Marsh Wren, photo by ©Robert Shantz

Conservation Profile

Species Concerns
Climate Change (Droughts)
Habitat Degradation and Loss
Small, Isolated Populations

Conservation Status Lists	
USFWS[1]	No
AZGFD[2]	Tier 1C
DoD[3]	No
BLM[4]	No
PIF Watch List[5b]	No
PIF Regional Concern[5a]	No

Migratory Bird Treaty Act
Covered

PIF Breeding Population Size Estimates[6]	
Arizona	9,900 ◑
Global	11,000,000 ◑
Percent in Arizona	0.09%

PIF Population Goal[5b]
Maintain

Trends in Arizona	
Historical (pre-BBS)	Unknown
BBS[7] (1968 – 2013)	Not given

PIF Urgency/Half-life (years)[5b]
> 50

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

Associated Breeding Birds
Ridgway's Rail, Virginia Rail, Sora, Common Gallinule, American Coot, Least Bittern, Common Yellowthroat

Breeding Habitat Use Profile

Habitats Used in Arizona
Primary: Wetlands
Secondary: Lowland Riparian Woodland

Key Habitat Parameters	
Plant Composition	Mixed-species stands of emergent vegetation, especially cattails and bulrushes[8]
Plant Density and Size	Dense stands of thick-stemmed emergent plants > 4 feet tall[8]; no tree cover, or at least < 30% tree cover
Microhabitat Features	Dense, mixed-species emergent plants tall and robust enough to anchor nests 1 – 2 feet above water
Landscape	High percent cover of emergent vegetation within marsh, and high density of wetlands in vicinity[8]

Elevation Range in Arizona
100 – 1,300 feet [9]

Density Estimate
Territory Size: < 1 – 3 acres[8]
Density: Up to 8 territories/acre[8]

Natural History Profile

Seasonal Distribution in Arizona	
Breeding	March – August[9]
Migration	March – May; mid-August – October[9]
Winter	Residents joined by northern migrants October – April

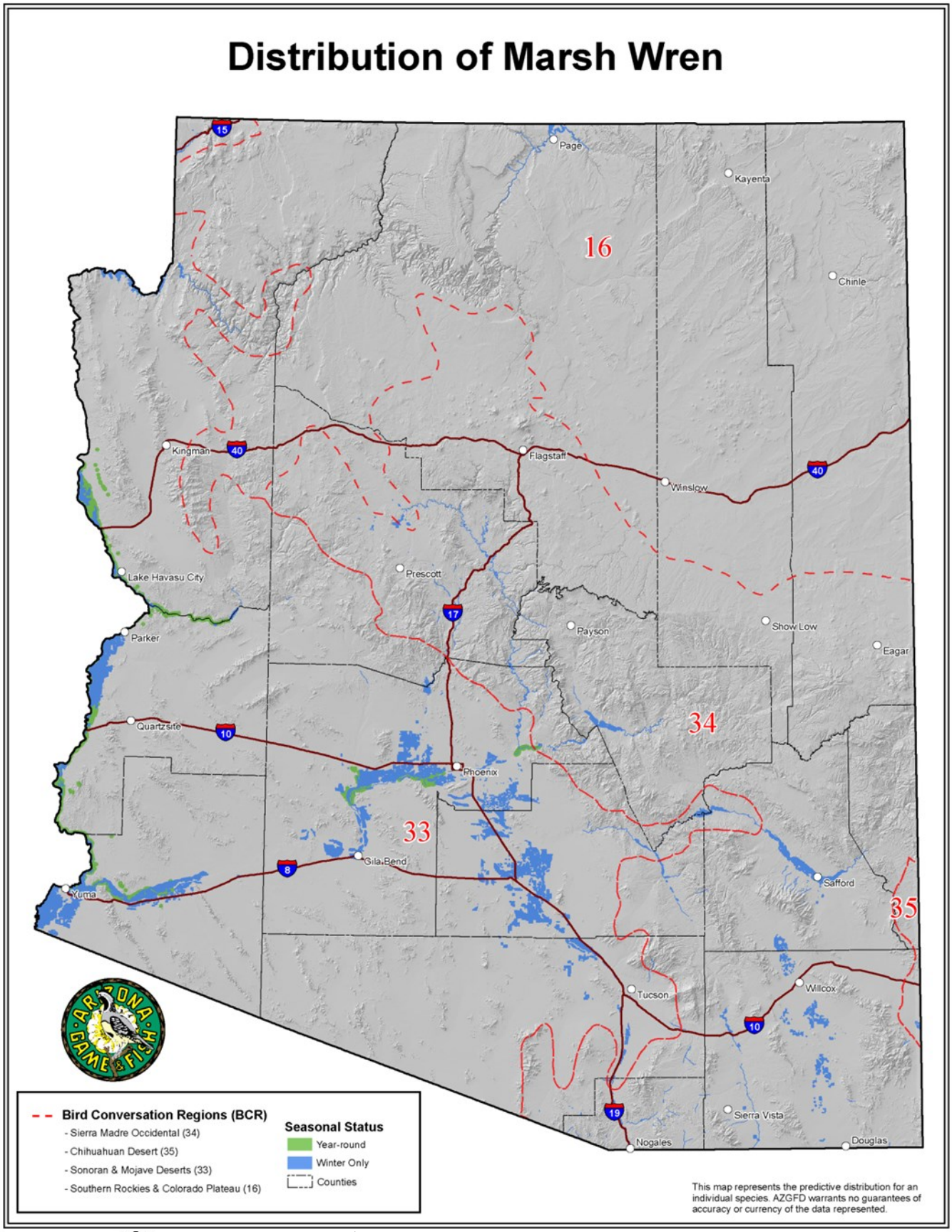
Nest and Nesting Habits	
Type of Nest	Globular[8]
Nest Substrate	Cattails or other emergent plants[8]
Nest Height	1 – 4 feet[8]

Food Habits	
Diet/Food	Invertebrates, esp. insects and spiders[8]
Foraging Substrate	Emergent and adjacent vegetation[8]

SPECIES ACCOUNT ● *MARSH WREN Cistothorus palustris*

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

Last Update: April 2023


Distribution of Marsh Wren
Page
Kayenta
Chinle
16
Kingman
Flagstaff
Winslow
Lake Havasu City
Prescott
Parker
Payson
Show Low
Eagar
Quartzsite
34
Phoenix
33
Gila Bend
Yuma
Safford
35
Tucson
Willcox
Sierra Vista
Nogales
Douglas
Bird Conversation Regions (BCR)
- Sierra Madre Occidental (34)
- Chihuahuan Desert (35)
- Sonoran & Mojave Deserts (33)
- Southern Rockies & Colorado Plateau (16)
Seasonal Status
Year-round
Winter Only
Counties
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

In Arizona, the breeding population of Marsh Wrens along the lower Colorado River and its tributaries, from Yuma to Topock Marsh, and along the adjacent lower Gila River, are non-migratory residents. Several very local and possibly declining resident populations also exist along the Middle Gila and Lower Salt rivers, where the subspecies *C. p. aestuarinus* reaches its eastern most distribution in the U.S. The only currently known locations for these isolated populations include the Tres Rios Wetlands area (near the confluence of the Gila and Salt rivers), the Salt River Recreation Area (near the confluence of the Salt and Verde rivers), and possibly the Arlington Valley. Marsh Wrens are absent as a breeding species elsewhere in the state, despite the presence of many seemingly suitable marsh areas (Corman 2005). Winter populations are much more widespread, with a notable influx of northern migrants that bolsters local resident populations. Marsh Wrens winter in unfrozen wetlands and local weedy areas throughout the state, although they are sparse north of the Mogollon Rim.

Habitat Description

Marsh Wrens use dense stands of cattails and bulrushes along edges of lakes and ponds, in slow sections of rivers where emergent vegetation has developed, and in irrigation ditches or agricultural runoff ponds (Corman 2005). Breeding densities in the Colorado River valley are highest where cattail and bulrush are densest (Rosenberg et al. 1991). In other regions, Marsh Wren presence is positively correlated with the amount of vegetated wetland area and with dominance of thick-stemmed emergent plants (Naugle 1997). Marsh Wrens prefer mixed-species stands of emergent vegetation (Zimmerman et al. 2002) and their occurrence is positively correlated with diversity of vegetation zones within a wetland (Fairbairn and Dinsmore 2001). Woody emergent vegetation is not known to be used by Marsh Wrens, except for occasional foraging, and wetlands with > 30% tall tree cover are unsuitable (Unitt 2008). Marsh Wrens likely also avoid pure stands of common reed (GBBO, pers. comm.), but data are lacking.

Microhabitat Requirements

Marsh Wrens build multiple alternate nests within their territory, which are built 1 – 2 feet above water inside dense emergent vegetation (Kroodsma and Verner 1997). Marsh Wrens also forage almost exclusively within cattail or other emergent plants, where they capture insects.

Landscape Requirements

Little is known about area and landscape requirements of western populations of Marsh Wrens. Wetlands that are large enough to feature a mosaic of emergent vegetation types and densities, including very dense sections, are likely the most beneficial. The current literature does not mention the need for open water in wetlands used by Marsh Wrens, although most of the Arizona populations occur in marshes associated with large waterbodies. While Marsh Wrens do not forage or nest in open water portions of wetlands, deep wetland areas may play a role in ensuring the health of insect populations and the density of emergent vegetation in shallower areas.

Conservation Issues and Management Actions

Small Population

While the Marsh Wren is widespread across North America, it occupies a relatively small breeding range within Arizona. Arizona is at the southern periphery of the species' interior breeding distribution. Small, year-round resident populations along the Middle Gila and Lower Salt rivers are isolated enough that they are vulnerable to extirpation (Corman 2005).

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.

Threat	Threat Level
Natural System Modifications • Fire and fire suppression • Dams and water management/use	Medium
Climate Change • Ecosystem encroachment • Changes in precipitation and hydrological regimes • Severe/extreme weather events	Medium

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

Natural System Modifications:

- Fire and fire suppression
- Dams and water management/use

Marsh Wrens require dense, heterogeneous, and relatively large patches of emergent vegetation within a functioning wetland (Zimmerman et al. 2002), which typically requires year-round inundation. Resident Marsh Wrens in Arizona readily colonize artificially created marshes when these new wetlands are near already occupied habitat. As an example, much of the current Arizona population of Marsh Wrens along the Colorado River nests above dams and other impoundments (Rosenberg et al. 1991, Kroodsma 1997).

Periodic prescribed wetland fires outside the breeding season may benefit this species by removing accumulated dead vegetation layers. This may also reduce chances of wildfires occurring during late winter and early spring, which may remove appropriate nesting habitat for much of the breeding season.

Recommended Actions:

1. Create conservation easements and protection measures for currently occupied Marsh Wren wetlands.
2. Create artificial wetland that result in fairly large, permanent areas with a diverse and dense emergent

vegetation zone; areas along the Lower Colorado River and in a connecting corridor to the Middle Gila River are of particular interest for restoring meta-population connectivity.
3. Create new wetland restoration sites close to currently occupied sites to maximize the likelihood of colonization.
4. Explore habitat enhancement options for wastewater pond installations that allow for dense emergent vegetation suitable for Marsh Wrens.
5. Restore recently-drained (< 30 years ago) wetlands that will allow quick regeneration of wetland vegetation (Zimmerman et al. 2002).
6. Coordinate with the Lower Colorado River Multi-Species Conservation Plan to create habitat that will benefit Marsh Wrens.
7. Work with BLM and USFWS to use controlled burns to improve habitat for Marsh Wren and protect habitat from wildfire.
8. Stagger cattail control treatments to maintain various stages of cattail regeneration and growth (Zimmerman et al. 2002).

Climate Change:

- Ecosystem encroachment
- Changes in precipitation and hydrological regimes
- Severe/extreme weather events

Given the global distribution of the interior Marsh Wren populations (Kroodsma et al. 1997), Arizona may be the first state to document population declines due to the effects of climate change. The few remaining isolated breeding populations on the Middle Gila and Lower Salt rivers are vulnerable to extirpations based on recent decline and degradation of wetland habitats. This is particularly the case during the past few decades following a major flood event, which was then followed by prolonged drought conditions. Many miles of inappropriate river bottom habitat (dense tamarisk or dry wash vegetation) now separate these small, non-migratory populations. Once Marsh Wrens are extirpated, it could greatly limit the potential of natural repatriation, even if appropriate wetland acreage is created, enhanced or otherwise established.

Recommended Actions:

1. Delineate currently-occupied breeding areas for Marsh Wrens in Arizona, particularly along the Gila and Salt river drainages, and develop a population monitoring plan.
2. Coordinate with local federal, state, tribal, and private entities within the Gila and Salt river drainages to encourage protection, enhancement, or establishment of sizeable wetlands when habitat alteration or restoration projects in the area are planned.

Research and Monitoring Priorities

1. Determine area and landscape requirements of Marsh Wrens in Arizona.
2. Conduct and expand Marsh Wren population monitoring or regular population inventories to better determine trends and changes in distribution; consider recording presence/absence of Marsh Wren as an incidental species during marsh bird surveys; when planning such survey efforts, consider a possible population retreat into northern latitudes, or local extirpations if retreat is impossible.

3. Determine causes of the relative lack of breeding Marsh Wrens outside the lower Colorado River.
4. Experiment with different wetland designs and conduct effectiveness monitoring for Marsh Wrens to determine successful conservation strategies.
5. Determine local impacts of extensive, non-native *Ludwigia* spp. (water primrose) infestation as a potential competitor of cattail and other native marsh vegetation.

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