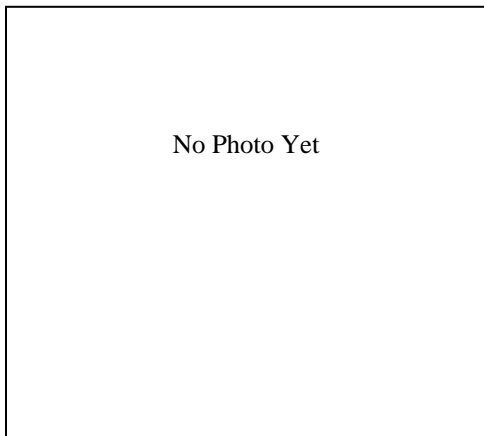


Virginia's Warbler

Vermivora virginiae

Conservation Profile



Priority Status	Conservation Target
Reasons for Priority Status	Small population size and patchy breeding distribution Lack of knowledge about habitat requirements Possible threats
Other Rankings	Continental PIF: Watch List Audubon Watchlist: Yellow Natural Heritage: S4B USFWS: Bird of Conservation Concern (Great Basin), Migratory Bird BLM: None NDOW: Conservation Priority
Trends	Historical: Not known Recent: Apparently stable [i1, p1], but trends difficult to determine reliably [p1, p8, i6]
Population Size and Stewardship %	Nevada (NBC): 8,200 Nevada (PIF): No estimate Global: 410,000 Stewardship %: 2%
Population Objective	TBD
Monitoring Coverage	Source: Nevada Bird Count Coverage and Adequacy: Excellent
Key Conservation Areas	TBD

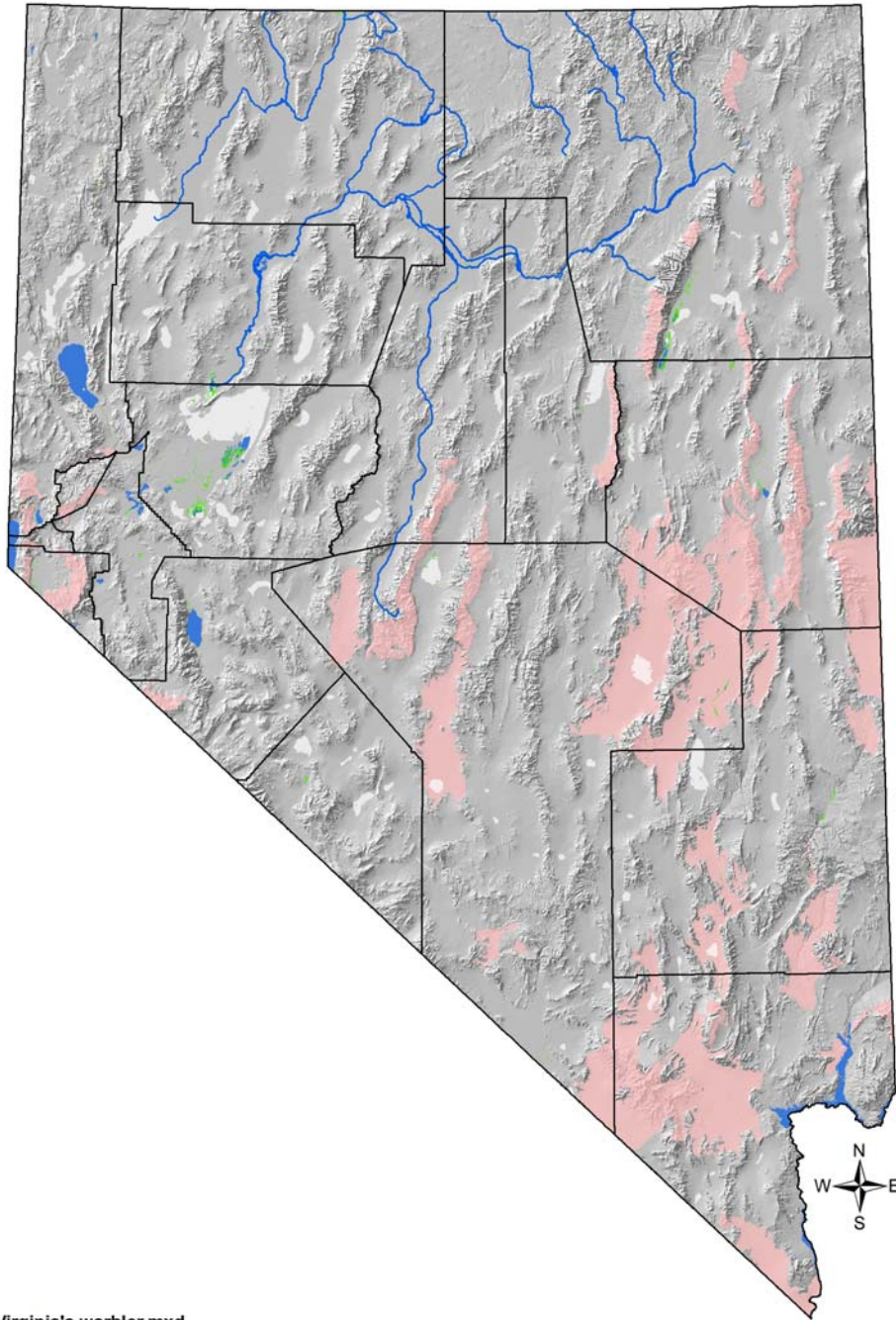
Habitat Use Profile

Main Habitats Used in Nevada	Pinyon-Juniper Montane Riparian
Key Habitat Use Parameters	Present within a variety of mid-elevation habitats characterized by open woodland with shrub understory [p1] Relatively open forest canopy structure preferred, but not specifically quantified [p1, EO] Little information on specific understory preferences, but seems to need some shrub / grass cover for nesting Riparian corridors may provide especially important habitat during migration [p1]
Minimum Patch Size	Breeding territories in AZ 0.83-2.26 ha [p1]; no information for Nevada

Natural History Profile

Seasonal Presence in Nevada	Spring - summer
Known Breeding Dates in Nevada	Late May – July [s4] Arrives on breeding grounds later than most passerines [p3]
Nesting Habits	Ground nests in small sheltered depression, often on a slope under vegetation cover [p1]
Food Requirements	Insects, spiders, gleaned from vegetation or captured in flight [p1]

Virginia's Warbler
Vermivora virginiae



File: Virginia's warbler.mxd

Virginia's Warbler

Vermivora virginiae

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

Virginia's Warbler is most often described as a breeder in Pinyon-Juniper and oak woodlands. In Nevada, where it is at the northwest periphery of its range, it is found in a wider variety of mid-elevation habitats [p3, p8], but its particular habitat associations are not well known [p1, p8]. The expert PIF review panel suggested that proximity to Montane Riparian habitat might be an important factor in Nevada, but NBC data were not conclusive for confirming this possibility. Virginia's Warblers arrive late on the breeding grounds (late April, early May, [p3, s4]), are patchily distributed throughout most of their range, and are often absent from apparently suitable habitat [p8]. This patchy distribution, along with a moderate population size and the likelihood that specific habitat requirements exist but are not yet quantified, is the basis for conservation concern about this species.

ABUNDANCE AND OCCUPANCY BY HABITAT

- NBC data

Virginia'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	
Great Basin	Coniferous Forest	2			0.1 (2/19)	
	Montane Riparian	4	1.4	0.0 - 2.8	0.5 (4/88)	
	Mountain Mahogany	3	2.7	2.1 - 3.3	0.33 (3/9)	
	Pinyon-Juniper	1	1.3	n/a	0.03 (2/61)	
Mojave	Aspen	1	2.1	n/a	0.14 (1/7)	
	Coniferous Forest	2	0.5	-0.8 - 1.9	0.5 (2/4)	
	Lowland Riparian	3	3.2	-1.6 - 7.9	0.08 (3/36)	
	Mesquite-Catclaw	1	1.3	n/a	0.07 (1/14)	
	Montane Riparian	3	2.2	-2.2 - 6.6	0.33 (3/9)	
	Montane Shrub	2	3.2	-0.9 - 7.2	0.4 (2/5)	
	Pinyon-Juniper	1	0.8	n/a	0.08 (1/12)	

Virginia's Warbler

Vermivora virginiae

NEVADA-SPECIFIC STUDIES AND ANALYSES

- Landscape Associations (NBC data)

Veg Type (Proportion)	Coef	S,E only (logit)
Mojave Scrub	-	0.075
Mesquite-Catclaw		0.976
Salt Desert	-	0.318
Sagebrush	-	0.068
Pinyon-Juniper	+	0.001 (10.0)
Mt. Mahogany	+	0.002 (8.5)
Montane Sage+Shrub	-	0.809
Montane Sage	-	0.727
Montane Shrub	+	0.711
Montane Ripar+Aspen	+	0.595
MontaneRiparian	+	0.165?
Aspen	-	0.560
Coniferous Forest	+	0.000 (13.8)
Lowland Riparian	-	0.286
Wetland	-	0.552
Agricultural	-	0.345
Cheatgrass	-	0.304
DISTANCE TO WATER	-	0.524

- Strongest explanatory factors were cover of Mt. Mahogany [in future analysis, lump into PJ], Pinyon-Juniper, and Coniferous Forest habitats.
- Montane Riparian is possibly important, especially if possible migratory sightings in two Mojave Scrub and Lowland Riparian transects are removed from the data set
- According to raw data, presence of Pinyon-Juniper appears to be the most consistent property of transects where Virginia's Warblers were observed

TRANSECTID	REGION	MTMahogany	PinyonJuniper	Conifer
MTM-5012	East	75.39	3.17	2.79
GRBA-MILL	East	44.37	12.64	17.08
MTM-4037	East	35.24	20.68	.00
MTM-95	East	22.81	64.25	.00
MR-UPPERSNAKE	East	21.08	11.48	1.05
PJ-70	East	3.12	69.80	.00
MR-CURRENT	East	.66	14.92	.00
CF-4248	East	.58	.00	78.37
PJ-LEHM	East	.19	92.51	.00
AS-CATHEDRAL	South	.00	2.21	91.78
CF-560	South	.00	13.03	85.25
CF-568	South	.00	32.53	55.11
MR-640	South	.00	32.24	34.93
MR-639	South	.00	68.45	1.36

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MR-637	South	.00	68.16	1.16
MS-311	South	.00	82.45	.42
PJ-211	South	.00	53.56	.10
LR-WILLOWCREEK	South	.00	45.87	.10
MS-302	South	.00	70.97	.00
LR-17806	South	.00	.00	.00
LR-18536	South	.00	.00	.00

MAIN THREATS AND CHALLENGES

- Patchy breeding distribution and absence from large areas of Pinyon-Juniper / Mt. Mahogany habitat suggest that Virginia's Warblers have specific habitat requirements that have not yet been quantified
- Small population size and patchy, disconnected breeding distribution
- Importance of various threats and best management practices not well known [p3, p8]. Conjectured threats include:
 - Grazing by livestock or feral horses and burros
 - Urban / suburban development
 - Invasive plants

CONSERVATION STRATEGIES

Habitat Strategies

- General Pinyon-Juniper and Montane Riparian conservation strategies
- Manage Pinyon-Juniper woodlands, especially those that adjoin Montane Riparian habitat, to favor a balanced mosaic of different age classes with healthy shrub understory
- In areas of monotypic mature and/or closed canopy Pinyon-Juniper woodland, thin or clear forest patches to re-create more balanced landscape mosaic

Research, Planning, and Monitoring

- Additional study needed in Nevada to better characterize specific habitat requirements and threats
- Continue monitoring to improve estimates of Nevada population size and trends

OTHER PRIORITY SPECIES WITH SIMILAR CONSERVATION STRATEGIES

- Pinyon Jay

FURTHER READING

Virginia's Warbler

Vermivora virginiae

- 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