

population declines that would suggest that the population should be listed as threatened or endangered. There continues to be some loss of nesting habitat, but land management practices are improving in many areas, especially in and near riparian vegetation. Although there is a continuing loss of riparian aspen vegetation in some areas, the rate of loss is declining and this important habitat type is being emphasized in land use planning. If land use management practices continue to improve, the Northern Goshawk will remain an integral part of our wildlife heritage in the Great Basin.



The Southwestern Willow Flycatcher: An Update

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Introduction

The Southwestern Willow Flycatcher (*Empidonax traillii eximius*) is one of five subspecies of Willow Flycatcher that breed in the United States (USFWS, 1997). In Nevada, the southwestern Willow Flycatcher is believed to breed from the Pahranaagat Valley west to Ash Meadows and south to the Colorado River (Unitt, 1987; McKernan, pers. comm.; St. George, pers. comm.). *Empidonax traillii adustus* and, to a lesser extent *E. t. brewsteri*, are also known to breed in portions of northern Nevada (Unitt, 1987).

Historically, the southwestern Willow Flycatcher was believed to be a fairly common breeder in the riparian areas along the Colorado River and its tributaries, from southern Utah, southwestern Colorado, and southern Nevada to northern Sonora and Baja California, Mexico (Unitt, 1987; Schlorff, 1990; USFWS, 1997). Southwestern Willow Flycatchers nest in riparian habitat characterized by a dense stand of intermediate sized shrubs or trees, such as willows (*Salix* sp.), usually with an overstory of scattered larger trees (Tibbitts et al., 1994). Nesting habitat almost always contains or is adjacent to water or saturated soil (Muiznieks et al., 1994). Most of the historical habitat has been lost or altered over the past century due to river regulation and channelization, agricultural and urban development, mining, road construction, and overgrazing (Phillips et al., 1964; Johnson and Haight, 1984; Unitt, 1987; Rosenberg et al., 1991; Tibbitts et al., 1994). Habitat fragmentation has resulted in an increase in Brown-headed Cowbird (*Molothrus ater*) parasitism (Unitt, 1987; Brown, 1988; Rosenberg et al., 1991; Sogge et al., 1993). Invasion by the exotic saltcedar (*Tamarix* sp.), and the subsequent change in wildfire frequency, has drastically altered riparian ecosystems throughout the Southwest.

Southwestern Willow Flycatcher populations have apparently declined from historical numbers. In recent years, the southwestern Willow Flycatcher was believed to be extirpated from the lower Colorado River and its tributaries; however, birds were observed in several locations as early as 1993 (Hunter et al., 1987; Rosenberg et al., 1991; Sierra et al., 1995). On February 27, 1995, the U.S. Fish and Wildlife Service listed the

southwestern Willow Flycatcher as endangered (60FR10694), prompting the Bureau of Reclamation, as well as several partners including Nevada Division of Wildlife, Southern Nevada Water Authority, National Park Service, and U.S. Geological Survey, to intensify ongoing survey efforts and to initiate additional surveys and studies with the ultimate purpose of improving the status of the subspecies.

Status

In 1996, the San Bernardino County Museum (SBCM), under an agreement with the Bureau of Reclamation, initiated a comprehensive study effort to determine the distribution, abundance, requirements for life and nesting success, and habitat affinities of the southwestern Willow Flycatcher along the lower Colorado River from Lake Mead to the border with Mexico. In 1997, this effort was expanded to include por-

tions of the Grand Canyon and the Virgin River. In 1998, the Pahranaagat Valley and Meadow Valley Wash were also included in the SBCM survey effort. The results for the southern Nevada sites are shown in Table 1.

Interesting results have been obtained through SBCM's work to date. Although southwestern Willow Flycatcher nesting had been documented in *Tamarix* stands above 2000 feet elevation in Arizona, it was initially hypothesized that *Tamarix* did not provide the thermal cover needed for successful breeding below 2000 feet (Hunter et al., 1987; Hunter et al., 1988). This, in fact, has not proven to be the case. Almost 40% of the known breeding sites within the study area are dominated by *Tamarix*. The area with the highest concentration of nesting southwestern Willow Flycatchers along the lower Colorado River is situated at Topic Marsh on Halves National Wildlife Refuge near Needles, California. The riparian vegetation at Topic Marsh contains over 90% saltcedar (McKernan and Braden, 1998).

Stand density may not be as important a factor as originally believed. At least one site containing nesting Willow Flycatchers, the Mormon Mesa site along the lower Virgin River, has a canopy closure of less than 50%. Initially, it was believed that the breeding season for southwestern Willow Flycatchers ranged from early June to late July and that, typically, Willow Flycatchers raised one brood per season (Tibbitts et al., 1994; Unitt, 1987). This study has documented southwestern Willow Flycatchers raising two or even three broods well into August (Braden and McKernan, 1998). Changes in vocalization

TABLE 1. Results of Southwestern Willow Flycatcher Surveys in Southern Nevada, 1996-98.

Location	YEAR (PAIRS/NESTS)		
	1996 (p/n)	1997 (p/n)	1998 (pn)
Muddy River Delta	*	2/2	*
Virgin River Delta	*	6/14	9/4
Mormon Mesa	*	2/3	11/10
Mesquite	*	3/5	2/6
Pahranaagat Valley	*	*	9/18
Meadow Valley Wash	*	*	1/2
Ash Meadows	1/1	1/1	1/1
*Not surveyed			

rates and songs have been documented through the breeding season, triggering a possible re-examination of existing survey protocol (Braden and McKernan, 1998).

Survey and study efforts will continue for several more years. Several important questions still need to be answered. Habitat affinities have not been fully developed or understood. Additional studies on the effects of cowbird parasitism and potential winter range problems in Central America will be initiated in the next year. With these additional data, strategies for the restoration and recovery of the southwestern Willow Flycatcher can be developed.

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Seasons in the Basin

Martin Meyers, Graham Chisholm, and Rick Savat

In order to share detailed sighting information among Great Basin birders, we initiated an annual roundup of bird sightings from Nevada and surrounding Great Basin locations. We chose to divide the area into two parts, with the southern district including Nevada's Clark, Lincoln, Esmeralda and most of Nye Counties and the northern district including Nevada's remaining counties. Reports from states adjoining Nevada will be recorded together. This summary provides more detailed coverage of Great Basin birds than would be appropriate in Field Notes. We encourage all resident and visiting Great Basin birders to submit their sightings to the editors. We are interested in both rarities and the arrival and departure dates of our more common species. We are also interested in sightings from the remote or under-birded portions of the Great Basin. Please send your sightings at the end of each reporting period (or send us a copy of your Audubon Field Notes reports) to the addresses below. Thank you for your past and future cooperation.

Winter Season (January 1 – February 28, 1998)

Northern District

(Note: Beginning with next year's "Seasons in the Basin" report, the Winter Season will be from December 1 of previous year through end of February. Since December, 1997 was included in last year's report, we will begin this year with January 1.)

Five Horned Grebes were reported at Pyramid Lake (Washoe) on February 20, and single sightings were recorded at Virginia Lake (Washoe) on February 3 and at Washoe