

Willow Flycatcher *Empidonax traillii*

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The southwestern subspecies *E. t. extimus* of the Willow Flycatcher is one of southern California's rarest birds, listed as endangered and restricted to a few colonies in riparian woodland. In San Diego County the population numbers fewer than 90 pairs, out of fewer than 200 statewide. During migration, the darker northwestern subspecies *E. t. brewsteri*, which breeds from the Sierra Nevada north through the Pacific Northwest, also occurs in San Diego County. Subspecies *extimus* is seen only at its breeding sites.

Breeding distribution: As a breeding species, the Willow Flycatcher is now restricted in San Diego County to two modest colonies and a few additional scattered pairs. The largest colony, with between 45 and 50 territorial males from 1993 through 2001, is along 4.6 miles of the upper San Luis Rey River between East Grade Road (just below Lake Henshaw) and the La Jolla Indian Reservation (F16, G16). The other is along the Santa Margarita River in Camp Pendleton. From 1999 to 2001, the birds maintained 18 or 19 territories, most along 3 miles of the river from the base airfield to Ysidora Basin (F5, G5) (Kus 2000, Kus et al. 2003a). Near O'Neill Lake (E6), where there were three territorial males, at least two paired, in 1998 (P. A. Ginsburg).

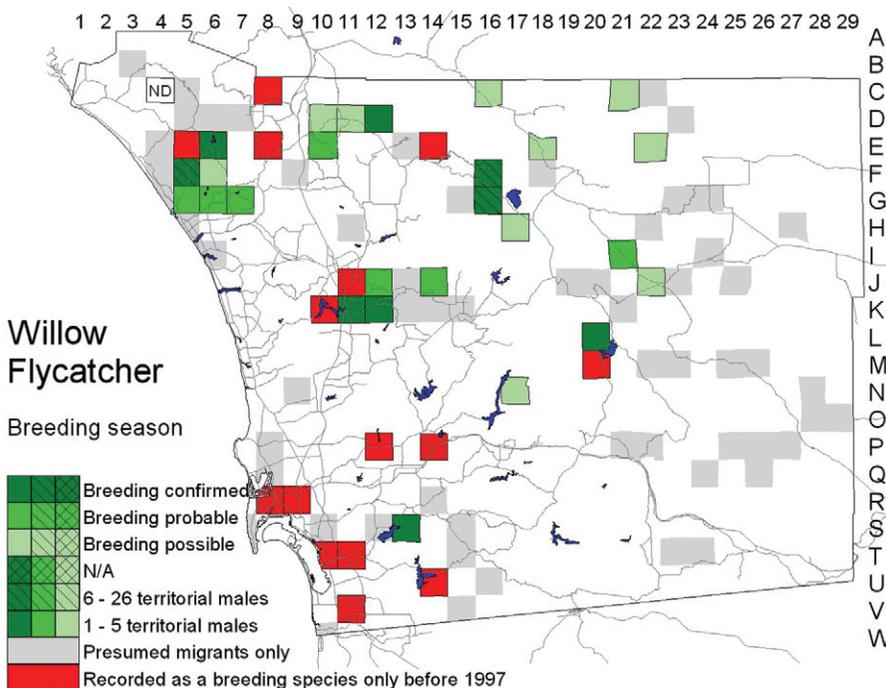
Four small new colonies have recently formed. After apparent absence from the lower San Luis Rey River in the late 1970s and 1980s, a few Willow Flycatchers repopulated the lower San Luis Rey River by 1999, with four pairs near Whelan Lake (G6) in 2001, four territorial males (two paired) north of Guajome Lake (G7) in 2001, two at Couser Canyon (E10) 1999–2001, and one or two

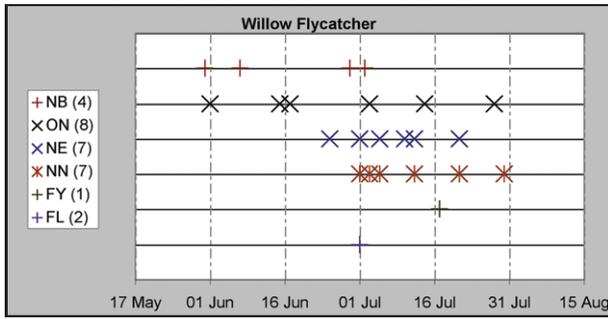


Photo by Anthony Mercieca

at Pala (D10/D11) in 2000 and 2001 (Kus et al. 2003a). About 3 miles from the San Luis Rey River, in a boggy glade along Agua Tibia Creek (D12), elevation 2200 feet, K. L. Weaver noted a pair, one carrying away craneflies, 17 July 2001. Another small colony was discovered in 1992 along the San Dieguito River between Lake Hodges and Tim's Canyon (K11/K12/J12/J14—in 1997 one pair in each); it has since varied between two and four pairs (Kus and Beck 1998, Kus et al. 2003a). Two territories were located along the San Diego River at the upper end (at low water) of El Capitan Reservoir (N17) in 2001 (Kus et al. 2003b). On the east slope of the mountains, a small colony has formed in San Felipe Valley near Paroli Spring (I22), from 1996 to 2001 fluctuating between two and five pairs (W. E. Haas). In 2002, two pairs nested downstream, 1 to 2 miles west of Scissors Crossing (J22) (W. E. Haas).

Elsewhere, there are only scattered pairs or unmated summering individuals. In Macario Canyon just southeast of Agua Hedionda Lagoon (I6) a pair maintained a territory in 1999 but apparently did not nest (W. E. Haas). Along Agua Caliente Creek near Warner Springs (F19) two males maintained territories in 2000 but never attracted mates (W. E. Haas). One along Cedar Creek near William Heise County Park (L20) 16 July 2000 was followed by a pair at a nest there on 10 July 2001 (J. R. Barth). One singing at the upper end of Sweetwater Reservoir (S13) 29 May–2 July 1997 was followed by a pair that nested there unsuccessfully from 29





May to 29 July 1998; one male maintained a territory in 1999 but did not return in 2000 or 2001 (P. Famolaro). Some of the following, though in suitable nesting habitat, could have been migrant *brewsteri*: one singing male along Temecula Creek northwest of Oak Grove (C16) 20 June 1998 (K. L. Weaver)—confirmed pair a short distance downstream in Riverside County in 1997 (Kus and Beck 1998); one individual along the San Luis Rey River near Puerta La Cruz (E18) 18 June 2000 (P. K. Nelson); two along Highway 76 at Kumpohui Creek (H17) 13 June 1998 (P. Unitt); on the desert slope, silent individuals in Alder Canyon (C21) 20 June 2001 (P. D. Jorgensen) and at the head of Middle Fork Borrego Palm Canyon near San Ignacio (E22) 16 June 1999 (P. Unitt).

Nesting: The Willow Flycatcher attaches the sides of its open-cup nest to slender stems and twigs, which may be vertical, horizontal, or slanting. The nest may be in an upright crotch or without support from below. Willow Flycatcher nests, remarkably similar to those of the Lesser Goldfinch, differ notably in virtually always having loosely attached nest material hanging below the cup and the adults' not letting the nestlings' fecal matter decorate the nest's edge. From one to four eggs are laid, with smaller numbers more common late in the season and in second and third nests. Nests are often over water or in the outer branches of a tree. In historic egg collections from southern California, 86% of nests were in willows, 4% in stinging nettle, and 10% in other plants (Unitt 1987). Along the upper San Luis Rey River, however, the Army Corps of Engineers removed willows in the 1950s, and coast live oaks press closely against the streamside ash and alder trees in the narrow canyon. Here, of 292 nests studied between 1995 and 2001, 71% were placed in oak trees, another 8% in multi-substrate association with live oak, most commonly incorporating California blackberry (W. E. Haas). The nest height there may vary from 14 inches to 62 feet. Along the lower Santa Margarita, heavily invaded by exotic plants, the birds nevertheless often nest in those exotics; of 25 nests in 2001, 11 were in poison hemlock and 3 were in giant reed (B. E. Kus pers. comm.).

Female Willow Flycatchers begin building their nests usually within one week of pairing, 10–14 days after spring arrival. Construction takes three to eight days (average 4.2 days along the upper San Luis Rey River). Eggs may be laid as early as mid May, but typically first nests are initiated between 25 May and 20 June, often in

synchrony, with older, experienced birds building the earliest nests. Earliest documented fledging date from the upper San Luis Rey River is 24 June 1995. The latest nest initiation date recorded is 16 July (1999), though later nests have been reported elsewhere (M. K. Sogge pers. comm.). Though laying of a second clutch following the fledging of a first brood is extremely rare among the more northern subspecies of the Willow Flycatcher, it is only uncommon on the upper San Luis Rey River. On 21 June 2000 a freak storm, dumping one inch of hail in less than one hour, ruined 19 of 31 active nests. Within 10 days all birds re-nested, including one female that built her new nest directly above the destroyed first nest.

Migration: The local population of subspecies *extimus* usually arrives in early May. From 1997 to 2001 the earliest recorded date was 1 May 2001, along the upper San Luis Rey River (W. E. Haas), and no earlier date is known. Subspecies *brewsteri* arrives later, typically in mid May. Our earliest date away from a nesting site 1997–2001 was 11 May (1999, three in Macario Canyon, I6, W. E. Haas; 2001, two at Carrizo Marsh, O29, M. C. Jorgensen); the only earlier such date published is 8 May (1988, Point Loma, S7, R. E. Webster, AB 42:482, 1988). The migration of *brewsteri* peaks in early June (e.g., 25 at Fort Rosecrans Cemetery, S7, 8 June 2002, P. Unitt), then falls off quickly, though occasional migrants are seen at least as late as 20 June (1998, 3 miles southeast of El Cajon, R14, N. Perretta).

Most territories of *extimus* remain occupied through early August; Haas' latest date for an adult (female) along the upper San Luis Rey River is 3 September (1999). Juveniles depart somewhat later; at the upper San Luis Rey the latest date for a known (banded) juvenile from the colony is 11 September (1998). Fall migration of adults of *brewsteri* begins in the third week of July and presumably accounts for the two "pairs" reported from nonbreeding habitat on Middle Peak (M20) 19 July 1987 (R. E. Webster, AB 41:1488, 1987). These adults' migration takes place primarily in August but largely bypasses San Diego County, as the birds swing east, avoiding Baja California and a crossing of the Gulf of California. Juveniles of *brewsteri* are more numerous, though still uncommon, in the county, and occur primarily in September. By mid October they are rare; the latest dates recorded are 26 October–3 November (1981, three at Point Loma, R. E. Webster, AB 36:218, 1982).

Winter: Unrecorded. There are fewer than 10 apparently valid sight records of the Willow Flycatcher elsewhere in southern California (no specimens). Central Sinaloa, in western Mexico, is the northern extreme of the normal winter range.

Conservation: Early in the 20th century, the Willow Flycatcher was locally common in San Diego County (Sharp 1907, Willett 1912, Stephens 1919a; 35 egg sets in WFVZ). Like that of so many riparian songbirds, the population collapsed in the mid 20th century, as the effects of cowbird parasitism and clearing of riparian woodland compounded each other. The riparian forest along the upper San Luis Rey River was not spared, being cleared by

the Army Corps of Engineers in the 1950s. It is probable that a remnant population of Willow Flycatchers persisted below Henshaw Dam and fortuitously began to nest in an alternative substrate, the coast live oak. In the late 20th century, clearing of riparian woodland was regulated, and the woodland regenerated itself in some areas. Following the formal listing of the Least Bell's Vireo as an endangered species in 1986, cowbirds were trapped widely, reducing parasitism pressure on all hosts. Yet, unlike the vireo, Blue-gray Gnatcatcher, and Yellow Warbler, the Willow Flycatcher has failed to respond in proportion. With no cowbird trapping nearby at the time, though, from the mid 1980s to the mid 1990s the upper San Luis Rey River colony evidently increased, to the point where it is now the largest colony of *extimus* in California, eclipsing that on the South Fork Kern River. Along the Santa Margarita River in Camp Pendleton, the number of territories increased from five in 1981 to 17 in 1986 (L. Salata in Unitt 1987), but the figures for 1986 through 2001 are virtually static. The incipient new colonies along the lower San Luis Rey River, in San Pasqual Valley, in San Felipe Valley and above El Capitan Reservoir are promising. Notably, the last two are in woodland that has grown only since the 1980s. But against these gains must be balanced the species' disappearance from several sites listed by Unitt (1987): Santa Margarita River north of Fallbrook, south end of Lake Cuyamaca, east end of Lower Otay Lake, and the Tijuana River valley. All of these were well surveyed between 1997 and 2001. The decline seems to have been arrested, and recovery has begun, but only slowly. In 2001, the known San Diego County population was 88 territorial males (Kus et al. 2003a).

Clearly, low rates of cowbird parasitism are a necessary but not sufficient condition for the Willow Flycatcher's recovery. Displacement of woodland by the exotic giant reed has become serious in many floodplains, especially that of the lower Santa Margarita River. In the Fallbrook area, clearing of steep chaparral-covered slopes for avocado orchards led to excessive runoff and catastrophic flooding during heavy rain in 1993, scouring the river channel. The vegetation recovered subsequently, but several years of below-average rainfall left the river frequently dry, and so unattractive to the flycatchers. Along the upper San Luis Rey River, the flow depends on the Vista Irrigation District's (VID) use of the river as a conduit for sending groundwater pumped from the basin of Lake Henshaw to the city of Escondido. Flow through the summer is maintained to support recreation in the La Jolla Indian Reservation, the result of a lawsuit among the La Jolla band of Luiseño Indians, the VID, and the

federal government. Though cattle were removed from the Forest Service and VID lands within the colony in the early 1990s, it is still common for cattle to wander out of nearby pastures and into the Willow Flycatcher habitat.

In the upper San Luis Rey colony, human recreation, including picnicking, floating downriver in tire tubes, hunting, and fishing, is on the increase (through the summer the river is stocked at the Forest Service day use area with nonnative trout). The spring hunting season for the recently introduced "Wild" Turkey overlaps the flycatchers' arrival, and hunters typically use the Forest Service's land to reach private property (W. E. Haas). Open fires, though prohibited, are common. Willow Flycatchers in this area are especially susceptible to fire because they depend on the coast live oak trees that are more prone to burn than more typically riparian trees. The colony barely missed huge fires just to the north in 1999 and to the west in 2003.

Because of the Willow Flycatcher's semicolonial habits—the clumping of territories near each other—restoration efforts should be focused near existing colonies. Lamberson et al. (2000) suggested that an important factor in the recovery of the Southwestern Willow Flycatcher is the need for adequate habitat within 15 km of existing population centers. Restoration attempts should recognize that low cowbird-parasitism rates, multilayered riparian woodland, and surface water are all important to the success of any attempt to bring back one of southern California's most endangered birds.

Taxonomy: The locally breeding subspecies is the pale *E. t. extimus* Phillips, 1948, while the birds passing through in migration are the darker *E. t. brewsteri* Oberholser, 1918 (Unitt 1987). The color of the crown, back, and neck are the best characters, though a difference is often evident on the underparts, too. In good light, the contrasting gray neck of *extimus*, differing clearly from the darker, more uniform olive neck and back color typical of *brewsteri*, is visible in the field. In the spring, when the birds are in fresh plumage, the pale olive edges on the crown feathers of *extimus* contrast with the dark centers, giving the crown a dappled appearance not obvious on the uniformly dark crown of *brewsteri*. The pale edges wear off over the summer, though, and even in fresh plumage reliable identification of the subspecies requires quantification of the color or comparison with museum specimens. The song of *extimus* is slower than that of other subspecies of the Willow Flycatcher (Sedgwick 2001), and this slow song is well attested by Haas' recordings from the colony along the upper San Luis Rey River.