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92590

040521 SW. Willow Flycatcher *Empidonax traillii extimus*

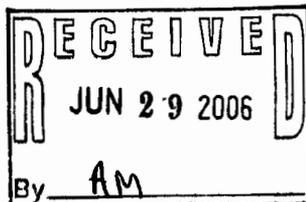


Biota Information System Of New Mexico BISON

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Numbers listed under "References" and numbers enclosed by asterisks (e.g., *43*) refer to reference numbers in the last section of the account (i.e., REFERENCES) and indicate the source of the information.

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Taxonomy

Species ID	040521
Name	Flycatcher, Willow, SW.
Other Common Names	Mosquerito barranqueno (Hispanic)
Category	04 Birds
Elcode	ABPAE33043
AOU Code	4660
BLM Code	EMTREX
Phylum	Chordata
Subphylum	Vertebrata
Class	Aves
Subclass	Neornithes

Suborder	Tyranni
Order	Passeriformes
Family	Tyrannidae
Genus	Empidonax
Species	traillii
Subspecies	extimus
Account	Single Ssp, < full species
Authority	(Phillips)
Scientific Name	Empidonax traillii extimus
Taxonomic Order	8520

References

02, 03, 37, 38, 39, 61, 69

Comments

For information regarding the other subspecies of Willow flycatcher in New Mexico, see subspecies account 040520. The southwestern willow flycatcher (Order Passeriformes; Family Tyrannidae) is a subspecies of one of the ten North American species in the genus Empidonax. The Empidonax flycatchers are renowned as one of the most difficult groups of birds to distinguish by sight, and the taxonomy of the group continues to be revised. The willow flycatcher and alder flycatcher (*E. alnorum*) were once considered a single species, the Traill's flycatcher (*E. traillii*). Some sources [American Ornithologists' Union (AOU) 1983, McCabe 1991] believe *E. traillii* and *E. alnorum*, and all their subspecies, constitute a superspecies, the "traillii complex." However, the two species are distinguishable by morphology (Aldrich 1951), song type, habitat use, structure and placement of nests (Aldrich 1953), ecological separation (Barlow and McGillivray 1983), and genetic distinctness (Seutin and Simon 1988) *52*. Breeding bird survey data for 1965 through 1979 combined the willow and alder flycatchers into a "Traill's flycatcher superspecies," because of taxonomic uncertainty during the 15-year reporting period *52*. ARIZONA This subspecies occurs in Arizona *61*.

Status

Status Code	Status Translation	References
101	Federal: Endangered	58
112	Federal: Critical Hab. Designated (NM)	58, 82
113	Federal: Critical Hab. Designated (AZ)	82
121	Federal: Migratory Bird Treaty Act	36
143	USFS Sensitive: Region 3 (NM,AZ)	44
201	State NM: Endangered	75, 81
208	State NM: Provides full protection	42
223	State NM: Not a Game Species	42
250	State AZ: FORMER STATUS; Endangered	52
255	State AZ: Species of Special Concern	73
260	State UT: Endangered	85
330	USFS Sensitive: Region 2 (CO)	71
503	Migratory: Seasonal movement	36
506	Neotropical Migrant: All Winter S. of U.S.	48, 54
700	TRADITIONAL CULTURAL IMPORTANCE	59
726	Navajo Tribes: Endangered (G2)	80
802	Heritage Global: Rare/Imperiled (G2)	61
821	Heritage AZ: Very Rare in AZ (S1)	61
839	Heritage Ranking: Taxon Tracked by Heritage Program	74
840	Heritage Ranking: See comments	61
999	See Comments	

Concern Code	Concern Translation	References
110	CONCERN: Low numbers	84
140	CONCERN: Limited or dated data/information	85
200	CAUSE: Habitat loss/degradation/fragmentation	84ü85
240	CAUSE: Disease/Parasites	84
999	SEE COMMENTS	

Comments on Status

1980: The willow flycatcher (all subspecies) was added to the Audubon Blue List of declining, threatened, or vulnerable species in 1980. This designation does not

provide regulatory protection (Fed. Register, 1993) *52*. 1988: Federal: The taxon was listed on the Federal Notice of Review to be considered for Endangered/Threatened status (NMDGF, 1988) *35*. 1991: This species was placed by the November 21, 1991 Federal Register, in Category 1 (Fed.Reg., 1991) *46*. 1993: Federal Status: Proposed endangered (Southwestern subspecies only) (Fed.Reg., 6/93) *52*. 1993: The US Fish and Wildlife Service designated Critical Habitat within the state of New Mexico, and has now included this with the proposed endangered status of the subspecies (USFWS, 1993) *53*. 1993: The Federal Register of July 23, 1993, Proposed the southwestern willow flycatcher be listed as an Endangered Species (Fed. Register, 1993) *52*. 1993: The USFWS determined that the preferred action was to list the southwestern willow flycatcher as Endangered. Threatened status would not be appropriate because the large proportion of historic habitat loss already constitutes extinction throughout a significant portion of the species' range (Fed. Register, 1993) *52*. 1994: The Southwestern willow flycatcher (*Empidonax traillii extimus*) was listed in the Federal Register, November 15, 1994, as a Category PE (proposed endangered) species for consideration to be listed as a Federal Endangered Species (Fed. Register, 1994) *57*. 1994: A recent proposal that the Federal status of *E.t.extimus* be uplisted to Endangered was supported by the Department (NMDGF) (NMDGF, 1994) *67*. 1995: The Southwestern willow flycatcher (*Empidonax traillii extimus*) was upgraded (February 17, 1995) to a Federal Endangered species. The listing was made effective March 29, 1995. Final Designation of Critical Habitat was delayed until July 23, 1995 (Fed. Register, 1995) *58*. 1995: *Empidonax traillii extimus* was listed under the Natural Heritage Global Rank "G5T2" ("G5" = [species listed] "Demonstrably Secure"; "T2" [subspecies listed] "Rare") (AGFD, 1995) *61*. 1995: The subspecies, *Empidonax traillii extimus*, was being "Tracked": data were being actively accumulated and entered into computerized and manual files by the Heritage Program (AGFD, 1995) *61*. 1996: The complete Natural Heritage Global Rank for the subspecies *Empidonax traillii extimus* was listed

"G5T2" (CNHP, 1996) *71*. 1996: The Southwestern willow flycatcher (*E.t.extimus*) was listed as a Sensitive Species in USFS Region 2 (CNHP, 1996) *71*. 1996: The subspecies, *Empidonax traillii extimus*, was listed by a New Mexico Natural Heritage Program list as "Tracked": data were being actively accumulated and entered into computerized and manual files by the Heritage Program (NMNHP, 1996) *74*. 1997: The USFWS designates critical habitat for the southwestern willow flycatcher. The USFWS has identified 18 critical habitat units totaling 964 river km (599 river miles) in Arizona, California, and New Mexico. See the Federal Register for more detailed information on specific areas in those states (Federal Register, 1997) *82*. NEW MEXICO 1988: New Mexico Status: "southwestern" subspecies, *E. t. extimus*, only: Endangered (group 2), first listed Jan. 9, 1988 (NMDGF Reg. 657) (NMDGF, 1988) *35*. 1990: The subspecies of the Willow flycatcher, *E. t. extimus* (Phillips) "Southwestern" Willow flycatcher, was listed in New Mexico as Endangered - group 2 (NMDGF, 1990) *39*; (NMDGF, 1990) *41*. 1994, Biologist's Recommendation: It was recommended that the New Mexico State Status of *E.t.extimus* be elevated to Group 1 (NMDGF, 1994) *67*. 1995/1996, Biologist's Recommendation: The Department (NMDGF) recommended that the state legal status of the subspecies (*E.t.extimus*) be uplisted to "Endangered". This would: 1) conform to the federal list, and 2) recognize the very precarious status of this taxon within the state (NMDGF, 9/95) *63*; (NMDGF, 1996) *70*. 1995/1996, Biologist's Recommendation: With other agencies, organizations, and individuals, the Department (NMDGF) should continue to survey for and monitor breeding populations and work with land owners and land and water managers to identify, protect, and enhance this flycatcher's riparian habitat (NMDGF, 9/95) *63*; (NMDGF, 1996) *70*. 1996, Biologist's Recommendation: Additionally, the NMDGF recommended that the USFWS establish a Recovery Team to identify actions and goals that will lead to recovery, and delisting, of this taxon (NMDGF, 1996) *70*. 1996: The recommended change in legal, New Mexico state, status for the southwestern willow flycatcher (*Empidonax traillii extimus*) was passed by

commission. The species status was upgraded from Threatened to Endangered (NMDGF, 1996) *75*. ARIZONA 1988: The state of Arizona classified the willow flycatcher (species) as endangered (AGFD, 1988) (Fed. Register, 1993) *52*. 1995: This species was granted Proposed Critical Habitat in Arizona (AGFD, 11/95) *68*. 1995: Empidonax traillii extimus was listed under the Natural Heritage Arizona State Rank "S1" ("S1" = "Very Rare"). The species, E.traillii, was listed in the same manner (AGFD, 1995) *61*. 1996: The Southwestern willow flycatcher (E.t.extimus) was listed as an Arizona Species of Special Concern (AGFD, 1996) *73*. CALIFORNIA 1992: California listed the southwestern willow flycatcher as Endangered (CDFG, 1992) (Fed. Register, 1993) *52*. UTAH

Comments on Trends

1987: Breeding populations of willow flycatcher in many areas are presumed to have been reduced by the loss of riparian habitats, a development that led Unitt (1987) to refer to the southwestern U.S. subspecies (E. t. extimus) as endangered. The breeding population in New Mexico is estimated at about 100 pairs, and overall numbers have declined in the lower and perhaps the middle Rio Grande Valley (Hubbard 1987) (NMDGF, 1988) *35*. 1995: Censuses and other population estimates from the late 1980s (supported by extensive surveys in 1993 and 1994) of Southwestern willow flycatcher breeding areas indicated only 300 to 500 breeding pairs remained. Many nesting groups monitored since that time continued to decline. Some groups had all of their nests parasitized by cowbirds (Fed. Register, 1995) *58*. 1991: Trend for the subspecies E.t.extimus (in 1991) was listed as Declining. "Declining" indicates decreasing numbers and/or increasing threats (Fed. Register, 1991) *46*. 1991/1992: One noted population in California (Unitt 1984 and 1987, Schlorff 1990, Service unpublished data) remained stable or increased in recent years where threats from livestock grazing had been virtually eliminated. However, after remaining stable or increasing for several years, this group on the South Fork of the Kern River experienced numerical declines in 1991 and 1992 (Fed. Register, 1993) *52*.

1994: The trend of the species' population was listed "Declining" (Fed. Register, 1994) *57*. 1994: Cooperative surveys in New Mexico in 1993 located less than 35 occupied *E.t.extimus* territories; preliminary results of 1994 surveys indicate at least 55 occupied territories were found (NMDGF, 1994) *67*. 1995: At the time of state-listing in 1988, the Department (NMDGF) estimated fewer than 200 pairs remained in New Mexico. Cooperative surveys in 1993-95 found only about 100 pairs, with some 75% occurring in one local area (NMDGF, 9/95) *63*.

Comments on Culture

1995: By their feeding habitats, Southwestern willow flycatchers provide insect control in dense, multi-layered riparian zones -- an essential function benefitting people and plant life (Fed. Register, 1995) *58*. 1993: Although currently rare, the southwestern willow flycatcher was not highly sought out by recreational bird watchers. It was not one of the highly-publicized specialty bird species which draws millions of bird watchers annually to the southwestern United States (Fed. Register, 1993) *52*.

Distribution

State	References
NM: Extant	35
AZ: Extant	61
CO: Species occurs(ed)	71

New Mexico County Occurrence

County	Data Season	Regular Abundance	Behavior	References
New Mexico		Regular		62
Bernalillo	Sp-Su-F		Breeds	35
Bernalillo				47
Catron	Sp-Su-F		Breeds	35

Catron			47
Chaves			47
Cibola			47
Cibola		Rare	35
Colfax			47
De Baca			47
Dona Ana	Sp-Su-F	Breeds	35
Dona Ana			47
Eddy			47
Grant	Sp-Su-F	Breeds	35
Grant			47
Guadalupe			47
Harding			47
Hidalgo	Sp-Su-F	Breeds	35
Hidalgo			47
Lincoln	Sp-Su-F	Breeds	35
Lincoln			47
Los Alamos			47
Luna	Sp-Su-F	Breeds	35
McKinley	Sp-Su-F	Breeds	35
McKinley			47
Mora			47
Otero			47
Quay			47
Rio Arriba	Sp-Su-F	Breeds	35
Rio Arriba			47
Sandoval	Sp-Su-F	Breeds	35
Sandoval			47

San Juan			47
San Miguel			47
Santa Fe			47
Santa Fe		Rare	35
Sierra	Sp-Su-F	Breeds	35
Sierra			47
Socorro	Sp-Su-F	Breeds	35
Socorro			47
Taos	Sp-Su-F	Breeds	35
Taos			47
Torrance			47
Valencia	Sp-Su-F	Breeds	35
Valencia			47

Arizona County Occurrence

County	Data	References
Apache		78
Cochise		78
Coconino		78
Gila		78
Graham		78
Greenlee		78
La Paz		78
Mohave		78
Pinal		78
Yavapai		78
Yuma		78

Comments on Distribution

The Southwestern willow flycatcher breeds in riparian habitats from southern California to Arizona and New Mexico, plus southern Utah and Nevada; it may also be found in southwest Colorado and west Texas although no critical habitat was proposed in those two states. The songbird is found in the U.S. from May until September; it winters in southern Mexico, Central America and northern South America *58*.

The "Historic range" of the Southwestern willow flycatcher (*Empidonax traillii extimus*) includes Arizona, California, Colorado, New Mexico, Texas, Utah, and Mexico (Fed. Register 1994)*57,52*.

Distribution: The willow flycatcher (species) breeds from central British Columbia eastward to Nova Scotia and southward to northern Baja California, the Southwest, Arkansas, and the southern Appalachians; it winters from southern Mexico to Panama (A.O.U. 1983). The subspecies *E. t. extimus* breeds from southern California and Baja California eastward to through Arizona to southern Utah, central New Mexico, and Trans-Pecos Texas (Unitt 1987). New Mexico: The species occurs statewide in spring and autumn migration, while birds presumably of the subspecies *E. t. extimus* breed in the Chama, Rio Grande, Zuni, San Francisco, Gila, and probably the Hondo (Lincoln Co.) basins and in the San Juan and western Sangre de Cristo mountains; reports of breeding elsewhere are unverified, dubious, or incorrect (Hubbard 1987). Areas of key habitat include breeding areas in the vicinities of Zuni (McKinley Co.), Corrales (Sandoval Co.) to upper Elephant Butte L. (Sierra Co.), Glenwood-Pleasanton (Catron Co.), and Cliff-Redrock (Grant Co.). (The map shows the breeding range for *E. t. extimus*) *35*.

The southwestern willow flycatcher also breeds in extreme southern portions of Nevada. It may also breed in southwestern Colorado, but nesting records are not available. Phillips (1948) suggested that willow flycatchers breeding from northeastern Arizona east to the Rio Grande River in New Mexico may be intergrades between *E. t. extimus* and the more northerly

subspecies *52*.

The migration routes and destination of the southwestern willow flycatcher are not well understood. However, willow flycatchers have been reported to sing and defend winter territories in Mexico and Central America (Gorski 1969, McCabe 1991). *E. t. extimus* most likely winters in Mexico, Central America, and perhaps northern South America (Phillips 1948, Peterson 1990). However, the habitats it uses on wintering grounds are unknown. Tropical deforestation may restrict wintering habitat for this and other neotropical migratory birds (Finch 1991) *52*.

Willow flycatchers (*E. traillii*) summer in the north and west and are considered rare to fairly common. They summer regularly in the San Juan, Chama, Rio Grande, San Francisco and Gila valleys and in the San Juan Mtns. They migrate statewide. Summer reports (for the species) in likely breeding areas include Jemez Mtns, Red River and Eagle Nest Lake *40*.

This species breeds in North America and winters primarily south of the US-Mexico border (1993) *54,48*.

Empidonax traillii extimus was discovered on the Gila National Forest during a spring bird census in 1992. Populations occur in the Cliff/Gila Valley, New Mexico. In this region occurs the largest known nesting concentration of the Southwestern willow flycatcher (Boucher, et al., 1997) *79*.

ARIZONA

Records indicate that the former range of the southwestern willow flycatcher in Arizona included portions of all major river systems (Colorado, Salt, Verde, Gila, Santa Cruz, and San Pedro) and probably major tributaries. Historical records exist from the Colorado River near Lee's Ferry and near the Little Colorado River confluence (Phillips, pers. comm., cited in Unitt 1987), and along the Arizona-California border (Phillips 1948, Unitt 1987), the Santa Cruz River near Tucson (Swarth 1914, Phillips 1948), the Verde River at Camp Verde (Phillips 1948), the Gila River at Fort Thomas (W.C. Hunter, pers. comm., cited in Unitt 1987), the White River at Whiteriver, the upper and lower San Pedro River (Willard 1912, Phillips 1948), and the

Little Colorado River headwaters area (Phillips 1948) *52*.

Nests very locally in wooded, swampy situations within Sonoran zones statewide and possibly also at higher elevations in the White Mountains. Known to breed in the Grand Canyon segment of the Colorado River and along the San Pedro River. The subspecies was extirpated from the lower Gila and lower Colorado rivers. Threatened by loss of habitat through stream diversions and channel clearing (AGFD, 1988) *56*.

1996: The Southwestern willow flycatcher nests locally in wooded, swampy situations within the Sonoran Life Zones (e.g. Big Sandy, Bill Williams delta, upper Gila River, Grand Canyon, middle Salt River, lower San Pedro River, Topock Marsh, upper Verde Valley) and at higher elevations in the White Mountains (AGFD, 1996)*73*.

The willow flycatcher, *Empidonax traillii*, was listed as a rare to uncommon species, occurring mainly in the breeding season (March - August), at the White Sands Missile Range (Kamees and Burkett, 1996) *76*.

Willow flycatchers (*Empidonax traillii* -- subspp. not stated) occur on the Apache-Sitgreaves, Coconino, Coronado, Kaibab, Prescott, and Tonto National Forests of Arizona (Patton, 1994) *60*.

TEXAS

The eastern edge of the southwestern willow flycatcher's range is in western Texas (Unitt 1987). Collections have been made at Fort Hancock on the Rio Grande (Phillips 1948), in the Guadalupe Mountains (Phillips, pers. comm., cited in Unitt 1987), the Davis Mountains (Oberholser 1974), and from unspecified locales in Brewster County (Wolfe 1956). Wauer (1973 and 1985) considered *E. t. extimus* a rare summer resident in Big Bend National Park. Data are lacking on current population levels and trends in Texas. Loss and modification of habitat may have reduced populations on the Rio Grande and Pecos Rivers *52*.

UTAH

The north-central limits of breeding southwestern willow flycatchers are in southern Utah. However, because of possible intergradations with *E. t.*

adastus, the exact limits are not well defined and a clinal gradation between the two subspecies may exist (Behle 1985, Unitt 1987). Records that are likely to represent *E. t. extimus* are from the Virgin River (Phillips 1948, Whitmore 1975), Kanab Creek, and along the San Juan and Colorado Rivers (Behle et al. 1958, cited in Unitt 1987; Behle and Higgins 1959, Behle 1985). Other reports document the subspecies being present along the Virgin, Colorado, San Juan, and perhaps Paria Rivers (BLM, unpubl. data). Although Behle believed *E. t. extimus* was always rare in southern Utah overall (pers. comm. cited in Unitt 1987), he considered it a locally common breeding resident where habitat existed along the Colorado River and its tributaries in southeastern Utah (Behle and Higgins 1959) *52*.

COLORADO

Whether or not the southwestern willow flycatcher breeds in Colorado is unclear. Some authors believe the subspecies may range into extreme southwestern Colorado (e.g. Hubbard 1987). Others do not (e.g. Unitt 1987). Several specimens taken in late summer have been identified as *E. t. extimus*, but nesting was not confirmed (Bailey and Niedrach 1965). Phillips (1948) cautioned that willow flycatchers in this region displayed considerable individual variation and may represent intergrades between *E. t. extimus* and *E. t. adastus*. No recent data are available on occurrence, population levels, or trends in this area *52*.

MEXICO

Six specimens from Baja California del Norte and two from Sonora were discussed by Unitt (1987). He and Phillips (pers. comm., cited in Unitt 1987) believed *E. t. extimus* was not common in northwestern Mexico. Wilbur (1987) was skeptical of its presence as a breeder in Baja California. In the more general treatments of field guides, the willow flycatcher is described as breeding in extreme northwestern Mexico, including northern Baja California del Norte (Blake 1953, Peterson 1973). No recent data are available on current population levels or trends *52*.

Unitt (1987) speculated that at higher elevations and in the eastern portion of its range, some *E. t. extimus* populations may be adapting to tamarisk. It is also possible that tamarisk affects *E. t. extimus* by altering the riparian insect fauna (Carothers and Brown 1991) *52*.

Nesting *E. t. extimus* have been found in tamarisk at middle elevations [less than 850 - 1200 m (2700 - 3500 feet)], on the Colorado River (Brown 1988), the Rio Grande (Hundertmark 1978, Hubbard 1987), and the San Pedro River (Hunter et al. 1987) *52*.

The majority of the southwestern willow flycatcher's range lies within California, Arizona, and New Mexico (Phillips 1948, Hubbard 1987, Unitt 1987) *52*.

Hydrologic Unit Distribution

Hydrologic Unit	References
SAN JUAN RIVER BASIN	40
RIO GRANDE AND PECOS BASINS	40
Rio Chama	40
LOWER COLORADO RIVER BASIN	40
Upper Gila	40
San Francisco	40

Other Distribution - New Mexico

Land Unit

FOREST SERVICE LANDS, NEW MEXICO
 CARSON NATIONAL FOREST
 CIBOLA NATIONAL FOREST
 GILA NATIONAL FOREST
 LINCOLN NATIONAL FOREST
 SANTA FE NATIONAL FOREST
 US NATIONAL WILDLIFE REFUGES, USFWS, NEW MEXICO
 BITTER LAKE NWR
 BOSQUE DEL APACHE NWR

LAS VEGAS NWR
 MAXWELL NWR
 NEW MEXICO STATE PARKS
 COYOTE CREEK SP
 SANTA ROSA LAKE SP
 WILDLANDS ECOREGIONS - SOUTHWESTERN U.S.
 Southern Rocky Mts; NM/CO

Habitat Associations

General Habitat	References
RIPARIAN	52
TERRESTRIAL	
AERIAL	
MONTANE	65
LOWLANDS	65, 66
SEE COMMENTS	52

Comments on Habitat Associations

The riparian habitat of the southwestern willow flycatcher has always been rare and has become more so *52*. CRITICAL HABITAT: The Southwestern Willow Flycatcher is a riparian obligate bird which is proposed for federal listing and includes designated critical habitat. *52*

Gap Analysis Habitat Associations

Gap Vegetation Type	Season Gap Importance	References
RIPARIAN		
MONTANE RIPARIAN cottonwd/alder/willow	Sp-Su- Important F	65
MONTANE RIPARIAN cottonwd/alder/willow	Sp-Su- Casual Use F	66
LOWLAND RIPARIAN	Sp-Su- Important	65, 66

cottonwd/sycamore	F		
MARSH rush/bulrush/sedge/cattail	Sp-Su-	Important	65
	F		
AQUATIC			
AQUATIC: RIVERINE/LACUSTRINE	Sp-Su-	Casual Use	65
	F		

Land Use/Land Cover Associations

LU/LC	References
Wetland	35, 52
Forested Wetland	35, 52
Nonforested Wetland	35, 52

Comments on Land Use/Land Cover Associations

Suckling et al. (1992) noted that most of the areas still known to support southwestern willow flycatchers have low or nonexistent levels of livestock grazing *52*.

National Wetland Inventory Associations

NWI	Class Special Modifier	Modifier Lifestage References
Riverine		
Riverine, unknown perennial		

Comments on General Habitat Associations

The Southwestern willow flycatcher is found in close association with dense groves of willows, arrowweed, buttonbush, tamarisk, Russian olive, and some other riparian vegetation, often with a scattered overstory of cottonwood *58*.

The Southwestern willow flycatcher breeds in riparian habitats -- along rivers, streams, and other wetlands *58*. The willow flycatcher builds its nest in shrubs

and small trees in willow thickets, shrubby mountain meadows, and deciduous woodlands along streams, lakes, and bogs (King 1955, Holcomb 1972) *49*. Although occurring widely in New Mexico during migration, willow flycatchers are confined to riparian woodlands in the breeding season (Hubbard 1987). These habitats are typically dominated by cottonwoods (*Populus* spp.), often with an understory of small trees or tall shrubs and surface water nearby *35*. The southwestern willow flycatcher occurs in riparian habitats along rivers, streams, or other wetlands, where dense growths of willows (*Salix* sp.), *Baccharis*, arrowweed (*Pluchea* sp.) tamarisk (*Tamarix* sp.) or other plants are present, often with a scattered overstory of cottonwood (*Populus* sp.) (Grinnell and Miller 1944, Phillips 1948, Zimmerman 1970, Whitmore 1977, Hubbard 1987, Unitt 1987, Whitfield 1990, Brown and Trosset 1989, Brown 1991). These riparian communities provide nesting and foraging habitat. Throughout the range of *E. t. extimus*, these riparian habitats tend to be rare, widely separated, small and/or linear locales, separated by vast expanses of arid lands. The southwestern willow flycatcher has experienced extensive loss and modification of this habitat and is also endangered by other factors, including brood parasitism by the brown-headed cowbird (*Molothrus ater*) (Unitt 1987) *52*. Habitat patches occupied in the Grand Canyon in 1991 and 1992 varied in size from 0.08 hectare (ha) [0.2 acre (ac)] to 0.63 ha (1.5 ac) (M. Sogge, unpublished data). These figures should be considered very general indications of "suitable" patch size. Throughout its range, the capability of habitat patches to support southwestern willow flycatchers is confused by the rarity of the subspecies, unstable populations, and other parameters *52*. Unitt (1987) speculated that at higher elevations and in the eastern portion of its range, some *E. t. extimus* populations may be adapting to tamarisk. It is also possible that tamarisk affects *E. t. extimus* by altering the riparian insect fauna (Carothers and Brown 1991) *52*. ARIZONA Southwestern willow flycatchers nest locally in wooded, swampy situations within the Sonoran Life Zones (AGFD, 1996)*73*.

Food Habits

Trophic		References
	GENERAL CARNIVORE-eats animals	07
	INVERTIVORE-eats invertebrates	07, 32, 35, 52
Lifestage	Food Item Consumed	Part of Food Item
General	VASCULAR PLANTS:	Not Applicable
General	ROSACEAE	Not Applicable
General	CAPRIFOLIACEAE	Not Applicable
General	ANIMALS:	Adult stage
General	ANIMALS:	Larva stage
General	INVERTEBRATES	Adult stage
General	INVERTEBRATES	Larva stage
General	ARTHROPODA	Adult stage
General	ARTHROPODA	Larva stage
General	Arachnida	Adult stage
General	Diplopoda	Adult stage
General	Insecta	Larva stage
General	Insecta	Adult stage
General	Odonata	Adult stage
General	Orthoptera	Adult stage
General	Lepidoptera	Larva stage
General	Lepidoptera	Adult stage
General	Coleoptera	Adult stage
General	Hymenoptera	Adult stage
General	Diptera	Adult stage
General	SEE COMMENTS	See Comments
Important	ANIMALS:	Adult stage
Important	ANIMALS:	Larva stage
Important	INVERTEBRATES	Adult stage
Important	INVERTEBRATES	Larva stage
Important	ARTHROPODA	Adult stage
Important	ARTHROPODA	Larva stage
Important	Insecta	Larva stage
Important	Insecta	Adult stage
Important	Lepidoptera	Larva stage
Important	Hymenoptera	Adult stage

Comments on General Food Habits

The southwestern willow flycatcher is an insectivore. It forages within and occasionally above dense riparian vegetation, taking insects on the wing and gleaning them from foliage (Wheelock 1912, Bent 1960) *52*. Southwestern willow flycatchers feed on insects in dense, multi-layered riparian zones. Such insect control in these areas is an essential function benefitting people and plant life *58*. NEW MEXICO The food of willow flycatchers (species) is dominantly insects, these usually taken during aerial forays *35*. COLORADO SOME ELDERBERRIES, BLACKBERRIES EATEN *32*.

References/Lifestage	Reference Numbers
General	08, 31, 32, 35, 52
Adult	08, 31, 32
Important	31, 32

Environmental Associations

Lifestage Environmental Association

Breeding Adult Elevation: 3001-4000 ft. (910 - 1220 m)
Breeding Adult Elevation: 4001-5000 ft. (1220 - 1520 m)
Breeding Adult Elevation: 5001-6000 ft. (1520 - 1830 m)
Breeding Adult Elevation: 6001-7000 ft. (1830 - 2130 m)
Breeding Adult Elevation: 7001-8000 ft. (2130 - 2440 m)
Breeding Adult Elevation: 8001-9000 ft. (2440 - 2740 m)
Breeding Adult Elevation: Specified in Comments
Breeding Adult Aquatic Habitat: Swamp; marshy with dense vegetation & trees
Breeding Adult Aquatic Habitat: Specified in Comments
Breeding Adult Grassland: Meadows - Low, moist grassland
Breeding Adult Agricultural Crops: Specified in Comments
Breeding Adult Vegetation Mosaics/Edges: Specified in Comments
Breeding Adult Aquatic/Terrestrial Ecotones: Woodland/water
Breeding Adult Aquatic/Terrestrial Ecotones: Specified in Comments
Breeding Adult See Comments On Environmental Associations
Feeding Adult Grassland: Meadows - Low, moist grassland
Feeding Adult Grassland: Specified in Comments
Feeding Adult Agricultural Crops: Specified in Comments

General	Elevation: 3001-4000 ft. (910 - 1220 m)
General	Elevation: 4001-5000 ft. (1220 - 1520 m)
General	Elevation: 5001-6000 ft. (1520 - 1830 m)
General	Elevation: 6001-7000 ft. (1830 - 2130 m)
General	Elevation: 7001-8000 ft. (2130 - 2440 m)
General	Elevation: 8001-9000 ft. (2440 - 2740 m)
General	Elevation: 9001-10000 ft. (2740 - 3050 m)
General	Elevation: 10001-11000 ft. (3050 - 3350m)
General	Elevation: 11001-12000 ft. (3350 - 3660 m)
General	Elevation: 12001-13000 ft. (3660 - 3960 m)
General	Elevation: Specified in Comments
General	Aspect: West
General	Human Association: Wildlife refuges/sanctuaries
General	Salinity: Specified in Comments
General	AQUATIC
General	General Waterbody Type: Rivers
General	General Waterbody Type: Streams
General	General Waterbody Type: Lakes
General	General Waterbody Type: Wetlands; marsh, bog, etc.
General	General Waterbody Type: Specified in Comments
General	Aquatic Habitat: Bog; peaty soil, highly acidic
General	Soil Type: Sand
General	Soil Type: Loam
General	Soil Type: Gravel
General	Soil Type: Specified in Comments
General	Soil Moisture: Moist
General	TERRESTRIAL
General	Terrestrial Features: Canyon/Steep slope
General	Terrestrial Features: Mesa; high/flat/table-land/sharp slopes
General	Terrestrial Features: Specified in Comments
General	Desert: Specified in Comments
General	Grassland: Meadows - Low, moist grassland
General	AGRICULTURAL CROP: Non-specific
General	Agricultural Crops: Specified in Comments
General	Vegetation Mosaics/Edges: Specified in Comments
General	Shrub Height: 11-15 feet
General	Shrub Height: > 15 feet
General	Shrub: Specified in Comments
General	Overstory Tree: Specified in Comments
General	Understory Trees: Dense
General	Understory Trees: Specified in Comments
General	Aquatic/Terrestrial Ecotones: Woodland/water

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Klingel, J., 2004. In Biota Information System Of New Mexico (BISON) database record 040521 SW. Willow Flycatcher New Mexico Dept. Game and Fish, Santa Fe, NM, Available at <http://fwie.fw.vt.edu/states/nmex_main/species/040521.htm>[http<http://fwie.fw.vt.edu/states/n](http://fwie.fw.vt.edu/states/n)
(Klingel 2004, *****)

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Klinger BISON entry for flycatcher.doc