Buff-breasted Flycatcher, photo by ©Gordon Karre

Conservation Profile

Species Concerns
Small Population Size Fire Suppression Recreational Activities Unsustainable Livestock Grazing

Conservation Status Lists	
USFWS[1]	BCC List (BCR 34,R2)
AZGFD[2]	Tier 1B
DoD[3]	No
BLM[4]	No
PIF Watch List[5b]	No
PIF Regional Concern[5a]	Regional Stewardship BCR 34

Migratory Bird Treaty Act
Covered

PIF Breeding Population Size Estimates[6]	
Arizona	75 – 130[9] ○
Global	2,000,000^
Percent in Arizona	.005%

PIF Population Goal[5b]
Maintain

Trends in Arizona	
Historical (pre-BBS)	Declines 1800s -1970[9]
BBS[7] (1968 – 2013)	Unknown; populations fluctuate

PIF Urgency/Half-life (years)[5b]
Insufficient Data

Monitoring Coverage in Arizona	
BBS[7]	Not adequate
AZ CBM	Not covered

Associated Breeding Birds
Painted Redstart, Black-throated Gray Warbler, Yellow-eyed Junco, Hutton's and Plumbeous vireos, Arizona Woodpecker, Montezuma Quail

Breeding Habitat Use Profile

Habitats Used in Arizona
Primary: Madrean Pine-Oak Woodlands Secondary: Montane Riparian Woodlands[4]

Key Habitat Parameters	
Plant Composition	Pine component (Chihuahua, Apache) most important[9]; often with sycamore, alligator juniper, walnut, madrone and several species of evergreen oaks[8]
Plant Density and Size	Open-growth forests (canopy cover about 20%)[9], maintained by fires; high tree diversity (2 – 8 species) near nests 4; medium-age (trees 12 – 18 inches DBH) or older; usually with open understory of grasses and small trees (5-15% cover between 7 – 33 feet)[9]
Landscape	Burned forest with patches of living pines important[4,6]; forest patches > 500 feet wide most suitable[10]; frequently near riparian forest[4]

Elevation Range in Arizona
5,400 – 8,450 feet[8]

Density Estimate
No estimates

Natural History Profile

Seasonal Distribution in Arizona	
Breeding	Mid-April – early August[8,11]
Migration	Mid-March – April; September[8]
Winter	Absent

Nest and Nesting Habits	
Type of Nest	Cup[4]
Nest Substrate	Live pine, oak, sycamore, maple, walnut[8]
Nest Height	Average 25 feet; range 6.5 – 46 feet[8]

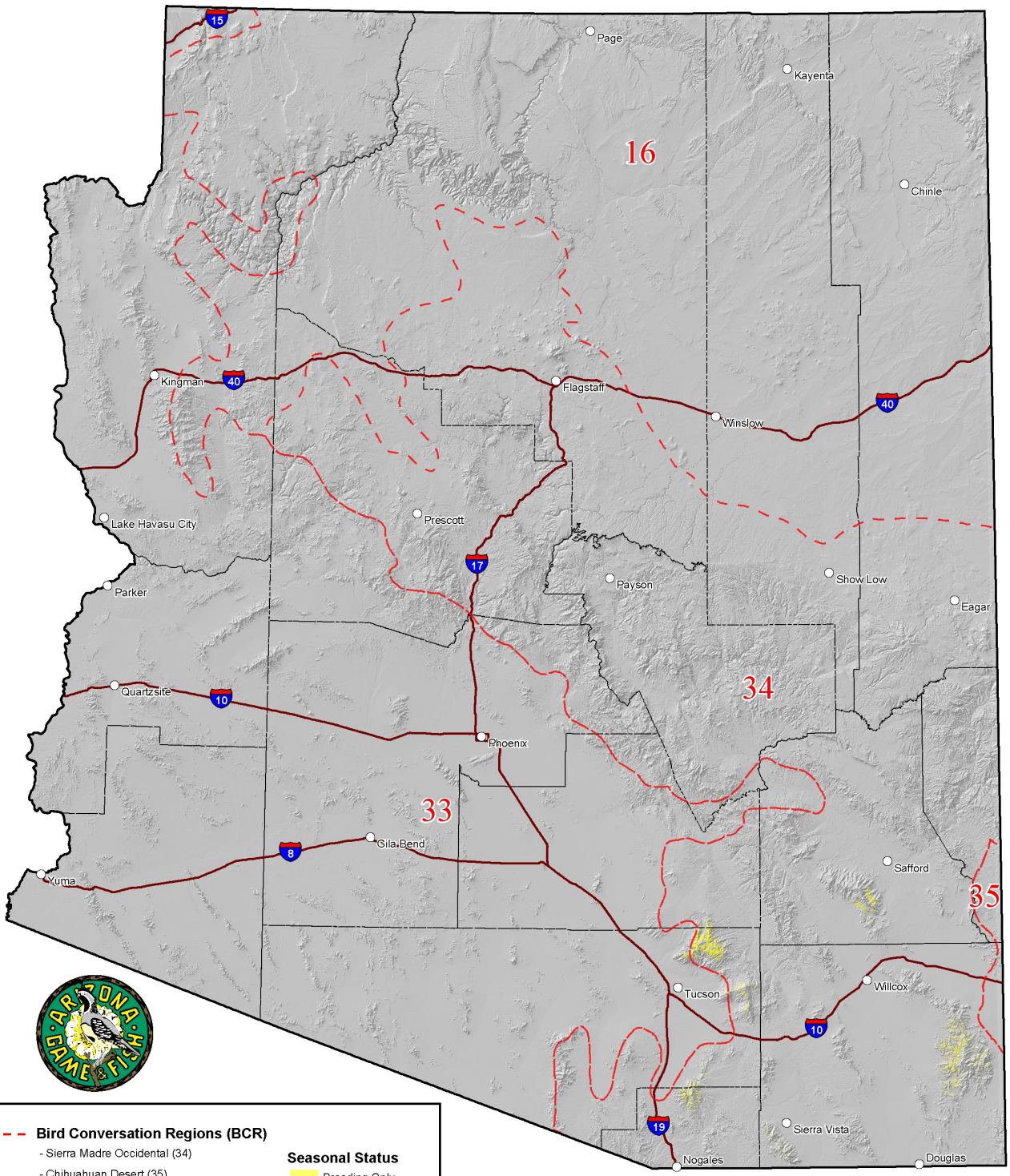
Food Habits	
Diet/Food	Insects
Substrate	Aerial forager[4]

SPECIES ACCOUNT ● *BUFF-BREASTED FLYCATCHER Empidonax fulvifrons*

Confidence in Available Data: ● High ◑ Moderate ○ Low ^ Not provided

Last Update: October 2023

Distribution of Buff-breasted Flycatcher



This map represents the predictive distribution for an individual species. AZGFD warrants no guarantees of accuracy or currency of the data represented.

General Information

Distribution in Arizona

The U.S. breeding population of Buff-breasted Flycatchers is largely restricted to high elevation canyons of southeastern Arizona, including the Santa Rita, Huachuca and Chiricahua mountains (Conway and Kirkpatrick 2007, eBird 2019). Fewer nesting pairs also occur locally in the Santa Catalina, Rincon Mountains, and recently in the Pinaleño Mountains. Historical records suggest that Buff-breasted Flycatchers once occurred north to central Arizona, including the White Mountains and Prescott area (Bailey 1928, Phillips et al. 1964, Conway and Kirkpatrick 2007). Complete U.S. population surveys resulted in 131 birds in 1995 – 1996 (Martin 1999) and 74 birds in 2000, with most of the decline concentrated in the Chiricahua Mountains (Conway and Kirkpatrick 2007). It is not known how much natural population fluctuation or observer variability played a role in these inventories. The Buff-breasted Flycatcher reaches the northern-most limit of its global breeding range in Arizona, and it winters exclusively south of the U.S. border (Bowers and Dunning 1994).

Habitat Description

In Arizona, Buff-breasted Flycatchers nest in open Madrean pine-oak woodlands and montane riparian forests (Bowers and Dunning 1994, Corman 2005), particularly in wide mountain canyons with an open growth of pines and an open understory of grasses and oaks (Martin and Morrison 1999). They also inhabit burned forest with patches of living pines (Bowers and Dunning 1994). Nesting areas are usually clustered in the bottom of the canyon (Martin and Morrison 1999), but also at higher elevations on broad ridge tops (Conway and Kirkpatrick 2001) and recovering burned mountain slopes. Buff-breasted Flycatchers also nest more often in forest patches that are > 500 feet wide than in smaller patches (Martin and Morrison 1999). Apache or Chihuahua pines are always present in areas occupied by Buff-breasted Flycatcher in Arizona (Bowers and Dunning 1994). Other typical tree species include ponderosa and southwestern white pines, alligator juniper, pinyon pine, Douglas fir, Arizona sycamore, Arizona madrone, and Arizona white and silverleaf oaks (Bowers and Dunning 1994, Corman 2005).

Microhabitat Requirements

Buff-breasted Flycatchers nest on gradual slopes of about 10% in open forests of moderately old to old Apache and Chihuahua pines with an open understory of oak (primarily Arizona white oak or silverleaf oak), with about 35 small oaks (4 – 8 inches DBH) per acre, and oak canopy cover of about 1% at 0 – 3 feet, 5% at 3 – 7 feet, 15% at 7 – 16 feet, and 9% at 16 – 33 feet. (Bowers and Dunning 1994, Martin 1999). There are usually multiple tree species immediately near the nest site (Bowers and Dunning 1994). Buff-breasted Flycatchers require an open shrub understory for successful foraging.

Landscape Requirements

Area requirements of Buff-breasted Flycatchers and their responses to landscape disturbances have not been studied. However, most Buff-breasted Flycatcher nesting areas are near riparian woodlands, particularly those featuring sycamores and Arizona walnut (Bowers and Dunning 1994). More research on these issues is warranted.

Conservation Issues and Management Actions

Threats Assessment

This table is organized by Salafsky et al.'s (2008) standard lexicon for threats classifications. Threat level is based on expert opinion of Arizona avian biologists and reviewers. We considered the full lexicon but include only medium and high threats in this account.

Level 1 Threat	Details	Importance to Species
Agriculture • Livestock farming and ranching	Overgrazing reduces native vegetation	Medium
Human Intrusions and Disturbance • Recreational activities		Medium
Natural System Modifications • Fire and fire suppression • Other ecosystem modifications	Low intensity fires maintain understory structure	High
Climate Change • Ecosystem encroachment • Changes in precipitation and hydrological regimes (drought)		High

In the following section we provide more detail about threats, including recommended management actions. Threats with similar recommended actions are grouped.

Agriculture:
- Livestock farming and ranching

Livestock grazing reduces native herbaceous vegetation, potentially reducing fuel for natural periodic ground fires and increasing encroachment of woody plants over time. Both of these processes reduce foraging habitat quality for Buff-breasted Flycatchers. Grazing may also impact the availability of riparian vegetation and the insects that it supports.

Recommended Actions:

1. Manage livestock grazing to avoid elimination of herbaceous layer and to maintain a moderate shrub layer.

Human Intrusions and Disturbance:
- Recreational activities

Increased densities of jays near campgrounds increases nest predation rates of nearby populations of Buff-breasted Flycatchers (Martin 1997). It has also been suggested that intense birding activities focused on this species (e.g. daily visits and call play-back) may be detrimental to the nesting success of populations

near public access points (Bowers and Dunning 1994).

Recommended Actions:

1. Avoid siting of new campgrounds, picnic facilities, and other recreational infrastructure in areas occupied by Buff-breasted Flycatcher.
2. Raise public awareness of the detrimental consequences of feeding wild birds in remote areas and of intrusive birding techniques, such as playing recordings.

Natural System Modifications:

- Other ecosystem modifications

Habitat degradation and loss was the likely cause of a historic range contraction prior to large-scale bird monitoring programs (Bowers and Dunning 1994). However, details on what led to these declines, which may have been caused by fire suppression and heavy livestock grazing (Bowers and Dunning 1994), are not known.

Recommended Actions:

1. Degraded pine forests that fall within the current or historic range may be restored through habitat management practices, such as prescribed fires and mechanical removal of encroaching understory, to create additional Buff-breasted Flycatcher habitat.
2. Determine Buff-breasted Flycatcher responses to current land use practices to plan for adaptive management.

Natural System Modifications:

- Fire and fire suppression

Elimination of periodic fires has allowed oak saplings to densely colonize the understory of many pine forests, degrading foraging habitat for Buff-breasted Flycatchers (Martin 1999). The species is more likely to be found in areas with visible signs of fires that eliminated almost all understory oaks or pines and a few large trees (Conway and Kirkpatrick 2007). Prescribed understory fires are usually low in intensity and may be helpful for maintaining habitat quality in combination with moderate-severity burns that completely remove the understory over longer time intervals.

Recommended Actions:

1. Encourage periodic, low intensity ground fires to control growth of understory woody species.
2. Consider moderate-intensity prescribed fires at longer time intervals, if low-intensity fires do not remove the understory properly. If higher-intensity fires carry too much risk of a catastrophic crown fires, mechanical removal of understory trees may be preferable.

Climate Change:

- Ecosystem encroachment

- Changes in precipitation and hydrological regimes (drought)

The U.S. population of the Buff-breasted Flycatcher is almost entirely restricted to Arizona, where it was once more widespread, and where it also reaches the northern edge of its global range (Bowers and Dunning 1994). This places a unique stewardship responsibility on Arizona to maintain U.S. populations, but also the likely region where any distributional changes of the species would occur in response to climate change.

Recommended Actions:

1. Conduct inventories in areas where uncertainty exists about current population size and distribution of Buff-breasted Flycatcher, additional to determine population status and occupied habitat area.
2. Develop a population and habitat monitoring plan for Buff-breasted Flycatcher that also takes into account the possibility of distributional changes in response to climate change.

Research and Monitoring Priorities

1. Conduct studies to determine key habitat area requirements and landscape features that are important to breeding Buff-breasted Flycatchers.
2. Establish periodic (every 5 – 10 yrs.) breeding population monitoring surveys to determine abundance, distribution and population trends in Arizona.
3. Conduct further research to identify and quantify conservation threats and how increasing large-scale wildfires in the sky islands of southeastern Arizona are influencing their abundance and distribution.
4. Conduct effectiveness monitoring on any on-the-ground conservation actions taken to benefit Buff-breasted Flycatchers.

Literature Cited

[4]Arizona Bureau of Land Management Sensitive Species List – March 2017.

[2]Arizona Game and Fish Department. 2012. Arizona's State Wildlife Action Plan: 2012 – 2022. Arizona Game and Fish Department, Phoenix, AZ.

Bailey, F.M. 1928. Birds of New Mexico. New Mexico Department of Game and Fish in cooperation with the State Game Protective Association and the Bureau of Biological Survey, Santa Fe, New Mexico.

[11]Bowers, Jr., R.K., and J.B. Dunning, Jr. 1994. Buff-breasted Flycatcher (*Empidonax fulvifrons*), The Birds of North America Online (A. Poole, Ed.) Ithaca: Cornell Lab of Ornithology.

[6]Conway, C.J., and C. Kirkpatrick. 2007. Effect of forest fire suppression on Buff-breasted Flycatchers. Journal of Wildlife Management 71:445 – 457.

[8] Corman, T.E. 2005. Buff-breasted Flycatcher. *In* Corman, T.E., and C. Wise-Gervais (eds.): Arizona Breeding Bird Atlas. University of New Mexico Press. Albuquerque, NM.

[3]Department of Defense. 2012. DoD PIF Mission-Sensitive Priority Bird Species. Fact Sheet #11. Department of Defense Partners in Flight Program.

[9]Martin, J.A. 1997. Distribution, abundance, and habitat characteristics of the buff-breasted flycatcher in Arizona. Master's thesis. University of Arizona. 172 pp.

[10]Martin, J.A. and M.L. Morrison 1999. Distribution, abundance, and habitat characteristics of the buff-breasted flycatcher in Arizona. Condor 101:272 – 281.

[5a]Partners in Flight. 2019. Avian Conservation Assessment Database, version 2019. Accessed on March 31, 2020.

[6]Partners in Flight Science Committee. 2019. Population Estimates Database, version 3.0. Accessed on March 31, 2020.

Phillips, A.R., J.T. Marshall, and G. Monson. 1964. The birds of Arizona. University of Arizona Press, Tucson, AZ.

[5b]Rosenberg, K.V., J.A. Kennedy, R. Dettmers, R.P. Ford, D. Reynolds, J.D. Alexander, C.J. Beardmore, P. J. Blancher, R.E. Bogart, G.S. Butcher, A.F. Camfield, A. Couturier, D.W. Demarest, W.E. Easton, J.J. Giocomo, R.H. Keller, A.E. Mini, A.O. Panjabi, D.N. Pashley, T.D. Rich, J.M. Ruth, H. Stabins, J. Stanton, T. Will. 2016. Partners in Flight Landbird Conservation Plan: 2016 Revision for Canada and Continental United States. Partners in Flight Science Committee.

Salafsky, N., Salzer, D., Stattersfield, A.J., Hilton-Taylor, C., Neugarten, R., Butchart, S.H.M., Collen, B., Cox, N., Master, L.L., O'Connor, S. and Wilkie, D. 2008. A standard lexicon for biodiversity conservation: unified classifications of threats and actions. Conservation Biology 22(4): 897 – 911.

[7]Sauer, J.R., J.E. Hines, J.E. Fallon, K.L. Pardieck, D.J. Ziolkowski, Jr., and W.A. Link. 2016. The North American Breeding Bird Survey, Results and Analysis 1966 – 2013, Version 2016. USGS Patuxent Wildlife Research Center, Laurel, MD. Accessed on July 1, 2016.

[1]U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. 85 pp.

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