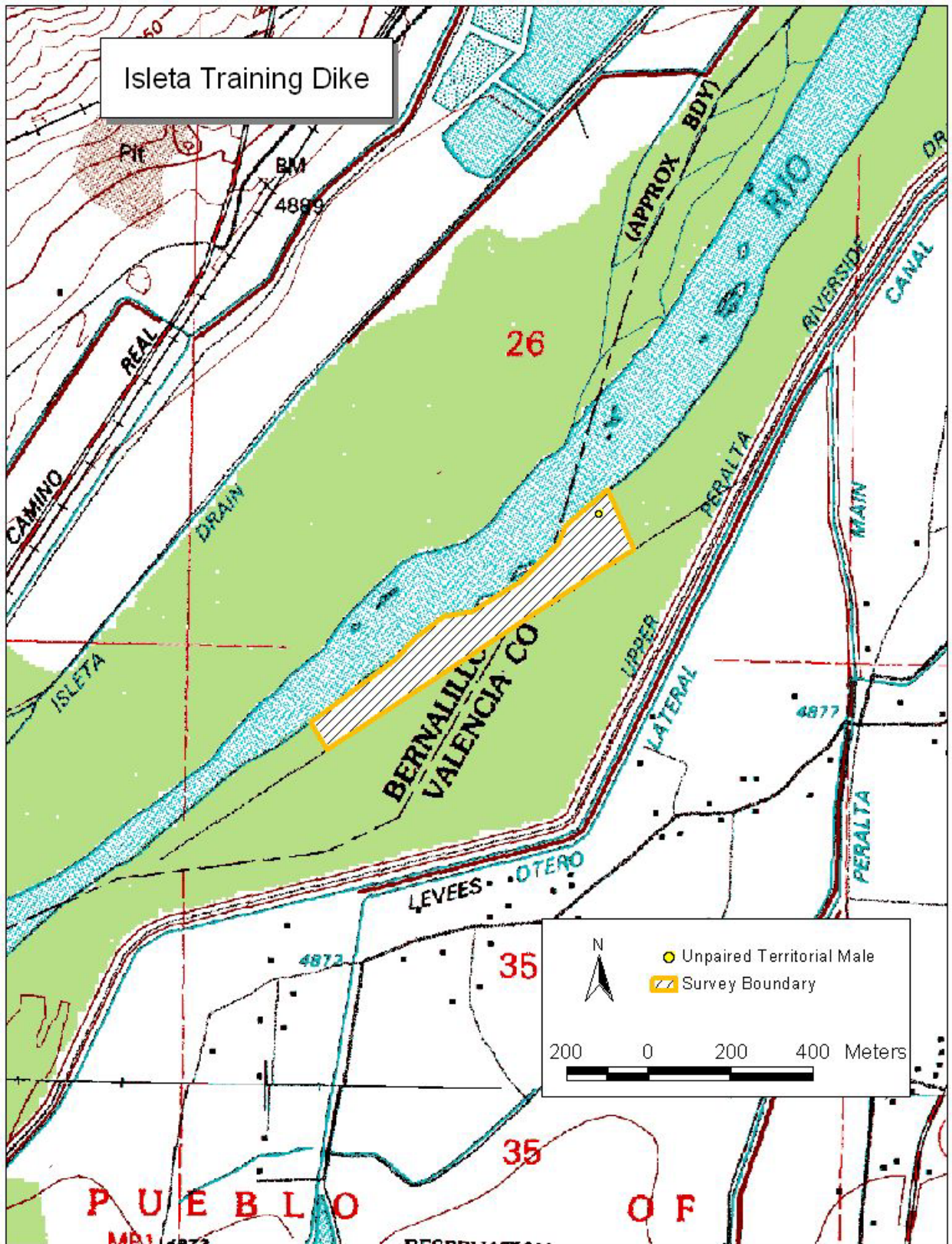
Map 1. Sites of WIFL survey at Isleta Pueblo, 2000.



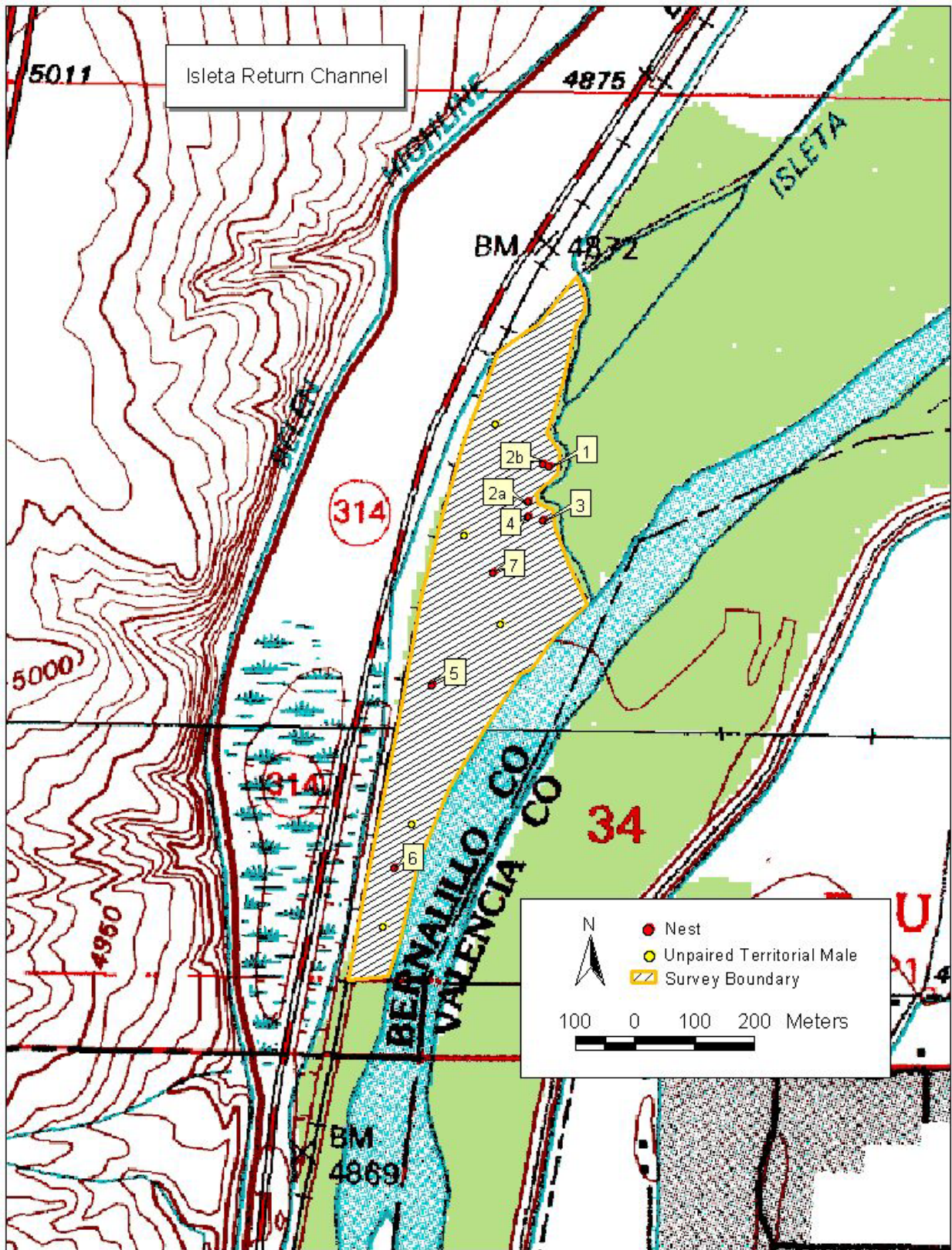
Map. 2. Near Atrisco Riverside Drain survey site.



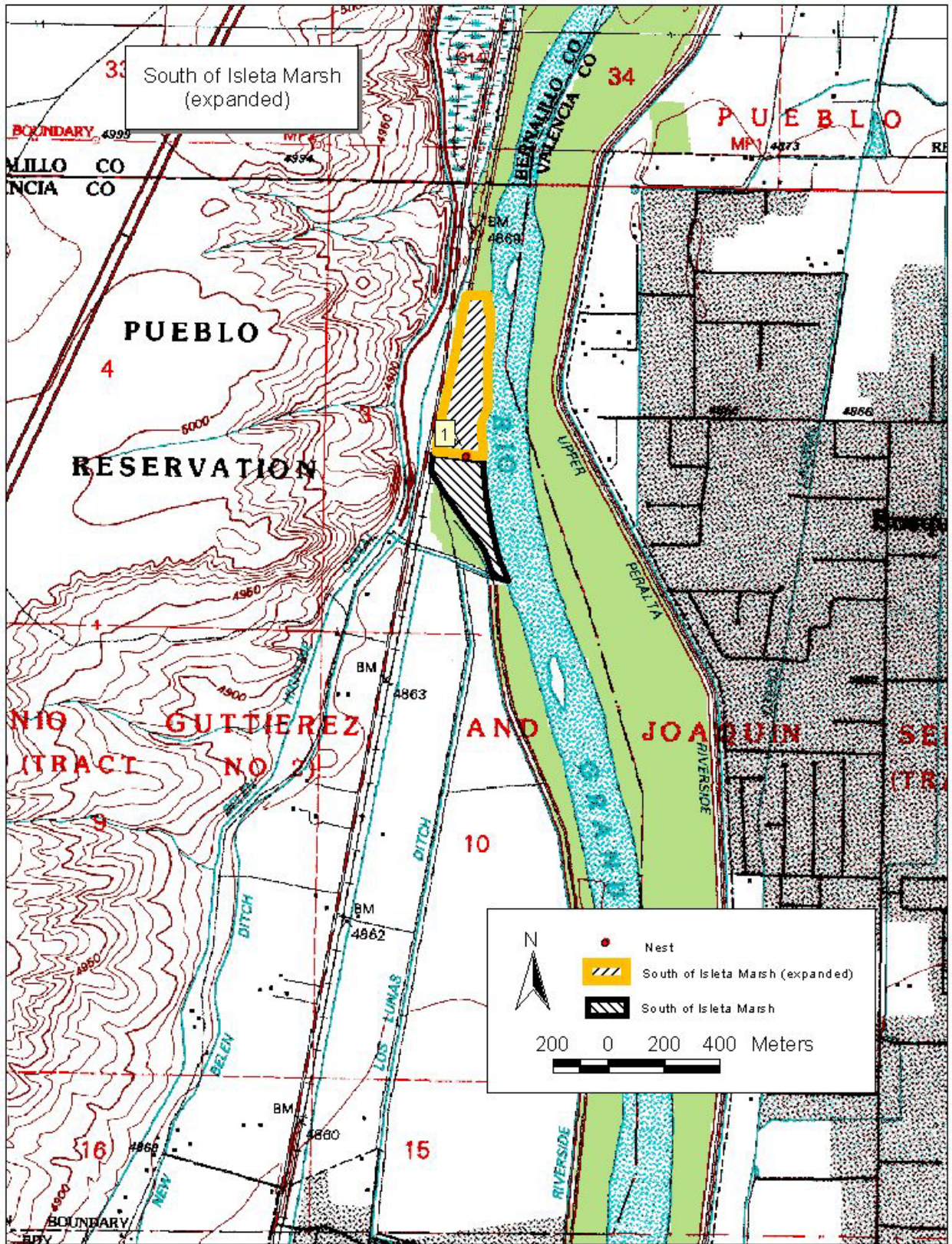
Map 3. South of Highway 147 Bridge survey site.



Map 4. Isleta Training Dike survey site.



Map 5. Isleta Return Channel survey site.



Map 6. South of Isleta Marsh (expanded) survey site.

**Appendix: Data sheets for Southwestern Willow Flycatcher surveys,
Isleta Pueblo, 2000.**

Willow Flycatcher Survey and Detection Form (rev. 4/98)

NEAR
Site Name N. Alarico Riverside Drain
If yes, what site name was used? _____

Was site surveyed in previous year? Yes No

County Bernalillo State NM USGS Quad Name 7561a

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ⁹ Yes ⁹ No

Site Coordinates: Start: N 3,866,395 E 346,252 UTM
Stop: N 3,866,226 E 346,348 UTM Zone 13
Elevation 4,895 ^(feet) meters (circle one)

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

Survey # Observer(s)	Date (m/d/y) Survey time	Number of WIFLs Found	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign Y or N	Comments about this survey (e.g., evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
¹ <u>H. Smith</u>	Date <u>05-27-00</u> start <u>0520</u> stop <u>0534</u> total hrs <u>:14</u>	0	0	0	N	Y	N	
² <u>H. Smith</u>	Date <u>6/16/00</u> Start <u>0530</u> Stop <u>0550</u> total hrs <u>:20</u>	0	0	0	N	Y	N	
³ <u>H. Smith</u>	Date <u>6/27/00</u> Start <u>0527</u> Stop <u>0543</u> total hrs <u>:17</u>	0	0	0	N	N	N	
_____	Date start stop total hrs _____							
_____	Date start stop total hrs _____							
Overall Site Summary (Total only resident WIFLs)		Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes No		
Total survey hrs <u>:51</u>		0	0	0	0	If yes, report color combination(s) in the comments section on back of form		

Name of Reporting Individual Hamilton Smith

Date Report Completed 7/26/00

Fill in the following information completely. Submit original form. Retain copy for your records.

Name of Reporting Individual Hamilton Smith Phone # 277-3822

Affiliation New Mexico Natural Heritage Program Email hsmith@unm.edu

Site Name Atasco Riverside Drive

Did you verify that this site name is consistent with that used in previous years? Yes No (circle one)

Management Authority for Survey Area (circle one): Federal Municipal/County State Tribal Private

Name of Management Entity or Owner (e.g., Tonto National Forest) Pueblo of Isleta

Length of area surveyed: .25 km (specify units, e.g., miles = mi, kilometers = km, meters = m)

Did you survey the same general area during each visit to this site this year? Yes No If no, summarize in comments below.

If site was surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below.

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 / Willow

Average height of canopy: 4m (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: 0m (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 xerox copy of a USGS quad/topographical map (REQUIRED) of the survey area, noting the survey site and location of WIFL detections. You may 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.

Comments (attach additional sheets if necessary): This was a very small site, adjacent to a large marsh.

Willow Flycatcher Survey and Detection Form (rev. 4/98)

Site Name South of Highway 147 Bridge Was site surveyed in previous year? Yes No
 If yes, what site name was used? _____

County Bernalillo/Valencia boundary State NM USGS Quad Name J567a

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ⁹ Yes ⁹ No

Site Coordinates: Start: N 3,863,421 E 345,638 UTM
 Stop: N 3,862,992 E 345,330 UTM Zone 13
 Elevation 4,890 feet/meters (circle one)

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

Survey # Observer(s)	Date (m/d/y) Survey time	Number of WIFLs Found	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign Y or N	Comments about this survey (e.g., evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
¹ <u>H. Smith</u>	Date <u>05/27/00</u> start <u>0548</u> stop <u>0627</u> total hrs <u>:39</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>N</u>	<u>Y</u>	<u>N</u>	<u>Migrants</u>
² <u>H. Smith</u>	Date <u>6/16/00</u> Start <u>0606</u> Stop <u>0646</u> total hrs <u>:40</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N</u>	<u>Y</u>	<u>N</u>	
³ <u>H. Smith</u>	Date <u>06/28/00</u> Start <u>0539</u> Stop <u>0603</u> total hrs <u>:24</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>N</u>	<u>Y</u>	<u>N</u>	
_____	Date start stop total hrs _____							
_____	Date start stop total hrs _____							
Overall Site Summary (Total only resident WIFLs)		Adults <u>2</u>	Pairs <u>0</u>	Territories <u>0</u>	Nests <u>0</u>	Were any WIFLs color-banded? Yes <input type="radio"/> No <input checked="" type="radio"/> If yes, report color combination(s) in the comments section on back of form		
Total survey hrs <u>1:43</u>								

Name of Reporting Individual Hamilton Smith Date Report Completed 7/26/00

Fill in the following information completely. Submit original form. Retain copy for your records.

Name of Reporting Individual Hamilton Smith Phone.# 277:3822

Affiliation New Mexico Natural Heritage Program Email hsmith@unm.edu

Site Name South of Highway 147 Bridge
Did you verify that this site name is consistent with that used in previous years? Yes No (circle one)

Management Authority for Survey Area (circle one): Federal Municipal/County State (Tribal) Private

Name of Management Entity or Owner (e.g., Tonto National Forest) Pueblo of Isleta

Length of area surveyed: .57 km (specify units, e.g., miles = mi, kilometers = km, meters = m)

Did you survey the same general area during each visit to this site this year? (Yes) No If no, summarize in comments below.

Was site surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below.

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 / Willow / Russian Olive

Average height of canopy: 15 m (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: 10 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 xerox copy of a USGS quad/topographical map (REQUIRED) of the survey area, noting the survey site and location of WIFL detections. You may 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.

Comments (attach additional sheets if necessary): The actual bosque was dry, however, there was a levee on one edge and the Rio Grande on the other.

Willow Flycatcher Survey and Detection Form (rev. 4/98)

Site Name Isleta Training Dike ~~Upper Parilla Riverside Drain~~ Was site surveyed in previous year? Yes No

If yes, what site name was used? _____

County Bernalillo / Valencia State NM USGS Quad Name Isleta

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ⁹ Yes ⁹ No

Site Coordinates: Start: N 3,861,751 E 344,689 UTM
 Stop: N 3,861,122 E 344,013 UTM Zone 13
 Elevation 4,880 ^(feet) meters (circle one)

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

Survey # Observer(s)	Date (m/d/y) Survey time	Number of WIFLs Found	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign Y or N	Comments about this survey (e.g., evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
¹ <u>H. Smith</u>	Date <u>05/31/00</u> start <u>05:33</u> stop <u>06:40</u> total hrs <u>1:07</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>N</u>	<u>Y</u>	<u>N</u>	<u>Single male, singing from exposed perch</u>
² <u>H. Smith</u>	Date <u>6/16/00</u> Start <u>0702</u> Stop <u>0745</u> total hrs <u>:43</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>N</u>	<u>Y</u>	<u>N</u>	<u>No pair interactions, or vocalizations detected.</u>
³ <u>H. Smith</u>	Date <u>06/29/00</u> Start <u>0728</u> Stop <u>0830</u> total hrs <u>1:02</u>	<u>1</u>	<u>0</u>	<u>1</u>	<u>N</u>	<u>Y</u>	<u>N</u>	<u>Single male</u>
_____	Date _____ start _____ stop _____ total hrs _____							
_____	Date _____ start _____ stop _____ total hrs _____							
Overall Site Summary (Total only resident WIFLs)		Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Total survey hrs <u>2:52</u>		<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	If yes, report color combination(s) in the comments section on back of form		

Name of Reporting Individual Hamilton Smith

Date Report Completed 7/26/00

Fill in the following information completely. Submit original form. Retain copy for your records.

Name of Reporting Individual Hamilton Smith Phone # 277-3822

Affiliation New Mexico Natural Heritage Program Email hsmith@unm.edu

Site Name Upper Peralta Riverside Drain
Did you verify that this site name is consistent with that used in previous years? Yes No (circle one)

Management Authority for Survey Area (circle one): Federal Municipal/County State Tribal Private

Name of Management Entity or Owner (e.g., Tonto National Forest) Pueblo of Tsele

Length of area surveyed: 0.95 km (specify units, e.g., miles = mi, kilometers = km, meters = m)

Did you survey the same general area during each visit to this site this year? No If no, summarize in comments below.

If site was surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below.

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 / Tamarisk

Average height of canopy: 15 m (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: 5 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 xerox copy of a USGS quad/topographical map (REQUIRED) of the survey area, noting the survey site and location of WIFL detections. You may 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.

Comments (attach additional sheets if necessary):

Willow Flycatcher Survey and Detection Form (rev. 4/98)

Site Name Isleta Return Channel Was site surveyed in previous year? Yes No

If yes, what site name was used? _____

County Bernalillo / Valencia State NM USGS Quad Name Isleta / Los Lunas

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ⁹ Yes ⁹ No

Site Coordinates: Start: N 3,861,071 E 343,025 UTM
 Stop: N 3,859,946 E 342,689 UTM Zone 13
 Elevation 4,872 (feet) meters (circle one)

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

Survey # Observer(s)	Date (m/d/y) Survey time	Number of WIFLs Found	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign Y or N	Comments about this survey (e.g., evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
¹ <u>H. Smith</u>	Date <u>5/29/00</u> start <u>0530</u> stop <u>0820</u> total hrs <u>2:50</u>	<u>11</u>	<u>4</u>	<u>4</u>	<u>N</u>	<u>Y</u> (abundant)	<u>N</u>	Noticeable pair interactions on 4 territories.
² <u>H. Smith</u>	Date <u>6/16/00</u> Start <u>0537</u> Stop <u>1145</u> total hrs <u>6:08</u>	<u>16</u>	<u>5</u>	<u>11</u>	<u>Y</u>	<u>Y</u>	<u>N</u>	4 nests, one additional active pair. No nest search.
³ <u>H. Smith</u> <u>K. Johnson</u>	Date <u>6/17/00</u> Start <u>07:35</u> Stop <u>1125</u> total hrs <u>3:50</u>	<u>18</u>	<u>6</u>	<u>12</u>	<u>Y</u>	<u>Y</u> (No nest penetration)	<u>N</u>	6 nests - 1. 4 eggs 2. 4 eggs 3. 3 eggs 4. 2 eggs / 2 hatchlings 5. 4 eggs 6. empty
<u>H. Smith</u> <u>K. Johnson</u> → (present day 2)	Date <u>06/28/00</u> start <u>0625</u> stop <u>1035</u> total hrs <u>4:10</u>	<u>10</u>	<u>3</u>	<u>7</u>	<u>Y</u>	<u>Y</u>	<u>N</u>	As of 6/29, 6 nests were still active. One was likely a re-nest.
	Date <u>06/29/00</u> start <u>0700</u> stop <u>0950</u> total hrs <u>3:50</u>	<u>9</u>	<u>4</u>	<u>5</u>	<u>Y</u>	<u>Y</u>	<u>N</u>	
		<u>V.4</u> <u>19</u> <u>total</u>	<u>7</u>	<u>12</u>				
Overall Site Summary (Total only resident WIFLs)		Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Total survey hrs <u>20:48</u>		<u>19</u>	<u>7</u>	<u>12</u>	<u>8</u>	If yes, report color combination(s) in the comments section on back of form		

Name of Reporting Individual Hamilton Smith Date Report Completed 7/26/00

Fill in the following information completely. Submit original form. Retain copy for your records.

Name of Reporting Individual Hamilton Smith Phone # 277-3822

Affiliation New Mexico Natural Heritage Program Email hsmith@unm.edu

Site Name Isleta Return Channel

Did you verify that this site name is consistent with that used in previous years? Yes No (circle one)

Management Authority for Survey Area (circle one): Federal Municipal/County State Tribal Private

Name of Management Entity or Owner (e.g., Tonto National Forest) Pueblo of Isleta

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

Did you survey the same general area during each visit to this site this year? Yes No If no, summarize in comments below.

Was the site surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below.

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 / Coyote Willow / Russian Olive

Average height of canopy: 15 m (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: _____ (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 xerox copy of a USGS quad/topographical map (REQUIRED) of the survey area, noting the survey site and location of WIFL detections. You may 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.

Comments (attach additional sheets if necessary): Visit 1 - 2nd survey 5/27/00 0638-0810, 1:32 hrs.

Visit 2 - Actual physical nests found on 6/16/00

Visit 4 - Took two days to complete.

Willow Flycatcher Survey and Detection Form (rev. 4/98)

Site Name South of Isleta Marsh (EXPANDED) Was site surveyed in previous year? Yes No
 If yes, what site name was used? _____

County Valencia State NM USGS Quad Name Los Lunas

Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? ⁹ Yes ⁹ No

Site Coordinates: Start: N 3,859,385 E 342,573 UTM
 Stop: N 3,858,374 E 342,672 UTM Zone 13
 Elevation 4,860 ^(feet) meters (circle one)

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

Survey # Observer(s)	Date (m/d/y) Survey time	Number of WIFLs Found	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N	Cowbirds Detected? Y or N	Presence of Livestock, Recent sign Y or N	Comments about this survey (e.g., evidence of pairs or breeding, number of nests, nest contents or number of fledges seen; potential threats)
¹ <u>H. Smith</u>	Date <u>05/28/00</u> start <u>0531</u> stop <u>0840</u> total hrs <u>3:09</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>N</u>	<u>Y</u>	<u>N</u>	
² <u>H. Smith</u>	Date <u>06/14/00</u> Start <u>0530</u> Stop <u>1000</u> total hrs <u>4:30</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>N</u>	<u>Y</u>	<u>N</u>	Active pair, spent time nest searching, couldn't find a nest.
³ <u>H. Smith</u>	Date <u>06/27/00</u> Start <u>0554</u> Stop <u>0840</u> total hrs <u>2:46</u>	<u>2</u>	<u>1</u>	<u>1</u>	<u>Y</u>	<u>Y</u>	<u>N</u>	Nest active, didn't approach to inspect clutch. Female attending, probably small hatchlings.
_____	Date start stop total hrs _____							
_____	Date start stop total hrs _____							
Overall Site Summary (Total only resident WIFLs)		Adults	Pairs	Territories	Nests	Were any WIFLs color-banded? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Total survey hrs <u>10:25</u>		<u>2</u>	<u>1</u>	<u>1</u>	<u>1</u>	If yes, report color combination(s) in the comments section on back of form		

Name of Reporting Individual Hamilton Smith Date Report Completed 7/26/00

Fill in the following information completely. Submit original form. Retain copy for your records.

Name of Reporting Individual Hamilton Smith Phone # 277-3822

Affiliation New Mexico Natural Heritage Program Email bhsm.th@unm.edu

Site Name South of Isleta Marsh

Did you verify that this site name is consistent with that used in previous years? Yes No (circle one)

Management Authority for Survey Area (circle one) Federal Municipal/County State Tribal Private

Name of Management Entity or Owner (e.g., Tonto National Forest) Pueblo of Isleta

Length of area surveyed: 1.05 km (specify units, e.g., miles = mi, kilometers = km, meters = m)

Did you survey the same general area during each visit to this site this year? Yes No If no, summarize in comments below

Was the site surveyed last year, did you survey the same general area this year? Yes / No If no, summarize in comments below

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: 40% Willow, 50% Tamarisk and Russian Olive, Cottonwood overstory

Average height of canopy: 20 m (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: 7m (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 xerox copy of a USGS quad/topographical map (REQUIRED) of the survey area, noting the survey site and location of WIFL detections. You may 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.

Comments (attach additional sheets if necessary): 6/27/00 Nest @ 15' in Tamarisk on east edge of standing water. (20 feet from swamp edge)

Cowbirds Abundant.