

Green-tailed Towhee

Pipilo chlorurus

Conservation Profile



Photo by Bob Goodman

Priority Status	Stewardship Target
Reasons for Priority Status	High stewardship responsibility
Other Rankings	Continental PIF: Stewardship Audubon Watchlist: None Natural Heritage: [TBD] USFWS: Bird of Conservation Concern (Great Basin), Migratory Bird BLM: None NDOW: None
Trends	Historical: Likely declines due to fire suppression, loss of species-rich shrublands [p1] Recent: Stable [i1, p1]
Population Size Estimates	Nevada (NBC): 885,000 Nevada (PIF): 685,000 Global: 4,100,000 [p5] Percent of Global: 16-22%
Population Objective	TBD
Monitoring Coverage	Source: Nevada Bird Count Coverage and Adequacy: Excellent
Key Conservation Areas	TBD

Habitat Use Profile

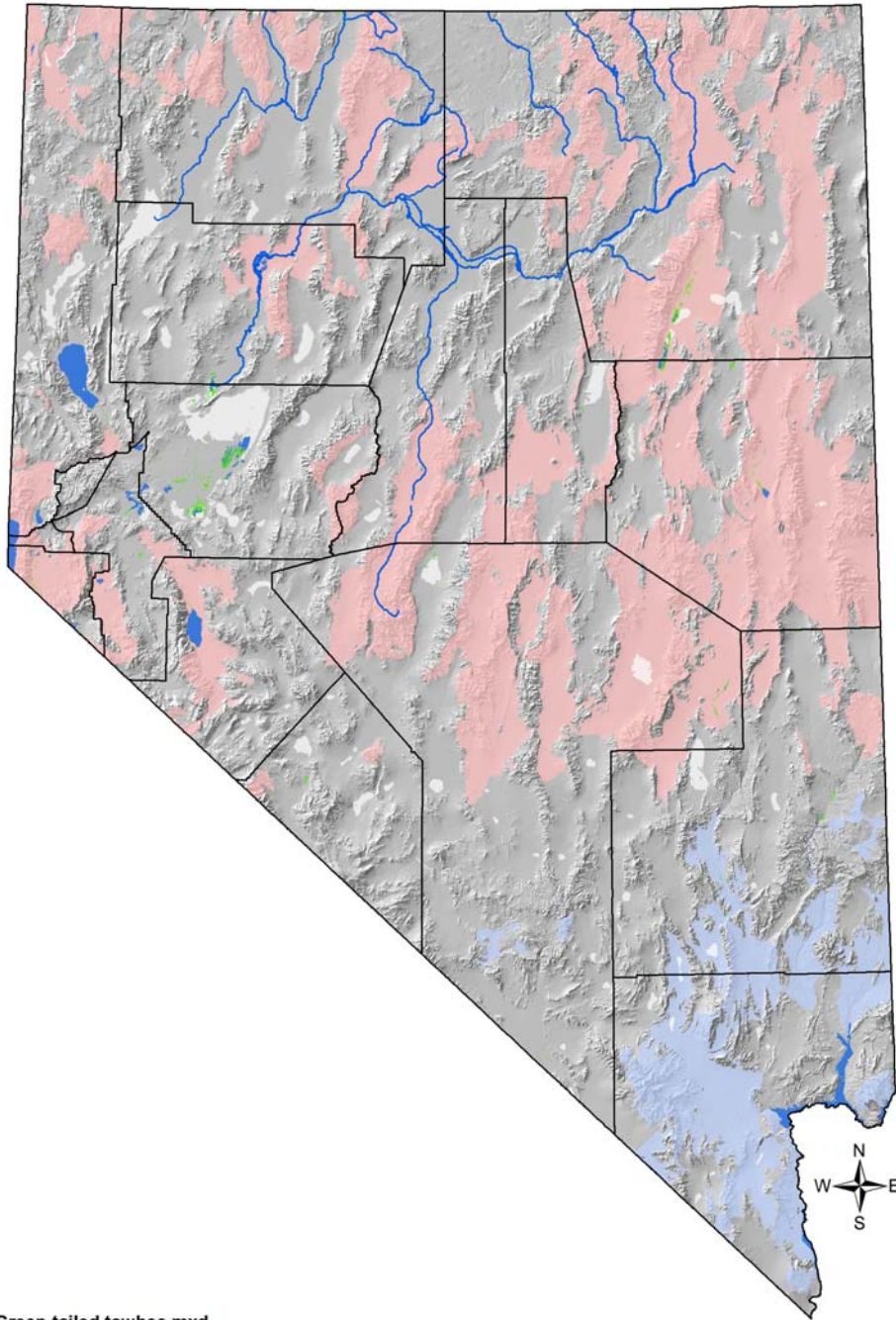
Main Habitats Used in Nevada	Montane Shrub Aspen Pinyon-Juniper
Key Habitat Use Parameters	Found in association with a wide range of vegetation covers, which generally share a dense, species-rich shrub layer in foothills or mountains [p1] May be attracted to fire-generated forest openings [p1] Shrub layer typically 0.5 – 1.5 m in height [p1] Winter habitat use in southern Nevada not well-characterized, but most likely concentrated in Mesquite-Catclaw that is < 1,300 m elevation [p1]
Minimum Patch Size	Mean territory size in Utah 0.9 ha [p1]

Natural History Profile

Seasonal Presence in Nevada	Spring – summer throughout Nevada Winter in Clark County [p1]
Known Breeding Dates in Nevada	Mid-May – early August [s4]
Nesting Habits	Nests well-concealed within dense shrubs or trees, most often < 1 m from ground [p1] Moderate fidelity to breeding territory [p1]
Food Requirements	Forages primarily on ground, under or near dense cover, for seeds, small insects, some fruit [p1]

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File: Green-tailed towhee.mxd

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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

The Green-tailed Towhee is nearly always associated with dense shrub cover in montane areas, especially in transitional zones that feature high shrub species diversity. These conditions may exist within a broad variety of different cover types, including several that were defined as habitat types for the NBC (Mountain Mahogany, Montane Sagebrush) and shrub covers of habitat types in this plan (e.g., Pinyon-Juniper and Montane Shrub). Beyond the general preference for dense, diverse shrub cover, there are surprisingly few detailed studies of the species, given that Green-tailed Towhees are widespread and relatively common. Nevada hosts approximately one-fifth of the global breeding population of this species, and we will provide further details on their habitat use in Nevada from NBC data in the final plan. Fortunately, current trends are stable and no immediate threats are known.

ABUNDANCE AND OCCUPANCY BY HABITAT

- NBC data

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Green-tailed Towhee					
	Primary Habitat Type Present at Transect	No. Transects with Sightings	Nevada Bird Count Sightings per 40 ha		
			average	95% confidence interval**	% transects occupied
Great Basin	Aspen	20	5.4	3.5 - 7.3	
	Coniferous Forest	6	7.0	-2.8 - 16.8	
	Lowland Riparian	6	3.3	1.4 - 5.2	
	Montane Riparian	50	5.2	3.9 - 6.4	
	Montane Sagebrush	11	13.1	6.5 - 19.7	
	Montane Shrub	10	9.5	4.9 - 14.0	
	Mountain Mahogany	7	10.9	4.7 - 17.1	
	Pinyon-Juniper	32	5.3	3.7 - 6.8	
	Sagebrush	5	3.5	0.3 - 6.7	
	Wetland	1	1.3	n/a	
Mojave	Aspen	1	7.6	n/a	
	Coniferous Forest	3	4.0	2.4 - 5.7	
	Joshua Tree	6	1.5	0.6 - 2.3	
	Lowland Riparian	1	1.3	n/a	
	Mojave Scrub	1	8.9	n/a	
	Montane Riparian	3	2.5	-7.0 - 12.1	
	Montane Shrub	4	0.5	0.1 - 0.9	
	Pinyon-Juniper	7	1.8	0.3 - 3.3	

[Transect occupancy % will be included in final version]

NEVADA-SPECIFIC STUDIES AND ANALYSES

Landscape Associations (NBC data)

- Logistic Regression

Veg Type (Proportion)	Coef	Statewide (linear)		State (logit)	GB only (linear)
		Univariate	Multivar		
Mojave Scrub	-	.000	(.724)	.009	
Mesquite-Catclaw	-	.094	(.961)	.068	
Salt Desert	-	.000	(.454)	.000	.000
Sagebrush	-/+	.670	.016	.612	.498
Pinyon-Juniper	+	.005	.000	.000 (25)	.058
Mt. Mahogany	+	.000	.004	.000 (25)	.000
Montane Sage+Shrub	+	.000		.000 (68)	.000
Montane Sage	+	.000	.000	.000 (72)	.000
Montane Shrub	-	.907	(.508)	.584	.393
Montane Ripar+Aspen	+	.000		.000 (46)	.000
MontaneRiparian	+	.005	(.929)	.002	.198
Aspen	+	.000	.038	.000 (49)	.000
Coniferous Forest	+	.773	(.141)	.004	.300
Lowland Riparian	-	.000	(.716)	.000	.001
Wetland	-	.007	(.860)	.036	.049

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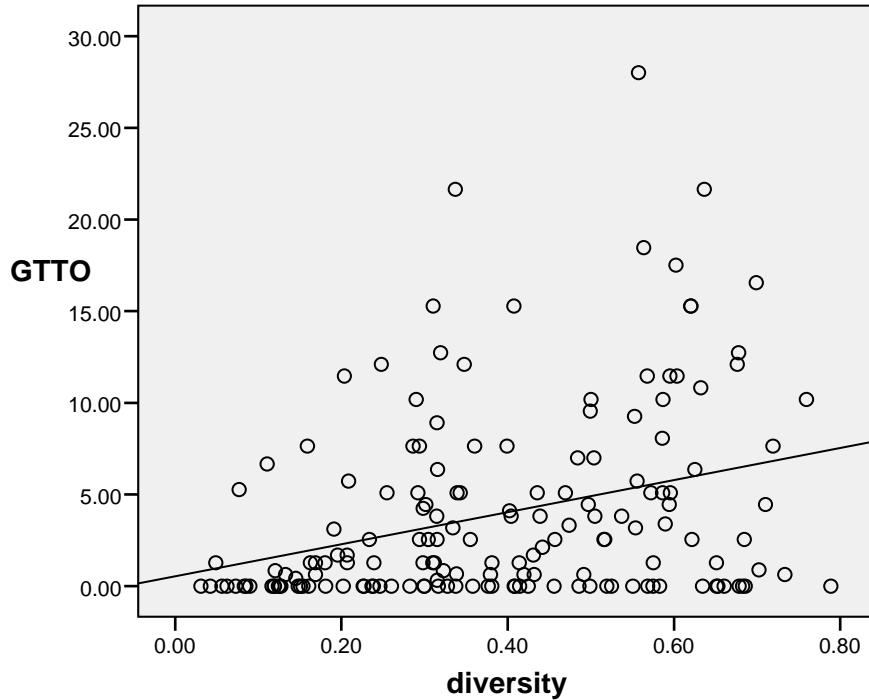
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Agricultural	-	.003		.002	.002
Cheatgrass	-	.066		.001	.048
DISTANCE TO WATER	-	.006	(.431)	.089	.009

- As expected, Green-tailed Towhee has positive associations with several different vegetation cover types that often contain dense shrub layers, including Montane Sagebrush, Pinyon-Juniper, Mt. Mahogany, Montane Riparian, and Aspen
- As in other parts of the range, Green-tailed Towhees appear to use Coniferous Forest openings in Nevada, although numbers are generally modest compared to other montane habitat types
- The lack of a relationship with Montane Shrubland is perhaps related to systemic inaccuracy in capturing this complex habitat type with remote sensing methods; many areas that could be classified as Montane Shrubland are classified as Montane Sagebrush in the map layer
- Green-tailed Towhees tend to occur in greater numbers closer to water, though the effect is only moderate
- Raw data suggest that Green-tailed Towhees are most numerous on transects where there is a diversity of available vegetation cover types
- The graph below plots the density of Green-tailed Towhees against the diversity of montane habitat types present within the transect. This plot uses all 163 NBC transects for which montane habitat types comprised more than 95% of the available cover
- For these transects, a Shannon-Weaver diversity index was computed for the on the eight montane cover types
 - Mt. Mahogany
 - Pinyon-Juniper
 - MontaneSagebrush
 - MontaneShrubland
 - Aspen
 - Montane Riparian
 - Coniferous Forest
 - Sagebrush
- The maximum value of 1.0 would occur if there were the same amount of all 8 cover types (0.125 each).

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- This plot suggests a fairly strong relationship between habitat type diversity and Green-tailed Towhee density

MAIN THREATS AND CHALLENGES

- Extensive loss of shrubland prior to 1960 probably reduced numbers, but current threats have not been well-studied [p1]
- In some areas, fire suppression may reduce recruitment of appropriate habitat within forest mosaic
- Heavy grazing that reduces shrub cover may negatively impact this bird

CONSERVATION STRATEGIES

Habitat Strategies

- General Montane Shrub, Aspen, Montane Riparian, and Pinyon-Juniper conservation strategies
- In terms of landscape structure, this bird tends to thrive in montane and foothill areas with considerable patch diversity that includes areas with dense, varied shrub

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- Protect dense, multi-species shrubland in ecotonal areas from heavy grazing and intense fires, especially in areas with a high diversity of interspersed montane habitat types
- If Coniferous Forest is managed for forest openings by use of low-intensity, small-scale fire, it may create suitable habitat

Research, Planning, and Monitoring

- Continue monitoring to detect any departures from population stability
- Define habitat requirements more clearly, as this may be an excellent indicator of montane shrubland integrity

OTHER PRIORITY SPECIES WITH SIMILAR CONSERVATION STRATEGIES

- Greater Sage-Grouse

FURTHER READING

- Wiens and Rotenberry 1981

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

[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