Southwestern Willow Flycatcher Surveys along the San Juan River, Utah

1994-1995

Photograph courtesy of Audubon Society Encyclopedia of North American Birds

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SUMMARY

We conducted surveys for the southwestern willow flycatcher (*Empidonax traillii extimus*) in riparian habitats along four reaches of upper Montezuma Creek, and at 17 sites along approximately 23 miles of the San Juan River between Montezuma Creek and Comb Ridge. All surveys were conducted on lands administered by the Bureau of Land Management. We did not detect any willow flycatchers along Montezuma Creek, nor did we find suitable flycatcher breeding habitat. However, we did detect willow flycatchers at two different sites on the San Juan River. At site #1 (5 miles [8 km] downstream from the Highway 262 bridge near Montezuma Creek), we found a singing willow flycatcher on 14 May 1994 and 08 June 1995. At site #2 (0.8 miles [1.2 km] downstream of the Highway 191 bridge), we located one pair and one singing male on 08 June 1995. Although limited survey time and logistic difficulties precluded verification of nesting, and the detections were made in a period where migrant flycatchers may be present, the observations suggest that Southwestern Willow Flycatchers may be breeding at one or more sites along the San Juan River. In addition, there are other sites throughout the river corridor with appropriate flycatcher breeding habitat. Brown-headed cowbirds were abundant throughout the river corridor. We recommend the following management actions: continue flycatcher monitoring along the San Juan River, emphasizing longer survey trips and concentrated effort to verify breeding status; consideration of recreation closures at suspected flycatcher breeding sites during the breeding season, and procurement of new or recent aerial photography of the San Juan River corridor.

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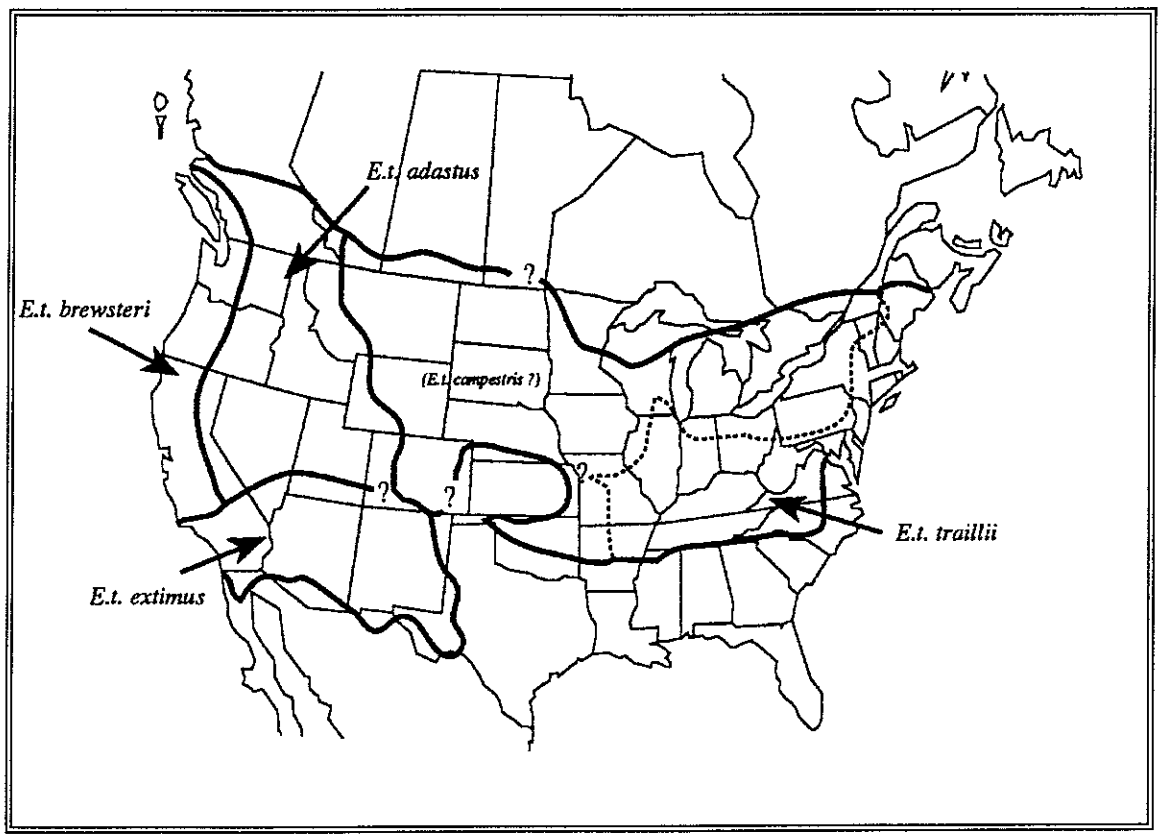
INTRODUCTION

The southwestern willow flycatcher (*Empidonax traillii extimus*) is one of several recognized subspecies of the willow flycatcher (Unitt 1987, Browning 1993), a neotropical migrant that breeds across much of North America (Figure 1). A riparian obligate species, the flycatcher generally nests in cottonwood-willow associations or similar riparian communities, although in some portions of the Southwest it will nest in tamarisk. The southwestern willow flycatcher has declined throughout its range in recent decades, possibly due to a number of factors including loss and fragmentation of riparian habitat, loss of wintering habitat, invasion of riparian habitat by the exotic tamarisk (*Tamarix* spp.), brood parasitism by brown-headed cowbirds (*Molothrus ater*), and predation (Hunter *et al.* 1987, Unitt 1987, Hunter *et al.* 1988, Whitfield 1990, Harris 1991, Rosenberg *et al.* 1991; USFWS 1993). It was placed on the federal endangered species list in 1995 (USFWS 1995), and is on the Utah Native Wildlife Species of Concern list.

Figure 1. Breeding ranges of willow flycatcher (*Empidonax traillii*) subspecies. Modified from Browning (1993), who supported designation of distinct *E.t. campestris* (north and west of the dotted line in *E.t. traillii* range).



Willow flycatchers were once distributed along most major river systems in the southwest, but have been lost from many former breeding areas. In Utah, the range of the Southwestern subspecies is restricted to the southern portion of the state (Unitt 1987). Records from Utah are sparse: the Virgin River near St. George and Springdale, 3 miles south of Kanab, the Colorado River in (now-inundated) Glen Canyon, and the San Juan River near Lake Powell (Unitt 1987). There are no published records of breeding willow flycatchers elsewhere on the San Juan River within Utah. However, in 1993, Frank Howe (Utah Division of Wildlife Resources) conducted aerial surveys of several river drainages in Utah, and reported what appeared to be appropriate habitat along portions of the San Juan River and parts of Montezuma Creek (F. Howe, *in litt.*).

Given the presence of potential willow flycatcher habitat along the San Juan River and Montezuma Creek, and that both are within the boundaries of the Southwestern Willow Flycatcher's range, the BLM provided funding to the CPRS/NAU to conduct flycatcher surveys in these areas. The flycatcher surveys were designed to meet the following three objectives:

1. Document the number of willow flycatchers in the study area during the breeding season;

2. Record willow flycatcher ecological and life history information;
    a. breeding habitat and territory characteristics
    b. nesting status and nest placement characteristics
    c. evidence of brown-headed cowbird parasitism

3. Develop recommendations for future southwestern willow flycatcher monitoring and management alternatives

Although originally envisioned as a one year project ending in 1994, administrative delays resulted in only one survey being conducted in 1994, rather than three as originally planned and funded. Therefore, the remaining two surveys were conducted during the 1995 breeding season. This report is based on the results of willow flycatcher surveys both years.

METHODS

We determined willow flycatcher presence by sightings and song detections made primarily from 0530 to 1000 hrs daily, when male song rates are the greatest (Unitt 1987). We conducted a few surveys at dusk, a period when willow flycatchers may display a secondary peak of singing (Weydemeyer 1973, Unitt 1987). In order to maximize the likelihood of detecting willow flycatchers, we followed the standardized willow flycatcher survey protocol detailed in Tibbitts et al. (1994). This technique is based on broadcasting taped willow flycatcher songs and calls in order to elicit a verbal response (singing) from any nearby territorial willow flycatcher, and has the advantage of allowing positive species identification by comparing the responding bird's song to the "known" willow flycatcher tape.

Surveyors walked through, or adjacent to, surveyed habitats whenever possible. Where terrain or dense vegetation prohibited walking surveys, or where strong river currents and steep banks prevented a safe landing, we made observations from boats drifting as slowly as possible past the habitat patch. After broadcasting willow flycatcher songs for 15-30 seconds (from a hand-held cassette player), surveyors listened approximately 1-3 minutes for a response. This procedure was repeated every 20-50 meters throughout each survey site.

We conducted surveys along the San Juan River from the Highway 202 bridge at Montezuma Creek downstream to Comb Ridge (Figure 2), and in four reaches of Montezuma Creek roughly five miles southeast of Monticello (Figure 3). We recorded all locations of singing/territorial willow flycatchers, and intensely observed flycatchers to locate nesting activity. To assess the threat of cowbird parasitism, observers recorded the presence of cowbirds at all surveyed patches, and noted cowbird behavior and any willow flycatcher response.

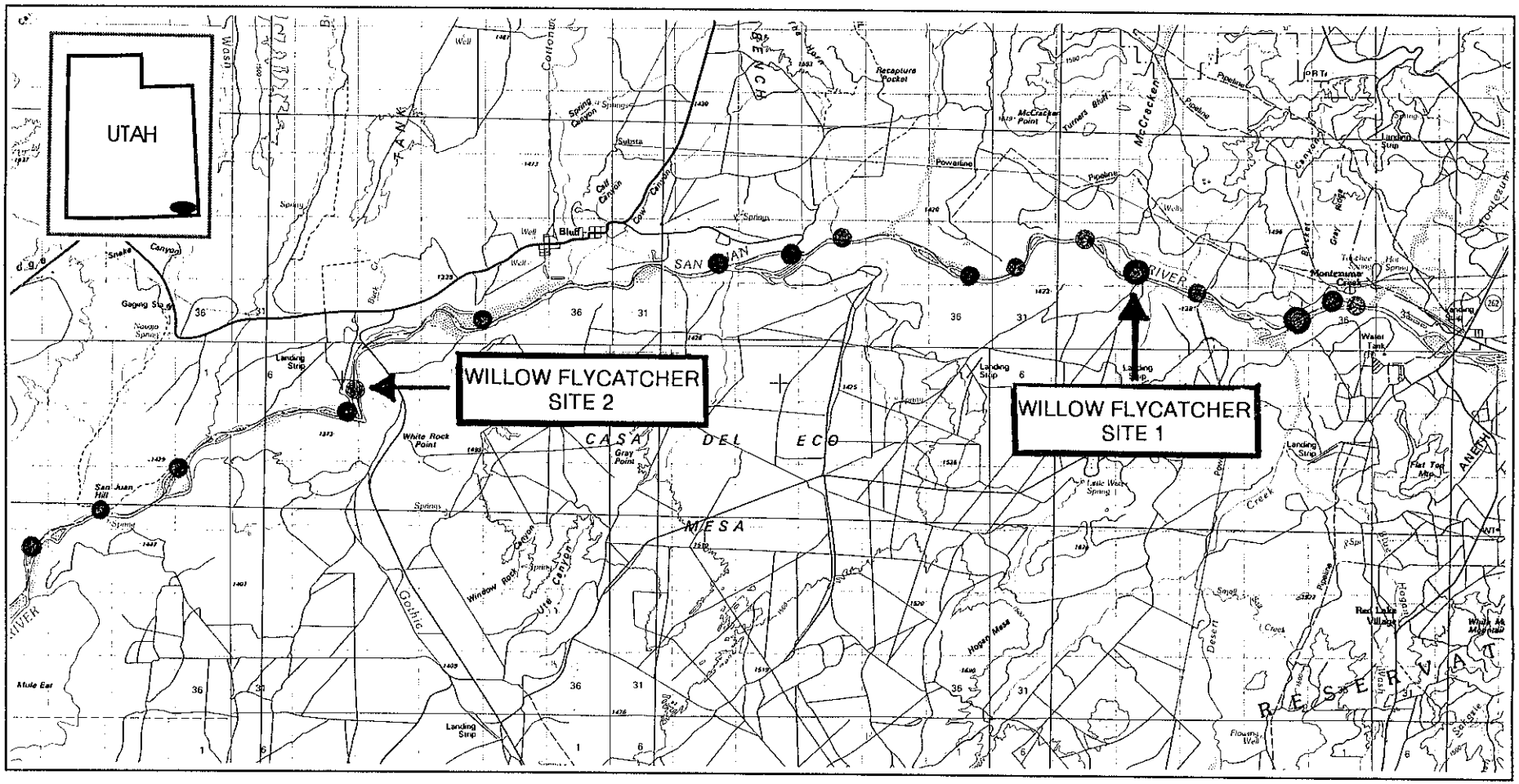
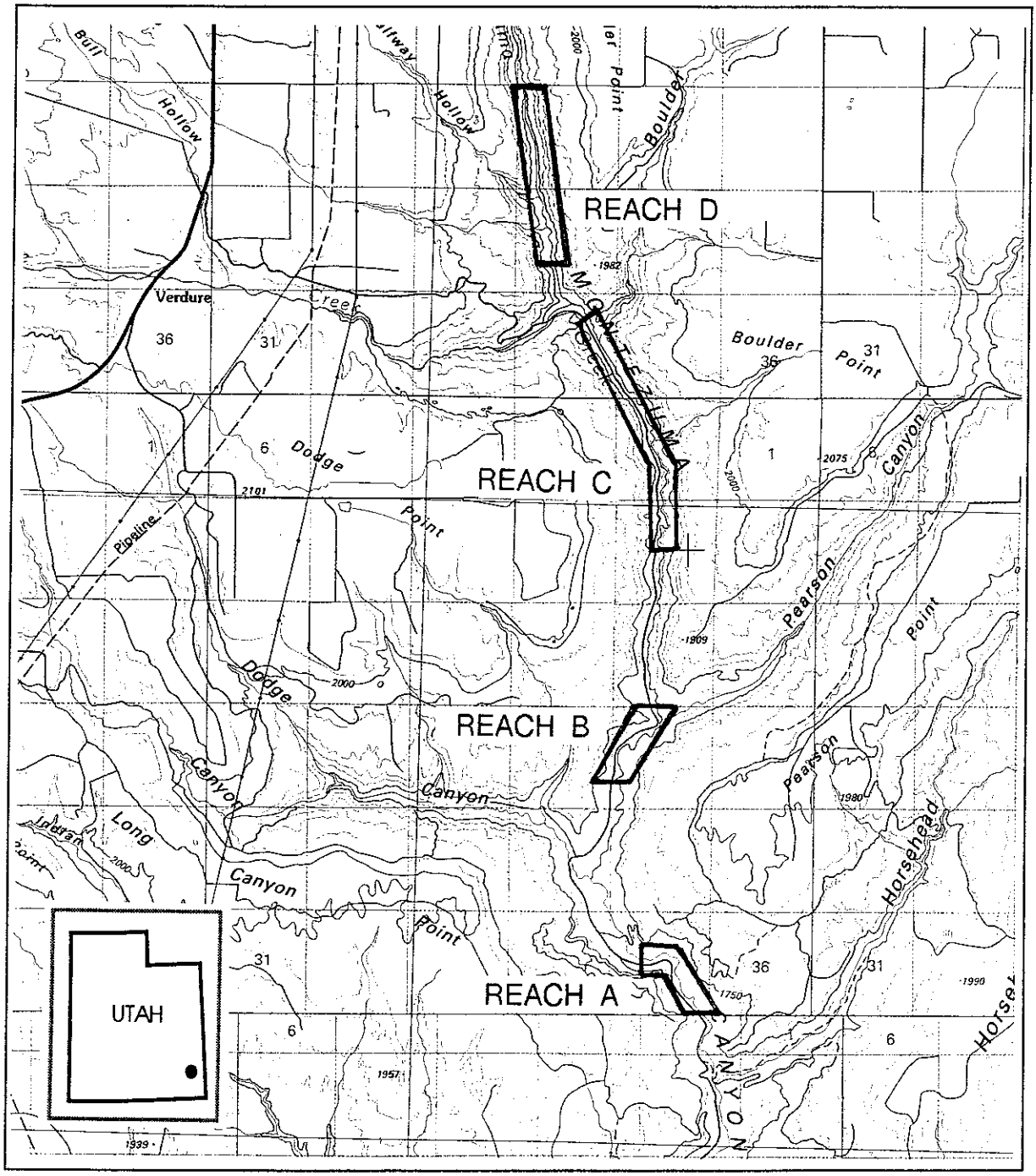


Figure 2. The San Juan River from Montezuma Creek downstream to Comb Ridge. Southwestern Willow Flycatchers surveys were conducted at sites indicated by colored dots. Red circles indicate 1994 survey sites; green circles are 1995 sites. Green dots with red borders are sites surveyed in both 1994 and 1995. Locations of willow flycatcher detections are labeled and marked with blue arrows. Base map is reduced from 1983 U.S.G.S. map: Bluff (Utah-Colorado), 1:100,000 scale.

Figure 3. Montezuma Creek, approximately 5 miles southeast of Monticello, Utah. Southwestern Willow Flycatchers surveys were conducted in the riparian zone in the reaches indicated by the red polygons. Base map is 1982 U.S.G.S. map: Blanding (Utah-Colorado), 1:100,000 scale.



RESULTS

Survey Effort

Montezuma Creek: We conducted surveys on the mornings of 30 June 1994, 29 June 1995, 6 July 1995. We surveyed all potential flycatcher habitat (as described in Tibbitts et al. 1994) within the narrow riparian band along the reaches of Montezuma Creek shown in Figure 3.

San Juan River:
We conducted 11 surveys from 14-15 May 1994, eight surveys between 07-09 June 1995, and nine surveys between 02 and 04 July 1995 (Figure 2). We emphasized the areas with moderate to high potential as willow flycatchers breeding sites (as described in Tibbitts et al. 1994). This included sites with dense stands of riparian vegetation, at least 3-4 m tall, with well developed structure from the canopy to near the ground. Suitable dominants and component vegetation included tamarisk, willow (*Salix spp.*), cottonwood (*Populus spp.*), and Russian olive (*Elaeagnus angustifolia*).

Willow Flycatcher Detections

Montezuma Creek: No willow flycatchers were detected during any of our surveys along Montezuma Creek. A list of 31 other bird species that we detected is presented in Appendix 1.

San Juan River: We detected willow flycatchers at one site in 1994, and two sites in 1995 (including the one site from 1994). Details of each of these willow flycatcher sightings are presented below, by location of detection (site). A list of 55 other bird species that we detected during the course of flycatcher surveys is presented in Appendix 1.

Site # 1

Location: River right (north bank), approximately 5 miles (8 km) below the Highway 262 bridge crossing the river near Montezuma Creek (see Figures 2 and 4). T35N, R23E, Section 28. Elevation approximately 4,360 ft (1330 m).

Habitat: A 10-15 m band of young willows (approximately 2-4 m tall) and arrowweed (*Pluchea servicea*), adjacent to river's edge and small side canal leading to northwest. The willows are bordered to north by strip of Russian olive, which in turn is bordered by, and interspersed with, clumps of tall, mature cottonwoods.

A singing male willow flycatcher was detected here on 14 May 1994 responding to our flycatcher tape. The willow flycatcher approached to within 3-5 m, singing and calling (*whitting*) loudly. Although we heard songs and calls close about us from several directions, the flycatcher was moving about rapidly and we could never verify more than one bird. We attempted to observe the flycatcher for evidence of nesting, but found it difficult to visually track the bird in the dense vegetation (Figures 5 and 6). We decided that it would be best to continue observations during the next trip, anticipated to be in early June 1994. Unfortunately, no other survey trips were conducted in 1994.

The site was revisited 08 June 1995, and a singing male willow flycatcher responded to our flycatcher tape. This flycatcher was found approximately 40 m from the location of the 1994 bird. It repeatedly vocalized as it moved about in the willow and Russian olive adjacent to the side canal (Figures 7 and 8). As in 1994, attempts to visually follow the bird to note breeding behaviors were hampered by dense vegetation. Surveyors did randomly search for a nest among the willows, but found no nest. We did not detect any willow flycatchers at the site during a follow-up trip on 03 July 1995.

Figure 4. The San Juan River, Utah, approximately 5 miles (8 km) downstream from Highway 262 bridge crossing. The locations of willow flycatchers detections are indicated by the blue oval (1994) and circle (1995). Base photograph is from a color-infrared aerial photograph, negative 15-13, dated 5-28-88, from the Bureau of Reclamation. River flow is page bottom to top. Note that significant riparian habitat has developed in many of the areas that appear to be sandbars in this 1988 photograph, including the area where flycatchers were detected (see Figures 5 - 8).

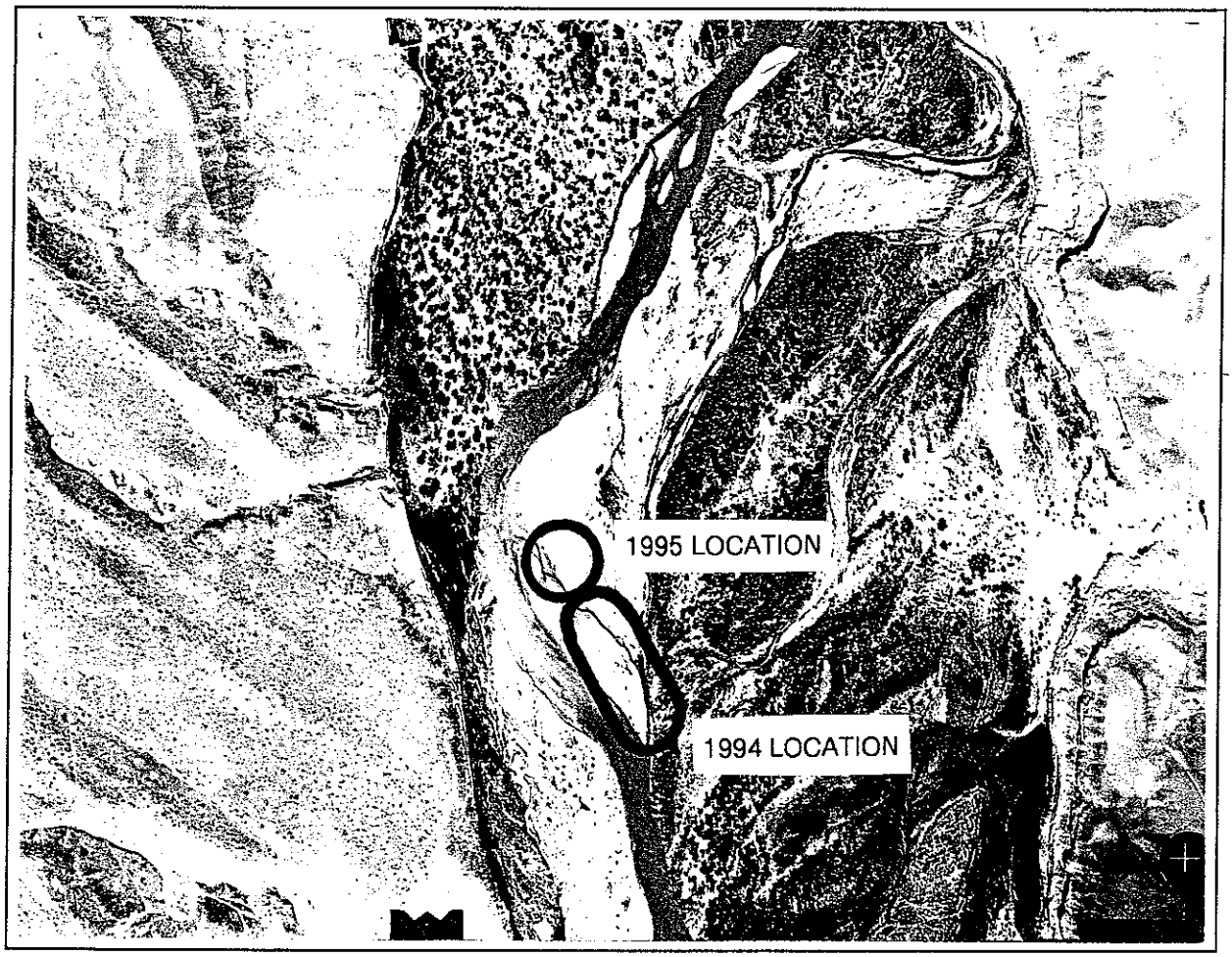


Figure 5. Riparian habitat at the 1994 Willow flycatcher detection site #1, along the San Juan River, Utah. View is looking from the river northwest toward the flycatcher habitat.

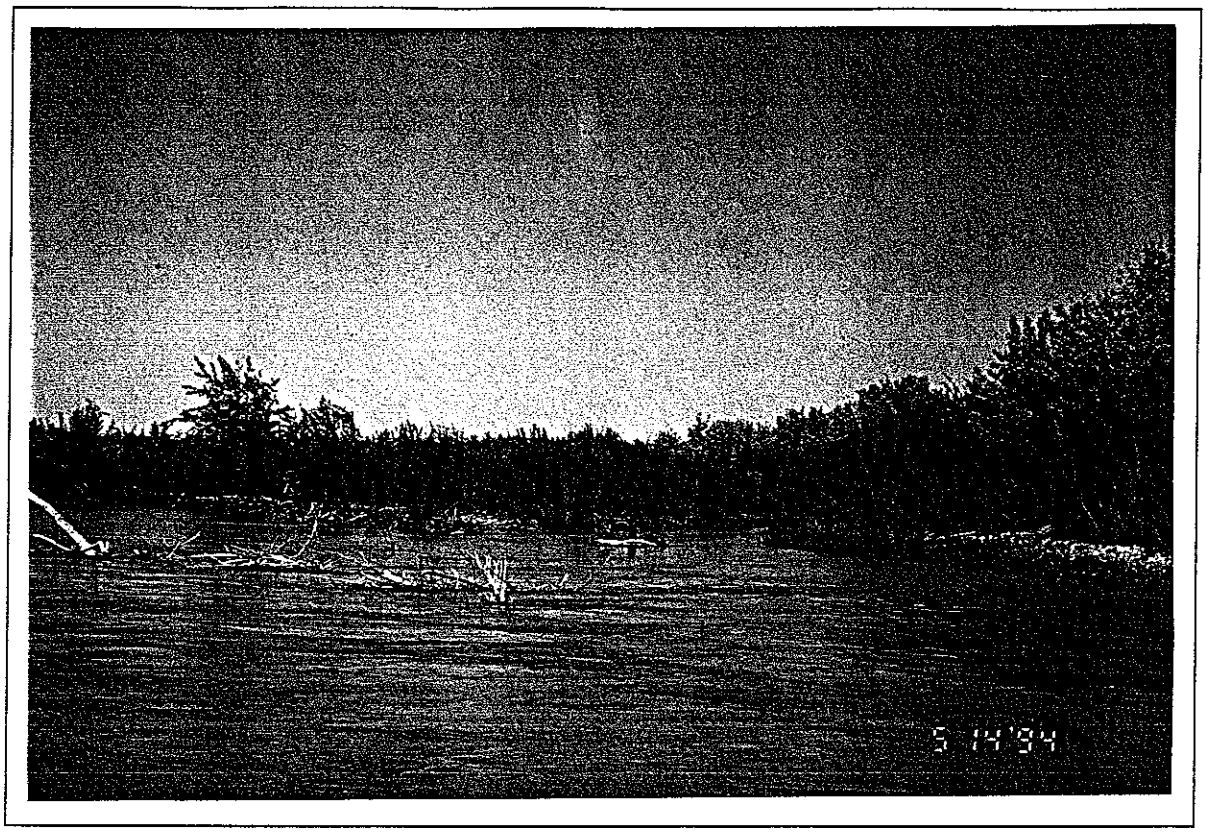


Figure 6. Riparian habitat within the 1994 Willow flycatcher detection site #1, along the San Juan River, Utah. View is from within the area where the flycatcher was detected, looking northwest across the small canal seen in Figure 4.

Figure 7. Riparian habitat at the 1995 Willow flycatcher detection site #1, along the San Juan River, Utah. View is looking from the river northwest toward the flycatcher habitat.

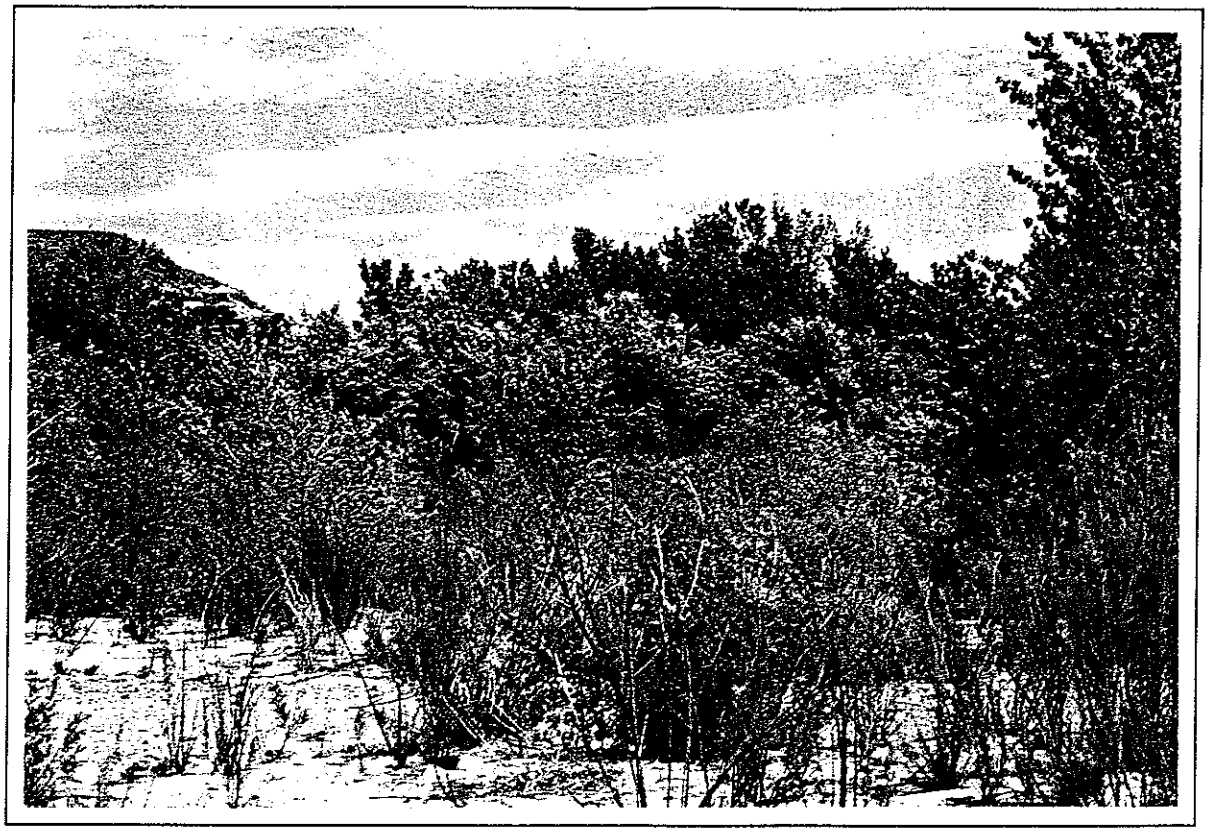


Figure 8. Riparian habitat within the 1995 Willow flycatcher detection site #1, along the San Juan River, Utah. View is from within the area where the flycatcher was detected, looking west across the area adjacent to the small canal seen in Figure 4.

Site #2

Location: Island approximately 0.8 miles (1.2 km) below the Highway 191 bridge crossing on the San Juan River, near Sand Island (Figures 2 and 9). T34N, R21E, Section 05. Elevation approximately 4250 ft (1300 m).

Habitat: Large island, bordered with a dense band of young willows (approximately 3-4 m tall) and arrowweed. Numerous beaver canals and channels along edges of island. Dense 2-4 m tall willows adjacent to river's edge and along beaver canals. The willow is bordered by Russian olive.

In 1994, we were unable to survey the island because the river's current swept us past before we could land. However, we noted that the island had some of the best flycatcher habitat that we had seen on the river, and considered it a high priority for follow-up on subsequent trips. Unfortunately, no more flycatcher trips were conducted in 1994.

Surveyors were successful in making it to the island on 08 June 1995. A pair of willow flycatchers, as well as another singing male, responded to the flycatcher tape along the eastern edge of the central third of the island. The willow flycatcher pair flitted among the branches near the surveyors, vocalizing and calling loudly. One of the observers was Brad Valentine, who has extensive experience studying breeding willow flycatchers in California. He noted that the behavior of the flycatcher pair at this site was consistent with behavior of nesting flycatchers. The surveyors attempted to watch the flycatchers for evidence of nesting, but could not visually follow the birds in the dense vegetation and diminishing daylight. With night approaching, the surveyors had to leave the island before they were able to follow up on the other singing male, and before they could survey the other two-thirds of the island. They were also unable to photograph the habitat on the island, but indicated that portions of it resembled the habitat in Figures 6 and 8. We did not detect any flycatchers at the site during a follow-up survey on 03 July 1995.

Figure 9. The San Juan River, Utah, approximately 0.8 miles (1.2 km) downstream from Highway 191 bridge crossing. The location of willow flycatcher detection site #2 is circled in blue. Base photograph is from a color-infrared aerial photograph, negative 17-7, dated 5-28-88, from the Bureau of Reclamation. River flow is from page top to bottom. Note that significant riparian habitat has developed in many of the areas that appear to be sandbars in this 1988 photograph, including the area where flycatchers were detected.

Presence of Suitable Breeding Habitat

Montezuma Creek:
Within Reaches A, B, and C (Figure 3), Montezuma Creek flows within a deeply incised bank, and supports only a relatively thin band of riparian vegetation that is bordered by dry, shrubby uplands (Figure 10). Reach D includes a number of willow-dominated patches, but most are very narrow and short. None of the four reaches contain habitat likely to support breeding willow flycatchers at this time.

However, there are two sites that have potential to develop into flycatcher habitat in the future:

> The lowest portion of Reach A contains a large patch of cottonwood/willow/ tamarisk habitat that, if it continued to expand and mature, could eventually support flycatchers.
>
> The willow-dominated areas in the upper portions of Reach D include beaver dams that have created wide wetland areas (Figure 11). If these areas were managed to promote continued willow growth, high quality flycatcher habitat may develop.

San Juan River:
The banks and islands of the San Juan River between Montezuma Creek and Comb Ridge include many areas of potential willow flycatcher breeding habitat. Most such sites were above Sand Island, and include dense stands of willow, tamarisk, and Russian olive (Figure 12). Several side channels (canals) meander adjacent to the main river and are bordered by stands of young, dense willows. Beaver dams widen and enhance these wetlands and willow patches, creating suitable flycatcher breeding habitat.

We restricted our surveys to BLM lands on the north bank (river right), however, there appeared to be similar patches of potential habitat along the Navajo Nation lands on the south bank.

Figure 10. Montezuma Creek in Reach B (refer to Figure 3). Note the narrow riparian area, the steep eroded bank, and the shrubby uplands.

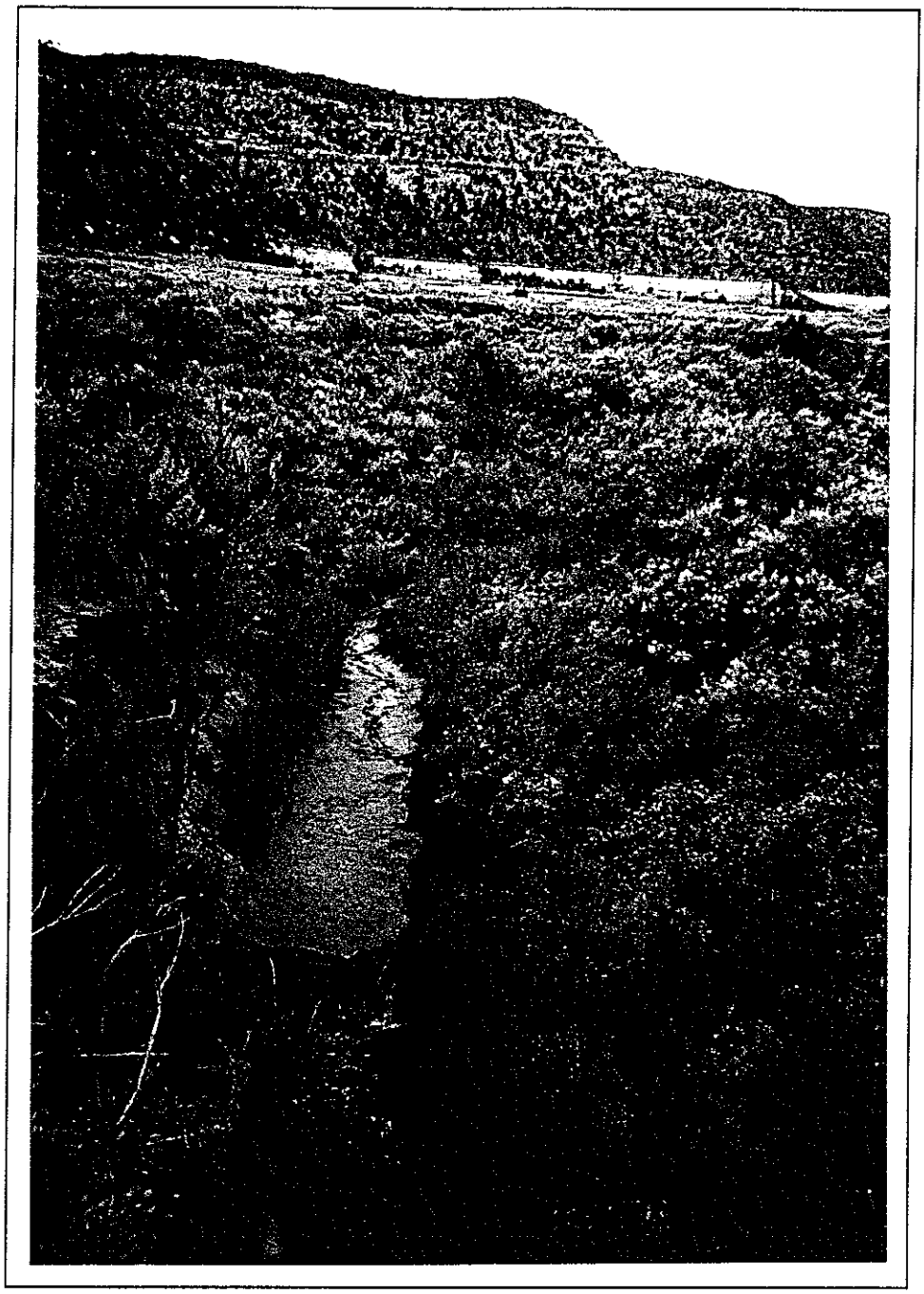


Figure 11. Montezuma Creek at the upper end of Reach D (refer to Figure 3). Note the beaver dam and associated willow-dominated wetlands.

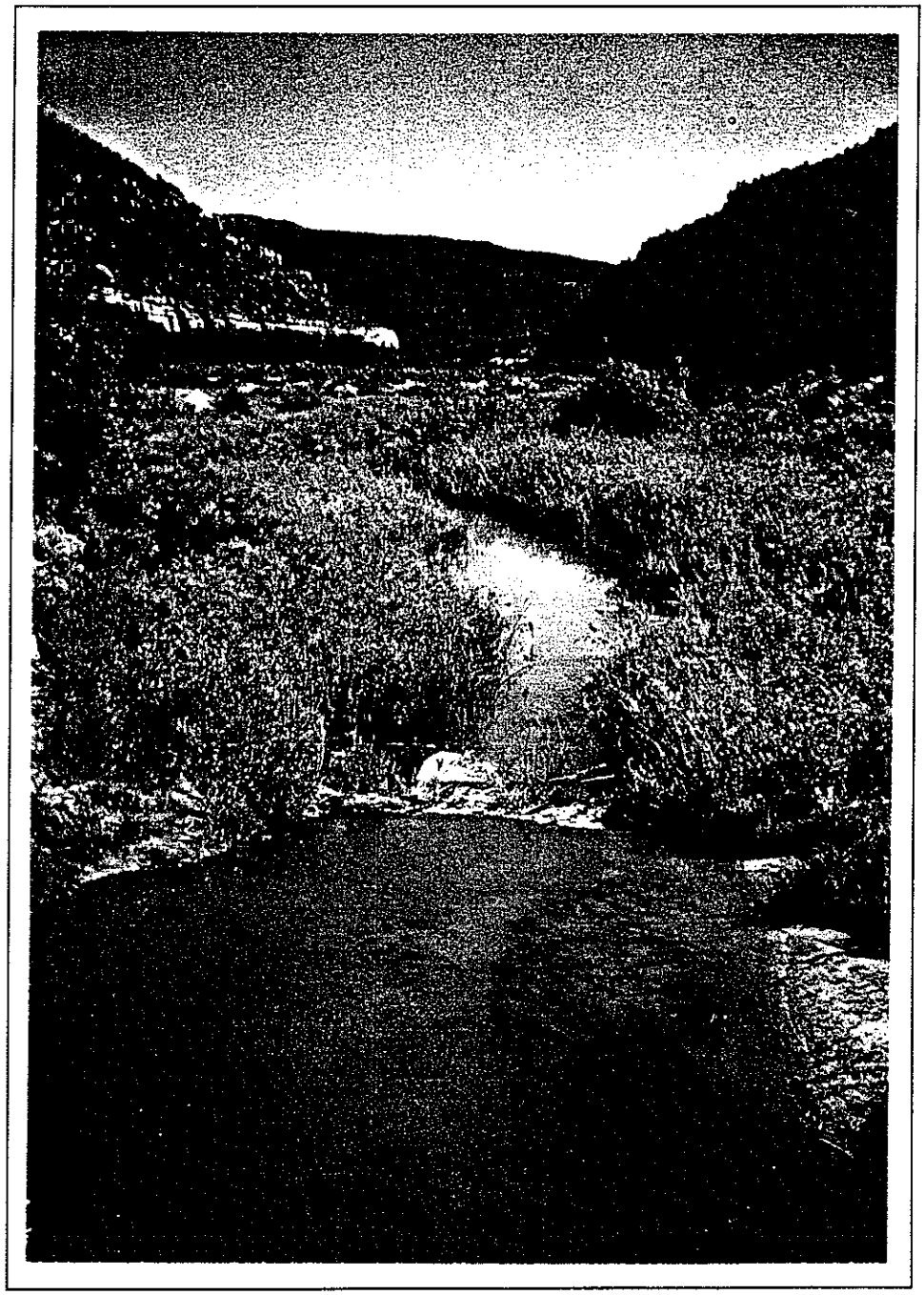
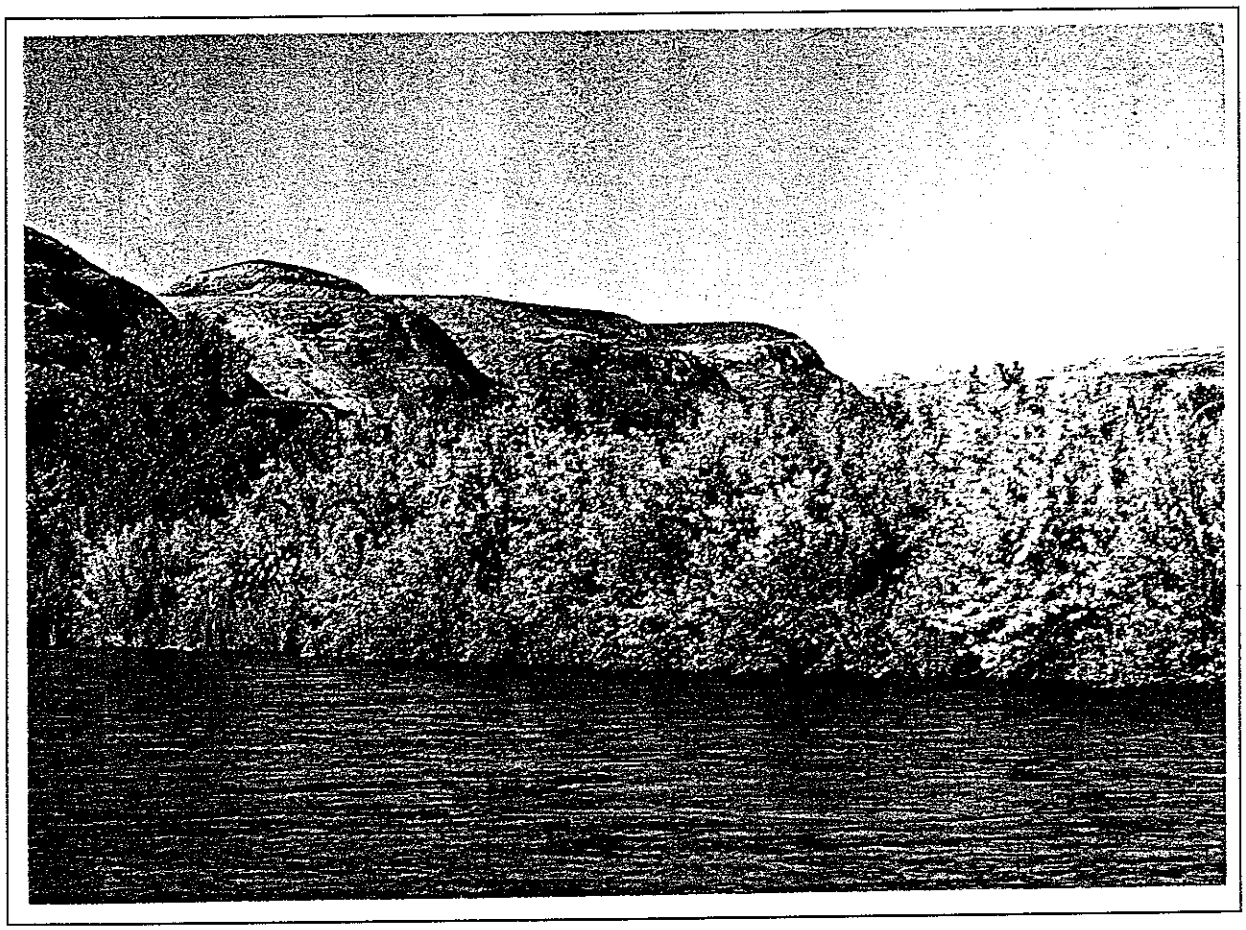


Figure 12. An example of potential willow flycatcher habitat along the San Juan River, Utah. Note the dense Russian-olive dominated patch immediately adjacent to the river.



Cowbird Prevalence

Brown-headed cowbirds were present throughout the San Juan River corridor during both years. We observed male and female cowbirds during almost all of our surveys, and they were regularly seen as we floated between survey sites. We noted many cases of cowbird courtship behavior, and also observed male Ash-throated Flycatchers, Northern Orioles, and Black-headed Grosbeaks chasing cowbirds from their territories.

Interestingly, we did not detect any cowbirds in our surveys along Montezuma Creek. This may be due to a lack of cattle grazing along the creek during the summer, when our surveys were conducted.

DISCUSSION

Montezuma Creek:
Within the reaches that we surveyed, Montezuma Creek currently has low potential as breeding habitat for the Southwestern Willow Flycatcher. As noted above, a few areas have some potential for developing into appropriate habitat, but this would probably require management of grazing and other disturbances with the objective of creating larger, taller riparian areas. However, even if appropriate habitat were created, there is no guarantee that willow flycatchers would settle and breed in these areas. There are no known willow flycatcher breeding areas nearby that could create a source of young birds for settlement, and we have no evidence that Montezuma Creek is a migration corridor that could attract and hold passing flycatchers.

Due to the current lack of appropriate habitat, there is little value in continuing annual willow flycatcher surveys along the portions of Montezuma Creek that we surveyed in 1994 and 1995. Given the potential for continued development of existing habitat, the area should be resurveyed in 2-3 years.

San Juan River:
Our surveys have documented willow flycatchers along the San Juan River within our study area. Although we were unable to find nests and verify breeding, the pattern and nature of our flycatcher detections suggest that willow flycatchers may be breeding (or attempting to breed) at the two sites where we found them:

> At Site #1, we detected a singing willow flycatcher in almost the same location in two consecutive years. The 1994 sighting occurred in mid-May, while the 1995 sighting occurred on 08 June. Both of these dates are early enough that these flycatchers could have been migrants (Tibbitts et al. 1994). However, male willow flycatchers are commonly on territories and initiating breeding by this time at other mid-elevation sites in the southwest (Sogge and Tibbitts 1994, Sferra et al. 1995), and we can not rule them out as territorial. The lack of detection in follow-up surveys in 1995 may be a result of the 4 week period between surveys. The entire willow flycatcher nesting cycle (from egg-laying to fledging) takes approximately 4 weeks, so a nesting attempt could easily have been missed between surveys. The fact that sightings were made in two consecutive years, with strongly aggressive responses, in appropriate breeding habitat, warrants considering this as a potential breeding site.
>
> At Site #2, the detections were also made early enough (08 June) that the birds could have been migrants. However, several lines of evidence suggest that these were territorial willow flycatchers: (1) the birds were found in suitable breeding habitat; (2) we observed a pair of flycatchers displaying typical territorial behavior; and (3) the second singing male sang from an area approximately 50 m away, a typical distribution of breeding territories along other rivers in the Southwest. The lack of any flycatcher detections at this site in our follow-up survey in July may be a result of the 4 week period between surveys (explained under Site #1, above).

Our survey results can not *confirm* that Southwestern Willow Flycatchers are breeding at these two sites. However, our results are certainly suggestive of potential breeding, particularly at Site #2. Given the endangered status, low population, and patchy distribution of the Southwestern Willow Flycatcher throughout its range, these and other sites along the San Juan River deserve continued attention.

Although we attempted to survey what we considered the best potential willow flycatcher breeding habitat along the river corridor, there were some areas that we missed. River flows were very high during both years, particularly during the 1995 surveys. As a result, we were unable to land at some sites where surveys were warranted. Therefore, our 1994 and 1995 survey sites should not be considered the only suitable willow flycatcher breeding habitat in this stretch of the river. In fact, potential breeding habitat is found throughout the San Juan River corridor.

Cowbirds were one of the most prevalent species detected along the San Juan River corridor over the course of our survey trips (although none were found at Montezuma Creek). Cowbird abundance is often considered to be an index of cowbird impacts in an area (more cowbirds mean more cowbird impacts). However, given that we do not know for certain that willow flycatchers are breeding along the San Juan River, there is no way yet to determine if there are any negative affects on local willow flycatchers.

MANAGEMENT CONSIDERATIONS AND RECOMMENDATIONS

Continued Monitoring

The U.S. Fish and Wildlife Service has listed the Southwestern Willow Flycatcher as an endangered species (USFWS 1995). Given the sightings described in this report, the BLM should continue to support willow flycatcher monitoring along the San Juan River corridor. Such monitoring will provide valuable information needed to clarify whether flycatchers breed in the area, and to further define habitat use, potential threats, and management options.

We recommend continued willow flycatcher surveys along the San Juan River in 1996 and beyond. Surveys should utilize experienced flycatcher researchers (who hold the proper state and federal permits), and use the same USFWS-approved survey methodology (Tibbitts et al 1994). Survey effort should be intensified over what we were able to accomplish in 1994 and 1995, with additional survey trips and efforts planned. For example, each river survey trip should take 5-6 days to survey the river, rather than the 2-3 days spent in 1994 and 1995. In addition, surveyors should plan on spending up to a full day in each area where willow flycatchers are detected, to better clarify breeding status. A minimum of three survey trips should be planned and conducted each year.

We do not recommend continued annual flycatcher surveys along the portions of Montezuma Creek that we surveyed in 1994 and 1995. However, since suitable habitat may develop in the future, surveys at 2-3 year intervals are probably appropriate.

Human-related Impacts

It is possible that Willow Flycatchers may be affected by human-related activities within the river corridor. Recreation use of the San Juan River has the potential of impacting the flycatchers by degrading riparian habitat. However, current BLM recreation management guidelines and river permit regulations are designed to minimize degradation of the riparian community. Therefore, it is unlikely that habitat alteration associated with recreation is a significant threat to willow flycatchers. However, data from future willow flycatcher monitoring programs should be used to regularly re-evaluate this potential threat.

The repeated passage of rafts, kayaks, and canoes near breeding territories could cause disturbance to willow flycatchers. However, we have monitored willow flycatcher breeding sties in the Grand Canyon for the last 4 years, and observed no changes in behavior when boats floated or motored past the patches where birds were (Sogge and Tibbitts 1994). Therefore, at this time no evidence suggests a concern about significant negative effect by passing boats.

Willow flycatchers may also be disturbed by noise and activity associated with nearby campers. Taylor (1986) found a possible correlation between recreational activities and decreased riparian bird abundance. Blakesley and Reese (1988) reported the willow flycatcher (probably *E. t. adastus*) as one of seven species negatively associated with campgrounds in riparian areas in

northern Utah. There is significant potential of such disturbance because flycatcher breeding areas are usually associated with dense riparian areas, which are often popular camping sites (although we saw no evidence of camping at either of the two flycatcher sites). The fact that willow flycatchers have regularly bred within approximately 100 m of camping areas in the Grand Canyon suggests that they are generally tolerant of low-level human activity that is not directly adjacent to or within the breeding territory (Sogge and Tibbitts 1992). However, repeated human presence within a territory or in close proximity to a nest could cause birds to abandon a territory or nest, or lead to nest failure due to reduced nest attendance.

Other human-related impacts are possible. For example, cattle grazing has been shown to reduce the quality of riparian flycatcher habitat (Taylor 1986, Sanders and Flett 1989). Grazing occurs at many sites along the San Juan River and could be negatively affecting the local flycatcher population by reducing potential habitat.

Restricted Use and Closures of Nesting Habitat

Because there is at least some potential for human disturbance at flycatcher sites along the San Juan River, the BLM should work to eliminate possible disturbance during the breeding season, at least until breeding status of the flycatchers is verified. The following actions should be initiated:

(1) inform the river recreation community of the status of the Southwestern willow flycatcher, and the potential of breeding areas along the San Juan River. Enlist their support of, and adherence to, measures taken to protect flycatchers.

(2) close flycatcher Sites 1 and 2 to all non-research uses beginning 05 May. The closures should last at least 75 days. The exact date of ending the closures should be determined based on the known or suspected breeding activity of resident flycatchers, as determined by the breeding surveys.

(3) immediately close any new area(s) where potentially- breeding willow flycatchers are found. The closure should last at least 75 days, or until a follow-up visit fails to find flycatchers present.

Closures should be advertised by the river permit office. Closure notices should also be posted at the sites, and along trails leading to the closure areas, to discourage people from camping at or visiting the area.

Procuring New or Updated Aerial Photographs

Aerial photographs are a valuable tool for surveying and monitoring of willow flycatchers, particularly in terms of identifying potential habitat, surveyed areas, and detection sites. The most recent aerials that we could find were taken in May 1988, over seven years ago. Since the photographs were taken, the river channel has changed in some areas, and there has been significant development of riparian vegetation throughout the river corridor. Many areas that appear in the 1988 aerials to be bare ground and sand are now covered with dense riparian vegetation, and other riparian areas have changed significantly. These changes make evaluation of potential flycatcher habitat difficult, if not impossible. A new series of aerial photographs should be obtained, and will prove valuable for many management uses beyond willow flycatcher surveys.

ACKNOWLEDGMENTS

This project would not have been possible without the cooperation and assistance of many persons and agencies. Funding and logistical support was provided by the Bureau of Land Management (BLM) and the National Biological Service Colorado Plateau Research Station at Northern Arizona University (CPRS/NAU). The U.S. Bureau of Reclamation and the Navajo Natural Heritage Program loaned us aerial photographs of the river corridor. Assistance from BLM staff, particularly Linda Richmond, Linda Seibert, Michelle Williams, and Kaye Wilson, was vital to the project. The flycatcher surveyors worked incredibly hard under often-difficult field conditions - I greatly appreciate the expertise and energies of Patricia Hodgetts, Matthew Johnson, Robert Marshall, Mark Smedick, Linda Sogge, Brad Valentine, Helen Yard, and Brenda Zimple.

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APPENDIX 1

Bird species detected along portions of the San Juan River and Montezuma Creek, Utah. This should not be considered a complete list of the birds found in these areas, but rather a list of species noted while observers were conducting surveys directed at Southwestern Willow Flycatchers.

	San Juan River		Montezuma Creek	
SPECIES	1994	1995	1994	1995
Great Blue Heron		X		
Canada Goose	X			
Mallard	X	X		
Cinnamon Teal	X			
Common Merganser	X			
Turkey Vulture	X	X		X
Cooper's Hawk	X			
Red-tailed Hawk	X		X	
Golden Eagle				X
American Kestrel	X		X	X
Peregrine Falcon	X			
Prairie Falcon		probable		
Ring-necked Pheasant	X	X		
Chukar	X	X		
American Coot	X	X		
Killdeer	X			
Spotted Sandpiper	X	X		
Mourning Dove	X		X	X
Lesser Nighthawk		X		
White-throated Swift	X			X
Black-chinned Hummingbird	X	X		
Northern Flicker			X	X
Western Wood-Pewee				X
Willow Flycatcher	X	X		
Black Phoebe		X		
Say's Phoebe	X		X	X

	San Juan River		Montezuma Creek	
SPECIES	1994	1995	1994	1995
Ash-throated Flycatcher	X	X		X
Western Kingbird	X			
Violet-green Swallow	X	X		
Northern Rough-winged Swallow	X	X		X
Cliff Swallow	X	X		X
Barn Swallow	X			
Black-billed Magpie	X	X	X	X
Scrub Jay			X	X
Common Raven	X	X		
Bushtit		X		
Rock Wren				X
Canyon Wren				X
Bewick's Wren		X		X
Blue-gray Gnatcatcher		X	X	X
Mountain Bluebird	X			
American Robin		X		X
Northern Mockingbird				X
Bell's Vireo		X		
Solitary Vireo			X	X
Virginia's Warbler				X
Lucy's Warbler		X		
Yellow Warbler	X	X	X	
Yellow-rumped Warbler	X			
Common Yellowthroat		X		X
Yellow-breasted Chat	X	X	X	X
Summer Tanager		X		
Western Tanager	X			
Black-headed Grosbeak	X	X		
Blue Grosbeak	X	X		X
Lazuli Bunting		X	X	X

	San Juan River		Montezuma Creek	
SPECIES	1994	1995	1994	1995
Rufous-sided Towhee			X	X
Song Sparrow		X	X	X
White-crowned Sparrow		X		
Red-winged Blackbird	X			
Brown-headed Cowbird	X	X		
Hooded Oriole	X	X		
Northern Oriole	X	X		X
House Finch		X		
Lesser Goldfinch		X		X