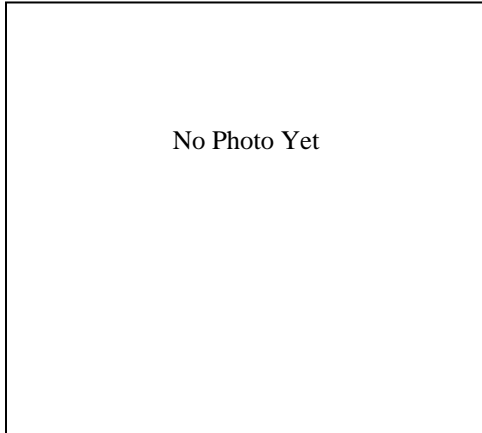


# Grace's Warbler

## *Dendroica graciae*

### Conservation Profile



### Habitat Use Profile

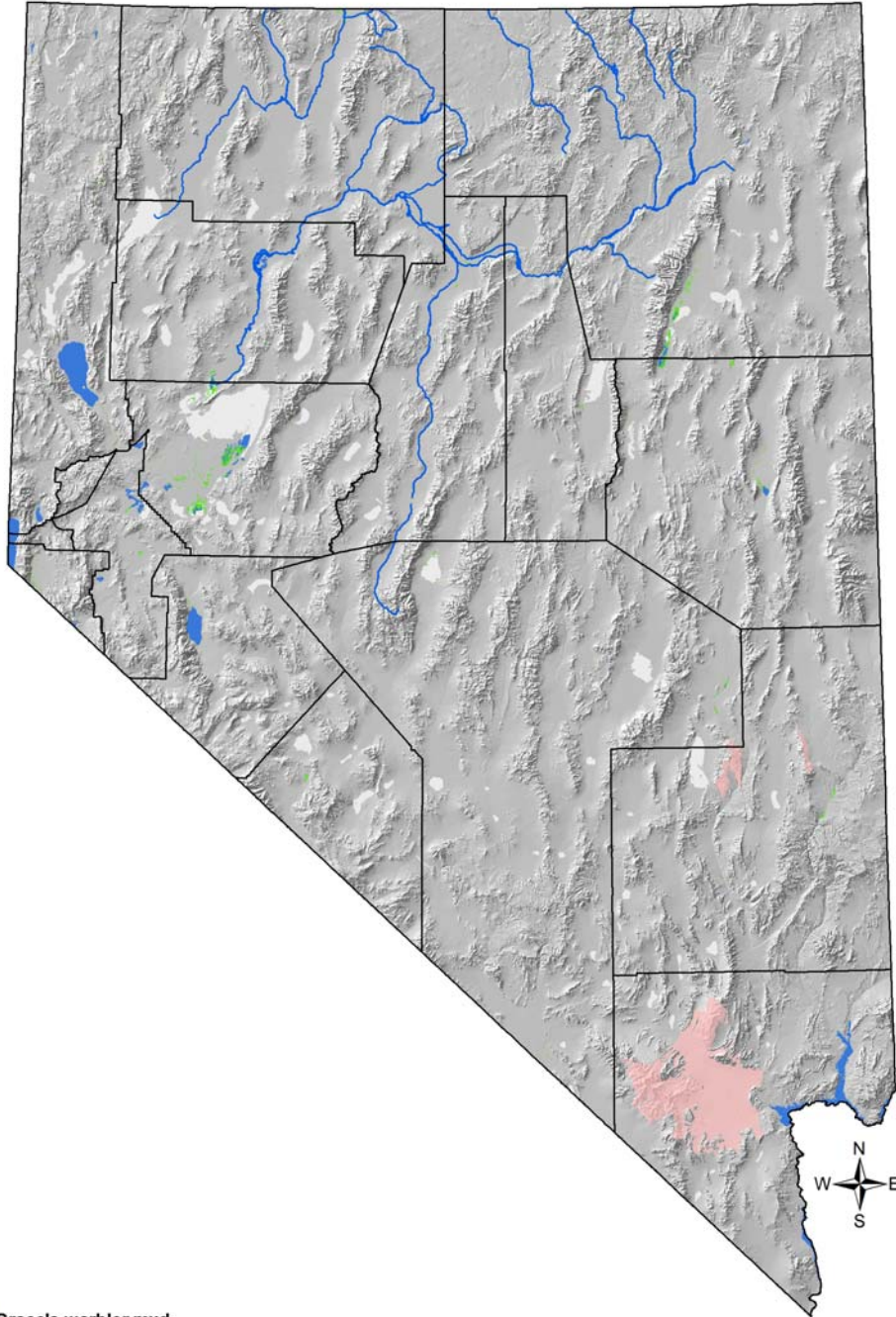
<b>Main Habitats Used in Nevada</b>	Coniferous Forest Montane Riparian Mojave Desert Lowland Riparian (migration) [p3]
<b>Key Habitat Use Parameters</b>	Most often found in ponderosa pine dominated forest, also uses white fir ,bristlecone pine, occ. juniper, pinyon [p1, p3] Park-like (open, mature) stands preferred, with 14 – 46 m spacing between large trees [p1, i6] Prefer mosaic of age/size classes of trees, including large trees [p1] In occupied habitat in AZ, average 46% canopy closure, 911 trees / ha, and 80 snags / ha [p1] In occupied habitat in AZ, average slope 10%, aspect usually N or E [p1] May require surface water (springs) within 500 m of territory [p1]
<b>Minimum Patch Size</b>	Not quantified in NV, but generally large territories for a warbler [p1] In AZ, territory size 1 - 6.25 ha depending on habitat quality [p1]

<b>Priority Status</b>	Conservation Target
<b>Reasons for Priority Status</b>	Threats Possible Declines Small population size Limited habitat
<b>Other Rankings</b>	Continental PIF: Watch List Audubon Watchlist: Yellow Natural Heritage: S2B USFWS: Migratory Bird BLM: None NDOW: Conservation Priority
<b>Trends</b>	Historical: Unknown, but geographical has probably expanded northward in 20 <sup>th</sup> century [p1] Recent: Stable or slowly declining in southwest, unknown for Nevada [i1, p1]
<b>Population Size Estimates</b>	Nevada (NBC): 610 Nevada (PIF): 170 Global: 1,000,000 [p5] Percent of Global %: < 1%
<b>Population Objective</b>	TBD
<b>Monitoring Coverage</b>	Source: Nevada Bird Count Coverage and Adequacy: Good
<b>Key Conservation Areas</b>	Spring Mountains Sheep Range

### Natural History Profile

<b>Seasonal Presence in Nevada</b>	Spring - summer
<b>Known Breeding Dates in Nevada</b>	Late April - late July [EO]
<b>Nesting Habits</b>	Nest placed in coniferous trees, well-concealed by needles [p1] Nest height 6 – 18 m above ground [p1, p3, i6] Nest tree height 13.7 – 17.5 m in AZ [p1]
<b>Food Requirements</b>	Arthropods, gleaned from foliage [p1] Foraging height usually 17 – 27 m [p1]

**Grace's Warbler**  
*Dendroica graciae*



File: Grace's warbler.mxd

# Grace's Warbler

## *Dendroica graciae*

### 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

Grace's Warblers may have reached southern Nevada only during the last 50 years as the result of a northward range expansion [p1, p3, p4]. Although still not very numerous in the state, this bird exhibits substantial annual variation in numbers [p1], which may in part account for the variation between the two available population size estimates. Grace's Warblers specialize in open pine forests with tall trees, but many aspects of their habitat use patterns and conservation status have not been well characterized, particularly in Nevada [p1]. The Nevada Bird Count and Nevada Breeding Bird Atlas project found breeders only in the Spring Mountains and Sheep Range, but according to some reports, this species may also breed in other southern Nevada ranges with tall pine forests [p3]. Commercial harvest of forests is not a threat in Nevada, but Nevada's Grace's Warblers are still vulnerable because their numbers are small, and their habitat is limited and vulnerable to catastrophic fires.

### ABUNDANCE AND OCCUPANCY BY HABITAT

- NBC data

Grace's Warbler						
	Primary Habitat Type Present at Transect	No. Transects with Sightings	Nevada Bird Count Sightings per 40 ha			
			average	95% confidence interval**	% transects occupied	
<i>Mojave</i>	Coniferous Forest	3	1.7	1.3 - 2.1	0.75 (3/4)	
	Lowland Riparian	1	0.4	n/a	0.03 (1/36)	
	Montane Riparian	2	1.3	-10.9 - 13.4	0.22 (2/9)	

# Grace's Warbler

*Dendroica graciae*

## NEVADA-SPECIFIC STUDIES AND ANALYSES

- TBD; NBC data insufficient for analysis

## MAIN THREATS AND CHALLENGES

- Threats are poorly known [p1, p3]. Issues of concern include:
  - Potential loss of park-like conifer forest mosaics to intense fires
  - Loss of surface water sources within forest mosaic due to diversions or plugging of springheads
  - Urban encroachment in the Spring Mountains
  - Outbreaks of conifer pathogens and insects causing forest degradation or loss

## CONSERVATION STRATEGIES

### **Habitat Strategies**

- General Coniferous Forest and Montane Riparian conservation strategies in southern Nevada
- In secondary forests of other parts of its range, Grace's Warbler has responded positively to moderate silvicultural thinning that resulted in more open stands with larger trees, but heavy thinning had negative effects [p1]
- Maintain healthy ponderosa pine/white fir stands in Spring Mountains and Sheep Range in self-sustaining condition with the goal of "no net loss" (i.e. multiple age classes with adequate regeneration/mature tree replacement ratios)
- Maintain a balanced composition (50/50 canopy) of ponderosa pine/white fir stands and open spaces
- Encourage an understory within the ponderosa pine/white fir stands with Gambel's oak and other native shrub components

### **Research, Planning, and Monitoring**

- Continue monitoring program and conduct additional studies to determine population size and trends in Nevada
- Investigate other possible breeding locations, such as Virgin or Clover Mountains
- Fire management plan that balances need for regenerative fire within ponderosa pine forest versus protection of sufficient amount of key breeding habitat
- Assist USFWS and partners to restore plugged or impeded springs in the Sheep Range
- In the Spring Mountains, assist USFS in helping maintain water at the springheads within the ponderosa pine/white fir areas

**Grace's Warbler**  
*Dendroica graciae*

OTHER PRIORITY SPECIES WITH SIMILAR CONSERVATION STRATEGIES

- TBD

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  
[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