

Southwestern Willow Flycatcher



ASSESSING HABITAT QUALITY FOR PRIORITY WILDLIFE SPECIES IN COLORADO WETLANDS



© U.S. FISH AND WILDLIFE SERVICE

Southwestern willow flycatchers (*Empidonax traillii extimus*, Family *Tyrannidae*) are attracted to shrubs near water or damp soil, where they can find an abundance of insects to eat.

Species Description

Identification

The willow flycatcher can be distinguished from other *Empidonax* flycatchers by the lack of a conspicuous eye ring. An entirely yellow lower mandible (beak) is a characteristic shared by cordilleran flycatchers (*Empidonax occidentalis*), but the throat of the willow is white compared with a yellow throat of the cordilleran. The two-note *fitz-bew* song of the willow flycatcher is unique among the *Empidonax* flycatchers.

Preferred Habitats

Southwestern willow flycatchers primarily inhabit wide, wet floodplains with a shrubby component. They are usually found in riparian areas and other wetlands with dense patches of shrubs and areas of open water. They occupy habitat dominated by willow, but will use tamarisk and Russian olive,

particularly where these non-native species dominate riparian habitat.

Diet

As generalist insectivores, foraging in the air, on the ground, and on vegetation, southwestern willow flycatchers consume a wide diversity of insects and spiders. Some of the dominant food items in their diet include flies, bugs, and beetles.

Conservation Status

Federal: Listed as Endangered in 1995.

Colorado: Listed as Endangered, and designated Tier 1 Species of Greatest Conservation Need.

At the time of listing, 359 territories were known. Although the number of known territories has increased (2007: 1,299 territories; 2012: 1,629 territories), perhaps due to increased sampling effort, the recovery goal of 1,950 territories has not been met.

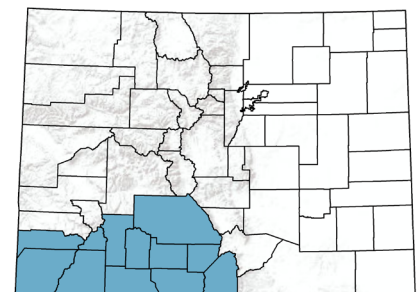
Species Distribution

Range

Southwestern willow flycatchers are known to breed in parts of Arizona, California, Colorado, Nevada, New Mexico, Texas, and Utah. During the non-breeding season, southwestern willow flycatchers occupy areas of Mexico to northern South America.



■ Current distribution



■ Known or suspected to breed

North America map based on USFWS 2018. Colorado map based on knowledge of the reviewers.

Version Date: November 2020

Preferred Habitat Conditions

Dominant vegetation structure	riparian shrubs with sparse to no trees
Interspersion	shrub patches interspersed with saturated soil or other wet areas; sometimes vegetation patches in long contiguous stands
Distance from vegetation patch to water or saturated soil	less than 40 feet from water (water present May through early June during typical years)
Vegetation density	branches and twigs very dense in lowest 6 feet with live foliage throughout
Dominant vegetation species	willow; generally avoids dense tamarisk
Nesting substrate (e.g., shrub structure)	vertical or nearly vertical, small-diameter stems; several stems woven into a nest of approximately 3 inches
Size and shape of vegetation patches	0.25–175 acres, but typically 3–5 acres; strips of at least 33 feet wide have been occupied
Canopy height if native (e.g., willow)	10–23 feet
Canopy height if non-native (e.g. tamarisk)	if tamarisk forms understory within cottonwood gallery, 10–20 feet; if tamarisk forms monoculture (no trees), 20–33 feet
Vegetation layers	often a single layer with no obvious over-story
Note: In some areas, tamarisk leaf beetles have defoliated tamarisk, rendering that habitat extremely poor.	

Management Recommendations

This fact sheet contains easy-to-use guidelines for understanding habitat needs of Colorado Parks and Wildlife priority wetland-dependent wildlife. Biologists with expertise in southwestern willow flycatchers have suggested numerous practical steps that can be taken to improve habitat quality for this species.

Hydrology

- Conserve water to protect integrity of water table.
- Flood sites to limit access of nest predators to meadows occupied by flycatchers.
- Maintain conditions to favor willow over tamarisk.
- Manage water to mimic natural conditions and avoid total inundation in habitat.
- Avoid diverting water from riparian areas.

Vegetation

- Control new invasions of exotic riparian plants.
- Encourage large, dense patches of shrubs, preferably willow.

Contamination

- Reduce agricultural chemicals and other toxins that affect insects in their diet.

Land Use

- Exclude livestock grazing during early breeding season (May through early July) in occupied habitat to reduce cowbird parasitism.
- Avoid extraction activities (e.g., sand and gravel).
- Exclude or limit human use of occupied sites.

Conservation

- Maintain mosaic of wetlands in different successional stages.
- Reduce predator intrusions where possible, e.g., domestic cats.
- Reduce predator attractants, e.g. food and trash.
- Beaver activity may benefit habitat but monitor for excessive vegetation loss.



© U.S. FISH AND WILDLIFE SERVICE

Acknowledgements

Terry Ireland (U. S. Fish and Wildlife Service, Grand Junction, CO), Matthew J. Johnson (Colorado Plateau Research Station, Northern Arizona University, Flagstaff, AZ), Charles Van Riper III (Professor Emeritus, University of Arizona; U. S. Geological Survey, Tucson, AZ), and Scott Durst (U. S. Fish and Wildlife Service, Albuquerque, NM) reviewed earlier versions and provided input on preferred habitat conditions.

Suggested Reading and Citations

- CPW (Colorado Parks and Wildlife). 2015. State Wildlife Action Plan: A Strategy for Conserving Wildlife in Colorado. Denver, Colorado.
- Drost, C. A., E. H. Paxton, M. K. Sogge, and M. J. Whitfield. 2001. Food habits of the southwestern willow flycatcher during the nesting season. *Studies in Avian Biology* No. 26:96-103.
- Finch, D. M., J. Agyagos, T. McCarthey, R. M. Marshall, S. H. Stoleson, and M. J. Whitfield. 2000. Management recommendations. In *Status, ecology, and conservation of the southwestern willow flycatcher*. D. M. Finch and S. H. Stoleson, Eds. Pages 107-117. Gen. Tech. Rep. RMRS-GTR-60. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station.
- Hatten, J. R., E. H. Paxton, and M. K. Sogge. 2010. Modeling the dynamic habitat and breeding population of southwestern willow flycatcher. *Ecological Modelling* 221:1674-1686.
- Sogge, M. K., S. J. Sferra, T. McCarthey, S. O. Williams III, and B. E. Kus. 2003. Distribution and characteristics of southwestern willow flycatcher breeding sites and territories: 1993-2001. *Studies in Avian Biology* No. 26:5-11.
- Stoleson, S. H., and D. M. Finch. 2003. Microhabitat use by breeding southwestern willow flycatchers on the Gila River, New Mexico. *Studies in Avian Biology* 26:91-95.
- U. S. Fish and Wildlife Service. 2002. *Southwestern Willow Flycatcher Recovery Plan*. Albuquerque, New Mexico. i-ix + 210 pp., Appendices A-O
- U. S. Fish and Wildlife Service. 2018. *Species Profile for Southwestern Willow Flycatcher (Empidonax traillii extimus)*. <https://ecos.fws.gov/ecp0/profile/speciesProfile?spcode=B094>.



© U.S. GEOLOGICAL SURVEY

DISCLAIMER: This scorecard is designed specifically for the Colorado Parks and Wildlife (CPW) Wetland Wildlife Conservation Program. It does not replace protocols required by U. S. Fish and Wildlife Service (USFWS). Please contact USFWS regarding questions about their required protocols for species listed under the Endangered Species Act.

Habitat Scorecard for Southwestern Willow Flycatcher (v. Nov 2020)

Assessment of habitat before and after restoration or management actions

Project Name: _____ Project Area (acres): _____ Habitat Area (acres): _____

Size of Contiguous Habitat outside Project Area (acres): _____ Ownership (circle): Same / Different / Conservation Easement

Scorecard Instructions: Enter one value that best describes early to late-summer conditions of each habitat variable, using the numbers in the value column. Habitat variables are in shaded boxes; ranges of condition are directly below each variable. **If condition is outside range or is not described, enter a zero.**

Project Area and Habitat Area: The project area includes the entire area affected by the project. The habitat is the area that will provide (in case of pre-project) or does provide (post-project) habitat for each potential target species within the project area. The habitat area may be the same size as the project area or it might be smaller and it may be defined differently for different target species. If there is contiguous habitat area outside the project area, note the size and whether the ownership of the contiguous areas is the same or different and whether it is under conservation easement or other habitat protection. If the habitat area within your project area is noncontiguous and/or if sections are in very different conditions, consider using multiple scorecards so that each scorecard represents the general conditions. If you use multiple scorecards, identify each habitat area on a map.

Key habitat variable and conditions	Value	Pre-Project	Expected Post-Project	Actual Post-Project
Date of assessment				
Dominant vegetation structure in habitat area				
Entirely or mostly shrubs (little to no obvious over-story of trees)	15.2			
Trees form obvious canopy over shrubs	10.1			
Shrub layer sparse or more trees than shrubs	5.1			
Distance from edge of shrubby patches to nearest water or saturated soils				
≤40 feet	15.2			
40 – 60 feet	10.1			
>60 feet	5.1			
Vegetation density at about 2/3 canopy height				
Totally shaded	15.2			
More shade than sun	10.1			
More sun than shade	5.1			
Tamarisk defoliation (can measure beetle activity as early as mid-late May)				
Circle appropriate source(s) of defoliation: Tamarisk leaf beetle Herbicide Fire Other				
No tamarisk OR 0 – 25% defoliation of tamarisk	15.2			
>25 – 75% defoliation of tamarisk	10.1			
>75% defoliation of tamarisk	5.1			
Dominant shrub species				
>90% willow	13.6			
40 – 90% willow	9.1			
<40% willow	4.5			
Nesting substrate				
Majority of shrubs have vertical, or nearly vertical, branches that can support nest	12.9			
A few shrubs have vertical, or nearly vertical, branches that can support nest	8.6			
No shrubs with vertical, or nearly vertical, branches that can support nest	4.3			

Continued on next page.

Habitat Scorecard for Southwestern Willow Flycatcher (v. Nov 2020)

Assessment of habitat before and after restoration or management actions

Southwestern Willow Flycatcher Scorecard *continued.*

Key habitat variable and conditions	Value	Pre-Project	Expected Post-Project	Actual Post-Project
Size of vegetation patches				
>3 acres	12.9			
>1.5 – 3 acres	8.6			
0.25 – 1.5 acres	4.3			
Total (of 100 possible): add all numbers in before or after columns				

For monitoring purposes (no score), describe general condition of tamarisk in project area				
% green (10% increments)				
% brown (10% increments)				
% dead (10% increments) NOTE: total should equal 100%				