

# Gray Flycatcher

*Empidonax wrightii*



Photo by Fred Peterson

## Conservation Profile

Priority Status	Stewardship Target
Reasons for Priority Status	High stewardship responsibility Potential threats
Other Rankings	Continental PIF: Stewardship Audubon Watchlist: None Natural Heritage: S4B USFWS: Migratory Bird BLM: None NDOW: None
Trends	Historical: Unknown Recent: Stable to increasing regionally [i1, p8]
Population Size Estimates	Nevada (NBC): 650,000 Nevada (PIF): 600,000 Global: 1,200,000 [p5] Percent of Global: > 50%
Population Objective	TBD
Monitoring Coverage	Source: Nevada Bird Count Coverage and Adequacy: Excellent
Key Conservation Areas	TBD

## Habitat Use Profile

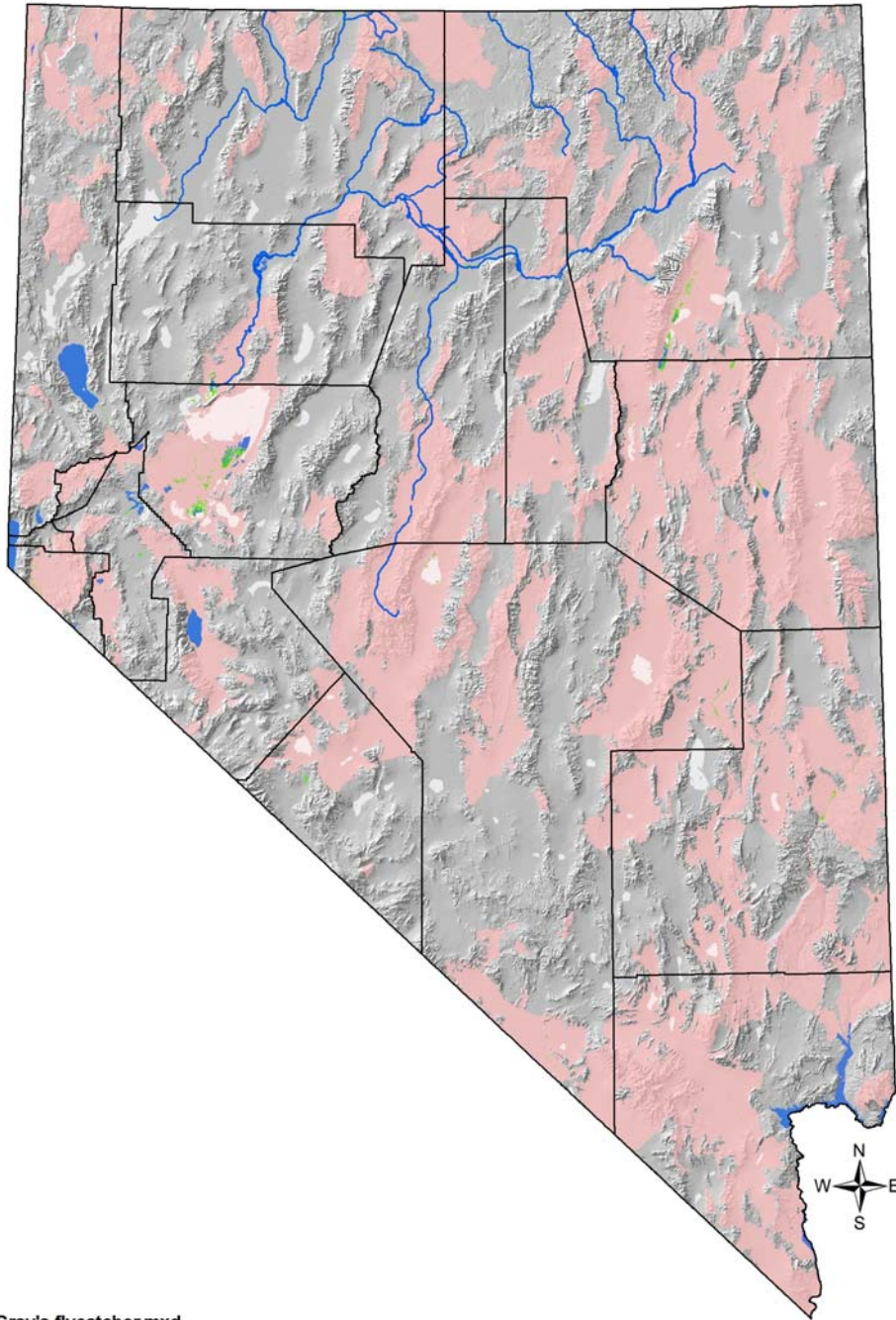
Main Habitats Used in Nevada	Pinyon-Juniper Sagebrush Montane Riparian
Key Habitat Use Parameters	Often found in Pinyon-Juniper / Sagebrush transitional zone, or in tall (> 1 m) stands of sagebrush or bitterbrush [p1, i6] Also uses Mt. Mahogany [p1] In transitional areas, favors higher tree density over higher shrub density [p1] Favors tall (>1 m), old-growth sagebrush or other shrubs for breeding sites [p1, i6] Anecdotally, proximity to a riparian or wet meadow edge may provide desirable foraging opportunities; however, no quantitative relationship demonstrated [s, p2]
Minimum Patch Size	Territory size: 1-5.3 ha [p1]

## Natural History Profile

Seasonal Presence in Nevada	Spring - summer
Known Breeding Dates in Nevada	Late May – early August [p4]
Nesting Habits	Dense part of tall sagebrush or conifer [p1] Site / territory fidelity is probably low [p1]
Food Requirements	insects exclusively, from air, ground, or plants [p1]

# Gray Flycatcher

*Empidonax wrightii*



File: Gray's flycatcher.mxd

# Gray Flycatcher

*Empidonax wrightii*

## Temporary Map Key

Pink: Breeding range

Hot pink / magenta: For some birds, breeding data was limited, and was supplemented by extrapolation to include likely breeding range. In these cases, hot pink represents known breeding range, and lighter pink the extrapolated breeding range.

Blue: Winter range

Yellow: Important migration stopover areas

Purple: Year-round range

Green: In some maps, wetlands mapped by SWReGAP are shown in green for interpretational purposes

Dot symbols: In cases where breeding records were isolated or very restricted in extent, they are represented by a pink dot symbol rather than a shaded area.

Arrows: Major migration routes. These are shown only for birds for which there are migration-associated conservation issues.

## OVERVIEW

Gray Flycatchers are widespread and common in Nevada, which hosts over half of the species' breeding population. This bird is most often associated with Pinyon-Juniper / Sagebrush transitional zones, and with tall stands of old-growth sagebrush or bitterbrush. In southern Nevada it is also frequently present in Joshua Tree stands. Beyond these general preferences, the specific habitat characteristics that promote presence and abundance are not fully understood [p8]. The main conservation needs for Gray Flycatchers are to maintain open Pinyon-Juniper and Sagebrush transition zones, even while conducting ongoing efforts to counteract the expansion of Pinyon-Juniper woodlands, and to continue monitoring in order to detect changes in population status.

## ABUNDANCE AND OCCUPANCY BY HABITAT

- NBC data [table contains error; GB Lowland Riparian value should be 0.091, not 0.91; will be correct in updated table]

## Gray Flycatcher *Empidonax wrightii*

Gray Flycatcher						
	Primary Habitat Type Present at Transect	No. Transects with Sightings	Nevada Bird Count Sightings per 40 ha			
			average	95% confidence interval**	% transects occupied	
<b>Great Basin</b>	Aspen	5	0.8	-0.2 - 1.7	0.17 (3/18)	
	Lowland Riparian	5	0.8	0.1 - 1.4	0.91 (6/66)	
	Montane Riparian	17	4.1	2.2 - 5.9	0.19 (17/88)	
	Montane Sagebrush	7	6.5	0.8 - 12.3	0.55 (6/11)	
	Montane Shrub	4	3.7	-4.6 - 11.9	0.33 (3/9)	
	Mountain Mahogany	2	8.9	-55.8 - 73.6	0.33 (3/9)	
	Pinyon-Juniper	43	8.2	6.4 - 9.9	0.8 (49/61)	
	Sagebrush	14	3.1	1.5 - 4.6	0.24 (8/33)	
	Wetland	3	0.8	-0.2 - 1.9	0.07 (2/30)	
<b>Mojave</b>	Aspen	n/a	n/a	n/a	0.43 (3/7)	
	Coniferous Forest	2	0.6	-2.8 - 4.0	0.75 (3/4)	
	Joshua Tree	8	0.8	0.2 - 1.4	0.55 (11/20)	
	Lowland Riparian	1	0.4	n/a	0.11 (4/36)	
	Mesquite-Catclaw	2	1.6	-10.5 - 13.7	0.5 (7/14)	
	Mojave Scrub	1	2.5	n/a	0.14 (3/22)	
	Montane Riparian	3	3.4	0.1 - 6.7	0.44 (4/9)	
	Montane Sagebrush	1	0.6	n/a	0.67 (2/3)	
	Montane Shrub	4	1.1	0.0 - 2.2	0.8 (4/5)	
	Pinyon-Juniper	7	2.1	1.0 - 3.2	0.67 (8/12)	
	Sagebrush	n/a	n/a	n/a	0.46 (12/26)	
	Salt Desert	n/a	n/a	n/a	0.1 (1/10)	

### NEVADA-SPECIFIC STUDIES AND ANALYSES

#### Habitat Requirements (NBC data)

According to logistic analysis of NBC data, detection sites of Gray Flycatcher had more junipers ( $P < 0.001$ ), greater sagebrush heights ( $P = 0.124$ ) and litter cover ( $P = 0.087$ ), and fewer mountain mahogany ( $P = 0.077$ ) than did non-detection sites. The univariate analysis had similar results: Gray Flycatcher detection sites had greater densities of trees, including junipers and pinyon pines, and greater litter cover, but lower densities of mountain mahogany and lower shrub and grass cover than non-detection sites. This pattern suggests that Gray Flycatchers primarily use young, fairly open juniper-sagebrush transitional habitats [s].

#### Landscape Associations (NBC data)

- Densities/40ha by transect type [this table largely redundant with table above; will be corrected]

Transect Type	Statewide
Mojave Scrub	

## Gray Flycatcher *Empidonax wrightii*

Joshua Tree	
Mesquite-Catclaw	
Salt Desert	
Sagebrush	1.087
Pinyon-Juniper	4.792
Mt. Mahogany	2.169
Montane Sage	3.130
Montane Shrub	0.705
MontaneRiparian	0.734
Aspen	
Coniferous Forest	
Lowland Riparian	
Wetland	
Agricultural	

- P-values of univariate relationships for Gray Flycatcher density with proportions of GIS habitat types in the landscape (under both linear and logistic regression):

Veg Type (Proportion)	Coef	Statewide (linear)	State (logit)	GB only (logit)	MJ only (logit)
Mojave Scrub	-	0.001	0.214(+)		
Mesquite-Catclaw	-	0.204	0.792		
Salt Desert	-	0.004	0.001		
Sagebrush	+	<b>0.007</b>	<b>0.024</b>	<b>0.000</b>	
Pinyon-Juniper	+	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	
Mt. Mahogany	-	0.364	0.034		
Montane Sage+Shrub	-	0.553	0.393		
Montane Sage	+	<b>0.807</b>	<b>0.627</b>	<b>0.004</b>	
Montane Shrub	-	0.052	0.052		
Montane Ripar+Aspen	-	0.062	0.045		
MontaneRiparian	-	0.332	0.211		
Aspen	-	0.061	0.068		
Coniferous Forest	-	0.077	0.030		
Lowland Riparian	-	0.001	0.000		
Wetland	-	0.175	0.045		
Agricultural	-	0.015	0.002		
Exotics(2181-2183)	-	0.164	0.047		
Cheatgrass	-	0.464	0.481		
DISTANCE TO WATER	-	0.646	0.871	0.518	

- In both of the multivariate analyses, presence of Pinyon-Juniper and Sagebrush are the important predictive factors
- This association is even clear at the level of transect type
- Highest densities occur on transects classified as Pinyon-Juniper, which often provide the mix of both woodland and shrubland preferred by this species

### MAIN THREATS AND CHALLENGES

- At present population appears to be stable with few pressing threats [i1, p8]

## Gray Flycatcher

*Empidonax wrightii*

- Known to decline where Pinyon-Juniper woodland is removed from transitional zone [p1]
- Affected by loss of tall old-growth shrubland to fire or other disturbances

### CONSERVATION STRATEGIES

#### Habitat Strategies

- General Sagebrush and Pinyon-Juniper conservation strategies
- Preserve old growth sagebrush stands [p1, p8] with fire suppression, if necessary
- Pinyon-Juniper removal projects should attempt to maintain an intergraded woodland/sagebrush transitional zone, rather than creating an abrupt border between shrubland and woodland

#### Research, Planning, and Monitoring

- Continue monitoring to detect any changes in population status
- The possible importance of availability of riparian or meadow habitat, especially during the brood-rearing period, should be further investigated

### OTHER PRIORITY SPECIES WITH SIMILAR CONSERVATION STRATEGIES

- Ferruginous Hawk
- Pinyon Jay

### FURTHER READING

- TBD

#### Temporary codes for standard references

[p1] Birds of N. America account for this species

[p2] NV Bird Conservation Plan ver. 1 (Neel 1999)

[p3] NV Wildlife Action Plan

[p4] Nevada Breeding Bird Atlas

[p5] PIF N. American Landbird Conservation Plan (Rich et al 2004) (NOTE:

[p6] Intermountain West Regional Shorebird Plan (Oring et al 2003)

[p7] Pacific Flyway reports

[p8] Shrubsteppe Landscapes in Jeopardy (Dobkin and Sauder 2004)

[p9] Birds in a Sagebrush Sea (Paige and Ritter 1999)

[s1] NBC-based population size estimates

[s2, s3] NBC-based habitat relationship analysis

[s4] Breeding Bird Atlas breeding phenology data

## **Gray Flycatcher**

*Empidonax wrightii*

- [i1] BBS trends analysis (Sauer et al 2005)
- [i2] NV Upland Game Management Plan (Espinosa et al in prep.)
- [i3] Western Quail Management Plan (Zornes et al 2008)
- [i4] NDOW Shorebird and Waterbird monitoring data (Neel)
- [i5] Brad Andres IMJV Shorebird / Waterbird data set
- [i6] GBBO Technical Report 08-01 (2008)
- [EO] Expert opinion from NVPIF group members
- [IWWCP] Intermountain West Waterbird Conservation Plan
- [NAWCP] North American Waterbird Conservation Plan
- [LBCUSACP] Long-billed Curlew Status Assessment and Conservation Plan
- [USSCP] U.S. Shorebird Conservation Plan
- [WHSRN] Western Hemispheric Shorebird Regional Network