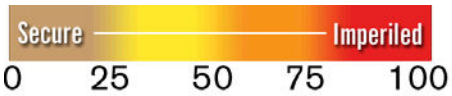
Accipiter striatus

Sharp-shinned Hawk

Class: Aves
Order: Accipitriformes
Family: Accipitridae

Priority Score: 19 out of 100



Population Trend: Decreasing

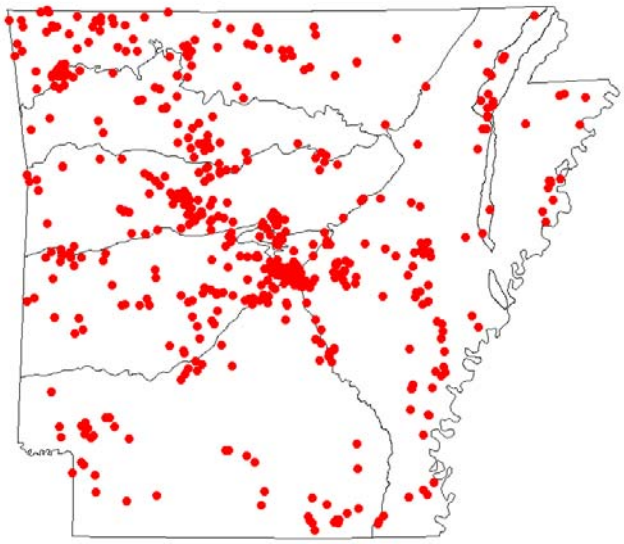
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3 — Vulnerable in Arkansas

Distribution

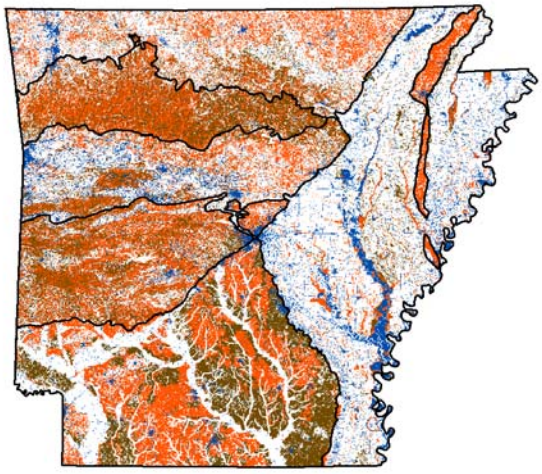
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crowley's Ridge Loess Slope Forest	Marginal
Cultivated Forest	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River Bottomland Depression	Marginal
Lower Mississippi River Dune Woodland, Pond, and Forest	Marginal
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Marginal
Ozark-Ouachita Dry Oak and Pine Woodland	Marginal
Ozark-Ouachita Dry-Mesic Oak Forest/Woodland	Marginal
Ozark-Ouachita Forested Seep	Marginal
Ozark-Ouachita Mesic Hardwood Forest	Suitable
Ozark-Ouachita Pine-Bluestem Woodland	Marginal
Ozark-Ouachita Pine-Oak Forest/Woodland - Woodland Condition	Suitable
Ozark-Ouachita Prairie and Woodland	Marginal
Urban/Suburban	Suitable
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Data Gap
West Gulf Coastal Plain Pine-Hardwood Forest/Woodland	Data Gap
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest/Woodland	Data Gap

Accipiter striatus
Sharp-shinned Hawk

Problems Faced

KNOWN PROBLEM: Collisions with windows near bird feeders.	Threat: Collision with man-made structures Source: Recreation
POTENTIAL PROBLEM: Mortality and lowered reproductive success due to pesticides, toxins, and heavy metals.	Threat: Toxins/contaminants Source: Municipal/Industrial point source
POTENTIAL PROBLEM: Mortality and lowered reproductive success due to pesticides, toxins, and heavy metals.	Threat: Toxins/contaminants Source: Agricultural practices
POTENTIAL PROBLEM: Mortality and lowered reproductive success due to pesticides, toxins, and heavy metals.	Threat: Toxins/contaminants Source: Non-point source pollution

Data Gaps/Research Needs

Determine the effect of forest management practices and habitat degradation due to agriculutural and urban/suburban development on foraging, wintering, and breeding habitat.
Determine the effect of logging on nest locations and the use of buffers, including appropriate buffer diameter, around nest sites.
Determine the effects of prescribed fire on nesting habitat.
Information is needed on breeding distribution and abundance.

Conservation Actions

	Importance	Category
Reduce window collisions near bird feeding stations.	Medium	Threat Abatement
Reduce window collisions near bird feeding stations.	Medium	Public Relations/Education

Monitoring Strategies

This species is rarely seen during the breeding season outside of forest canopies, making it one of the most difficult raptors to census in Arkansas. Monitoring should include encouraging birders to search for nests in specific woodland habitats, especially mature dense pine stands and mixed pine-hardwood forests, and to report sightings and nests to the Arkansas Audubon Society Rare Bird Report and eBird.

Comments

Sharp-shinned Hawks are rarely-seen nesters that breed mainly in large stands of decidous, coniferous, and mixted pine-hardwood forests and pine plantations. Often referred to by Arkansans as the "Blue Darter," sharp-shinned hawks feed primarily on small birds. The size of a Blue Jay, these small accipiters are built for bursts of speed with a long narrow tail and short, round wings. They are often observed capturing prey at backyard bird feeders, often to the dismay of homeowners. Little is known about the distribution of and impacts of forest management on "sharpies" in Arkansas.

(Douglas and Neal 1986, Bildstein and Meyer 2000)

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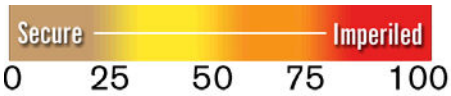
Aimophila ruficeps

Rufous-crowned Sparrow

Class: Aves
Order: Passeriformes
Family: Emberizidae

Priority Score: 23 **out of 100**



Population Trend: Stable

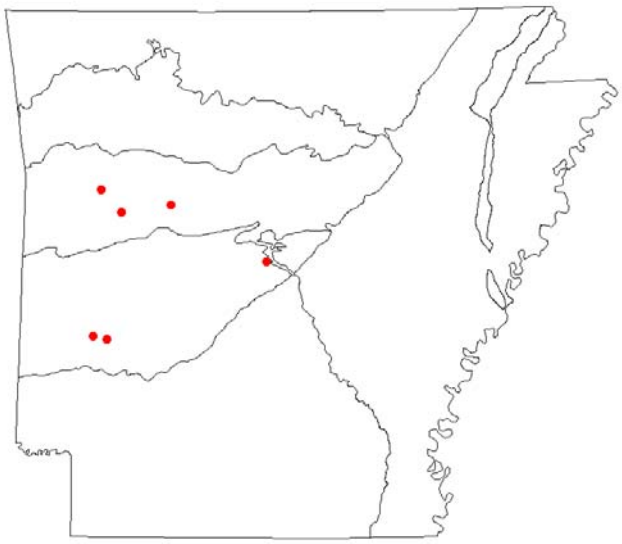
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S1 — Critically imperiled in Arkansas

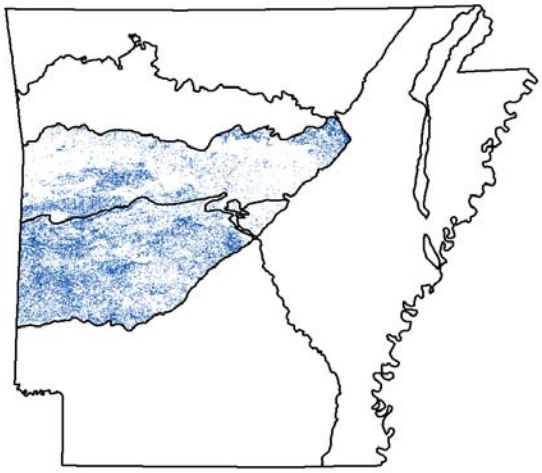
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☐ Ozark Highlands
- ☐ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☐ South Central Plains
- ☐ Mississippi Alluvial Plain
- ☐ Mississippi Valley Loess Plains



Habitat Map

Habitats

	Weight
Interior Highlands Dry Acidic Glade and Barrens	Suitable

Problems Faced

KNOWN PROBLEM: Loss of habitat due to fire suppression.	Threat: Alteration of natural fire regimes Source: Fire suppression

Data Gaps/Research Needs

Determine the effects of fire or mechanical thinning on populations.

Conservation Actions

	Importance	Category
Conduct prescribed burns.	Medium	Habitat Restoration/Improvement
Thin forests and maintain scrub habitat along blufflines.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. However, because this species is so secretive and habitat-specific, targeted monitoring is required, e.g. use of playback to elecit a response. The single remaining populationin the state, located on Mount Magazine, should be monitored annually.Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Primarily a bird of the southwestern US and Mexico, this species has been found on a few mountaintops in central and western Arkansas, along south-facing bluff lines where open forest mixed with grass and rocky outcrops provides preferred habitat. Mount Magazine (Logan Co.) is currently the only occupied site in the state and is the species' eastern-most breeding population range wide. Previously occupied sites were: Pinnacle Mountain (Pulaski Co.), Mount Nebo (Yell Co.), Horseshoe Mountain (Franklin Co.), Redland Mountain (Pike Co.), and Paul Mountain (Montgomery Co.). Habitat restoration efforts should focus on these or similar sites. Isolated populations in Arkansas and elswhere in the species's range suggest it has good dispersal abilities and thus the potential to recolonize following restoration. However, the shy and secretive nature of this species makes it difficult to study. (Arkansas Audubon Society 2012, Collins 1999, eBird 2014, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Ammodramus henslowii

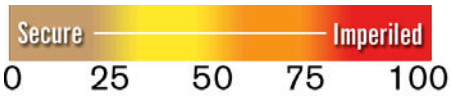
Henslow's Sparrow

Class: Aves

Order: Passeriformes

Family: Emberizidae

Priority Score: 33 **out of 100**



Population Trend: Decreasing

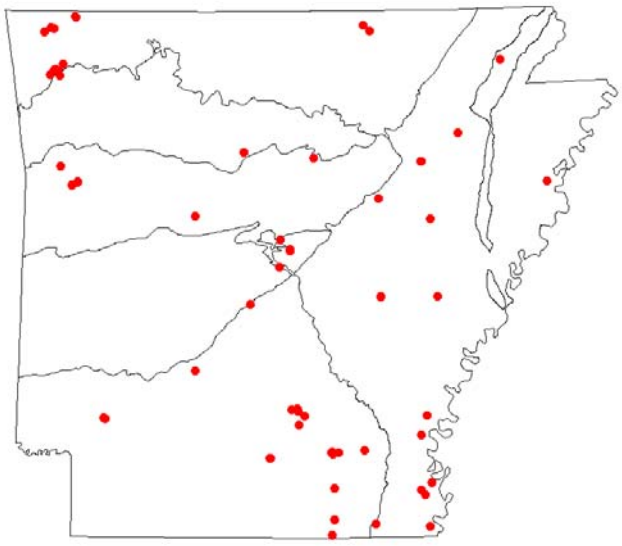
Residence: Permanent

Global Rank: G4 — Apparently secure species

State Rank: S1B,S2N — Critically imperiled breeding, imperiled nonbreeding species in Arkansas

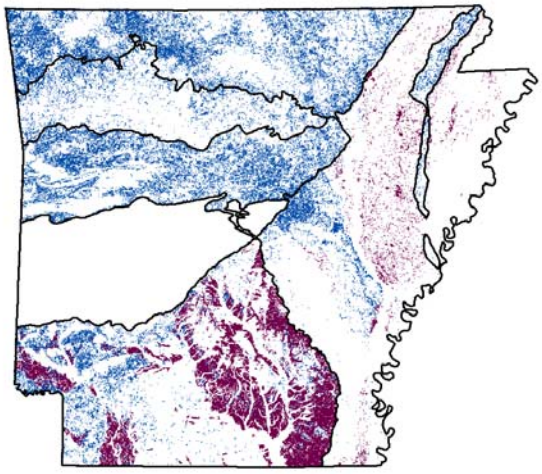
Distribution

Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [ ] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [x] Mississippi Valley Loess Plains



Habitat Map

Habitats

	Weight
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Suitable
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Optimal

Problems Faced

KNOWN PROBLEM: Habitat loss due to conversion of pasture and hayfields to other uses.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Habitat loss due to natural succession related to fire suppression.	Threat: Habitat destruction or conversion Source: Fire suppression
KNOWN PROBLEMS: Nest failure from destruction of nests due to earlier and more frequent haying.	Threat: Biological alteration Source: Agricultural practices
POTENTIAL PROBLEM: Habitat loss due to urbanization.	Threat: Habitat destruction or conversion Source: Urban development

Data Gaps/Research Needs

Surveys for breeding Henslow's Sparrows need to be conducted in grasslands over a wider area in the Arkansas Valley and the Ozarks.

Conservation Actions

Conservation Actions	Importance	Category
Acquire important tracts to provide increased block size and connectivity of grassland habitat.	High	Land Acquisition
Disturb grasslands every 2-4 years.	High	Fire Management
Establish large blocks of grassland habitat.	High	Habitat Restoration/Improvement
Establish large blocks of grassland habitat.	High	Habitat Restoration/Improvement
Restore native grasslands.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

Known populations should be monitored periodically to assess population trends. Surveys should be conducted in potential breeding and wintering habitat to search for additional populations. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Small breeding season populations of Henslow's sparrows occur in tallgrass prairie remnants of northwest Arkansas. Protection, management, or restoration of privately owned tracts of tallgrass prairie through farm bill programs or other means would likely increase available breeding habitat. Larger populations occur in the winter in southern Arkansas, with the greatest number observed in saline glades within pine flatwoods of the Ouachita Terraces. Restoration of pine flatwoods structure to savanna and open woodlands may provide additional winter habitat, as would increased protection, management or restoration of calcareous prairie in southwestern portions of the state. (Arkansas Audubon Society 2012, Bechtoldt and Stouffer. 2005, Cooper 2007, Herkert and others 2002, Hamel 1992, Holimon and others 2004, Holimon and others 2008, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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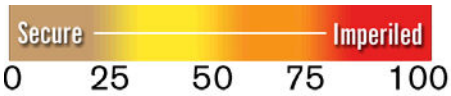
Ammodramus leconteii

Le Conte's Sparrow

Class: Aves
Order: Passeriformes
Family: Emberizidae

Priority Score: 21 **out of 100**



Population Trend: Decreasing

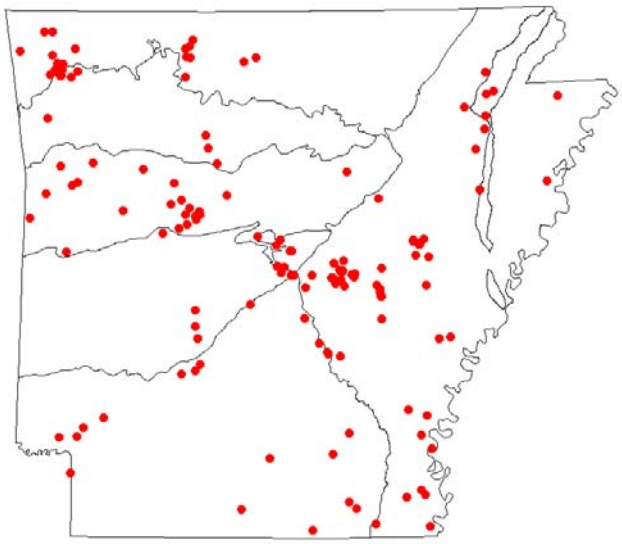
Residence: Winter

Global Rank: G4 — Apparently secure species

State Rank: S3S4N — Vulnerable nonbreeding species in Arkansas (uncertain rank)

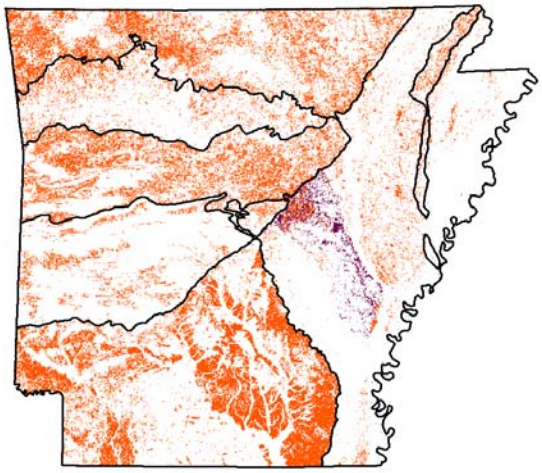
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains



Habitat Map

Habitats

Habitats	Weight
Lower Mississippi Alluvial Plain Grand Prairie	Optimal
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Optimal
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Marginal

Problems Faced

KNOWN PROBLEM: Loss and degradation of wetland habitats.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss and degradation of wetland habitats.	Threat: Habitat destruction Source: Urban development
KNOWN PROBLEM: Loss of habitat due to conversion to agriculture.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of mesic grasslands, succession due to lack of periodic disturbance.	Threat: Habitat destruction or conversion Source: Fire suppression

Data Gaps/Research Needs

Survey grasslands in winter and during migration.

Conservation Actions

Conservation Actions	Importance	Category
Acquire important tracts to provide increased block size and connectivity of grassland habitat.	Medium	Land Acquisition
Burn grasslands every 2-4 years.	High	Fire Management
Establish large blocks of grassland habitat.	High	Habitat Restoration/Improvement
Mow or hay every 2-4 years; avoid annual disturbance regimes.	Medium	Habitat Restoration/Improvement
Restore native grasslands.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

Expand efforts to locate and survey potential wintering habitat for this species.

Comments

Like other grassland specialists, populations are probably declining due to a lack of habitat. Its quiet and secretive nature make it difficult to study, especially on its winter range. Grassland habitat can be maintained or enhanced through treatments such as haying, grazing, and burning or combinations thereof, though annual disturbance management should be avoided because it reduces dense litter favored by this species. This species would benefit from farm bill program projects that protect, restore, and manage grasslands. (Arkansas Audubon Society 2012, Dechant and others 2003, Hamel 1992, James and Neal 1986, Lowther 2005, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Ammodramus savannarum

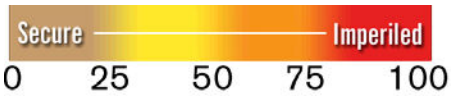
Grasshopper Sparrow

Class: Aves

Order: Passeriformes

Family: Emberizidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

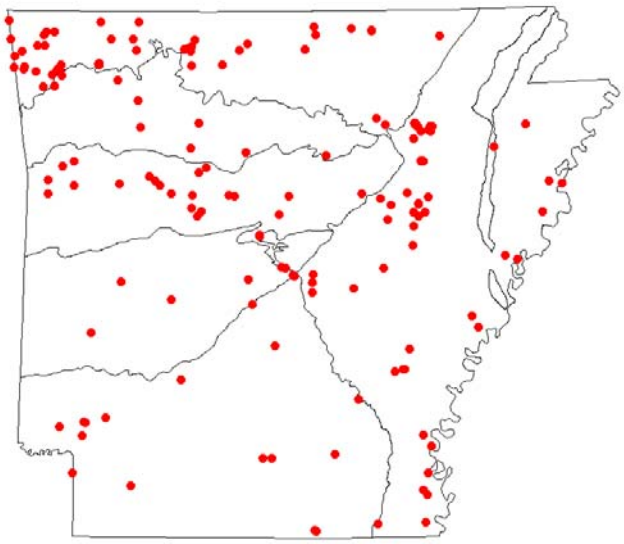
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3B — Vulnerable breeding species in Arkansas

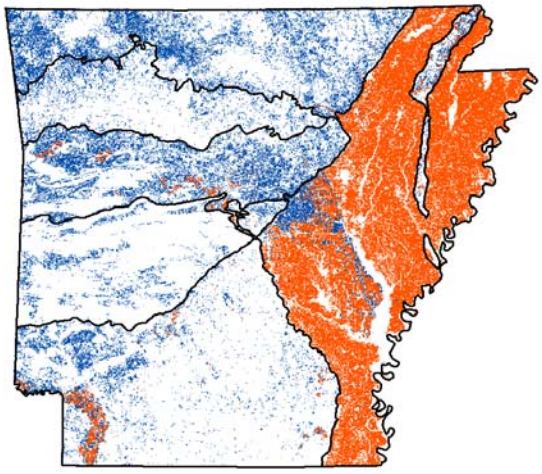
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains



Habitat Map

Habitats

Habitats	Weight
Crop Land	Marginal
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Suitable

Problems Faced

KNOWN PROBLEM: Habitat disturbance and nest failure from earlier and more frequent haying.	Threat: Habitat disturbance Source: Agricultural practices
KNOWN PROBLEM: Habitat disturbance from heavy grazing.	Threat: Habitat disturbance Source: Grazing/Browsing
KNOWN PROBLEM: Habitat loss from conversion of grassland to cropland.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Habitat loss from urbanization.	Threat: Habitat destruction or conversion Source: Urban development

Data Gaps/Research Needs

Additional grassland surveys.

Conservation Actions

Conservation Actions	Importance	Category
Acquire important tracts to increase block size and connectivity of grassland habitat.	Medium	Land Acquisition
Conduct prescribed burning.	High	Fire Management
Maintain habitat with light to moderate grazing or haying.	Medium	Habitat Restoration/Improvement
Protect and manage grassland habitat.	High	Habitat Protection
Restoration of native grasslands.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Expand efforts to locate and survey potential breeding habitat.

Comments

Grasshopper sparrows favor fairly open grasslands and prairies with bare or open ground for feeding and little shrub cover. Loss of native herbivores has resulted in less favorable habitat in prairie remnants than that which occurred historically. The largest known Arkansas population is on Fort Chaffee next to the Arrowhead Landing Strip, where open soil conditions within tallgrass prairie have been maintained, possibly through a combination of soil type and occasional mechanical disturbance. It also nests in open pasture land across the state that is not overgrazed. Promote farm bill projects that protect, restore, and manage grassland habitats. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, Vickery 1996)

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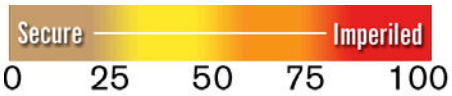
Anas rubripes

American Black Duck

Class: Aves
Order: Anseriformes
Family: Anatidae

Priority Score: 19 out of 100



Population Trend: Stable

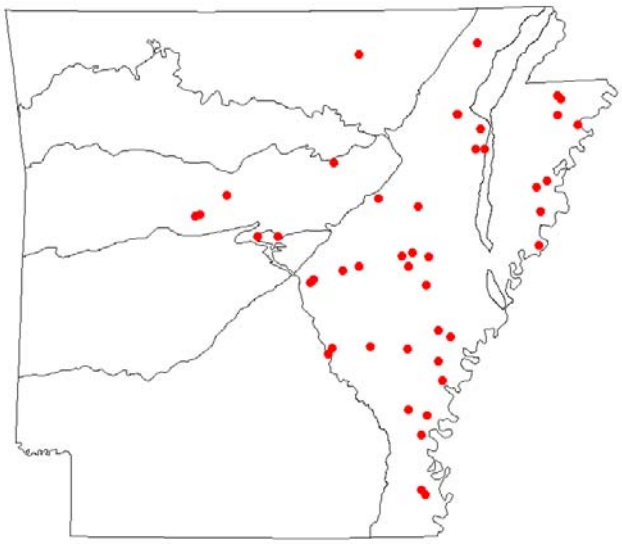
Residence: Winter

Global Rank: G5 — Secure

State Rank: S2N — Imperiled nonbreeding species in Arkansas

Distribution

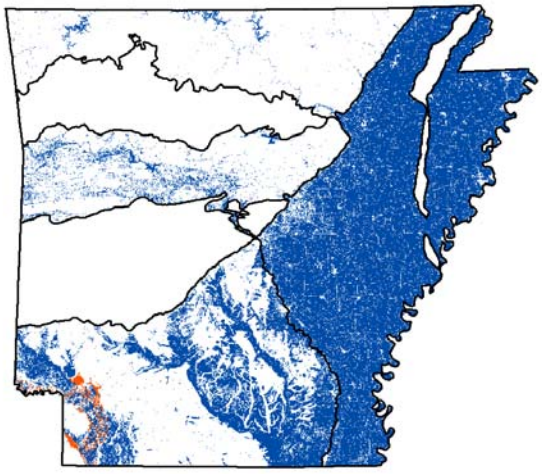
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [ ] Boston Mountains
- [x] Arkansas Valley
- [ ] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River Bottomland Depression	Suitable
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ponds, Lakes, and Water Holes	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Marginal
West Gulf Coastal Plain Wet Hardwood Flatwoods	Suitable

Anas rubripes
American Black Duck

Problems Faced

KNOWN PROBLEM: Loss and degradation of wetlands and coastal salt marshes on wintering grounds.	Threat: Habitat destruction or conversion Source: Urban development
KNOWN PROBLEM: Loss and degradation of wetlands and coastal salt marshes on wintering grounds.	Threat: Habitat destruction or conversion Source: Municipal/Industrial point source
KNOWN PROBLEM: Loss and degradation of wetlands and coastal salt marshes on wintering grounds.	Threat: Habitat destruction or conversion Source: Recreation
KNOWN PROBLEM: Loss and degradation of wetlands on breeding grounds.	Threat: Habitat destruction or conversion Source: Resource extraction
KNOWN PROBLEM: Loss and degradation of wetlands on breeding grounds.	Threat: Habitat destruction or conversion Source: Commercial/industrial development
KNOWN PROBLEM: Loss and degradation of wetlands on breeding grounds.	Threat: Habitat destruction or conversion Source: Forestry activities
KNOWN PROBLEM: Loss and degradation of wetlands on breeding grounds.	Threat: Habitat destruction or conversion Source: Agricultural practices
POTENTIAL PROBLEM: Hybridization with mallards. Mallards have expanded in range and abundance.	Threat: Biological alteration Source: Interspecific competiton

Data Gaps/Research Needs

No data gaps or research needs were identified at the state level.

Conservation Actions

	Importance	Category
Protect wetlands.	High	Habitat Protection
Restore and/or enhance wetlands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Record occasional observations during mid-winter waterfowl surveys and periodic aerial waterfowl surveys.

Comments

The American Black Duck was once the most abundant dabbling duck species in eastern North America but populations experienced a drastic decline (>50%) between the 1950s and 1990s. Winter inventories continue to indicate a stable or slightly declining population while breeding population estimates from 1990-2010 suggest a stable population. In contrast, demographic data suggest declining productivity between 1997 and 2007 (Devers and Collins 2011). Harvest restrictions were implemented in 1983 and 1984 in the U.S. and Canada, respectively, and harvest rates decreased (Francis et al. 1998). However, these data do not indicate that harvest was the only or primary cause of the black duck decline (Rusch et al. 1989). Currently, harvest is managed according to the Black Duck Adaptive Harvest Management framework, the goals of which are to: 1) maintain a black duck population that meets legal mandates and provides consumptive and non-consumptive use commensurate with habitat carrying capacity; 2) maintain societal values associated with the hunting tradition; and, 3) maintain equitable access to the black duck resources between and within the U.S. and Canada (USFWS 2014). American Black Ducks and Mallards are very similar genetically and ecologically thus setting the stage for competition, and field and laboratory studies provide circumstantial evidence of competition (Conroy et al. 2002). However, it is unclear if the increase in Mallards is the ultimate or proximate cause of the black duck decline or simply a concurrent event (Devers and Collins 2011). While research and monitoring projects to address key information needs are ongoing, habitat conservation efforts are focused on protection, restoration and enhancement of key lands on the breeding grounds, migration routes and wintering grounds (Devers and Collins 2011).

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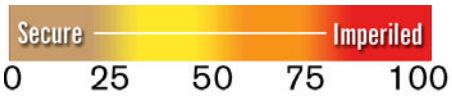
Anhinga anhinga

Anhinga

Class: Aves
Order: Pelecaniformes
Family: Anhingidae

Priority Score: 19 out of 100



Population Trend: Stable

Residence: Breeding

Global Rank: G5 — Secure

State Rank: S2 — Imperiled in Arkansas

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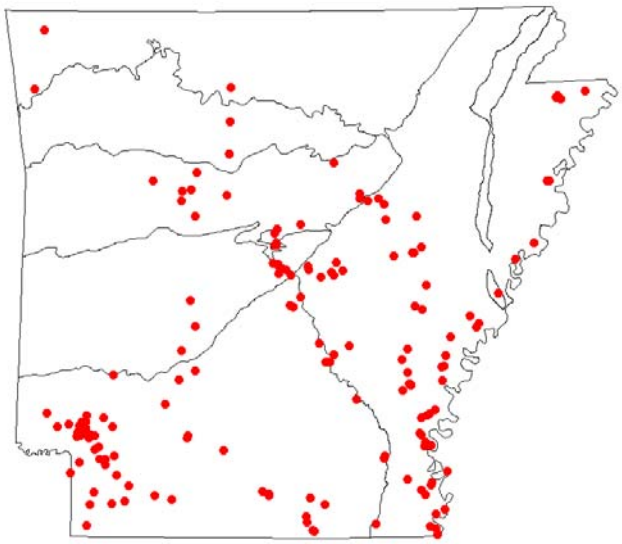
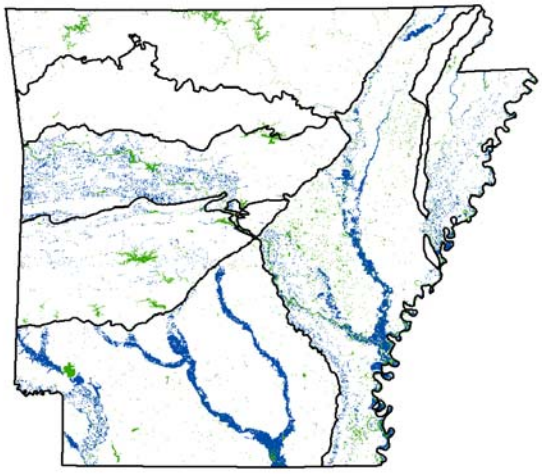
Distribution

Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains



Habitat Map

Habitats

	Weight
Lower Mississippi River Riparian Forest	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ponds, Lakes, and Water Holes	Obligate
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable

Problems Faced

KNOWN PROBLEM: Loss of wetlands due to agriculture.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of wetlands from hydrological alteration.	Threat: Hydrological alteration Source: Water diversion
POTENTIAL PROBLEM: Accidental shooting as a result of coromorant control.	Threat: Resource depletion Source: Confined animal operations
POTENTIAL PROBLEM: Poor water quality, contaminants.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Determine survivorship.

Conservation Actions

	Importance	Category
Maintain or restore bottomland hardwood swamps with older growth tress adajcent to sloughs, rivers, bayous, and reservoir.	High	Habitat Restoration/Improvement

Anhinga anhinga
Anhinga

Monitoring Strategies

Conduct inventories for colonial waterbirds, particularly rookery counts, as a part of the North American Colonial Waterbird Monitoring Program coordinated by the Waterbird Conservation for the Americas Bird Initiative. Continue monitoring of this species by the Arkansas Natural Heritage Commission.

Comments

This species spends most of its life in or on the branches of tall trees, over slow moving rivers, sloughs, bayous and lakes and reservoirs. Even though it is highly aquatic, its feathers are not waterproof like most waterfowl feathers. Thus they need to spend a lot of time drying and warming in the sun, with their wings and tail spread. Their turkey-like tail spread gives them the nickname "Water Turkey". Their need to bask in the sun limits their range northward. They nest in colonies, often among herons and egrets. Young anhingas can swim before they can fly. They are sensitive to the presence of humans while nesting. Loss of wetlands through drainage and agricultural development has led to their decline in the state. (Arkansas Audubon Society 2012, Frederick and Siegel-Causey 2000, Hamel 1992, James and Neal 1986, Kushlan and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Anthus spragueii

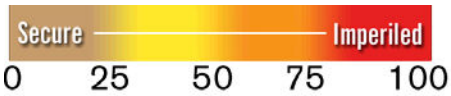
Sprague's Pipit

Class: Aves

Order: Passeriformes

Family: Motacillidae

Priority Score: 33 **out of 100**



Population Trend: Decreasing

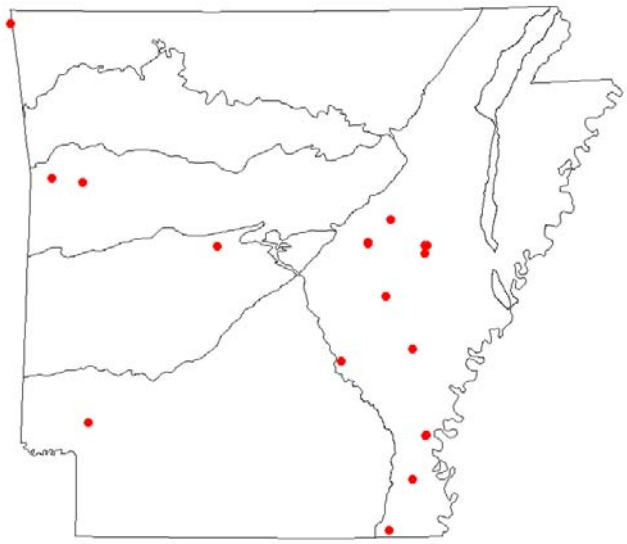
Residence: Winter

Global Rank: G4 — Apparently secure species

State Rank: S1N — Critically imperiled nonbreeding species in Arkansas

Distribution

Occurrence Records



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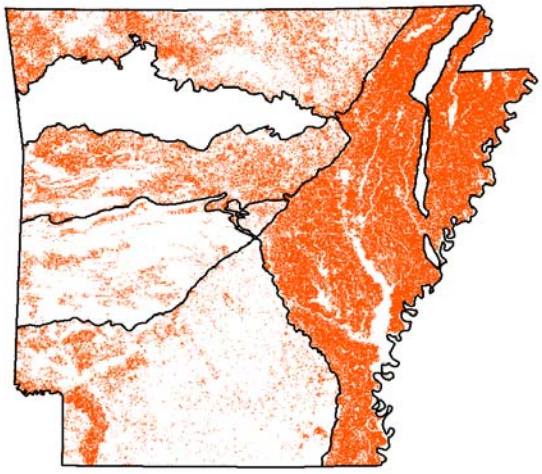
Habitat Map



Habitats	Weight
Crop Land	Marginal
Lower Mississippi Alluvial Plain Grand Prairie	Marginal
Ozark-Ouachita Prairie and Woodland	Marginal
Pasture Land	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Marginal

Problems Faced

KNOWN PROBLEM: Loss of grassland habitat.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of grassland habitat.	Threat: Habitat destruction Source: Urban development
KNOWN PROBLEM: Loss of grassland habitat.	Threat: Alteration of natural fire regimes Source: Fire suppression
KNOWN PROBLEM: Loss of large herbivores.	Threat: Biological alteration Source: Management of/for certain species

Data Gaps/Research Needs

Determine best management practices.
Determine range of habitat associations.
Determine statewide distribution and abundance.

Conservation Actions

	Importance	Category
	Medium	
Conduct prescribed burning in grassland habitats.	High	Fire Management
Maintain habitat with light to moderate grazing or haying.	High	Habitat Restoration/Improvement
Restore native grasslands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Continue to track this species using the Christmas Bird Count. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Arkansas appears to be on the eastern periphery of the Sprague's Pipits wintering range. The species is a candidate for listing as Endangered or Threatened under the Endangered Species Act of 1973; the U.S. Fish and Wildlife Service is scheduled to make a decision on listing by the end of September 2015. Its conservation status includes Species of Special Concern/Watch List Species by Partner's in Flight and National Audubon Society. Range wide it winters in grasslands lacking shrubs. It winters in the adjacent state of Texas in heavily grazed grasslands dominated by little bluestem (Schizachyrium scoparium) and Andropogon spp, and in large, over-grazed pastures. Its winter habitat associations in Arkansas have not been quantified and are poorly understood, though they are reliably found in small numbers at the Stuttgart Airport in habitat dominated by old-field threeawn (Aristida oligantha) and have been observed in similar habitat at H.E. Flanagan Prairie Natural Area (Holimon, personal observation). Habitat descriptions from other observed locations in Arkansas are not known but in general consist of very open areas with short grass and few shrubs. (Arkansas Audubon Society 2012, Butcher and others 2007, Davis and others 2014, Grzybowski 1982, Jones 2010, Rich and others 2004)

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Antrostomus vociferus

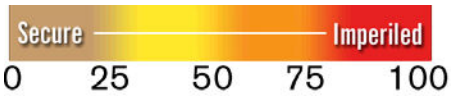
Eastern Whip-poor-will

Class: Aves

Order: Caprimulgiformes

Family: Caprimulgidae

Priority Score: 19 out of 100



Population Trend: Decreasing

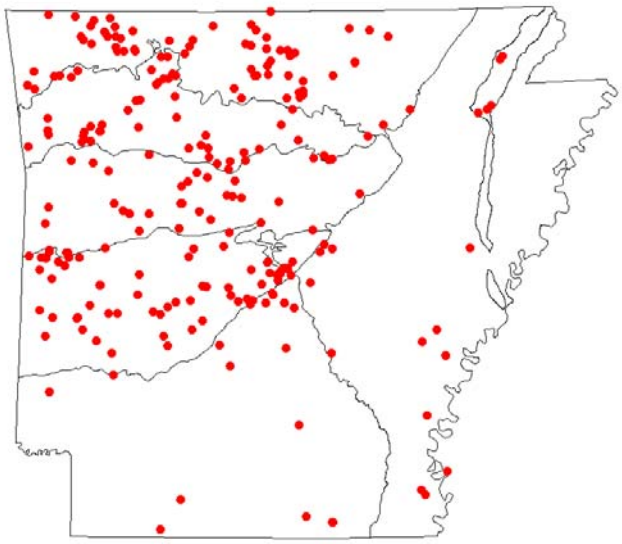
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

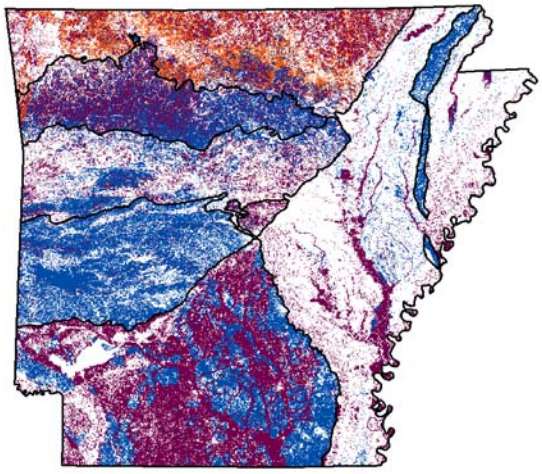
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Antrostomus vociferus
Eastern Whip-poor-will

Habitats	Weight
Crowley's Ridge Loess Slope Forest	Suitable
Cultivated Forest	Suitable
Interior Highlands Calcareous Glade and Barrens	Marginal
Interior Highlands Dry Acidic Glade and Barrens	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Optimal
Lower Mississippi River Riparian Forest	Optimal
Ouachita Montane Oak Forest	Optimal
Ozark-Ouachita Dry Oak and Pine Woodland	Optimal
Ozark-Ouachita Dry-Mesic Oak Forest	Optimal
Ozark-Ouachita Dry-Mesic Oak Forest/Woodland	Optimal
Ozark-Ouachita Large Floodplain	Optimal
Ozark-Ouachita Mesic Hardwood Forest	Optimal
Ozark-Ouachita Pine-Bluestem Woodland	Suitable
Ozark-Ouachita Pine-Oak Forest/Woodland	Optimal
Ozark-Ouachita Prairie and Woodland	Suitable
Ozark-Ouachita Riparian	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Optimal
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Suitable
West Gulf Coastal Plain Pine-Hardwood Forest/Woodland	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Optimal
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest/Woodland	Suitable
West Gulf Coastal Plain Small Stream/River Forest	Optimal
West Gulf Coastal Plain Wet Hardwood Flatwoods	Optimal

Problems Faced

KNOWN PROBLEM: Loss of forest openings.	Threat: Altered composition/structure Source: Forestry activities
KNOWN PROBLEM: Loss of nesting habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of nesting habitat.	Threat: Habitat destruction or conversion Source: Urban development
KNOWN PROBLEM: Predation.	Threat: Extraordinary predation/parasitism/disease Source: Predation
POTENTIAL PROBLEM: Collisions with vehicles and man-made structures.	Threat: Collision with man-made structures Source: Urban development
POTENTIAL PROBLEM: Nest predation by feral hogs.	Threat: Extraordinary predation/parasitism/disease Source: Exotic species
POTENTIAL PROBLEM: Toxins, heavy metals, and pesticides negatively affect the species.	Threat: Toxins/contaminants Source: Municipal/Industrial point source
POTENTIAL PROBLEM: Toxins, heavy metals, and pesticides negatively affect the species.	Threat: Toxins/contaminants Source: Non-point source pollution

Data Gaps/Research Needs

Collect information on habitat selection and potential limiting factors on the breeding grounds.
Determine impacts of human activity.
Estimate population size and status.
Investigate interspecies competition between Chuck-will's-widows and Whip-poor-wills with and emphasis on the recent range expansion of Chuck-wills-widows.

Conservation Actions

	Importance	Category
More data are needed to determine conservation actions.	Medium	Data Gap

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate but some issues, such as bias, may not have been accounted for. This species may require implementation of night roadside counts to collect data on distribution and population trends specific to Arkansas. This effort should be coordinated with states doing similar monitoring. Nightjar Surveys in Arkansas should be expanded along current BBS routes with an emphasis on routes in the Ozark Highlands and norhtern portion of Crowley's Ridge.

Comments

This species is secretive, often heard but rarely seen. It feeds primarily on the wing, mostly at dawn and dusk. It is a ground nester which prefers nesting in open woods with little or no underbrush. These habitat patches are often found near suburbs and agricultural fields. However, habitat loss through succession or increased urbanization and agricultural development could be a problem. Common in the Ozark-St. Francis NF, Uncommon to locally common in the Ouachita NF (ANHC 2003, Bent 1989, Cink 2002, Duzan and others 2003, 2003A, Evans and Kirkman 1980, Fitzgerald 2000, Hamel 1992, Jacobs 2001, James and Neal 1986, Martin and Finch 1995, Robbins and Easterla 1992).

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Arenaria interpres

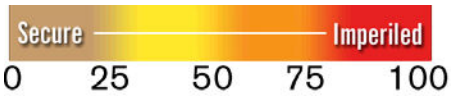
Ruddy Turnstone

Class: Aves

Order: Charadriiformes

Family: Scolopacidae

Priority Score: 24 **out of 100**



Population Trend: Decreasing

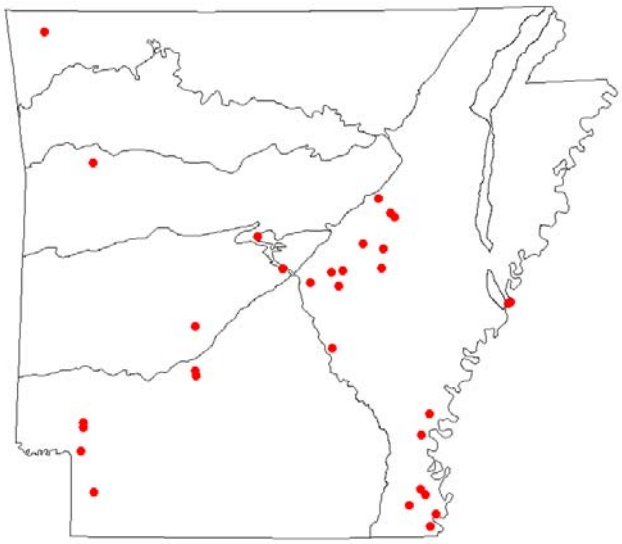
Residence: Transient

Global Rank: G5 — Secure

State Rank: S2N — Imperiled nonbreeding species in Arkansas

Distribution

Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [ ] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
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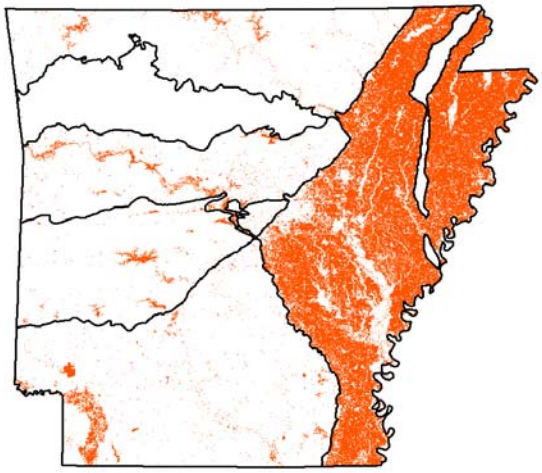
Habitat Map



Habitats	Weight
Crop Land	Marginal
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Water diversion
KNOWN PROBLEM: Lack of mud flats during migration.	Threat: Habitat destruction or conversion Source: Agricultural practices

Data Gaps/Research Needs

Determine habitat use during migration.

Conservation Actions	Importance	Category
Draw-down fish ponds to create mud flat habitat in July - November.	High	Habitat Restoration/Improvement
Flood crop land in summer and early fall after harvest.	High	Habitat Restoration/Improvement
Manipulate federal and state managed moist-soil units to provide mud flat habitat during March-early June migration and, if possible, during July - November migration.	Medium	Habitat Restoration/Improvement
Manipulate reservoirs (private and publicly owned) to provide mudflat habitat during July - Nov. migration, and, if possible, during March-early June migration.	Medium	Habitat Restoration/Improvement
Restore mud flats.	High	Habitat Restoration/Improvement

Arenaria interpres
Ruddy Turnstone

Monitoring Strategies

Initiate migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture.

Comments

This species is seen in the state April-October, but this species is seen in the state very infrequently. They tend to forage on exposed mudflats, sandbars and rock dikes along rivers. Studies suggest that populations of this and other shorebird species are declining. The availability of habitat and food along their migratory route is critical. Birds need to stop and refuel as they go. Proper management of water levels on wetlands, artificial impoundments, and flooded agricultural fields can help. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Klima and Jehl 1998, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004).

Commercial aquaculture facilities are important stopover sites for this species and many other shorebirds (Lehnen and Krementz 2013). The decline of fish pond acreage in the state from 60,000 surface acres in 2002 to less than 30,000 acres in 2012 is alarming (personal communication Dr. Carole Engle, UAPB). Water management strategies have changed at many of the remaining facilities because of increased efficiency. Emphasis should be placed on programs that would encourage fish farmers to provide shallow-water habitat for extended periods of time.

Additionally, management plans for reservoirs (ex. Chicot, Millwood) and moist-soil impoundments (AGFC, USFWS, private) could be altered to provide additional benefit to many shorebirds that rely on mudflat habitat. Deeper water that is drawn down slowly typically provides more invertebrates than very recently flooded water.

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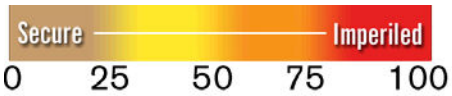
Botaurus lentiginosus

American Bittern

Class: Aves
Order: Ciconiiformes
Family: Ardeidae

Priority Score: 23 **out of 100**



Population Trend: Stable

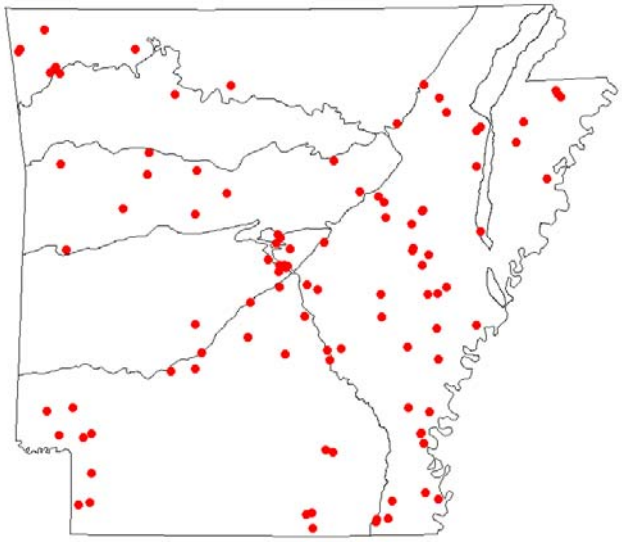
Residence: Permanent

Global Rank: G4 — Apparently secure species

State Rank: S2N — Imperiled nonbreeding species in Arkansas

Distribution

Occurrence Records



Ecoregions where the species occurs:

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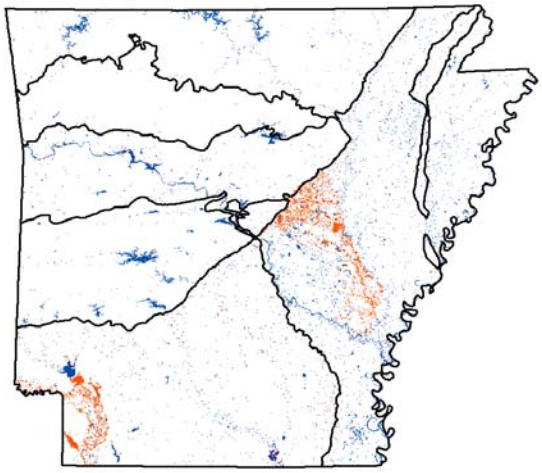

Habitat Map

Habitats

Habitats	Weight
Herbaceous Wetland	Optimal
Lower Mississippi Alluvial Plain Grand Prairie	Marginal
Ozark-Ouachita Prairie and Woodland	Marginal
Ponds, Lakes, and Water Holes	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Marginal

Problems Faced

KNOWN PROBLEM: Highly vulnerable to contaminants and pollutants.	Threat: Toxins/contaminants Source: Agricultural practices
KNOWN PROBLEM: Lack of emergent marsh, lack of wetlands.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Lack of emergent marsh, lack of wetlands.	Threat: Hydrological alteration Source: Water diversion
KNOWN PROBLEM: Lack of emergent marsh, lack of wetlands.	Threat: Habitat destruction or conversion Source: Forestry activities

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions

Conservation Actions	Importance	Category
Maintain wetlands.	High	Habitat Protection
Restore wetlands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Participate in National Marshbird Monitoring Program coordinated by Waterbird Conservation for the Americas Bird Initiative.

Comments

Although little is known about this secretive species' natural history, its dependence on freshwater wetlands with tall, dense emergent vegetation is clear, as is its population decline associated with the decline in wetland habitat. Chemical contamination of their food supply may also be a factor in the decline. Although difficult to spot, its distinctive, loud, booming call can be heard from a long way off, and gives rise to nicknames like thunder-pumper. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Kushlan and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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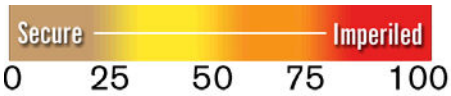
Calcarius pictus

Smith's Longspur

Class: Aves
Order: Passeriformes
Family: Emberizidae

Priority Score: 24 **out of 100**



Population Trend: Decreasing

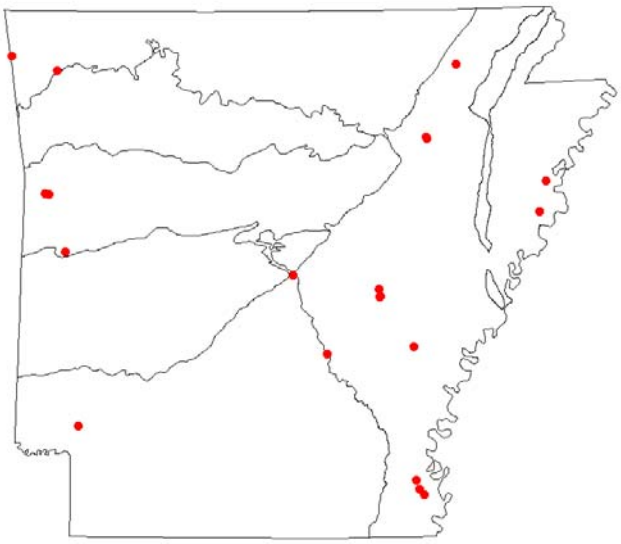
Residence: Winter

Global Rank: G5 — Secure

State Rank: S2N — Imperiled nonbreeding species in Arkansas

Distribution

Occurrence Records



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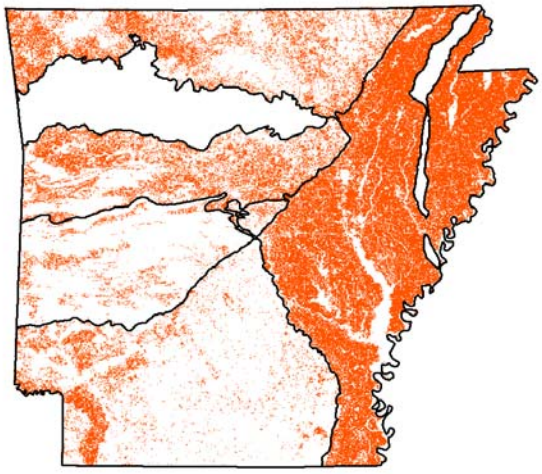

Habitats	Weight
Crop Land	Marginal
Lower Mississippi Alluvial Plain Grand Prairie	Marginal
Ozark-Ouachita Prairie and Woodland	Marginal
Pasture Land	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Marginal

Problems Faced

KNOWN PROBLEM: Loss of grassland habitat containing three-awn grass (Aristida spp.).	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of large herbivores.	Threat: Biological alteration Source: Management of/for certain species
POTENTIAL PROBLEM: Replacement of three-awn grass (Aristida spp.) with bermuda at airports.	Threat: Habitat destruction or conversion Source: Exotic species

Data Gaps/Research Needs

Determine population trends.
Further investigation of statewide distribution and abundance.
Investigate if there are alternative habitats to those dominated by three-awn grass (Aristida spp.).

Conservation Actions

	Importance	Category
Enocurage use of three-awn grass (Aristida spp.) along airport runways.	High	Habitat Restoration/Improvement
Stop mowing before end of growing season, providing cover, forage, and three-awn grass (an annual) seeds.	High	Habitat Restoration/Improvement

Monitoring Strategies

Continue efforts to locate and survey potential wintering habitat for this species.
Monitor known winter locations for abundance and presence of preferred habitat containing three-awn grass.

Comments

Smith's longspurs occur only in winter Arkansas, primarily along airport runways where prior soil disturbance favored the establishment of large stands of three-awn grass (Aristida spp). The number of known airport locations in the state supporting this bird has declined, likely due in part to this early successional grassland habitat type succeeding to a later seral grassland stage having different composition and structure. Without repeated disturbance favoring three-awn grass, succession to other grassland habitats resulting in loss of habitat suitable for wintering Smith's Longspurs is inevitable. In addition, airport managers now commonly replant disturbed areas associated with airport construction with non-native species such as Bermuda grass. Further, many airport managers have replaced three-awn grass and other native species with Bermuda grass for aesthetic purposes. Bermuda grass is not an important component of their winter habitat and deters their presence when it is dominant, perhaps because of deeper thatch. (Arkansas Audubon Society 2012, Briskie 2009, Grzybowski 1980, Hamel 1992, James and Neal 1986, Holimon and others 2012, Martin and Finch 1995, Monroe 2010, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Calidris alba

Sanderling

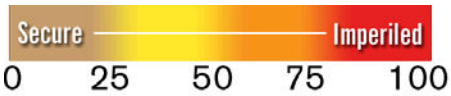
©Jeff R. Wilson

Class: Aves

Order: Charadriiformes

Family: Scolopacidae

Priority Score: 19 out of 100



Population Trend: Decreasing

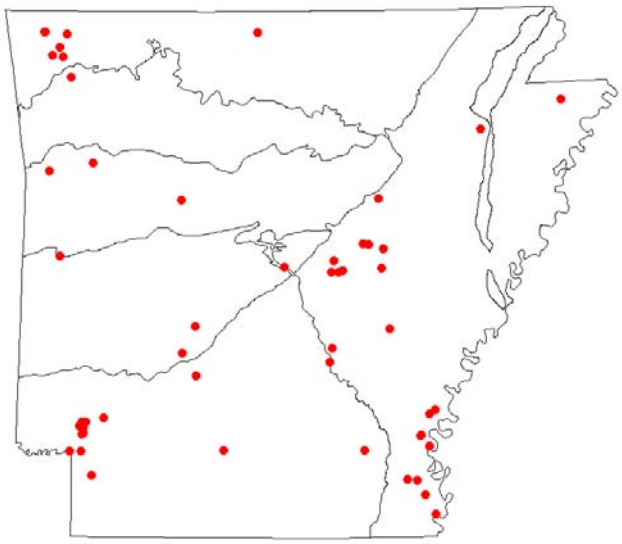
Residence: Transient

Global Rank: G5 — Secure

State Rank: S3N — Vulnerable nonbreeding species in Arkansas

Distribution

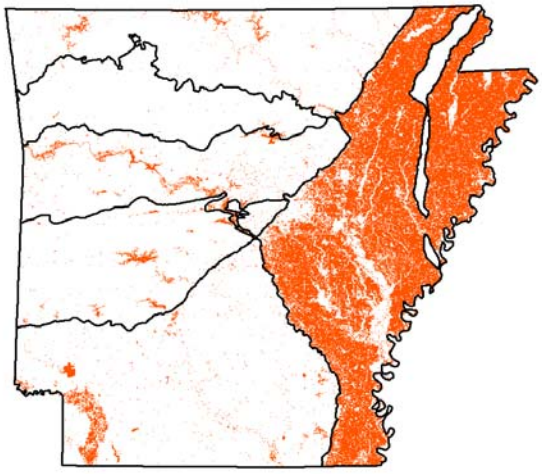
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Water diversion
KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Agricultural practices

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions	Importance	Category
Provide mud flat habitat by flooding harvested cropland in summer and early fall.	High	Habitat Restoration/Improvement
Provide mud flat habitat by manipulation moist-soil units during March to early June and, where possible, during July - November.	Medium	Habitat Restoration/Improvement
Provide mudflat habitat by drawing down fish ponds in July - November.	High	Habitat Restoration/Improvement

Monitoring Strategies

Initiate late summer - fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture.

Calidris alba
Sanderling

Comments

This species is seen in the state April-October, but this species is seen in the state very infrequently. They tend to forage on exposed mud flats, sandbars and rock dikes along rivers. Studies suggest that populations of this and other shorebird species are declining. The availability of habitat and food along their migratory route is critical. Birds need to stop and refuel as they go. Proper management of water levels on wetlands, artificial impoundments, and flooded agricultural fields can help. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, MacWhirter and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, U.S. Shorebird Conservation Plan 2004)

Commercial aquaculture facilities are important stopover sites for this species and many other shorebirds (Lehnen and Krementz 2013). The decline of fish pond acreage in the state from 60,000 surface acres in 2002 to less than 30,000 acres in 2012 is alarming (personal communication Dr. Carole Engle, UAPB). Water management strategies have changed at many of the remaining facilities because of increased efficiency. Emphasis should be placed on programs that would encourage fish farmers to provide shallow-water habitat for extended periods of time.

Additionally, management plans for reservoirs (ex. Chicot, Millwood) and moist-soil impoundments (AGFC, USFWS, private) could be altered to provide additional benefit to many shorebirds that rely on mudflat habitat. Deeper water that is drawn down slowly typically provides more invertebrates than very recently flooded water.

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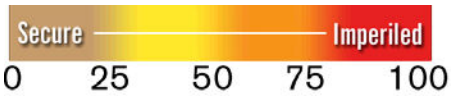
Calidris alpina

Dunlin

Class: Aves
Order: Charadriiformes
Family: Scolopacidae

Priority Score: 19 out of 100



Population Trend: Decreasing

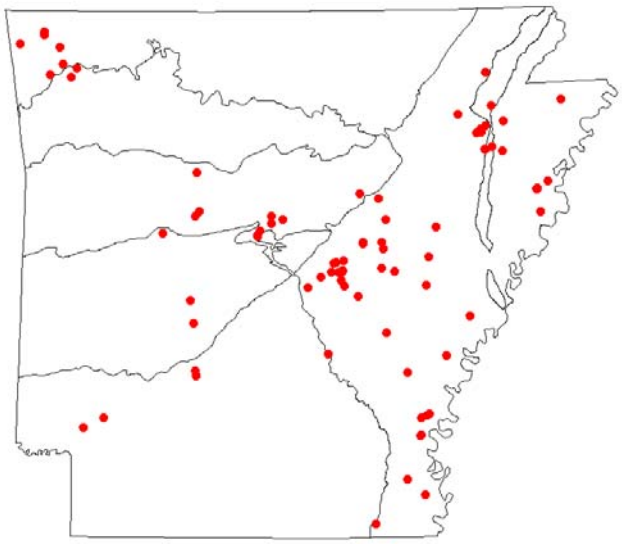
Residence: Transient

Global Rank: G5 — Secure

State Rank: S3N — Vulnerable nonbreeding species in Arkansas

Distribution

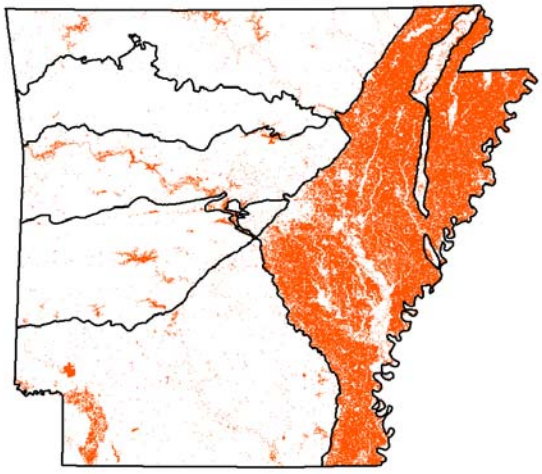
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Channel alteration
KNOWN PROBLEM: Lack of mud flats.	Threat: Habitat destruction or conversion Source: Agricultural practices

Data Gaps/Research Needs

A reliable assessmnet of population status and trends is needed.

Conservation Actions	Importance	Category
Provide mud flat habitat by drawing down fish ponds in July - November.	High	Habitat Restoration/Improvement
Provide mud flat habitat by flooding harvested cropland in summer and early fall.	High	Habitat Restoration/Improvement
Provide mud flat habitat by manipulating moist-soil units during March to early June and, where possible, during July - November.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

Initiate late summer - fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture.

Comments

This species has been seen in the state every month, but is most common during the spring migration period March-June and the fall migration period October-December. They are often seen in association with other sandpipers. Studies suggest that populations of this and other shorebird species are declining. The availability of habitat and food along their migratory route is critical. Birds need to stop and refuel as they go. Proper management of water levels on wetlands, artificial impoundments, and flooded agricultural fields can help. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Klima and Jehl 1998, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004).

Commercial aquaculture facilities are important stopover sites for this species and many other shorebirds (Lehnen and Krementz 2013). The decline of fish pond acreage in the state from 60,000 surface acres in 2002 to less than 30,000 acres in 2012 is alarming (personal communication, Dr. Carole Engle, UAPB). Water management strategies have changed at many of the remaining facilities because of increased efficiency. Emphasis should be placed on programs that would encourage fish farmers to provide shallow-water habitat for extended periods of time.

Additionally, management plans for reservoirs (ex. Chicot, Millwood) and moist-soil impoundments (AGFC, USFWS, private) could be altered to provide additional benefit to many shorebirds that rely on mudflat habitat. Deeper water that is drawn down slowly typically provides more invertebrates than very recently flooded water.

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Calidris himantopus

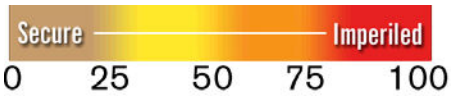
Stilt Sandpiper

Class: Aves

Order: Charadriiformes

Family: Scolopacidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

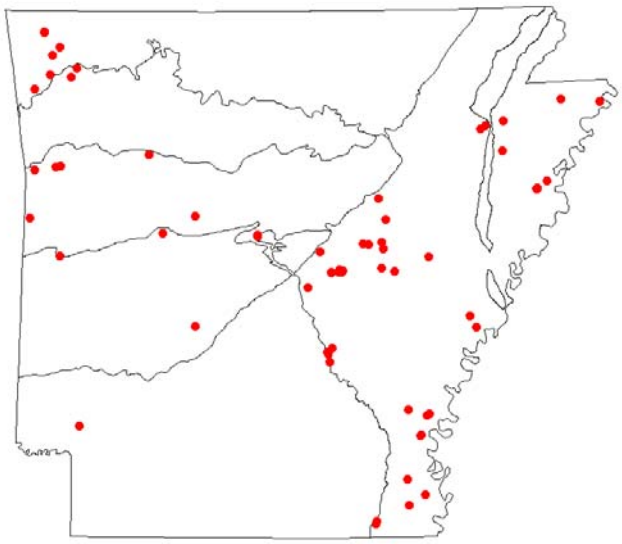
Residence: Transient

Global Rank: G5 — Secure

State Rank: S3N — Vulnerable nonbreeding species in Arkansas

Distribution

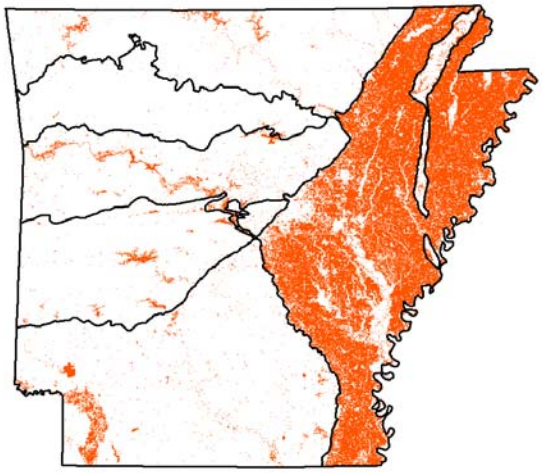
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Water diversion
KNOWN PROBLEM: Loss of mud flat habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions	Importance	Category
Provide mud flat habitat by drawing down fish ponds in July - November.	High	Habitat Restoration/Improvement
Provide mud flat habitat by flooding harvested cropland in summer and early fall.	High	Habitat Restoration/Improvement
Provide mud flat habitat by manipulating moist soil units during March to early June and, where possible, during July to November.	Medium	Habitat Restoration/Improvement
Provide mud flat habitat by manipulating reservoirs (both private and public) during July through November migration, and where possible, during March to early June migration.	Medium	Habitat Restoration/Improvement

Calidris himantopus
Stilt Sandpiper

Monitoring Strategies

Initiate late summer - fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture.

Comments

This species is seen in the state March-November, with March- June sightings believed to be spring northward migrants, while birds seen July through November are believed to be southbound migrants. They are often seen in association with Long-billed Dowitchers and tend to forage in very shallow water rather than exposed mud. Studies suggest that populations of this and other shorebird species are declining. The availability of habitat and food along their migratory route is critical. Birds need to stop and refuel as they go. Proper management of water levels on wetlands, artificial impoundments, and flooded agricultural fields can help. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Klima and Jehl 1998, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

Commercial aquaculture facilities are important stopover sites for this species and many other shorebirds (Lehnen and Krementz 2013). The decline of fish pond acreage in the state from 60,000 surface acres in 2002 to less than 30,000 acres in 2012 is alarming (personal communication Dr. Carole Engle, UAPB). Water management strategies have changed at many of the remaining facilities because of increased efficiency. Emphasis should be placed on programs that would encourage fish farmers to provide shallow-water habitat for extended periods of time.

Additionally, management plans for reservoirs (ex. Chicot, Millwood) and moist-soil impoundments (AGFC, USFWS, private) could be altered to provide additional benefit to many shorebirds that rely on mudflat habitat. Deeper water that is drawn down slowly typically provides more invertebrates than very recently flooded water.

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Calidris subruficollis

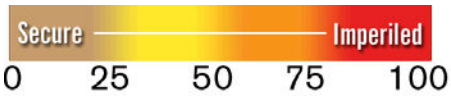
Buff-breasted Sandpiper

Class: Aves

Order: Charadriiformes

Family: Scolopacidae

Priority Score: 29 **out of 100**



Population Trend: Decreasing

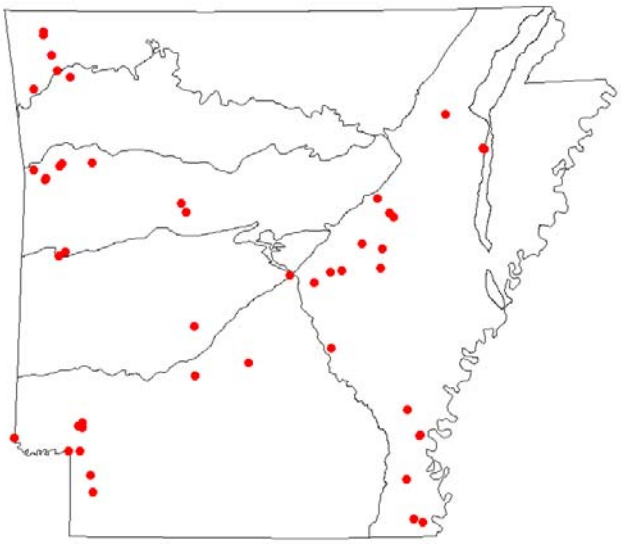
Residence: Transient

Global Rank: G4 — Apparently secure species

State Rank: S2N — Imperiled nonbreeding species in Arkansas

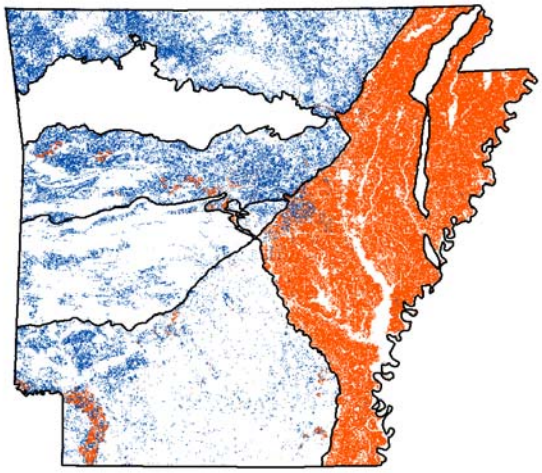
Distribution

Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [ ] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains



Habitat Map

Habitats	Weight
Crop Land	Marginal
Lower Mississippi Alluvial Plain Grand Prairie	Marginal
Mud Flats	Suitable
Ozark-Ouachita Prairie and Woodland	Marginal
Pasture Land	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Marginal

Problems Faced

KNOWN PROBLEMS: Lack of open areas containing short grass.	Threat: Altered composition/structure Source: Grazing/Browsing
KNOWN PROBLEMS: Lack of open areas containing short grass.	Threat: Altered composition/structure Source: Fire suppression
KNOWN PROBLEMS: Lack of open areas containing short grass.	Threat: Altered composition/structure Source: Agricultural practices
KNOWN PROBLEMS: Lack of open areas containing short grass.	Threat: Altered composition/structure Source: Urban development

Data Gaps/Research Needs

Determine impacts of pesticides applied to golf courses and sod farms on prey availability and bird reproductive health.

Conservation Actions

Conservation Actions	Importance	Category
Protect grasslands, short grass wetlands, and associated mud flats utilized during migration.	High	Habitat Protection
Restore grasslands and associated grassy mud flats utilized during migration.	High	Habitat Restoration/Improvement

Monitoring Strategies

Initiate fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

The only North American shorebird to have a lek mating system like grouse Listed as highly imperiled by the U.S. Shorebird Conservation Plan. Considered near threatened on the IUCN Red List; on the Yellow list of Watch List 2014. Specific management attention is needed for this shorebird. During migration, inhabits relatively dry, short-grass sites such as pastures, golf courses, and airports; also mudflats and rice fields. In Arkansas, rare spring migrant and uncommon fall migrant; highest numbers have been seen on sod farms. (Arkansas Audubon Society 2014, Hamel 1992, James and Neal 1986, Lanctot and Laredo1994, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, U.S. Shorebird Conservation Plan 2004, Rosenberg and others 2014, U.S. Shorebird Conservation Plan Partnership. 2015)

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Chaetura pelagica

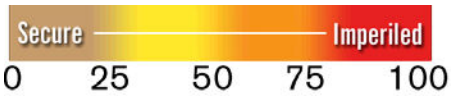
Chimney Swift

Class: Aves

Order: Apodiformes

Family: Apodidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

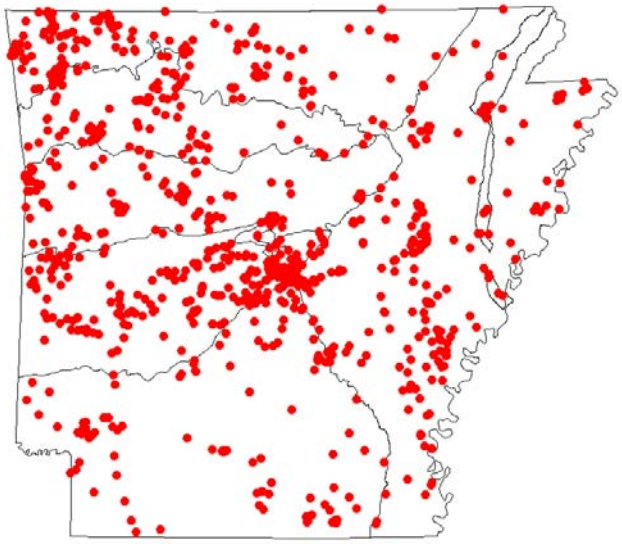
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

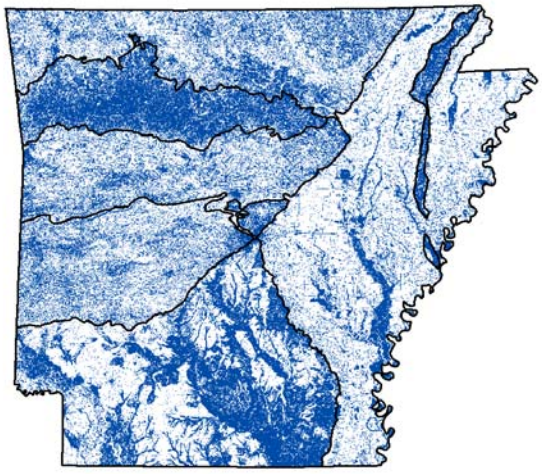
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Chaetura pelagica
Chimney Swift

Habitats	Weight
Crowley's Ridge Loess Slope Forest	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River Bottomland Depression	Suitable
Lower Mississippi River Dune Woodland, Pond, and Forest	Suitable
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ozark-Ouachita Dry-Mesic Oak Forest	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Mesic Hardwood Forest	Suitable
Ozark-Ouachita Pine-Oak Forest/Woodland	Suitable
Ozark-Ouachita Riparian	Suitable
Urban/Suburban	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Mesic Hardwood Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest and Woodland	Suitable
West Gulf Coastal Plain Small Stream/River Forest	Suitable

Problems Faced

KNOWN PROBLEM: Loss of old growth forests.	Threat: Habitat destruction Source: Forestry activities
KNOWN PROBLEM: Use of chimney caps prevents use of chimneys as nesting locations.	Threat: Habitat disturbance Source: Urban development
POTENTIAL PROBLEM: Temperature extremes and heavy rains affect food resources, survivorship, and nest success.	Threat: Biological alteration Source:
POTENTIAL PROBLEM: Widespread pesticide use reduces aerial insects.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Determine the extent to which swifts are using natural sites (e.g. trees, caves) for roosting and nesting.

Quantify the availability and occupancy of man-made nesting and roosting sites (e.g. chimneys, swift towers, outbuildings, wells, silos) to determine if these sites are a limiting factor.

Conservation Actions

Conservation Actions	Importance	Category
Educate homeowners and chimney and pest control professionals about swift-friendly management practices.	High	Public Relations/Education
Identify and protect natural nest and roost sites.	High	Habitat Protection
Protect old growth forests.	Medium	Habitat Protection

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Encourage documentation, reporting, and monitoring of natural nest/roost locations. Promote the citizen science monitoring program A Swift Night Out (chimneyswifts.org). Continue to conduct Breeding Bird Surveys at all routes established in Arkansas.

Comments

Historically, this species depended on scattered, large-diameter, hollow trees for nesting. Populations increased tremendously when Europeans settled the land and provided chimneys. Now populations are declining because people are capping old chimneys to keep animals out, and new chimneys are not as suitable. Uncapping chimneys and providing swift nesting towers may help stop the decline. (ANHC 2003, Cink and Collins 2002, Clawson 1982, Duzan and others 2003, 2003A, Evans and Kirkman 1980, Fitzgerald 2000, Hamel 1992, Hines et al. 2013, Jacobs 2001, James and Neal 1986, Martin and Finch 1995, Robbins and Easterla 1992, Steeves et al. 2014).

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Charadrius melodus

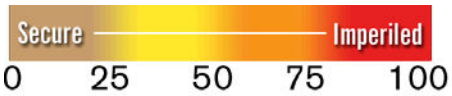
Piping Plover

Class: Aves

Order: Charadriiformes

Family: Charadriidae

Priority Score: 43 **out of 100**



Population Trend: Decreasing

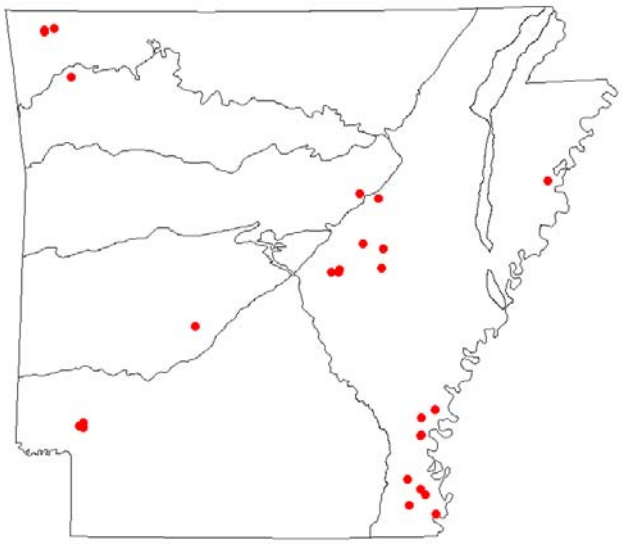
Residence: Transient

Global Rank: G3 — Vulnerable species

State Rank: S1N — Critically imperiled nonbreeding species in Arkansas

Distribution

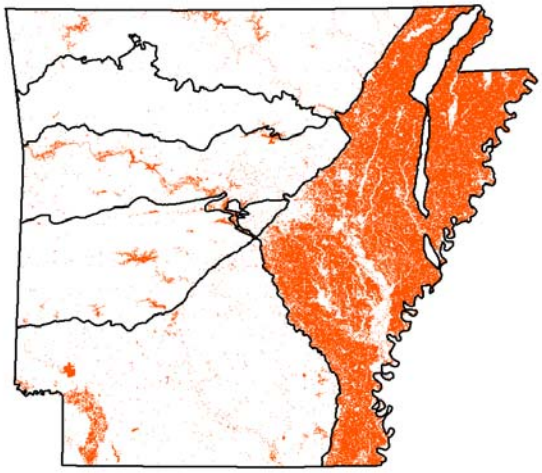
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Water diversion

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions	Importance	Category
Maintain or restore mud flats.	High	Habitat Protection
Provide mud flat habitat by drawing down fish ponds in July - November.	High	Habitat Restoration/Improvement
Provide mud flat habitat by manipulation reservoirs (both public and private) during July - November migration, and where possible, during March to early June migration.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

Initiate late summer - fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This species is listed as a highly imperiled species by the U.S. Shorebird Conservation Plan. Although this species occurs in Arkansas only in small numbers during migration, it is a Federally Threatened species, and thus warrants attention. Reservoir shoreline was the most common habitat used on inland migration, but birds also stopped at natural lakes, rivers, marsh wetlands, industrial ponds and fish farms where the substrate type is predominantly mud flat. Wetlands, impoundments, and agricultural fields that are managed to provide mud flat habitat from July- November for other migratory shorebirds should provide foraging habitat for this species as well. (Duzan and others 2003, 2003A, Haig and Elliot-Smith 2004, U.S. Shorebird Conservation Plan 2004)

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Chordeiles minor

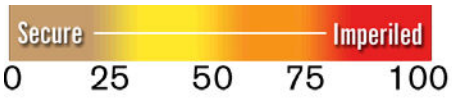
Common Nighthawk

Class: Aves

Order: Caprimulgiformes

Family: Caprimulgidae

Priority Score: 24 **out of 100**



Population Trend: Decreasing

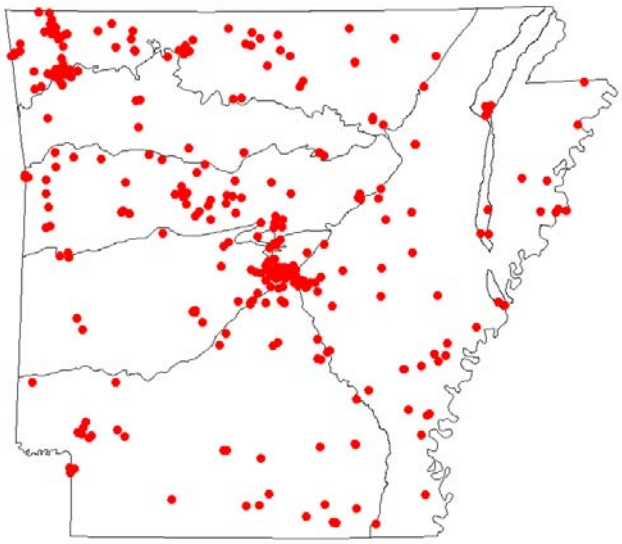
Residence:

Global Rank: G5 — Secure

State Rank: S2B — Imperiled breeding species in Arkansas

Distribution

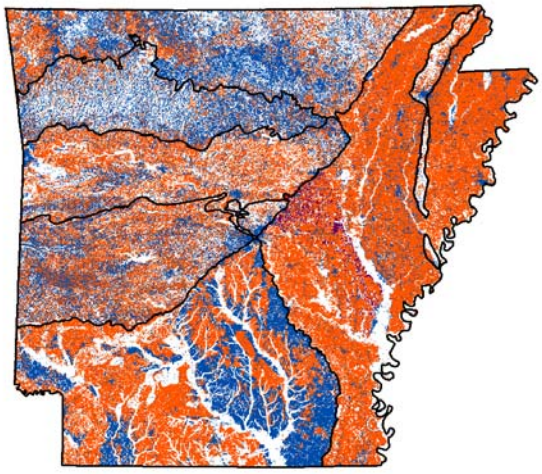
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Interior Highlands Calcareous Glade and Barrens	Suitable
Interior Highlands Dry Acidic Glade and Barrens	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Optimal
Lower Mississippi River Dune Woodland, Pond, and Forest	Marginal
Ozark-Ouachita Dry Oak and Pine Woodland	Marginal
Ozark-Ouachita Pine/Bluestem Woodland	Marginal
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Marginal
Urban/Suburban	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Optimal
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Suitable

Problems Faced

KNOWN PROBLEM: Loss of insect prey due to increased use and effectiveness of insecticides.	Threat: Biological alteration Source: Agricultural practices
KNOWN PROBLEM: Loss of insect prey due to increased use and effectiveness of insecticides.	Threat: Biological alteration Source: Urban development
KNOWN PROBLEM: Loss of openland habitat due to succession.	Threat: Alteration of natural fire regimes Source: Fire suppression

Data Gaps/Research Needs

Determine breeding success.

Determine effects of insecticide use on prey availability.

Conservation Actions

	Importance	Category
Implement prescribed fire to help create bare patches for nesting.	Medium	Fire Management
Restore and maintain native grasslands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Conduct species specific routes, in urban/suburban environments, following Nightjar Survey Network protocols. www.nightjars.org

Comments

Data from the North American Breeding Bird Survey indicate that the species has declined roughly 2% per year between 1966-2010. A cause for decline includes the increased use of agricultural pesticides, including synthetic neonicotinoids, which has reduced the prey base of flying insects. This species commonly nests on gravel rooftops in urban and suburban areas. The increased use of rubber material for rooftops instead of gravel is a suspected cause of decline for urban populations.

(Brigham and others 2011, NABCI 2014)

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Cistothorus platensis

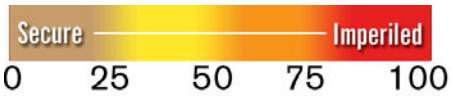
Sedge Wren

Class: Aves

Order: Passeriformes

Family: Troglodytidae

Priority Score: 21 **out of 100**



Population Trend: Stable

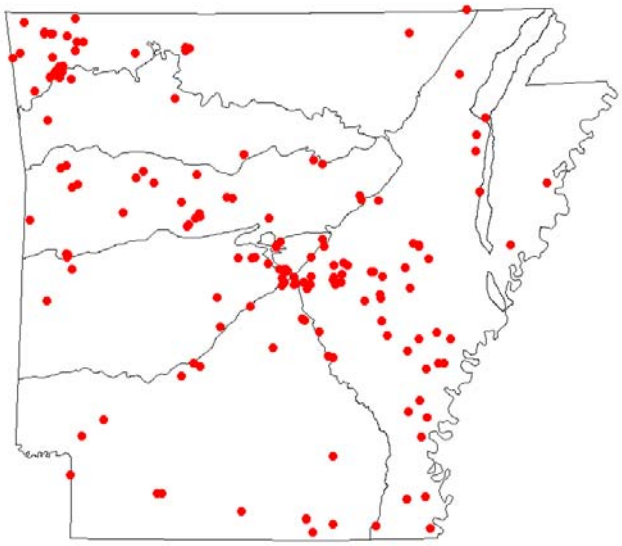
Residence: Permanent

Global Rank: G5 — Secure

State Rank: S1S2B,S4N — Critically imperiled breeding species in Arkansas (uncertain rank), apparently secure nonbreeding species in Arkansas

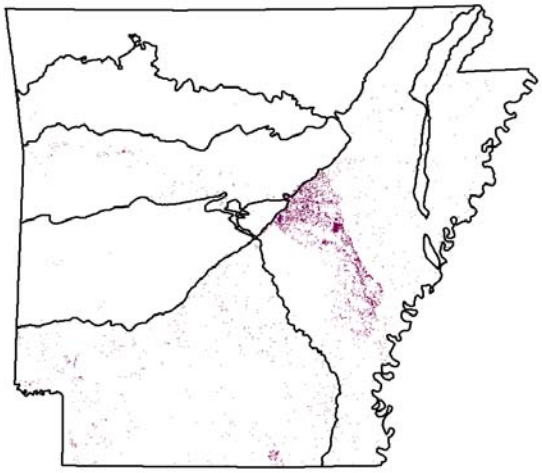
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains



Habitat Map

Habitats

Habitats	Weight
Herbaceous Wetland	Optimal
Lower Mississippi Alluvial Plain Grand Prairie	Optimal
Ozark-Ouachita Prairie and Woodland	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Suitable

Problems Faced

KNOWN PROBLEM: Loss and degradation of herbaceous wetlands.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss and degradation of herbaceous wetlands.	Threat: Habitat destruction or conversion Source: Forestry activities
KNOWN PROBLEM: Loss and degradation of seasonal wetland habitats.	Threat: Habitat disturbance Source: Excessive groundwater withdrawal
KNOWN PROBLEM: Loss and degradation of seasonal wetland habitats.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss and degradation of seasonal wetland habitats.	Threat: Habitat destruction or conversion Source: Urban development
KNOWN PROBLEM: Loss of native warm season grasslands.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Nest failure from destruction of nests due to earlier and more frequent haying.	Threat: Habitat disturbance Source: Agricultural practices

Data Gaps/Research Needs

Identify breeding sites.

Identify important wintering locations.

Conservation Actions

	Importance	Category
Conduct periodic disturbance to limit woody encroachment, timed to provide dense emergent wetland vegetation for nesting and/or wintering.	Medium	Habitat Restoration/Improvement
Conduct spring burns to provide optimal vegetation height and density and reduce litter.	Medium	Fire Management
Protect emergent wetlands and grasslands.	High	Habitat Protection
Restore emergent wetlands.	High	Habitat Restoration/Improvement
Restore native warm season grasses.	High	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Expand effort to locate breeding and important wintering locations. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This species lives at the interface of grasslands and wetlands; they nest where the soil is saturated and sedges mix with grasses. Unfortunately, this habitat type has been frequently drained for farming. Frequent haying and over-grazing decrease habitat quality as well. Fortunately, providing habitat through the Conservation Reserve Program has boosted numbers in some areas.This species would benefit from farm bill program projects that protect, restore, and manage wetlands and grasslands. (Arkansas Audubon Society 2012, Dechant and others 2003, Hamel 1992, Herkert and others 2001, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Coccyzus americanus

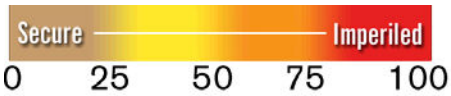
Yellow-billed Cuckoo

Class: Aves

Order: Cuculiformes

Family: Cuculidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

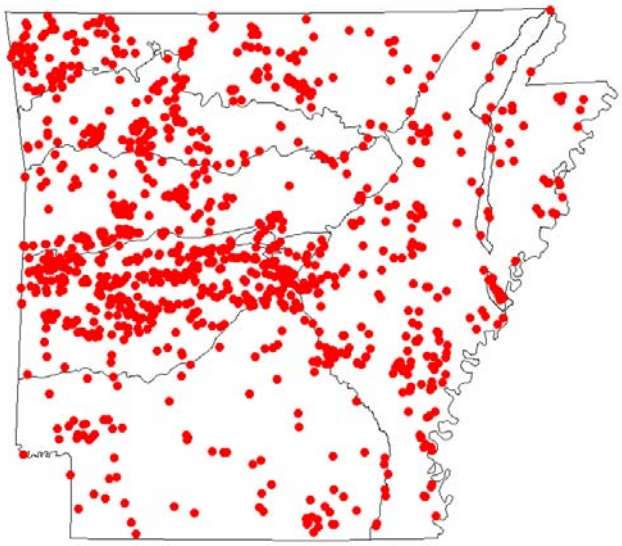
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

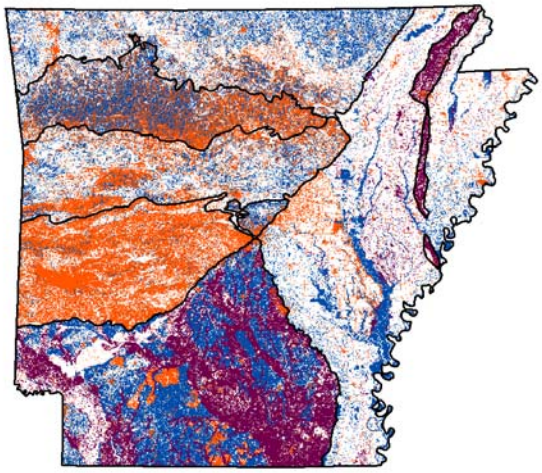
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Coccyzus americanus
Yellow-billed Cuckoo

Habitats	Weight
Crowley's Ridge Loess Slope Forest	Optimal
Cultivated Forest	Marginal
Lower Mississippi Alluvial Plain Grand Prairie	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Optimal
Lower Mississippi River Bottomland Depression	Marginal
Lower Mississippi River Dune Woodland, Pond, and Forest	Marginal
Lower Mississippi River High Bottomland Forest	Optimal
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ouachita Montane Oak Forest	Suitable
Ozark-Ouachita Dry Oak Woodland	Suitable
Ozark-Ouachita Dry-Mesic Oak Forest	Suitable
Ozark-Ouachita Forested Seep	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Mesic Hardwood Forest	Optimal
Ozark-Ouachita Pine/Bluestem Woodland	Marginal
Ozark-Ouachita Pine-Oak Forest	Marginal
Ozark-Ouachita Pine-Oak Forest	Marginal
Ozark-Ouachita Prairie and Woodland	Suitable
Ozark-Ouachita Riparian	Optimal
Urban/Suburban	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Marginal
West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods	Marginal
West Gulf Coastal Plain Large River Floodplain Forest	Optimal
West Gulf Coastal Plain Mesic Hardwood Forest	Optimal
West Gulf Coastal Plain Pine-Hardwood Forest	Marginal
West Gulf Coastal Plain Red River Floodplain Forest	Optimal
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest and Woodland	Marginal

Coccyzus americanus
Yellow-billed Cuckoo

Habitats

Habitats	Weight
West Gulf Coastal Plain Seepage Swamp and Baygall	Suitable
West Gulf Coastal Plain Small Stream/River Forest	Optimal
West Gulf Coastal Plain Wet Hardwood Flatwoods	Suitable

Problems Faced

KNOWN PROBLEM: Loss of dense scrub cover near streams, marshes, and wetlands within otherwise open woodlands.	Threat: Riparian habitat destruction Source: Forestry activities
KNOWN PROBLEM: Loss of dense scrub cover near streams, marshes, and wetlands within otherwise open woodlands.	Threat: Riparian habitat destruction Source: Conversion of riparian forest
KNOWN PROBLEM: Loss of quality nesting habitat due to habitat fragmentation.	Threat: Habitat fragmentation Source: Urban development
KNOWN PROBLEM: Population declines thought to be linked to habitat loss.	Threat: Habitat fragmentation Source: Forestry activities
KNOWN PROBLEMS: Loss of forest stands containing well-developed midstories for nesting.	Threat: Altered composition/structure Source: Forestry activities
POTENTIAL PROBLEM: Loss of both hardwood and pine pole-stage timber plantations.	Threat: Altered composition/structure Source: Forestry activities
POTENTIAL PROBLEM: Loss of quality nesting habitat due to habitat fragmentation.	Threat: Habitat fragmentation Source: Resource extraction
POTENTIAL PROBLEM: Toxins and contaminants in agricultural areas may pose a threat.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Additional information on life history on the breeding grounds is needed with a focus on breeding territory, site selection, site tenacity, fecundity, and mortality, and dispersal and survivorship of immature birds.
Determine causes of population decline.
Determine response to prescribed burning.
Evaluate effectiveness of management actions to provide breeding habitat for source populations.

Conservation Actions

Conservation Actions	Importance	Category
Create, restore, and maintain the shrubby component of riparian habitat.	High	Habitat Restoration/Improvement
Protect riparian forested habitat.	Medium	Habitat Protection
Reduce pesticide use near riparian and orchard areas.	Medium	Threat Abatement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. If more accurate data are needed, a species specific census involving playback calls should be developed and conducted. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas.

Comments

Although locally abundant in extensive mature forests, this species has undergone steep population declines and has disappeared from portions of its range. It is sensitive to habitat fragmentation. Breeding is often triggered by an abundant food supply of large orthoptera, especially caterpillars and cicadas. This species will occasionally lay eggs in the nests of other species. (Arkansas Audubon Society 2012, Hamel 1992, Hughes 1999, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Colinus virginianus

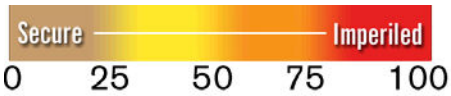
Northern Bobwhite

Class: Aves

Order: Galliformes

Family: Odontophoridae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

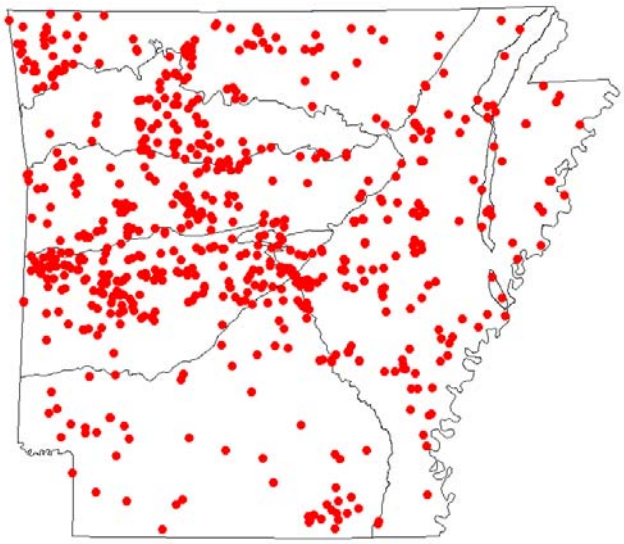
Residence: Permanent

Global Rank: G5 — Secure

State Rank: S3 — Vulnerable in Arkansas

Distribution

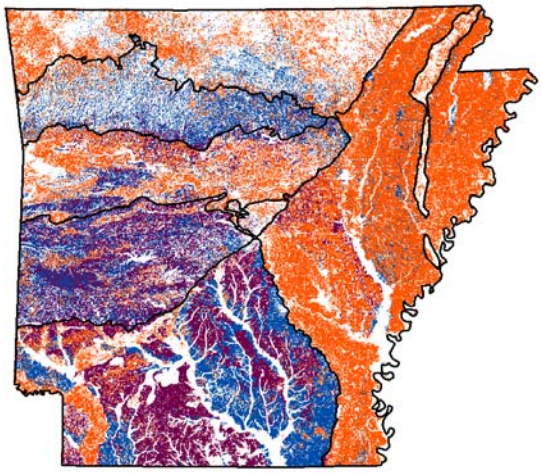
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Cultivated Forest	Marginal
Interior Highlands Dry Acidic Glade and Barrens	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Optimal
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River Dune Woodland, Pond, and Forest	Marginal
Ozark-Ouachita Dry Oak and Pine Woodland	Optimal
Ozark-Ouachita Pine/Bluestem Woodland	Optimal
Ozark-Ouachita Pine-Oak Forest	Suitable
Ozark-Ouachita Pine-Oak Woodland	Suitable
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Optimal
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Marginal
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Suitable
West Gulf Coastal Plain Saline Glade	Suitable

Problems Faced

KNOWN PROBLEM: Conversion to non-native, cool and warm season grasses (fescue, bermuda grass, bahiagrass).	Threat: Altered composition/structure Source: Exotic species
KNOWN PROBLEM: Fragmentation of early successional habitat and native warm season grasses.	Threat: Habitat fragmentation Source: Fire suppression
KNOWN PROBLEM: Habitat fragmentation.	Threat: Habitat fragmentation Source: Grazing/Browsing
KNOWN PROBLEM: Habitat fragmentation.	Threat: Habitat fragmentation Source: Agricultural practices
KNOWN PROBLEM: Lack of contiguous blocks of suitable habitat.	Threat: Habitat fragmentation Source: Urban development
KNOWN PROBLEM: Loss of early successional habitat and native warm season grasses.	Threat: Habitat destruction or conversion Source: Fire suppression
KNOWN PROBLEM: Loss of early successional habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices
POTENTIAL PROBLEM: Decreased prey availability due to pesticide use.	Threat: Biological alteration Source: Agricultural practices
POTENTIAL PROBLEM: Fire ant predation on chicks.	Threat: Extraordinary predation/parasitism/disease Source: Predation
POTENTIAL PROBLEM: Loss of early successional habitat within pine plantation clearcut areas.	Threat: Habitat destruction or conversion Source: Forestry activities

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions

	Importance	Category
Increase connectivity of available habitat.	High	Habitat Restoration/Improvement
Restore early successional habitat.	High	Habitat Restoration/Improvement
Restore native warm season grasses and forbs.	High	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Continue state agency brood surveys for this species.

Comments

This popular gamebird is in decline region-wide due to habitat degradation. Agricultural practices and forestry practices that remove weedy and shrubby vegetation also remove nesting and foraging habitat. Fire suppression also has led to habitat loss.

Farm Bill programs, particularly the applicable practices within the Conservation Reserve program (CP-33), that promote practices focusing on the establishment of early successional habitat may improve quail habitat. Private landowners should be encouraged to perform prescribed burns. (ANHC 2003, Baerg 1927, Brennan 1991, 1999, Clawson 1982, Dickson and others 1983, Dimmick and others 2002, Duzan and others 2003, 2003A, Evans and Kirkman 1980, Fitzgerald 2000, Hamel 1992, Jacobs 2001, James and Neal 1986, Landers and Mueller 1986, Martin and Finch 1995, Robbins and Easterla 1992, Rosene 1969, Stoddard 1931).

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Cygnus buccinator

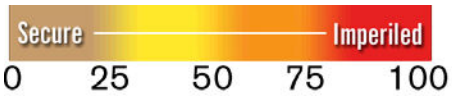
Trumpeter Swan

Class: Aves

Order: Anseriformes

Family: Anatidae

Priority Score: 17 **out of 100**



Population Trend: Increasing

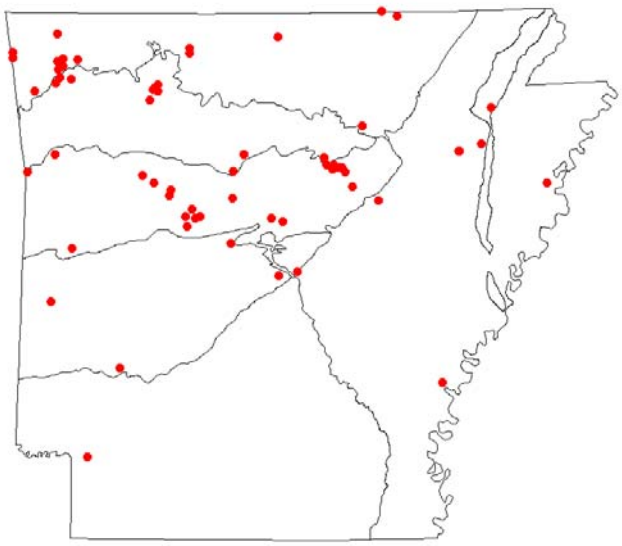
Residence: Winter

Global Rank: G4 — Apparently secure species

State Rank: S2N — Imperiled nonbreeding species in Arkansas

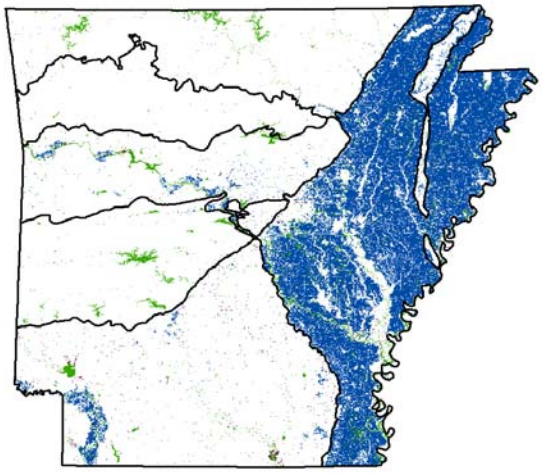
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains



Habitat Map

Habitats	Weight
Crop Land	Suitable
Herbaceous Wetland	Optimal
Mud Flats	Marginal
Ponds, Lakes, and Water Holes	Obligate

Problems Faced

KNOWN PROBLEM: Collisions with power lines.	Threat: Collision with man-made structures Source: Commercial/industrial development
KNOWN PROBLEM: Collisions with power lines.	Threat: Collision with man-made structures Source: Urban development
KNOWN PROBLEM: Lead poisoning from ingestion of lead fishing tackle and lead shot.	Threat: Toxins/contaminants Source: Recreation
KNOWN PROBLEM: Dependency on supplemental feeding.	Threat: Biological alteration Source: Management of/for certain species
POTENTIAL PROBLEM: Competition with Mute Swans.	Threat: Extraordinary competition for resources Source: Exotic species

Data Gaps/Research Needs

As Mute Swans continue to expand into the current Trumpeter Swan breeding and wintering ranges, an understanding of the competitive interaction between these 2 species is needed to understand how the expansion of this exotic species may impact Trumpeter Swans.
Identify suitable foraging sites.
Information is needed on the differences in foraging ecology and nutritional needs between swans foraging on agricultural crops versus aquatic vegetation.
Specific data on the exact routes and sites used during migration and on the wintering grounds are needed to adequately protect and manage critical habitats.

Conservation Actions

	Importance	Category
Control breeding flighted and pinioned mute swans in Arkansas.	High	Public Relations/Education
Control breeding flighted and pinioned mute swans in Arkansas.	High	Threat Abatement
Install highly visible power line markers in on power lines around known wintering ponds and wetlands used by swans	High	Threat Abatement
Plant winter forage.	Medium	Habitat Restoration/Improvement
Protect quality emergent wetlands.	High	Habitat Restoration/Improvement
Restore and manage emergent wetlands.	High	Habitat Restoration/Improvement
Restore and manage for emergent and native aquatic vegetation in ponds, lakes and water holes.	High	Habitat Restoration/Improvement

Monitoring Strategies

Continue and expand winter and summer surveys for both Mute Swans and Trumpeter Swans.

Comments

In 1988, 1 collared Trumpeter Swan was observed on a pond adjacent to a nuclear power generating plant near Russelville AR. Banded near LaCreek NWR in Nebraska, this was the first Trumpeter Swan reported in Arkansas in over 80 years. In 1995, 9 Trumpeter Swans were observed on Magness Lake in Cleburne County. During the winter of 2001-2002, 45 swans was observed at Magness Lake and reliable reports of counts over 180 at Magness Lake were received in 2010 (K Rowe pers. Comm.) The construction of ponds as clean water sources for shale oil extraction in the vicinity of Magness Lake as well as the ponds' landowners feeding swans has increased estimates of swans wintering in Cleburne County to over 250 in 2014-5. In 2008-10 AGFC partnered with Iowa DNR and released 49 immature trumpeters raised in Iowa DNR's Trumpeter Swan Restoration Project. These swans were released in the Ozarks and Arkansas River Valley in a reverse migration experiment that proved successful as released collared swans returned to AR in subsequent years to winter. Several swans released in this experiment have been observed wintering in the Arkansas River Valley area as adults with un-collared mates and their cygnets (K. Rowe pers comm). Wintering Trumpeter Swan population estimates from a volunteer 2013-14 survey conducted by AGFC totaled about 525 swans. Trumpeter Swan mortality in Arkansas has been caused by lead poisoning, collision with power lines and illegal shooting (Rowe pers. Comm).

(Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Martin and Finch 1995, Mitchell 1994, Mitchell and Eichholz 2010, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Egretta tricolor

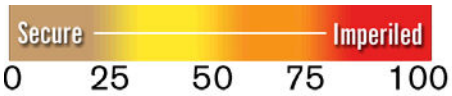
Tricolored Heron

Class: Aves

Order: Pelecaniformes

Family: Ardeidae

Priority Score: 19 out of 100



Population Trend: Stable

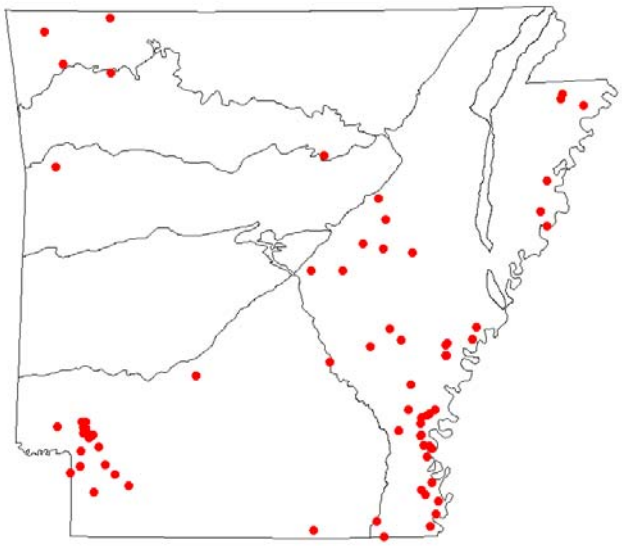
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S2B — Imperiled breeding species in Arkansas

Distribution

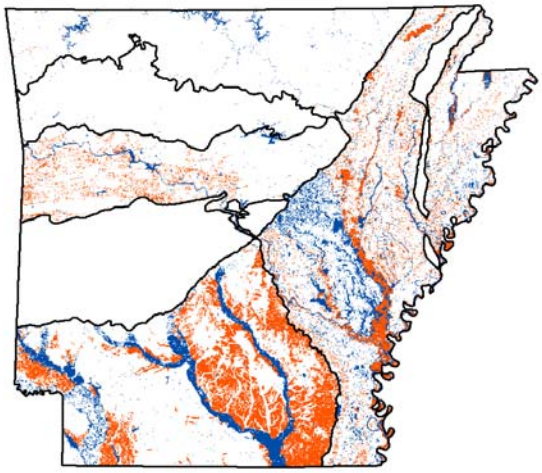
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [ ] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Herbaceous Wetland	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River Bottomland Depression	Suitable
Lower Mississippi River High Bottomland Forest	Marginal
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Marginal
Ozark-Ouachita Large Floodplain	Marginal
Ponds, Lakes, and Water Holes	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable

Egretta tricolor
Tricolored Heron

Problems Faced

KNOWN PROBLEM: Loss of emergent wetlands.	Threat: Altered composition/structure Source:
KNOWN PROBLEM: Conflicts with aquaculture.	Threat: Extraordinary competition for resources Source: Confined animal operations
KNOWN PROBLEM: Loss of wetlands from conversion.	Threat: Habitat destruction or conversion Source: Agricultural practices
POTENTIAL PROBLEM: Vulnerable to toxins and contaminants resulting from agricultural run-off.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Determine the impacts of toxins, heavy metals, and pesticides.

Conservation Actions

	Importance	Category
Maintain wetlands.	High	Habitat Protection
Restore wetlands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Initiate a Colonial Waterbird Survey as well as track species by www.ebird.com. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This species is a rare and irregular summer resident that has bred a few times in Arkansas. It is more common in late summer when immatures wander north from breeding grounds nearer the coast. The tricolored heron favors coastal salt marshes. A decline in the availability of coastal marshes in Louisiana and the Gulf of Mexico has likely led to a decline in this species, which was previously known as the Louisiana Heron. Wetland restoration in Arkansas can improve breeding opportunities long term, especially if sea level rise forces the species to move northward from Louisiana. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Kushlan and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Rodgers and Smith 1995, Sauer and others 2004).

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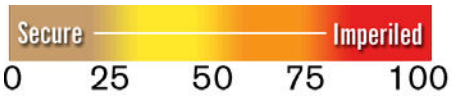
Elanoides forficatus

Swallow-tailed Kite

Class: Aves
Order: Accipitriformes
Family: Accipitridae

Priority Score: 29 **out of 100**



Population Trend: Decreasing

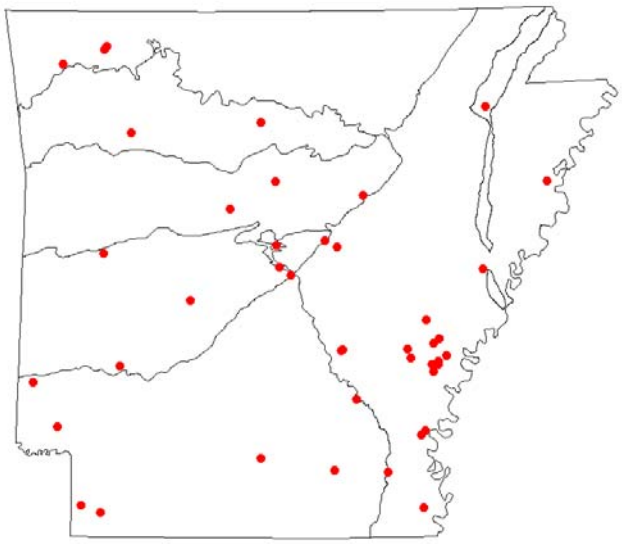
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S1B — Critically imperiled breeding species in Arkansas

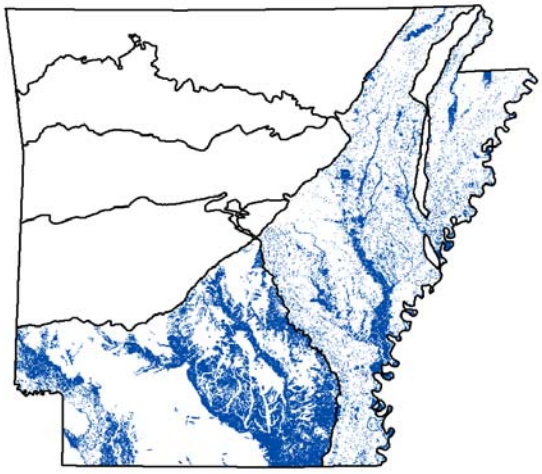
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☐ Ozark Highlands
- ☐ Boston Mountains
- ☐ Arkansas Valley
- ☐ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☐ Mississippi Valley Loess Plains



Habitat Map

Habitats	Weight
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable

Problems Faced

KNOWN PROBLEM: Loss of bottomland hardwood forests.	Threat: Habitat destruction or conversion Source: Conversion of riparian forest
KNOWN PROBLEM: Loss of bottomland hardwood forests.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of bottomland hardwood forests.	Threat: Altered composition/structure Source: Forestry activities
KNOWN PROBLEM: Nest failure.	Threat: Extraordinary predation/parasitism/disease Source: Predation

Data Gaps/Research Needs

Determine if species is breeding on Dale Bumpers White River National Wildlilfe Refuge and adjoining private lands.
Determine if species is nesting and successfully fledging young on Sulphur River Wildlife Management Area.
Determine if species is present on Dale Bumpers White River National Wildlilfe Refuge during breeding season.
Determine if tree density and canopy connectivity increases rates of predation on nesting kites.

Conservation Actions

	Importance	Category
Manage forests for super dominant trees in canopy for nesting.	High	Habitat Restoration/Improvement
Reduce nestling predation.	High	Threat Abatement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that this species has imprecise trend data at the continental level. A specialized effort to determine if this species is nesting in Arkansas is needed. Nesting populations must be monitored in a manner which eliminates disturbance to the species. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Once ranging from Florida to Minnesota, this species is now restricted to a few southeastern states, with most birds found in Florida. Formerly extirpated from Arkansas since the 1940s, a pair was observed routinely during the breeding season in 1998 and 1999 along the lower White River in the vicinity of the Dale Bumpers White River National Wildlife Refuge (DBWRNWR). This apparent re-colonization of Swallow-tailed Kites was significant because this species seems to have a high fidelity to breeding sites and tends to nest socially in loose colonies. Funded by AWAP funds and funds from the Arkansas Game and Fish Commission, a research project was initiated in 2002 to locate and monitor Swallow-tailed Kite nests on the DBWRNWR. Nests were located but failed prior egg hatching in 2002, 2004, 2005 and 2006. In 2007 and 2009. Swallow-tailed Kites were present on the refuge during the breeding season, but a nest was not located. In 2008 a nest with 3 nestlings was located and monitored but failed due to researcher disturbance. Swallow-tailed kites have been observed sporadically in spring and summer on the DBWRNWR since 2010. It is unknown if a pair is still attempting to nest on the refuge or adjoining property.

The most recent observation of this species occurred during spring/summer 2015, when a pair was repeatedly observed from April - August at Sulphur River Wildlife Management Area. The pair is assumed to have made a nesting attempt based on observed behavior (K. Rowe, pers. Comm.). Individual Swallow-tailed Kites, most likely from Louisiana, have been observed throughout Arkansas during the post-breeding season dispersal period.

(Arkansas Audubon Society 2012, Bader and Bednarz 2005, Chiavacchi and others 2011, Hamel 1992, James and Neal 1986, Martin and Finch 1995, Meyer 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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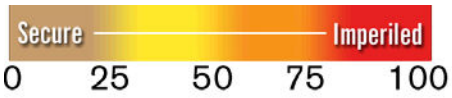
Empidonax traillii

Willow Flycatcher

Class: Aves
Order: Passeriformes
Family: Tyrannidae

Priority Score: 23 **out of 100**



Population Trend: Stable

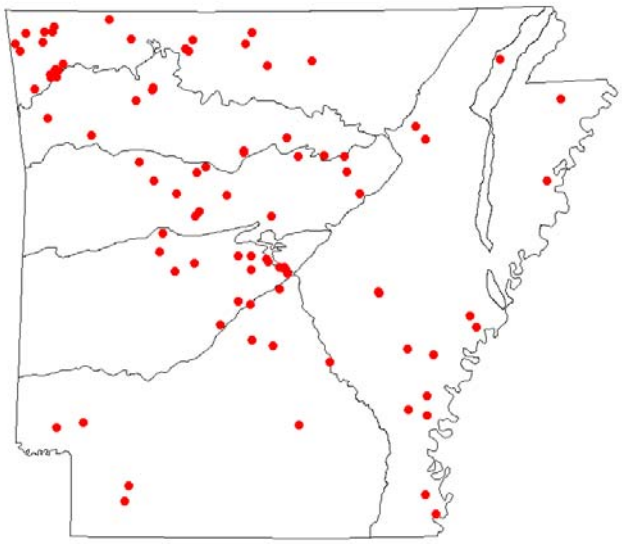
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S1B — Critically imperiled breeding species in Arkansas

Distribution

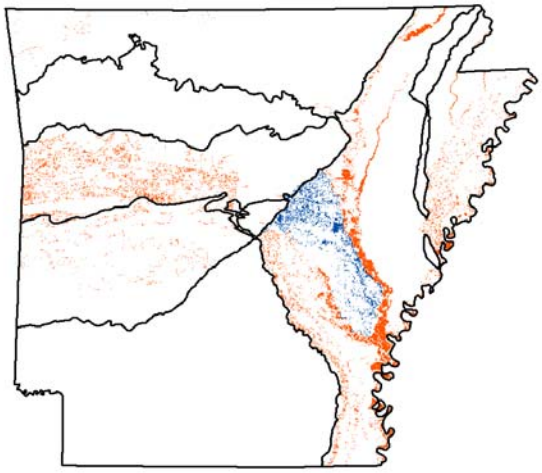
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi River Riparian Forest	Marginal
Ozark-Ouachita Large Floodplain	Marginal
Ozark-Ouachita Prairie and Woodland	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Suitable

Empidonax traillii
Willow Flycatcher

Problems Faced

KNOWN PROBLEM: Loss of grassland with shrub component.	Threat: Altered composition/structure Source: Dam
KNOWN PROBLEM: Loss of grassland with shrub component.	Threat: Riparian Habitat Destruction Source: Conversion of riparian forest
KNOWN PROBLEM: Loss of grassland with shrub component.	Threat: Riparian Habitat Destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of grassland with shrub component.	Threat: Habitat destruction or conversion Source: Urban development
KNOWN PROBLEM: Loss of grassland with shrub component.	Threat: Habitat destruction or conversion Source: Agricultural practices
POTENTIAL PROBLEM: Loss of quality, native grasslands.	Threat: Altered composition/structure Source: Grazing/Browsing
POTENTIAL PROBLEM: Loss of quality, native grasslands.	Threat: Altered composition/structure Source: Agricultural practices
POTENTIAL PROBLEM: Parasitism by Brown-headed Cowbirds.	Threat: Extraordinary predation/parasitism/disease Source: Parasites/pathogens

Data Gaps/Research Needs

Locate and survey potential breeding habitat.

Conservation Actions

	Importance	Category
Maintain grasslands with shrub component.	High	Habitat Protection
Restore grassland with shrub component.	High	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Continue effort to locate breeding populations of this species. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Population is below historical numbers in Arkansas and throughout the country. Disturbances to riparian habitat such as damming, dredging, channelization, urbanization, draining, and cattle are threats. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, Sedgwick 2000)

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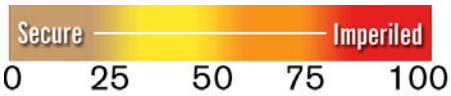
Euphagus carolinus

Rusty Blackbird

Class: Aves
Order: Passeriformes
Family: Icteridae

Priority Score: 29 **out of 100**



Population Trend: Decreasing

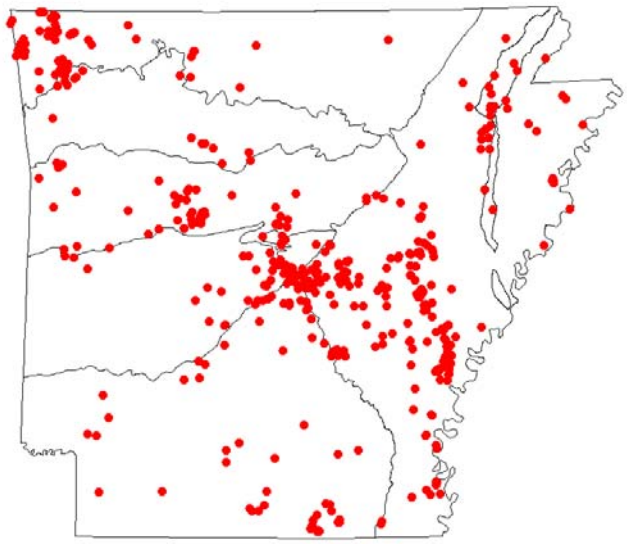
Residence: Winter

Global Rank: G4 — Apparently secure species

State Rank: S2N — Imperiled nonbreeding species in Arkansas

Distribution

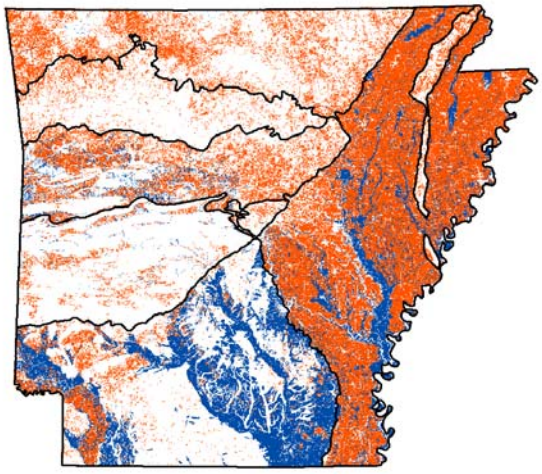
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Prairie and Woodland	Suitable
Pasture Land	Marginal
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable

Problems Faced

KNOWN PROBLEM: Loss of wooded wetlands on breeding grounds.	Threat: Habitat destruction Source: Conversion of riparian forest
KNOWN PROBLEM: Loss of wooded wetlands on breeding grounds.	Threat: Habitat destruction Source: Forestry activities
POTENTIAL PROBLEM: Vulernability to toxins and contaminants.	Threat: Toxins/contaminants Source: Non-point source pollution

Data Gaps/Research Needs

Determine habitat use in the winter.
Determine the effect of contaminants on health and survival.
Determine the effect of winter habitat selection on survival and carry-over effects to breeding season.
Information is needed on diet on the wintering grounds in Arkansas.

Conservation Actions

	Importance	Category
Manage water fluctuations for invertebrates in winter.	Low	Habitat Restoration/Improvement
Restore and protect wooded wetlands on breeding grounds.	Low	Habitat Protection

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that this species has imprecise trend data at the continental level. An effort is being made to expand the BBS program to better survey this species. Species specific citizen science-based monitoring efforts were iniitated in 2009 (Rusty Blackbird Blitz) and are aimed at winter and migratory periods. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Unlike other blackbirds, this species has undergone significant population decline. Much more research is needed to understand the factors responsible for this decline, but it may be due in part to the destruction of wet woods these birds prefer on the breeding grounds. Clearing the land for agriculture and urbanization also has promoted other blackbirds that may out-compete Rusty Blackbirds. (Arkansas Audubon Society 2012, Avery 2013, Hamel 1992, James and Neal 1986, Martin and Finch 1995, Newell 2013, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Falco sparverius

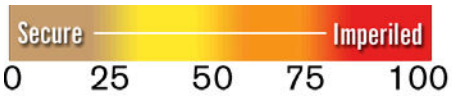
American Kestrel

Class: Aves

Order: Falconiformes

Family: Falconidae

Priority Score: 19 out of 100



Population Trend: Stable

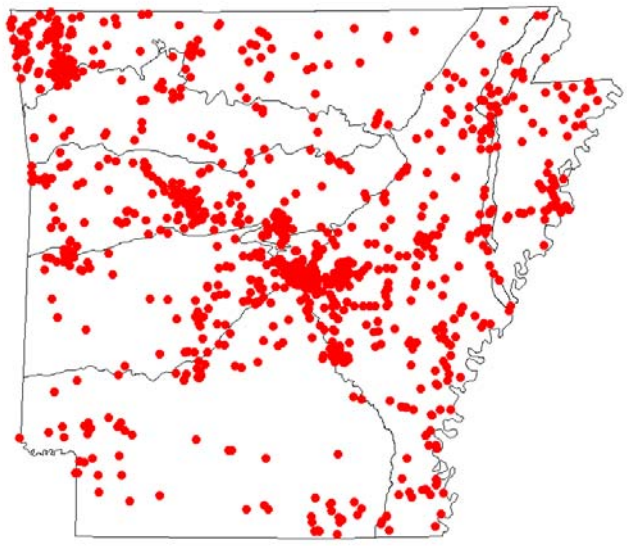
Residence: Winter

Global Rank: G5 — Secure

State Rank: S2B,S4N — Imperiled breeding, apparently secure nonbreeding species in Arkansas

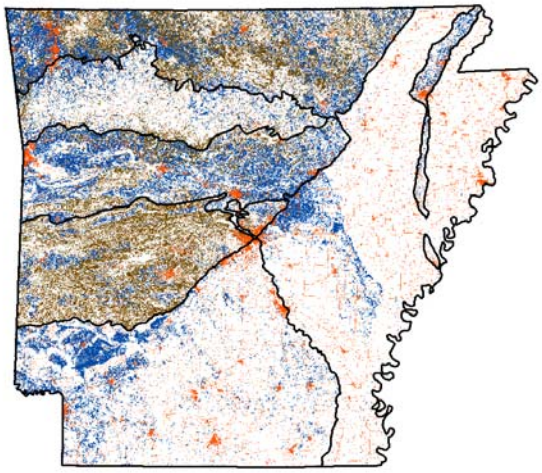
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains



Habitat Map

Habitats	Weight
Central Interior Highlands Calcareous Glade and Barrens	Data Gap
Central Interior Highlands Dry Acidic Glade and Barrens	Data Gap
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Ozark-Ouachita Pine/Bluestem Woodland	Data Gap
Ozark-Ouachita Prairie and Woodland	Suitable
Pasture Land	Suitable
Urban/Suburban	Marginal
West Gulf Coastal Plain Calcareous Prairie	Suitable

Problems Faced

KNOWN PROBLEM: Lack of large trees within open areas for nesting.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of available habitat due to succession from grassland and shrubland to forest.	Threat: Altered composition/structure Source: Forestry activities

Data Gaps/Research Needs

Determine causes of mortality.
Determine effects of pasture grass Kentucky 31 on prey species availability.
Determine factors that contribute to nest box use when nest structures are located in unoccupied habitat.
Determine impacts of pesticides.
Determine postfledging dispersal and subsequent recruitment into breeding populations.

Conservation Actions

	Importance	Category
Encourage farmers/ranchers to retain snags in pastures.	High	Habitat Restoration/Improvement
Encourage farmers/ranchers to retain widely spaced den trees in pastures.	High	Habitat Restoration/Improvement
Establish nest boxes in areas where kestrels occur during winter months.	High	Habitat Restoration/Improvement

Monitoring Strategies

Additional surveys need to be conducted in appropriate habitat to improve precision of BBS monitoring. Christmas Bird Count data are appropriate for monitoring overwintering kestrels.

Comments

American Kestrels inhabit open country across the United States where they hunt from perches and often while hovering (Smallwood and Bird 2002). They are commonly seen perched on utility lines along roadsides and thus are often censused from automobiles. Kestrels will not breed in habitat that is devoid of nesting cavities or dominated by tall grass or shrubs (Stys 1993). Fortunately, they will accept nesting boxes which can be used to increase breeding populations (Hamerstrum et al. 1973). Nest boxes placed with their openings facing south and east may be preferred (McComb and Nobel 1981). Kestrels have been documented nesting in man-made structures and buildings in Arkansas. Sites includes inside gutters, behind siding in insulation, and inside beams (K.Rowe pers. Obs). In Arkansas the overwintering population is larger than the breeding population (C. Kellner pers.obs.).

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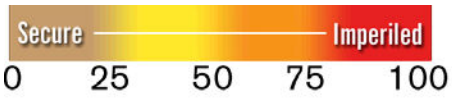
Gallinula galeata

Common Gallinule

Class: Aves
Order: Gruiformes
Family: Rallidae

Priority Score: 19 out of 100



Population Trend: Unknown

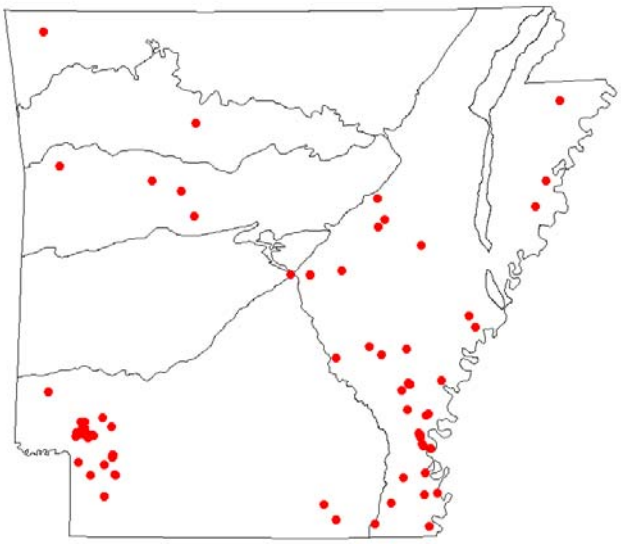
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S2B — Imperiled breeding species in Arkansas

Distribution

Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
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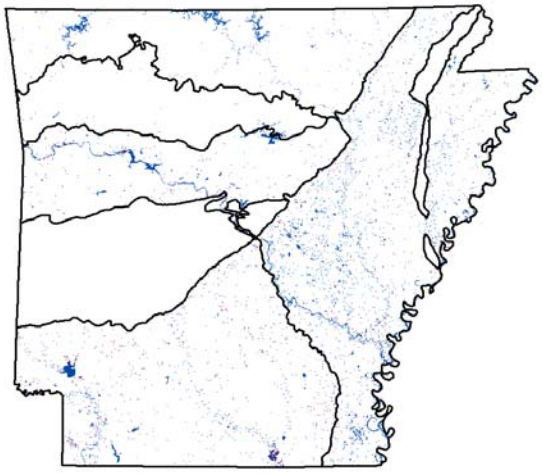
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats

	Weight
Herbaceous Wetland	Optimal
Ponds, Lakes, and Water Holes	Suitable

Problems Faced

KNOWN PROBLEM: Loss of wetlands from conversion.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of wetlands to invasive plant species.	Threat: Habitat destruction or conversion Source: Exotic species

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions

	Importance	Category
Protection of herbaceous wetlands.	High	Habitat Protection
Restoration of herbaceous wetlands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Conduct secretive marshbird surveys using the North American Marsh Bird Survey Protocol outlined in the National Marsh Bird Survey Program.

Comments

This species has benefited by human-altered habitats such as flooded agricultural fields, reservoirs, and impoundments. However, for breeding they require permanently flooded marshes with robust emergent vegetation. They may be sensitive to wetland loss and invasive wetland plant species. Restoring or actively managing emergent wetlands will benefit this species. (Arkansas Audubon Society 2012, Bannor and Kiviat 2002, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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Haemorhous purpureus

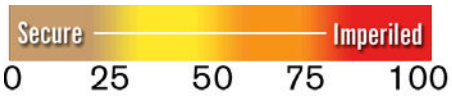
Purple Finch

Class: Aves

Order: Passeriformes

Family: Fringillidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

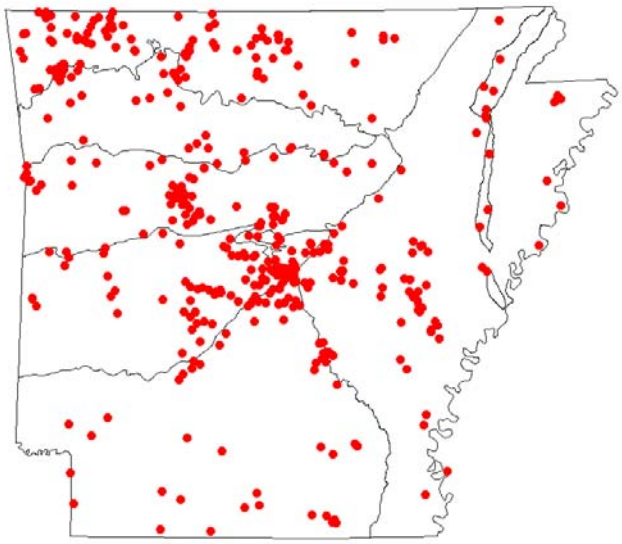
Residence: Winter

Global Rank: G5 — Secure

State Rank: S3N — Vulnerable nonbreeding species in Arkansas

Distribution

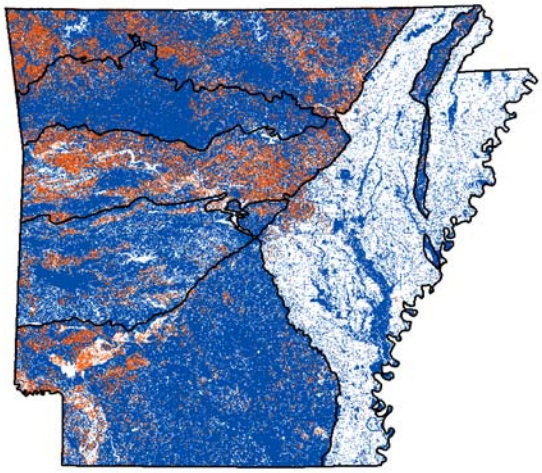
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Haemorhous purpureus
Purple Finch

Habitats	Weight
Crowley's Ridge Loess Slope Forest	Suitable
Cultivated Forest	Suitable
Interior Highlands Calcareous Glade and Barrens	Suitable
Interior Highlands Dry Acidic Glade and Barrens	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River Bottomland Depression	Suitable
Lower Mississippi River Dune Woodland, Pond, and Forest	Suitable
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ouachita Montane Oak Forest	Suitable
Ozark-Ouachita Dry Oak and Pine Woodland	Suitable
Ozark-Ouachita Dry-Mesic Oak Forest	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Mesic Hardwood Forest	Suitable
Ozark-Ouachita Pine/Bluestem Woodland	Suitable
Ozark-Ouachita Pine-Oak Forest/Woodland	Suitable
Ozark-Ouachita Prairie and Woodland	Suitable
Ozark-Ouachita Riparian	Suitable
Pasture Land	Marginal
Urban/Suburban	Suitable
West Gulf Coastal Plain Calcareous Prairie and Woodland	Suitable
West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Mesic Hardwood Forest	Suitable
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Suitable
West Gulf Coastal Plain Pine-Hardwood Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable

Haemorhous purpureus
Purple Finch

Habitats

	Weight
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest and Woodland	Suitable
West Gulf Coastal Plain Small Stream/River Forest	Suitable
West Gulf Coastal Plain Wet Hardwood Flatwoods	Suitable

Problems Faced

KNOWN PROBLEM: Competition with House Finch.	Threat: Extraordinary competition for resources Source: Exotic species
POTENTIAL PROBLEM: Extensive clearcutting on breeding grounds.	Threat: Habitat destruction Source: Forestry activities

Data Gaps/Research Needs

Determine wintering habitat preferences.

Conservation Actions

	Importance	Category
Create open woodlands.	Low	Habitat Restoration/Improvement

Monitoring Strategies

Continue to conduct Christmas Bird Counts, Great Backyard Bird Count, and encourage the use of eBird.

Comments

Audubon's Christmas Bird Count data show this widespread winter resident has an irruptive yet declining trend in Arkansas. The decline is strongly associated with the spread of House Finches across eastern North America, indicating interspecific competition.

(Wooten 1996, National Audubon Society 2010)

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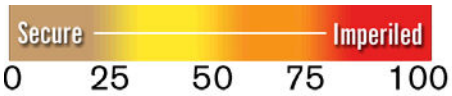
Hylocichla mustelina

Wood Thrush

Class: Aves
Order: Passeriformes
Family: Turdidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

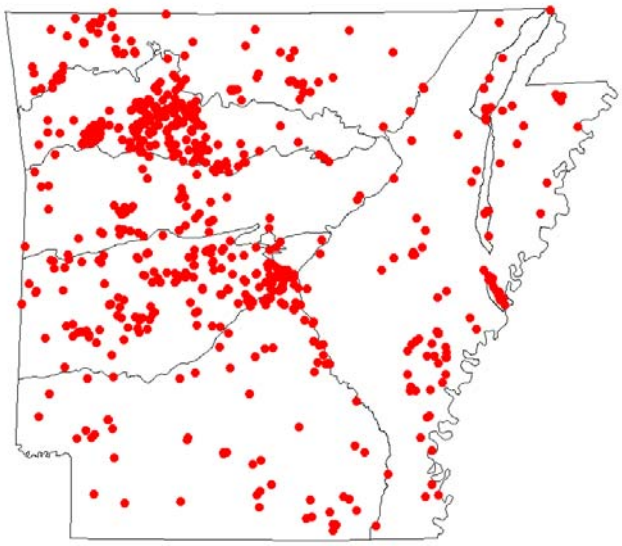
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

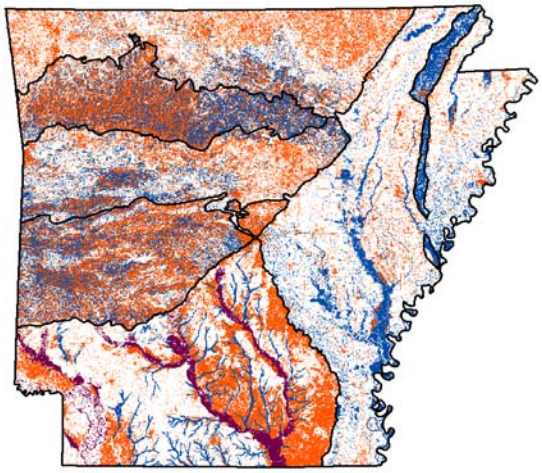
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Hylocichla mustelina
Wood Thrush

Habitats	Weight
Crowley's Ridge Loess Slope Forest	Suitable
Cultivated Forest	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River High Bottomland Forest	Optimal
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ouachita Montane Oak Forest	Marginal
Ozark-Ouachita Dry-Mesic Oak Forest	Marginal
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Mesic Hardwood Forest	Optimal
Ozark-Ouachita Pine-Oak Forest	Suitable
Ozark-Ouachita Riparian	Optimal
Urban/Suburban	Marginal
West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods	Marginal
West Gulf Coastal Plain Large River Floodplain Forest	Optimal
West Gulf Coastal Plain Mesic Hardwood Forest	Optimal
West Gulf Coastal Plain Pine-Hardwood Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Optimal
West Gulf Coastal Plain Small Stream/River Forest	Suitable
West Gulf Coastal Plain Wet Hardwood Flatwoods	Suitable

Problems Faced

KNOWN PROBLEM: Habitat fragmentation of extensive tracts of mature forest.	Threat: Habitat fragmentation Source: Urban development
KNOWN PROBLEM: Habitat fragmentation of extensive tracts of mature forest.	Threat: Habitat fragmentation Source: Agricultural practices
KNOWN PROBLEM: Habitat fragmentation of extensive tracts of mature forest.	Threat: Habitat fragmentation Source: Forestry activities
KNOWN PROBLEM: Habitat fragmentation of extensive tracts of mature forest.	Threat: Habitat fragmentation Source: Road construction
KNOWN PROBLEM: Habitat fragmentation of extensive tracts of mature forest.	Threat: Habitat fragmentation Source: Resource extraction
KNOWN PROBLEM: Increased nest predation by mesopredators as a result of habitat fragmentation.	Threat: Extraordinary predation/parasitism/disease Source: Predation
KNOWN PROBLEM: Increased parasitism by Brown-headed Cowbirds as a result of habitat fragmentation.	Threat: Extraordinary predation/parasitism/disease Source: Parasites/pathogens
PROTECTION PROBLEM: Lack of proper understory structure for nesting or post-fledging period.	Threat: Altered composition/structure Source: Forestry activities
PROTECTION PROBLEM: Lack of proper understory structure for nesting or post-fledgling period.	Threat: Alteration of natural fire regimes Source: Fire suppression

Data Gaps/Research Needs

Determine how fire and other forest management may affect suitability of forest patches for breeding (including predation and parasitism).
Determine how various habitats are used during various life stages.

Conservation Actions

	Importance	Category
Maintain forest cover across large landscapes.	High	Habitat Protection
Manage for species that produce high-lipid fruits during migration.	Low	Habitat Restoration/Improvement
Manage for understory development for nesting structure.	Medium	Habitat Restoration/Improvement
Provide matrix of forest conditions (early successional to mature) for various life stages.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas.

Comments

Its ethereal, flute-like voice is a trademark sound of the woods. Declining range wide. Typically requires extensive tracts of mature forest at the landscape scale, but this varies by location. At a more local scale, requires sites with hardwood understory and canopy overstory. Common to uncommon on the Ozark-St. Francis and Ouachita NF. Common in the Big Woods. Arkansas is on the western edge of its range. (Anders and others 1998, Annand and Thompson 1997, Artman and Downhower 2003, Baerg 1927, Clawson 1982, DeGraaf 1991, Dellinger et al. 2007, Duzan and others 2003, 2003A, Evans and Kirkman 1980, Evans and others 2011, Finch 1991, Finch and Stangel 1993, Fitzgerald 2000, Hamel 1992, Jacobs 2001, James 1971, James and Neal 1986, Kaisner and Lindell 2007, Kellner Unpublished, Martin and Finch 1995, Pingjun 1994, Probst and Thompson 1996, Robbins and Easterla 1992, Robinson and others 1995, Salveter 1994, Thompson 1995, Thompson and Fritzell 1990, Thompson and others 1995, 1996)

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Ixobrychus exilis

Least Bittern

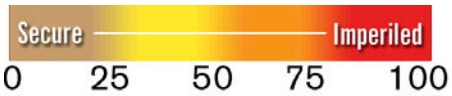
©Jeff R. Wilson

Class: Aves

Order: Ciconiiformes

Family: Ardeidae

Priority Score: 19 out of 100



Population Trend: Unknown

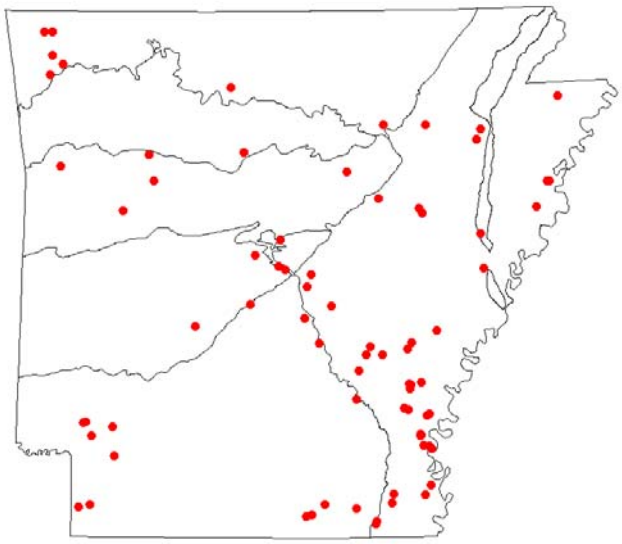
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S2B — Imperiled breeding species in Arkansas

Distribution

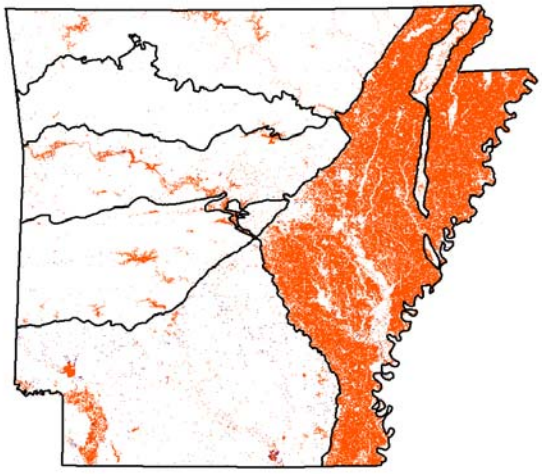
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats

Habitats	Weight
Crop Land	Marginal
Herbaceous Wetland	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Conversion of emergent and herbaceous wetlands to bottomland hardwoods.	Threat: Habitat destruction or conversion Source: Forestry activities
KNOWN PROBLEM: Loss of wetlands from conversion.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of wetlands to invasive plant species.	Threat: Habitat destruction or conversion Source: Exotic species
KNOWN PROBLEM: Vulnerable to toxins and contaminants resulting from agricultural run-off.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions

Conservation Actions	Importance	Category
Maintain herbaceous wetlands.	High	Habitat Protection
Restore herbaceous wetlands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Conduct secretive marshbird surveys using the North American Marsh Bird Survey Protocol outlined in the National Marsh Bird Survey Program.

Comments

This secretive bird can be found in high densities in quality habitat. The availability of large, shallow wetlands with dense emergent vegetation is a limiting factor for this species in Arkansas. Loss of large, shallow wetlands with dense emergent vegetation and pollution are major threats. Minor modification to habitat management plans for waterfowl can increase available habitat. (Arkansas Audubon Society 2012, Gibbs and others 1992B, Hamel 1992, James and Neal 1986, Kushlan and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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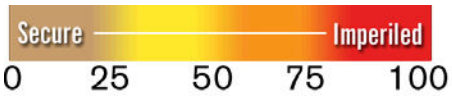
Lanius ludovicianus

Loggerhead Shrike

Class: Aves
Order: Passeriformes
Family: Laniidae

Priority Score: 24 out of 100



Population Trend: Decreasing

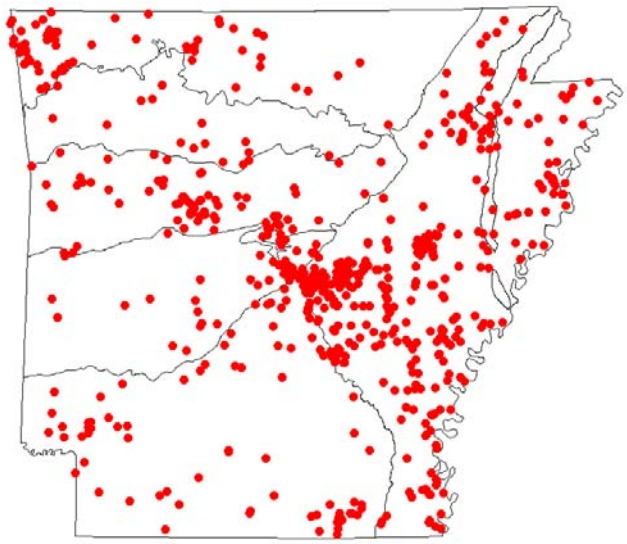
Residence: Permanent

Global Rank: G4 — Apparently secure species

State Rank: S3 — Vulnerable in Arkansas

Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
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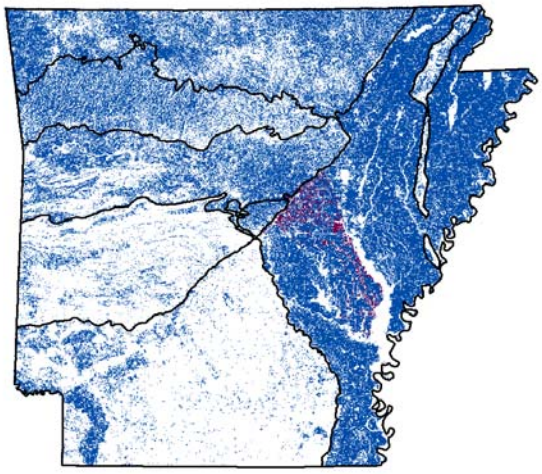

Habitat Map

Habitats

	Weight
	Optimal
Crop Land	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Optimal
Ozark-Ouachita Cliff and Talus	Suitable
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Suitable

Problems Faced

KNOWN PROBLEM: Lack of grassland with shrub component.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Post-fledging mortality from car strikes.	Threat: Collision with man-made structures Source: Road construction
POTENTIAL PROBLEM: Pesticides.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Conduct additional studies of pesticides, toxins, and heavy metals effects on Loggerhead Shrikes.
Determine causes of mortality in both resident and migrant populations.
Determine the role of shrike and automobile collisions in population declines of shrikes in Arkansas.
Study foraging success of resident versus migrant birds in the winter to determine if changes in the quality of winter habitat may affect migrant populations.

Conservation Actions

	Importance	Category
Maintain grassland with shrub component.	High	Habitat Protection
Plant or maintain low, thick shrubs and trees along fencerows and throughout otherwise open pastures and fields to improve nesting habitat.	Medium	Habitat Restoration/Improvement
Protect trees and shrubs used for nesting and perches from cattle grazing and rubbing.	Medium	Habitat Protection
Restore grassland with shrub component.	High	Habitat Restoration/Improvement
Restore native grasslands.	Medium	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This predatory bird impales its prey (insects, rodents, birds) on sharp objects like thorns and barbed wire. This allows it to eat prey without the benefit of strong, taloned feet that raptors use for holding prey. It also serves to advertise its territory and attract mates. It inhabits open country that includes scattered trees and shrubs or fencerows. Populations are correlated with the amount of pasture land. Habitat is available, yet the species is declining. More study is needed to identify sources of the decline. (Arkansas Audubon Society 2012, Duzan and others 2003, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, Yosef 1996)

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Limnodromus griseus

Short-billed Dowitcher

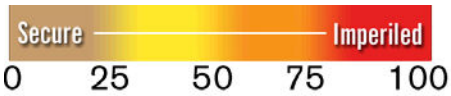
©U.S. Fish and Wildlife Service

Class: Aves

Order: Charadriiformes

Family: Scolopacidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

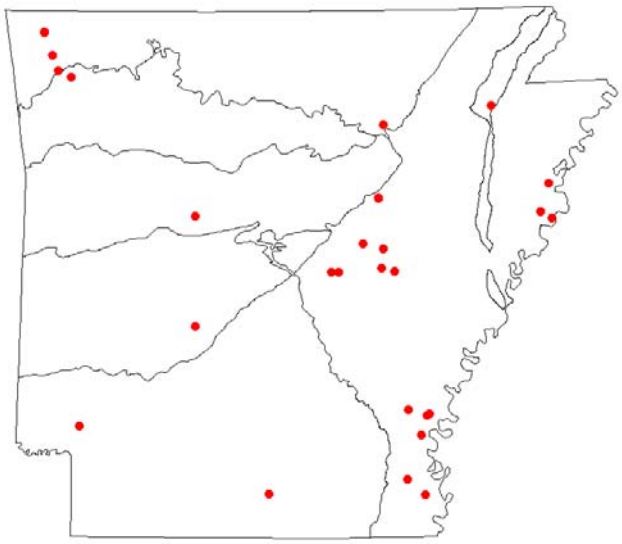
Residence: Transient

Global Rank: G5 — Secure

State Rank: S3N — Vulnerable nonbreeding species in Arkansas

Distribution

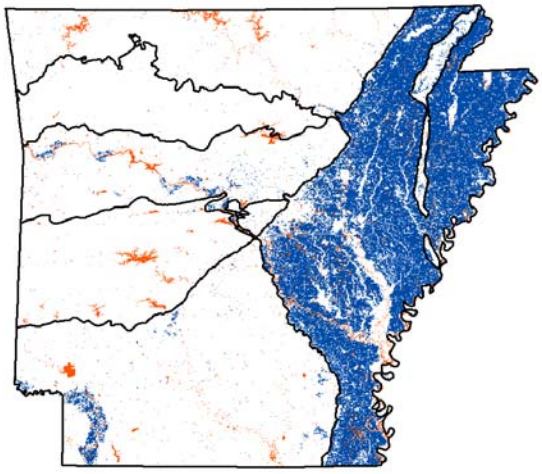
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Suitable
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flat habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Water diversion

Data Gaps/Research Needs

Conservation Actions	Importance	Category
Draw down fish ponds to create mud flat habitat in July - November.	High	Habitat Restoration/Improvement
Flood cropland in summer and early fall after harvest.	High	Habitat Restoration/Improvement
Manipulate federal and state managed moist-soil units to provide mud flat habitat during March-early June and, if possible, during July - November.	Medium	Habitat Restoration/Improvement
Manipulate reservoirs (private and publicly owned) to provide mud flat habitat during July - November migration, and, if possible, during March-early June migration.	Medium	Habitat Restoration/Improvement
Restore mud flats.	High	Habitat Restoration/Improvement

Monitoring Strategies

Initiate late summer - fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture.

Comments

This species is seen in the state April-October. They are often seen in association with the more numerous Long-billed Dowitchers and Stilt Sandpipers, and tend to forage in shallow water rather than exposed mud. This species is listed as a species of high concern by the U.S. Shorebird Conservation Plan. While population size is difficult to determine, it is thought to be relatively abundant. Proper management of water levels on wetlands, artificial impoundments, and flooded agricultural fields can provide critical stopover habitat during migration.

Commercial aquaculture facilities are important stopover sites for this species and many other shorebirds (Lehnen and Krementz 2013). The decline of fish pond acreage in the state from 60,000 surface acres in 2002 to less than 30,000 acres in 2012 is alarming (personal communication Dr. Carole Engle, UAPB). Water management strategies have changed at many of the remaining facilities because of increased efficiency. Emphasis should be placed on programs that would encourage fish farmers to provide shallow-water habitat for extended periods of time.

Additionally, management plans for reservoirs (ex. Chicot, Millwood) and moist-soil impoundments (AGFC, USFWS, private) could be altered to provide additional benefit to many shorebirds that rely on mud flat habitat. Deeper water that is drawn down slowly typically provides more invertebrates than very recently flooded water.

(Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Jehl and others 2001, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, U.S. Shorebird Conservation Plan 2004)

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Limnothlypis swainsonii

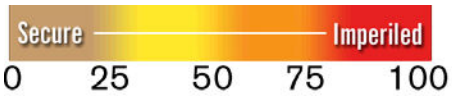
Swainson's Warbler

Class: Aves

Order: Passeriformes

Family: Parulidae

Priority Score: 19 **out of 100**



Population Trend: Unknown

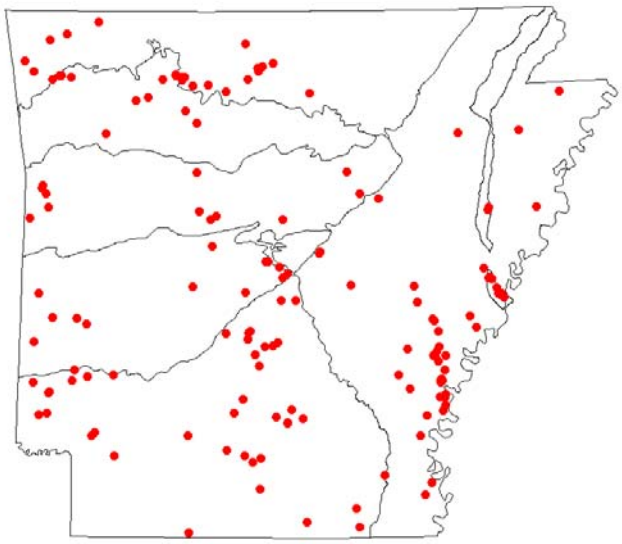
Residence: Breeding

Global Rank: G4 — Apparently secure species

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
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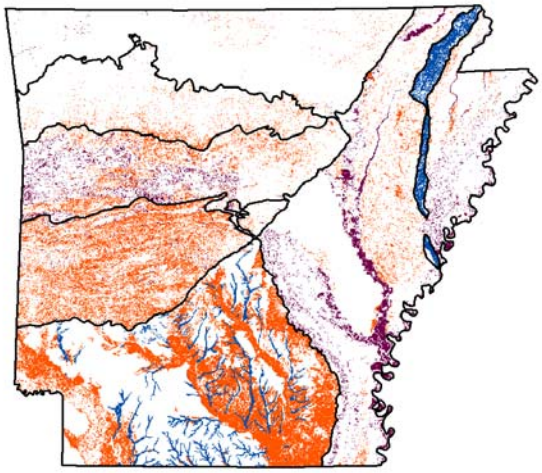
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crowley's Ridge Loess Slope Forest	Suitable
Cultivated Forest	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Optimal
Ozark-Ouachita Large Floodplain	Data Gap
Ozark-Ouachita Riparian	Marginal
West Gulf Coastal Plain Large River Floodplain Forest	Marginal
West Gulf Coastal Plain Mesic Hardwood Forest	Marginal
West Gulf Coastal Plain Red River Floodplain Forest	Marginal
West Gulf Coastal Plain Small Stream/River Forest	Suitable
West Gulf Coastal Plain Wet Hardwood Flatwoods	Marginal

Problems Faced

KNOWN PROBLEM: Lack of understory and midstory and loss of midseral stages interspersed with more mature woodlands due to even-aged forest management.	Threat: Altered composition/structure Source: Forestry activities
KNOWN PROBLEM: Loss of dense understory component of riparian/floodplain forest.	Threat: Altered composition/structure Source: Dam
KNOWN PROBLEM: Loss of dense understory component of riparian/floodplain forest.	Threat: Alteration of natural fire regimes Source: Fire suppression
KNOWN PROBLEM: Loss of giant cane habitat.	Threat: Habitat destruction Source: Conversion of riparian forest
POTENTIAL PROBLEM: Nesting failure caused by flooding.	Threat: Hydrological alteration Source: Dam
POTENTIAL PROBLEM: Parasitism by Brown-headed Cowbirds.	Threat: Extraordinary predation/parasitism/disease Source: Parasites/pathogens

Data Gaps/Research Needs

Determine post- fledging survival.
Determine distribution and abundance.
Determine importance of regenerating forests.
Evaluate management practices to create breeding habitat.

Conservation Actions

	Importance	Category
Manage for dense understory and ground cover.	High	Habitat Restoration/Improvement
Manage for unevenaged forests using group selection harvest or evenaged management with small clearcuts.	High	Habitat Restoration/Improvement
Protect and restore tracts to increase bottomland forest block size and provide connectivity.	High	Habitat Protection
Restore canebrake habitats.	High	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Expand effort to locate new breeding populations. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

The Swainson's Warbler is closely associated with canebrakes in bottomland hardwoods, but also utilizes regenerating clearcuts (hardwood or pine). It utilizes dense thickets within large contiguous forests of various age classes and composition that have occasional canopy gaps, high leaf litter, and a sparse herbaceous layer. Loss and fragmentation of bottomland hardwood forests and associated canebrakes is a source of decline. Cowbird nest parasitism is high in the Dale Bumpers White River NWR and Crowley's Ridge. The species distribution and abundance in regenerating forests of Arkansas is poorly understood. (Anich and others 2010, Brown and Dickson 1994, Carrie 1996, Clawson 1982, Duzan and others 2003, 2003A, Evans and Kirkman 1980, Fitzgerald 2000, Graves 2002, Graves 2014, Hamel 1992, Jacobs 2001, James and Neal 1986, Martin and Finch 1995, Robbins and Easterla 1992)

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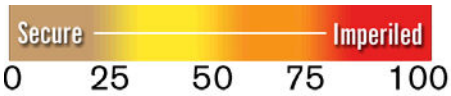
Nyctanassa violacea

Yellow-crowned Night-Heron

Class: Aves
Order: Pelicaniformes
Family: Ardeidae

Priority Score: 24 out of 100



Population Trend: Decreasing

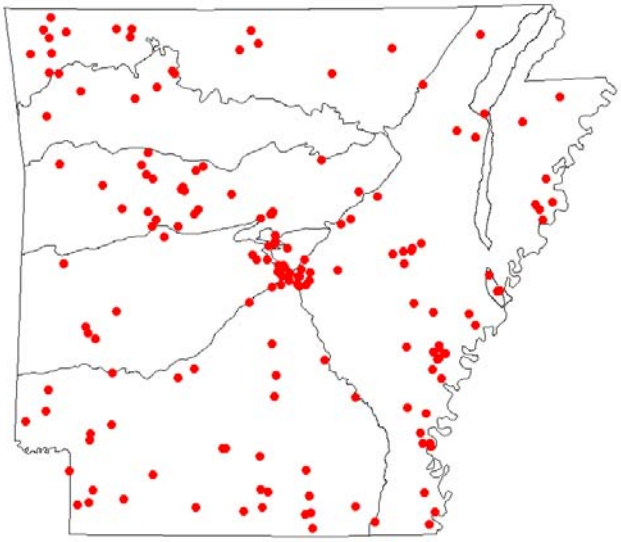
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S2B — Imperiled breeding species in Arkansas

Distribution

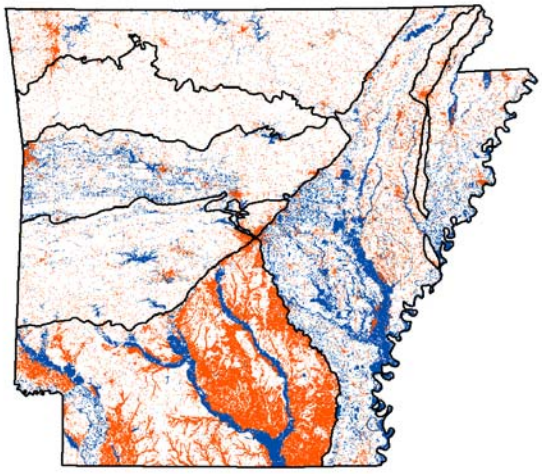
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River Bottomland Depression	Suitable
Lower Mississippi River High Bottomland Forest	Marginal
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Prairie and Woodland	Data Gap
Ozark-Ouachita Riparian	Marginal
Ponds, Lakes, and Water Holes	Suitable
Urban/Suburban	Marginal
West Gulf Coastal Plain Large River Floodplain Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable
West Gulf Coastal Plain Small Stream/River Forest	Marginal

Problems Faced

KNOWN PROBLEM: Conflicts with aquaculture.	Threat: Extraordinary competition for resources Source: Confined animal operations
KNOWN PROBLEM: Degradation and loss of breeding and foraging habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices
POTENTIAL PROBLEM: Vulnerability to toxins and contaminants from agricultural run-off.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Home range estimates on wintering grounds are needed.

Conservation Actions

	Importance	Category
Improve breeding and foraging habitat.	High	Habitat Restoration/Improvement
Reduce depredation on aquaculture facilities.	High	Public Relations/Education
Reduce threats posed by toxins/contaminants.	Low	Threat Abatement

Monitoring Strategies

Initiate systematic ground surveys in high productive habitat during breeding season. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This species forages from dusk to dawn. Because it specializes on crustaceans, it can conflict with aquaculture farmers. This species is generally abundant and widespread, though restricted to areas near water because of its food requirements. Protection of forested wetland habitat and reducing conflicts between birds and farmers and between nest colonies and the neighborhoods in which they nest are important conservation measures. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Kushlan and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, Watts 1995)

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Nycticorax nycticorax

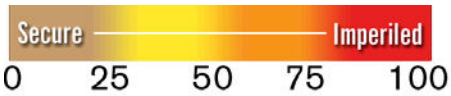
Black-crowned Night-Heron

Class: Aves

Order: Pelicaniiformes

Family: Ardeidae

Priority Score: 19 out of 100



Population Trend: Stable

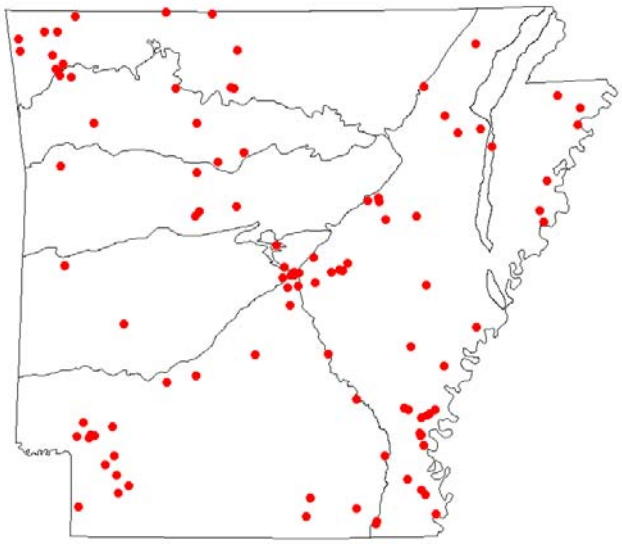
Residence: Permanent

Global Rank: G5 — Secure

State Rank: S2B — Imperiled breeding species in Arkansas

Distribution

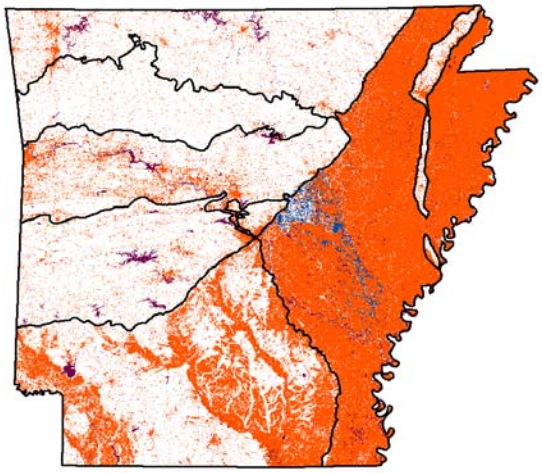
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Herbaceous Wetland	Optimal
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River Bottomland Depression	Suitable
Lower Mississippi River High Bottomland Forest	Marginal
Lower Mississippi River Low Bottomland Forest	Marginal
Lower Mississippi River Riparian Forest	Marginal
Mud Flats	Suitable
Ozark-Ouachita Large Floodplain	Marginal
Ozark-Ouachita Prairie and Woodland	Suitable
Ponds, Lakes, and Water Holes	Optimal
Urban/Suburban	Marginal
West Gulf Coastal Plain Large River Floodplain Forest	Marginal
West Gulf Coastal Plain Red River Floodplain Forest	Marginal

Problems Faced

KNOWN PROBLEM: Loss of emergent wetland habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of emergent wetland habitat.	Threat: Habitat destruction Source: Forestry activities
KNOWN PROBLEM: Nest failure resulting from mammalian predation.	Threat: Extraordinary predation/parasitism/disease Source: Predation
POTENTIAL PROBLEM: Conflicts with aquaculture.	Threat: Extraordinary competition for resources Source: Confined animal operations

Data Gaps/Research Needs

Determine impacts of contaminants, toxins, and heavy metals on reproduction.
Identify distribution of nesting colonies.
Identify non-lethal control strategies for aquaculture depredation.
Research effects of depredation on aquaculture.

Conservation Actions

	Importance	Category
Buffer nest sites to prevent human disturbance from causing nest abandonment and nestling mortality.	Medium	Habitat Protection
Buffer nest sites to prevent human disturbance from causing nest abandonment and nestling mortality.	Medium	Public Relations/Education
Reduce depredation on aquaculture.	Medium	Public Relations/Education
Reduce threats posed by toxins/contaminants.	Low	Threat Abatement
Restore emergent wetland habitat.	High	Habitat Restoration/Improvement

Monitoring Strategies

Conduct inventories for colonial waterbirds, particularly rookery counts, as a part of the North American Colonial Waterbird Monitoring Program coordinated by the Waterbird Conservation for the Americas Bird Initiative. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

A widespread, abundant, colonial nester which will nest in suburban areas in Arkansas. An excellent indicator of environmental quality, this species has recovered following the banning of DDT but may be impacted by other environmental contaminents. It is an opportunistic forager and eats a wide variety of prey, including fish and crawfish. This can put it in conflict with aquaculture farms. More study is needed to determine what effect this and other wading birds have on commercial harvest. (Arkansas Audubon Society 2012, Davis 1993, Hamel 1992, Hothem and others 2010, James and Neal 1986, Kushlan and others 2002, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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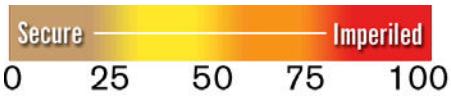
Peucaea aestivalis

Bachman's Sparrow

Class: Aves
Order: Passeriformes
Family: Emberizidae

Priority Score: 33 **out of 100**



Population Trend: Decreasing

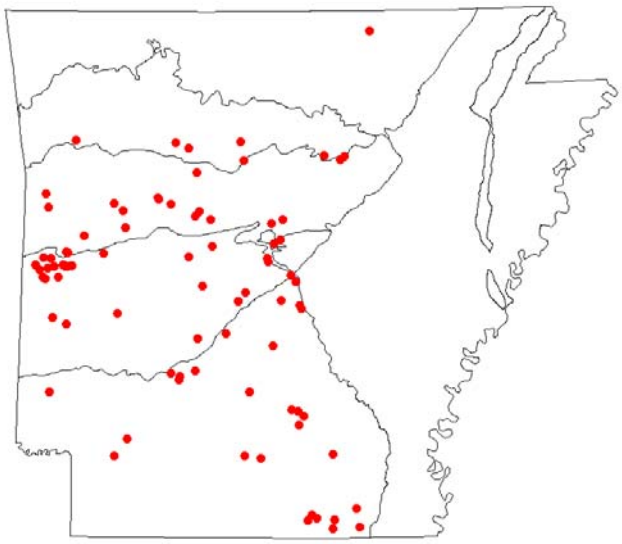
Residence: Breeding

Global Rank: G3 — Vulnerable species

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

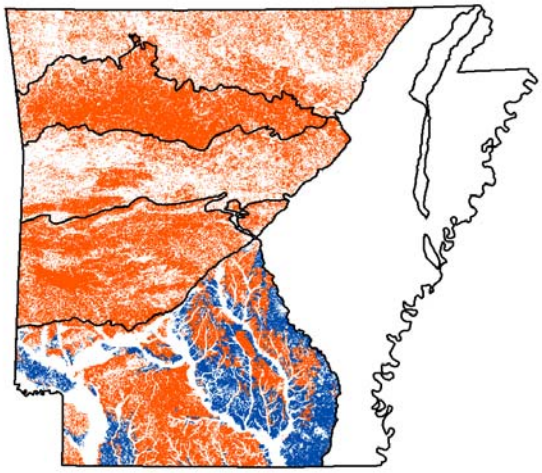
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [ ] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Cultivated Forest	Marginal
Ozark-Ouachita Dry Oak and Pine Woodland	Marginal
Ozark-Ouachita Dry-Mesic Oak Forest	Marginal
Ozark-Ouachita Pine/Bluestem Woodland	Optimal
Ozark-Ouachita Pine-Oak Forest	Marginal
Ozark-Ouachita Pine-Oak Woodland	Marginal
Ozark-Ouachita Prairie and Woodland	Marginal
West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods	Suitable
West Gulf Coastal Plain Pine-Hardwood Forest	Marginal
West Gulf Coastal Plain Sandhill Oak and Shortleaf Pine Forest and Woodland	Marginal

Problems Faced

KNOWN PROBLEM: Loss of shortleaf pine/bluestem communities from fire suppression.	Threat: Habitat destruction or conversion Source: Forestry activities
KNOWN PROBLEM: Loss of shortleaf pine/bluestem communities from fire suppression.	Threat: Alteration of natural fire regimes Source: Fire suppression
KNOWN PROBLEM: Loss of shortleaf pine/bluestem communities from fire suppression.	Threat: Habitat fragmentation Source: Forestry activities

Data Gaps/Research Needs

Determine optimal amount of groundcover, especially grass cover, to maintain and increase sparrow populations.
Determine optimal growing season fire return interval for breeding habitats.
Determine the effects of habitat isolation and fragmentation.
Examine the relative importance of early successional versus older aged forest stands in maintaining local populations.

Conservation Actions

	Importance	Category
Develop or maintain early successional grass and forb layer with limited shrub and hardwood midstory.	High	Habitat Restoration/Improvement
Maintain open, mature pine forest habitat.	High	Habitat Protection
Maintain or restore historical fire regimes.	High	Fire Management
Maintain or restore shortleaf pine/bluestem communities.	High	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that this species has imprecise trend data at the continental level. An effort is being made to expand the BBS program to better survey this species.

Comments

Bachman's Sparrows use both early and late successional pine and pine hardwood forests where the mid-story is sparse and a ground cover of grasses and forbs are present (Krementz and Christie 1999, Tucker et al. 2006, Jones and others 2013, Allen and Burt. 2014, Jones and others 2014). These pine systems require disturbance (usually growing season fire) on a regular basis (<4-year return intervals) to maintain their attractiveness. The scale at which the disturbance is implemented may affect local population dynamics, but this question requires further research (Seaman and Krementz 2000, Jones and others 2014). Early successional habitats, including clearcuts, can be attractive, and in certain situations, can be productive sites for Bachman's sparrows (Krementz and Christie 1999, Stober and Krementz 2000).

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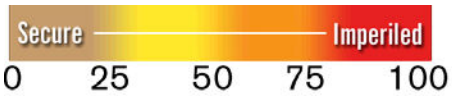
Picoides borealis

Red-cockaded Woodpecker

Class: Aves
Order: Piciformes
Family: Picidae

Priority Score: 43 out of 100



Population Trend: Decreasing

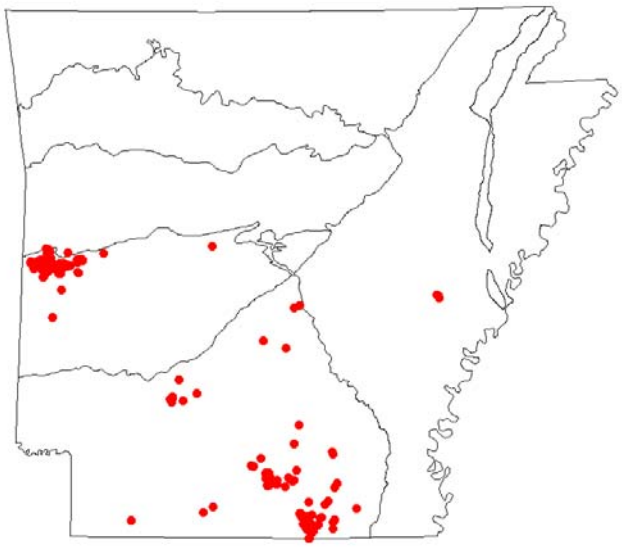
Residence: Permanent

Global Rank: G3 — Vulnerable species

State Rank: S1 — Critically imperiled in Arkansas

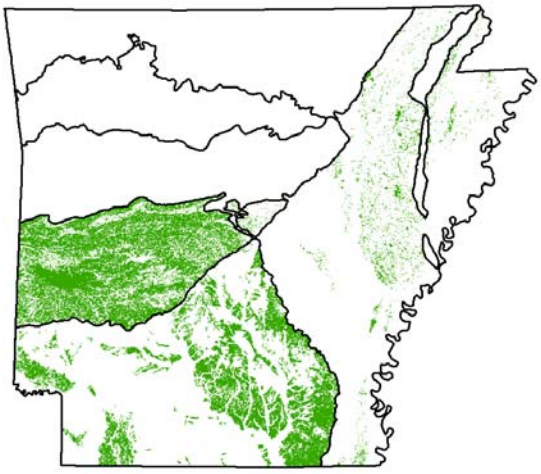
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☐ Ozark Highlands
- ☐ Boston Mountains
- ☐ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☐ Mississippi Valley Loess Plains



Habitat Map

Habitats

Habitats	Weight
Ozark-Ouachita Pine-Bluestem Woodland	Obligate
Ozark-Ouachita Pine-Oak Forest/Woodland	Marginal
West Gulf Coastal Plain Pine-Hardwood Flatwoods	Obligate
West Gulf Coastal Plain Pine-Hardwood Forest/Woodland	Obligate

Problems Faced

KNOWN PROBLEM: Competition for nesting cavities.	Threat: Altered composition/structure Source: Forestry activities
KNOWN PROBLEM: Fire suppression.	Threat: Alteration of natural fire regimes Source: Fire suppression
KNOWN PROBLEM: Habitat fragmentation.	Threat: Habitat fragmentation Source: Forestry activities
KNOWN PROBLEM: Habitat loss and degradation.	Threat: Habitat destruction or conversion Source: Fire suppression
KNOWN PROBLEM: Loss of extensive, mature pine habitat that is open and park-like.	Threat: Habitat destruction Source: Forestry activities
KNOWN PROBLEM: Predation by snakes.	Threat: Extraordinary predation/parasitism/disease Source: Predation

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions

	Importance	Category
Manage clusters and translocate individuals to augment existing or establish new populations.	High	Population Management
Protect and restore additional sites and additional habitat adjacent to existing protected sites; develop connectivity between populations.	High	Habitat Protection
Reduce nest predation and cavity kleptoparasitism; important in small populations (i.e, < 100 breeding groups).	Medium	Threat Abatement
Restore canopy structure and composition; reduce mid-story encroachment; restore native groundcover.	High	Habitat Restoration/Improvement
Restore fire regimes through frequent (every 2-4 years) use of prescribed fire.	High	Fire Management

Monitoring Strategies

Annual property data reports submitted to the U.S. Fish and Wildlife Service provide population trends at the local, regional, and range-wide levels. Continue monitoring of clusters year-round that is being conducted by the ANHC, TNC, USFS, and the USFWS. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This endangered species is a habitat specialist that occurs only in mature, open pine woodlands and savannas of the southeastern United States. Primary threats are loss of open pine habitat due to fire suppression and habitat conversion, loss of older pines needed for roost and nest cavities, and fragmentation of habitat causing isolation of populations which results in reduced genetic diversity and greater vulnerability to demographic and environmental chance events. A territorial, non-migratory species, it often occurs in family groups with a breeding pair and a male helper that is an offspring from a previous year; average group size is 2-3 birds. Until the mid-to-late twentieth century, largest populations were known from open pine flatwoods along the Ouachita terraces of southern Arkansas, and building on strong conservation efforts underway in that region represents one of the best opportunities for recovery of this species in this state. The Ouachita NF currently supports the largest population and has the potential for supporting a population 2-3 times its current size; additional habitat restoration in this region represents the other best recovery opportunity. Portions of the Ozark NF undergoing pine-hardwood woodland restoration may present additional opportunities, but the extent and likelihood need further exploration. A small population in eastern Arkansas, the only known one throughout the Mississippi Alluvial Plain, needs additional habitat protection and restoration to attain long-term viability. (Conner and others 2001, Costa and others 1996, Holimon and Montague 2003, Jackson 1994, James and Neal 1986, Masters and others 1995, McKellar and others 2014, Montague and others 1995, Neal 1992, Neal and others 1992, 1993a, 1993b, 1998, Robison and others 1999, Rudolph and others 1992, USDA FWS 2003, Walters and others 2002)

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Pluvialis dominica

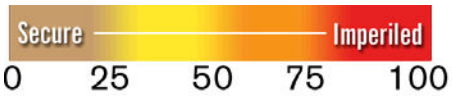
American Golden-Plover

Class: Aves

Order: Charadriiformes

Family: Charadriidae

Priority Score: 15 out of 100



Population Trend: Unknown

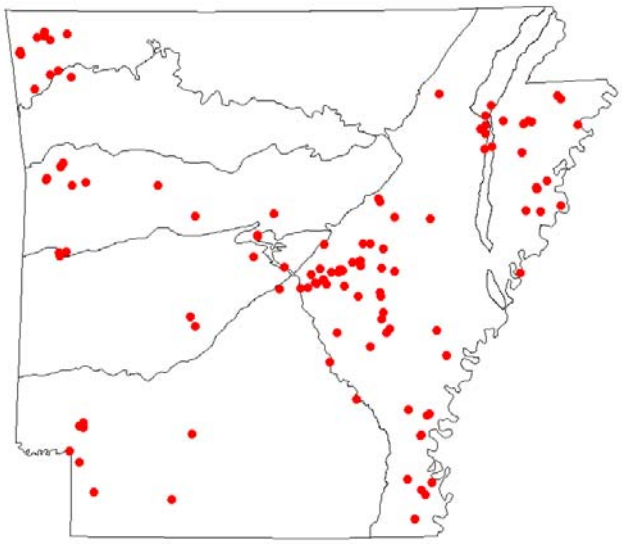
Residence:

Global Rank: G5 — Secure

State Rank: S3N — Vulnerable nonbreeding species in Arkansas

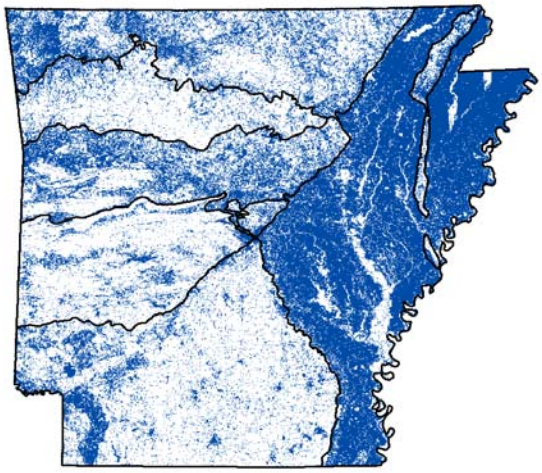
Distribution

Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains



Habitat Map

Habitats	Weight
Crop Land	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Mud Flats	Suitable
Pasture Land	Suitable
Ponds, Lakes, and Water Holes	Suitable
Urban/Suburban	Suitable

Problems Faced

KNOWN PROBLEM: Lack of wet prairie habitat.	Threat: Hydrological alteration Source: Agricultural practices
KNOWN PROBLEM: Lack of wet prairie habitat.	Threat: Groundwater depletion Source: Agricultural practices
KNOWN PROBLEM: Lack of wet prairie habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices

Data Gaps/Research Needs

Determine habitat use during spring migration.

Determine stopover duration during spring migration.

Conservation Actions	Importance	Category
Manage for wet, open prairies and grasslands.	High	Habitat Restoration/Improvement

Pluvialis dominica
American Golden-Plover

Monitoring Strategies

Develop spring migration counts in Arkansas through Lower Mississippi Valley/West Gulf Coast Joint Venture.

Comments

This shorebird has a long circular migration route that includes Arkansas during only spring migration. Spring migration records occur throughout the state. Some counts can be in the tens of thousands in Arkansas, but inter-annual variation in counts are high. Similar American Golden-Plover counts at some inland stopover sites in Indiana are thought to account for a significant portion of the entire known population (Johnson 2003). That comparable numbers of American Golden-Plovers use Arkansas stopover sites suggests that these sites may be important to the continental American Golden-Plover population. Usual habitats include short-grass prairies, flooded pastures, plowed fields and less often on mudflats and beaches where foraging for invertebrates occurs. Management for plover migration habitat may require the maintenance of complexes of potential habitat to assure alternatives when local conditions vary (Skagen and Knopf 1994). Very little is known about habitat use in Arkansas by this species.

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Pluvialis squatarola

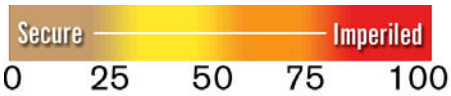
Black-bellied Plover

Class: Aves

Order: Charadriiformes

Family: Charadriidae

Priority Score: 24 **out of 100**



Population Trend: Decreasing

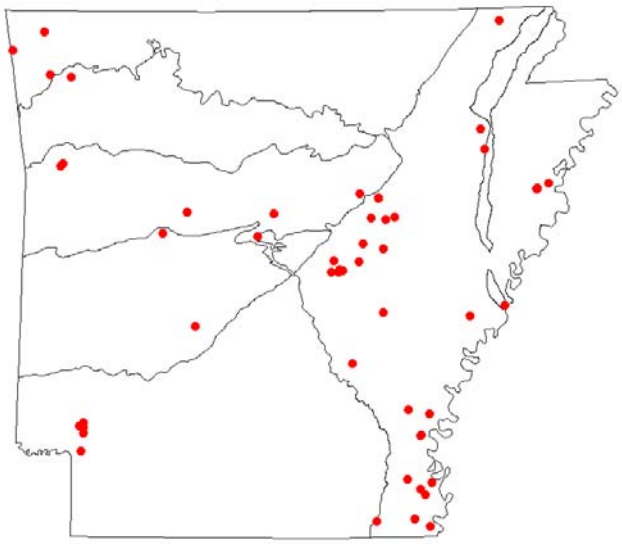
Residence: Transient

Global Rank: G5 — Secure

State Rank: S2N — Imperiled nonbreeding species in Arkansas

Distribution

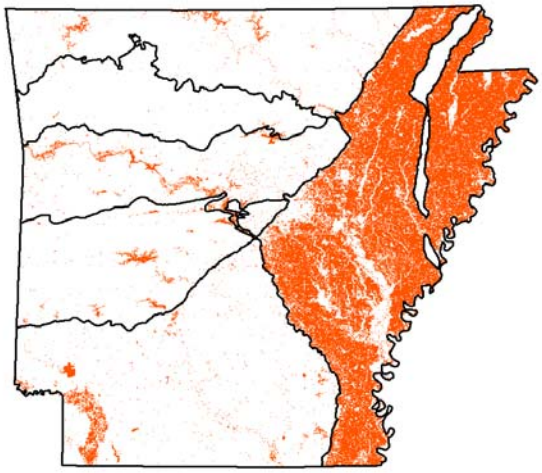
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [x] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Mud Flats	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Lack of mud flat habitat.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Lack of mud flats during migration as a result of hydrological alteration.	Threat: Hydrological alteration Source: Water diversion

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions	Importance	Category
Draw down fish ponds to create mud flat habitat in July - November.	High	Habitat Restoration/Improvement
Flood cropland in summer and early fall after harvest.	High	Habitat Restoration/Improvement
Manipulate federal and state managed moist-soil units to provide mud flat habitat during March-early June and, if possible, during July - November.	Medium	Habitat Restoration/Improvement
Manipulate reservoirs (private and publicly owned) to provide mud flat habitat during July - November migration, and, if possible, during March-early June migration.	Medium	Habitat Restoration/Improvement
Restore mud flats.	High	Habitat Restoration/Improvement

Monitoring Strategies

Initiate late summer - fall migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley Joint Venture.

Comments

This species is seen in the state March-November, with March- June sightings believed to be spring northward migrants, while birds seen July through November are believed to be southbound migrants. They are often seen in association with Long-billed Dowitchers, and tend to forage in very shallow water rather than exposed mud. Studies suggest that populations of this and other shorebird species are declining. The availability of habitat and food along their migratory route is critical. Birds need to stop and refuel as they go. Proper management of water levels on wetlands, artificial impoundments, and flooded agricultural fields can help. (Arkansas Audubon Society 2012, Carter and others 2000, CWCS 2004, CWCS 2005A, CWCS 2005B, Hamel 1992, James and Neal 1986, Klima and Jehl 1998, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

Commercial aquaculture facilities are important stopover sites for this species and many other shorebirds (Lehnen and Krementz 2013). The decline of fish pond acreage in the state from 60,000 surface acres in 2002 to less than 30,000 acres in 2012 is alarming (personal communication Dr. Carole Engle, UAPB). Water management strategies have changed at many of the remaining facilities because of increased efficiency. Emphasis should be placed on programs that would encourage fish farmers to provide shallow-water habitat for extended periods of time.

Additionally, management plans for reservoirs (ex. Chicot, Millwood) and moist-soil impoundments (AGFC, USFWS, private) could be altered to provide additional benefit to many shorebirds that rely on mudflat habitat. Deeper water that is drawn down slowly typically provides more invertebrates than very recently flooded water.

Taxa Association Team and Peer Reviewers

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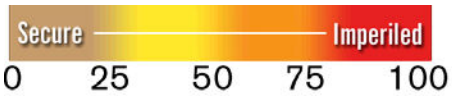
Porphyrio martinicus

Purple Gallinule

Class: Aves
Order: Gruiformes
Family: Rallidae

Priority Score: 23 **out of 100**



Population Trend: Stable

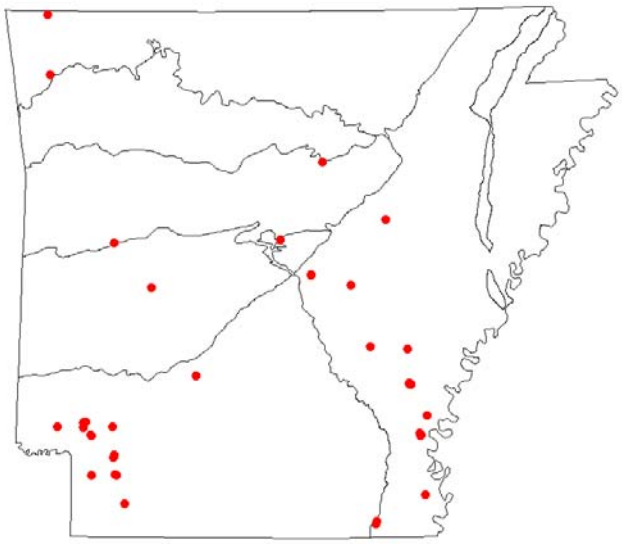
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S1B — Critically imperiled breeding species in Arkansas

Distribution

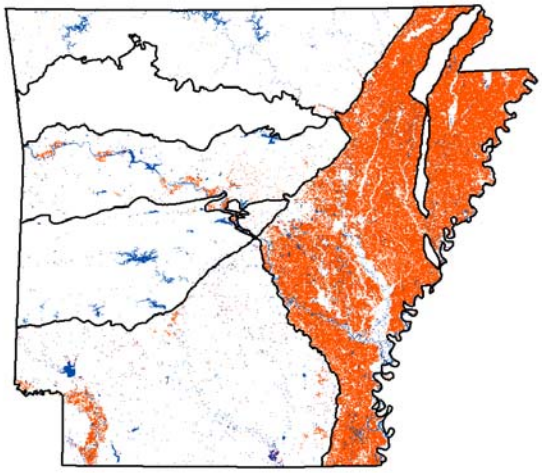
Occurrence Records



Ecoregions where the species occurs:

- [x] Ozark Highlands
- [ ] Boston Mountains
- [x] Arkansas Valley
- [x] Ouachita Mountains
- [x] South Central Plains
- [x] Mississippi Alluvial Plain
- [ ] Mississippi Valley Loess Plains

Habitat Map



Habitats

	Weight
Crop Land	Marginal
Herbaceous Wetland	Optimal
Ponds, Lakes, and Water Holes	Suitable

Problems Faced

KNOWN PROBLEM: Loss of herbaceous wetlands.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of herbaceous wetlands.	Threat: Habitat destruction Source: Urban development

Data Gaps/Research Needs

No data gaps or research needs were identified.

Conservation Actions

	Importance	Category
Maintain herbaceous wetlands.	High	Habitat Protection
Restore herbaceous wetlands.	High	Habitat Restoration/Improvement

Monitoring Strategies

Conduct secretive marshbird surveys using the North American Marsh Bird Survey Protocol outlined in the National Marsh Bird Survey Program.

Comments

Purple Gallinules are not considered to be native to the state of Arkansas; rather they have expanded their range northward into Arkansas (Crow 1974). Their low population numbers in Arkansas is not an immediate concern, though climate change may shift their breeding range northward, increasing the importance of available habitat in Arkansas. The restoration of emergent wetlands could benefit this species and increase their population numbers overall. Extensive loss of wetland habitat may be offset by this adaptable species' use of rice fields, impoundments, and wildlife refuges. It readily accepts weedy conditions brought on by eutrophication and feeds on exotic weeds such as water hyacinth and hydrilla. Rapidly maturing rice varieties and subsequent early harvest together with removal of emergent vegetation from ponds could negatively affect this bird. (Arkansas Audubon Society 2012, Crow 1974, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, West and Hess 2002)

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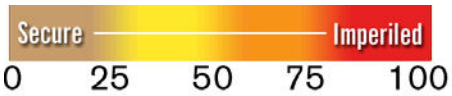
Rallus elegans

King Rail

Class: Aves
Order: Gruiformes
Family: Rallidae

Priority Score: 33 out of 100



Population Trend: Decreasing

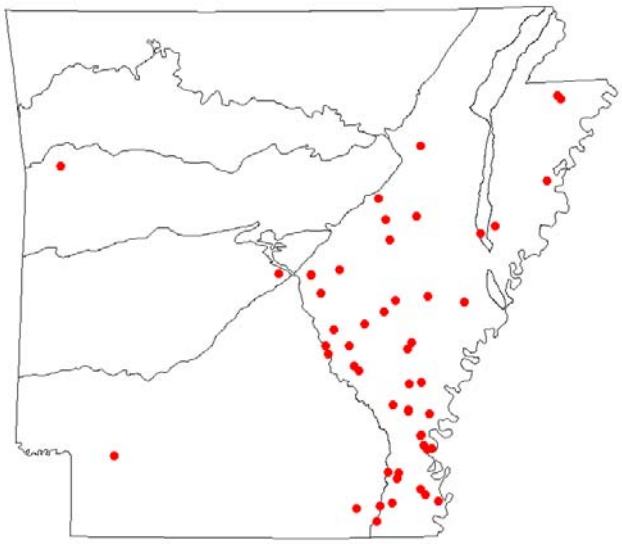
Residence: Permanent

Global Rank: G4 — Apparently secure species

State Rank: S1B — Critically imperiled breeding species in Arkansas

Distribution

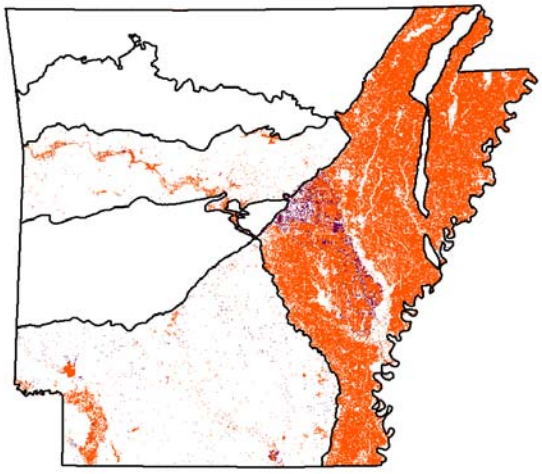
Occurrence Records



Ecoregions where the species occurs:

- ☐ Ozark Highlands
- ☐ Boston Mountains
- ☑ Arkansas Valley
- ☐ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☐ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crop Land	Marginal
Herbaceous Wetland	Optimal
Lower Mississippi Alluvial Plain Grand Prairie	Optimal
Ponds, Lakes, and Water Holes	Marginal

Problems Faced

KNOWN PROBLEM: Conversion of emergent and herbaceous wetlands to bottomland hardwoods.	Threat: Habitat destruction or conversion Source: Forestry activities
KNOWN PROBLEM: Loss of herbaceous wetlands.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Loss of herbaceous wetlands.	Threat: Habitat destruction Source: Urban development
KNOWN PROBLEM: Loss of herbaceous wetlands.	Threat: Hydrological alteration Source: Water diversion

Data Gaps/Research Needs

Determine current distribution and abundance.

Conservation Actions	Importance	Category
Protect herbaceous wetlands.	High	Habitat Protection
Restore herbaceous wetlands.	High	Habitat Restoration/Improvement

Rallus elegans
King Rail

Monitoring Strategies

Conduct secretive marshbird surveys using the North American Marsh Bird Survey Protocol outlined in the National Marsh Bird Survey Program.

Comments

The Grand Prairie region of Arkansas was historically important to King Rails, and they were common breeders in the rice fields and associated drainage ditches in the 1950s and 60s (Meanley 1969). Their abundance or occurrence throughout the rest of Arkansas was largely unknown outside of a few observations posted to the Arkansas Audubon Society's bird record database. In 2004, 2005 and 2012, marshbird surveys were conducted throughout the Mississippi Alluvial Valley of Arkansas to document the abundance and range of this species (Budd and Krementz 2011, Budd and Rowe 2013). In each of the three field seasons, very few (<25 individuals) King Rails were observed. The surveys also noted that King Rails were no longer common in the Grand Prairie Region, likely due to changes in agricultural practices. This species utilizes emergent wetlands that consist of cattails, sedges, rushes, etc and that have at least small pockets of water throughout the summer months. The King Rail also tends to use emergent wetlands that are more than 400 meters away from a forested block. These habitat conditions are rare in Arkansas. In order to improve their population status, more emergent wetlands need to be restored and maintained.

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Scolopax minor

American Woodcock

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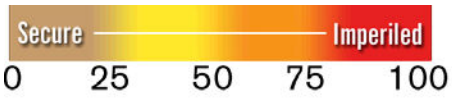
Class: Aves
Order: Charadriiformes
Family: Scolopacidae

Priority Score: 24 **out of 100**



Population Trend: Decreasing

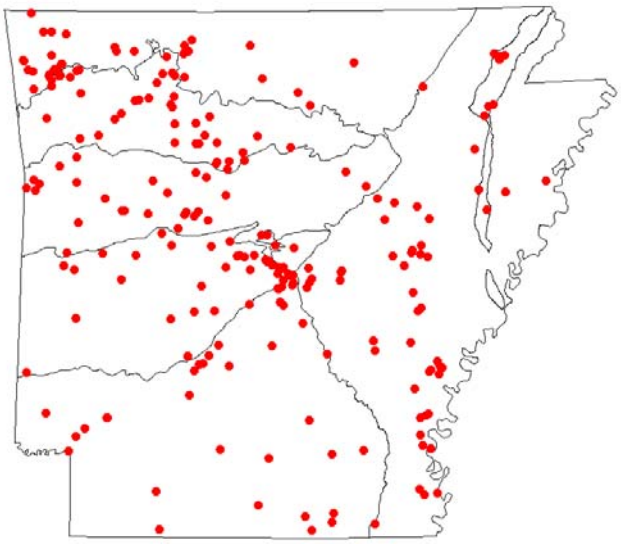
Residence: Permanent

Global Rank: G5 — Secure

State Rank: S2B,S3N — Imperiled breeding, vulnerable nonbreeding species in Arkansas

Distribution

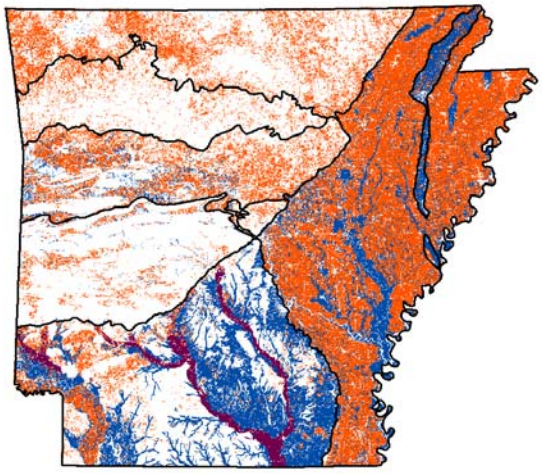
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Scolopax minor
American Woodcock

Habitats	Weight
Crop Land	Marginal
Crowley's Ridge Loess Slope Forest	Suitable
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Lower Mississippi Flatwoods Woodland and Forest	Suitable
Lower Mississippi River Bottomland Depression	Marginal
Lower Mississippi River Dune Woodland, Pond, and Forest	Marginal
Lower Mississippi River High Bottomland Forest	Suitable
Lower Mississippi River Low Bottomland Forest	Suitable
Lower Mississippi River Riparian Forest	Suitable
Ozark-Ouachita Large Floodplain	Suitable
Ozark-Ouachita Mesic Hardwood Forest	Marginal
Ozark-Ouachita Prairie and Woodland	Suitable
Ozark-Ouachita Riparian	Suitable
Pasture Land	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Marginal
West Gulf Coastal Plain Dry Pine-Hardwood Flatwoods	Suitable
West Gulf Coastal Plain Large River Floodplain Forest	Optimal
West Gulf Coastal Plain Mesic Hardwood Forest	Suitable
West Gulf Coastal Plain Red River Floodplain Forest	Suitable
West Gulf Coastal Plain Small Stream/River Forest	Suitable
West Gulf Coastal Plain Wet Hardwood Flatwoods	Optimal

Scolopax minor
American Woodcock

Problems Faced

KNOWN PROBLEM: Conversion of wet hardwood sites to commercial pine lands.	Threat: Habitat destruction or conversion Source: Forestry activities
KNOWN PROBLEM: Conversion of wet hardwood sites to commercial pine lands.	Threat: Habitat destruction or conversion Source: Conversion of riparian forest
KNOWN PROBLEM: Draining of swampy areas in bottomland hardwood and flatwood forests.	Threat: Hydrological alteration Source: Water diversion
KNOWN PROBLEM: Lack of early successional forests.	Threat: Altered composition/structure Source: Conversion of riparian forest
POTENTIAL PROBLEM: Loss of individuals to hunting.	Threat: Biological alteration Source: Recreation
POTENTIAL PROBLEM: Vulnerability to toxins and contaminants.	Threat: Toxins/contaminants Source: Agricultural practices

Data Gaps/Research Needs

Nocturnal habitat use during autumn migration in the Mississippi Alluvial Valley.
Stopover duration during autumn and spring migration.

Conservation Actions

	Importance	Category
Manage for successional bottomland and flatwood forests.	High	Habitat Restoration/Improvement

Monitoring Strategies

Initiate autumn migration counts in the Mississippi Alluvial Valley and the West Gulf Coastal Plain, coordinated through Lower Mississippi Valley West Gulf Coastal Plain Joint Venture.

Comments

This compact shorebird spends its time probing for food on forest floors rather than mud flats. Its long, flexible bill is sensitive to touch, and it uses it to find and extract earthworms. Forest management practices and hunting may influence population trends. Management for this species in Arkansas should prioritize providing migration habitat, as relatively little breeding occurs in Arkansas, and few woodcock overwinter here as compared to Texas and Louisiana. Woodcock use a wide variety of habitat types during both autumn and spring migration, but the use of open habitats like old fields and clearcuts can be quite important especially during spring migration. Diurnal habitat management should focus on high stem density of forbs/shrubs/trees (but not grass) at the ground layer with a sparse mid-story and an open canopy. Woodcock prefer loamy to sandy-loam soils where earthworm abundances, an important food source, are high. Disturbance (fire, thinning, grazing) of some habitat types is important component of management.

(Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Keppie and Whiting 1994, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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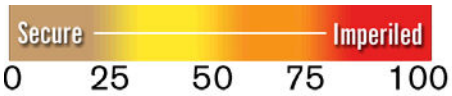
Setophaga cerulea

Cerulean Warbler

Class: Aves
Order: Passeriformes
Family: Parulidae

Priority Score: 24 **out of 100**



Population Trend: Decreasing

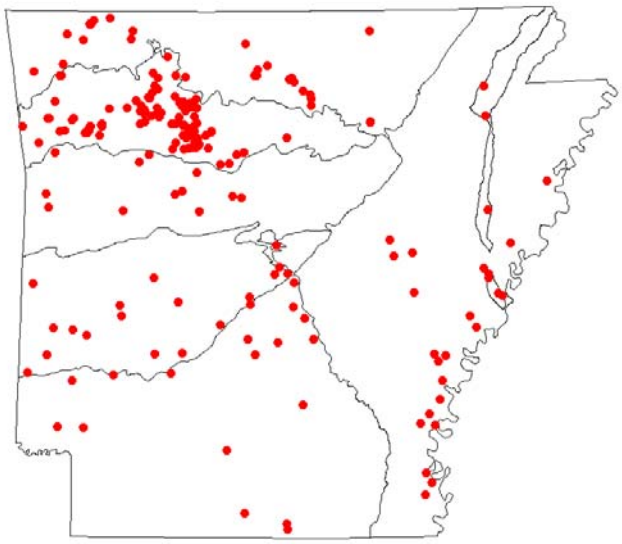
Residence: Breeding

Global Rank: G4 — Apparently secure species

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

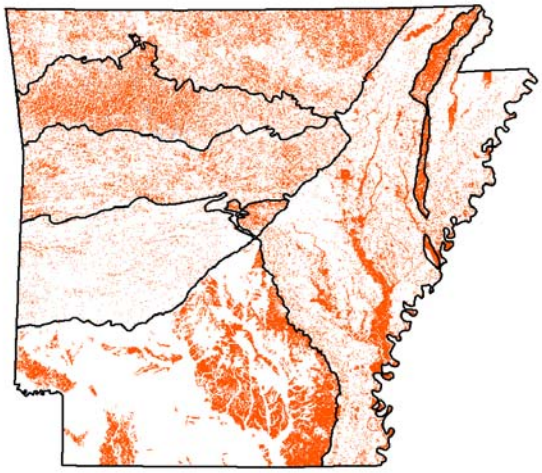
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Crowley's Ridge Loess Slope Forest	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Lower Mississippi River High Bottomland Forest	Marginal
Lower Mississippi River Low Bottomland Forest	Marginal
Lower Mississippi River Riparian Forest	Marginal
Ozark-Ouachita Dry-Mesic Oak Forest	Marginal
Ozark-Ouachita Mesic Hardwood Forest	Suitable
Ozark-Ouachita Riparian	Marginal

Problems Faced

KNOWN PROBLEM: Loss of large blocks of mature/old growth unevenaged forests.	Threat: Habitat fragmentation Source: Forestry activities
KNOWN PROBLEM: Lack of small openings/canopy gaps in large contiguous forests.	Threat: Altered composition/structure Source: Forestry activities
KNOWN PROBLEM: Loss of large blocks of mature/old growth unevenaged forests.	Threat: Habitat destruction Source: Forestry activities
KNOWN PROBLEM: Loss of unevenaged forest structure.	Threat: Alteration of natural fire regimes Source: Fire suppression
KNOWN PROBLEM: Loss of uneven-aged forest structure.	Threat: Altered composition/structure Source: Forestry activities
KNOWN PROBLEM: Nest parasitism from Brown-headed Cowbirds.	Threat: Extraordinary predation/parasitism/disease Source: Parasites/pathogens
KNOWN PROBLEM: Nest parasitism from Brown-headed Cowbirds.	Threat: Habitat fragmentation Source: Forestry activities
POTENTIAL PROBLEM: Loss of preferred tree species.	Threat: Altered composition/structure Source: Forestry activities
POTENTIAL PROBLEM: Red oak-borer problems resulting from fire suppression.	Threat: Alteration of natural fire regimes Source: Forestry activities

Data Gaps/Research Needs

Determine breeding status in the South Central Plains ecoregion.
Determine relationship between breeding habitat type, management practices, and post-fledgling survival.
Identify preferred vegetation structure within habitats.

Conservation Actions

	Importance	Category
Enlarge and connect forests to reduce the amount of non-forested edge.	High	Habitat Restoration/Improvement
Enlarge and connect forests to reduce the amount of non-forested edge.	High	Land Acquisition
Minimize forest fragmentation.	High	Habitat Restoration/Improvement
Promote unevenaged forest management.	High	Habitat Restoration/Improvement
Utilize prescribed fire to improve habitat suitablility.	Medium	Fire Management

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Continue effort to locate new locations for breeding populations in Arkansas. Conduct area-specific surveys in order to capture territorial clusters that may be missed by Breeding Bird Surveys. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

The loss and fragmentation of extensive unfragmented tracts of mature forest, with natural disturbance regimes intact, is the primary threat to this species on the breeding grounds. Within these habitat patches, birds are affected (both positively and negatively) by local forest management practices. Small group- selection cuts can mimic the canopy gaps found in preferred habitat and may be attractive if occurring in regions with high overall forest cover (e.g., Ozark NF). However, these same artificial disturbances may lead to reduced densities in landscapes with low forest cover (Crowley's Ridge or LMAV). These efforts may also lead to a decrease in nesting success and a decline in densities over time (in regions of high forest cover as well). Thus, appropriate placement of these emulated disturbances in areas of highly forested regions with lower densities of birds (at a local scale) would be prudent.In any event, large trees (>40 cm DBH) are needed for nesting and foraging, and a complex layering of upper canopy, midstory, and understory vegetation is also preferred.

The species is locally common in appropriate habitat in the Ozark NF, but much less numerousin the Ouachita Mountain, Gulf Coastal Plain, and Mississippi Delta regions. (ANHC 2003, Boves and others 2013a and b, Buehler and others 2013, Clawson 1982, Duzan and others 2003, 2003A, Evans and Kirkman 1980, Fitzgerald 2000, Hamel 1992, 2000, Jacobs 2001, James 1971, James and Neal 1986, James and others 2001, Kellner In prep, Martin and Finch 1995, Probst and Thompson 1996, Robbins and Easterla 1992, Robbins and others 1989, 1995, Rodewald and Smith 1998, Rosenberg and others 2000, Wood and others 2013)

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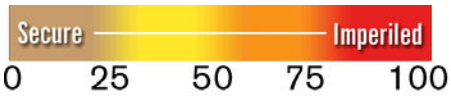
Sternula antillarum athalassos

Interior Least Tern

©U.S. Fish and Wildlife Service

Class: Aves
Order: Charadriiformes
Family: Laridae

Priority Score: 31 **out of 100**



Population Trend: Increasing

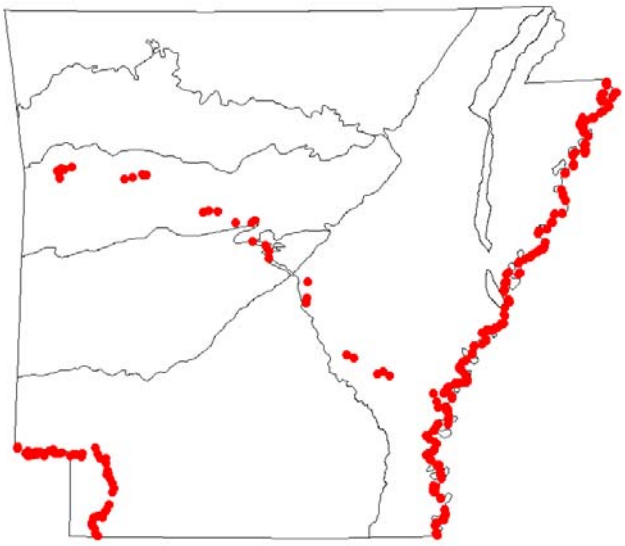
Residence: Breeding

Global Rank: G4T2Q — Apparently secure (imperiled subspecies) questionable taxonomy

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

Occurrence Records



Ecoregions where the species occurs:

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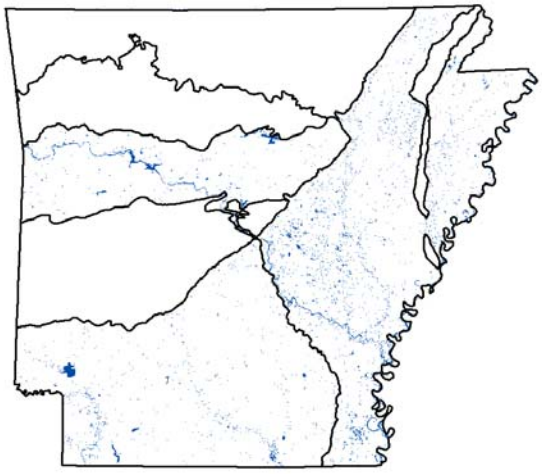

Habitat Map

Habitats

	Weight
Mud Flats	Obligate
Ponds, Lakes, and Water Holes	Suitable

Problems Faced

KNOWN PROBLEM: Disturbance by cattle.	Threat: Habitat disturbance Source: Grazing/Browsing
KNOWN PROBLEM: Disturbance by humans.	Threat: Habitat disturbance Source: Recreation
KNOWN PROBLEM: Loss of sandbars.	Threat: Hydrological alteration Source: Channel maintenance
KNOWN PROBLEM: Predation by mesopredators.	Threat: Extraordinary predation/parasitism/disease Source: Predation

Data Gaps/Research Needs

Monitor Red River population and determine reproductive success as well as causes of nest and nestling mortality.

Conservation Actions

	Importance	Category
Create sandbars.	Medium	Habitat Restoration/Improvement
Encourage predator control.	High	Threat Abatement
Protect sandbars.	High	Habitat Protection
Reduce human disturbance.	High	Public Relations/Education

Monitoring Strategies

Monitor nest success and population numbers on Arkansas and Red Rivers to assess disturbance from human related activities, including boaters, ATV use, and cattle intrusion. Continue monitoring breeding success. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

An endangered species in the interior portion of the country. Breeding habitat is limited to sand bars on large rivers - the Arkansas, Red and Mississippi Rivers. Numbers are increasing on the Mississippi. They also forage on open bodies of water, such as lakes and fish ponds in migration. (Arkansas Audubon Society 2012, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004, Thompson and others 1997)

Numbers on the Arkansas, Red and Mississippi rivers have exceeded the delisting criteria since 2005 when annual surveys began (U.S. Fish and Wildlife Service 2013). In 2007 birds were discovered nesting on rooftops throughout the river valley; birds were discovered using at least five white gravel rooftops within 10 miles of the Arkansas River (Nupp and Watterson 2007).

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Thryomanes bewickii

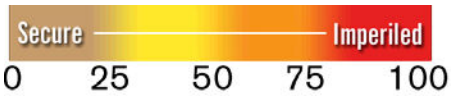
Bewick's Wren

Class: Aves

Order: Passeriformes

Family: Troglodytidae

Priority Score: 29 **out of 100**



Population Trend: Decreasing

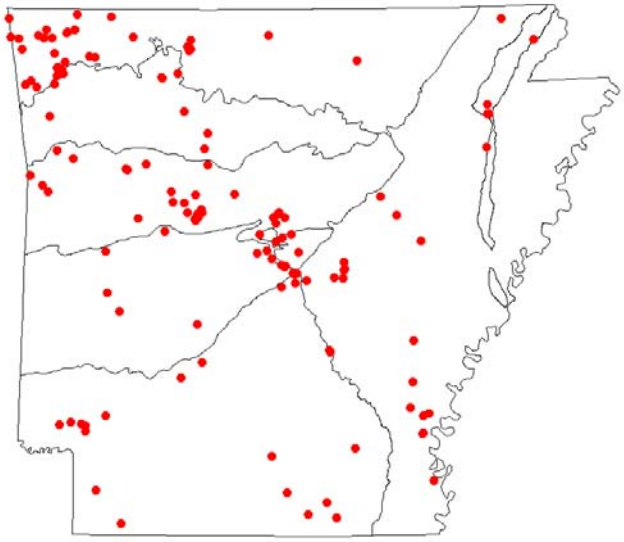
Residence: Permanent

Global Rank: G5 — Secure

State Rank: S1B,S1S2N — Critically imperiled breeding species, critically imperiled nonbreeding species (uncertain rank) in Arkansas

Distribution

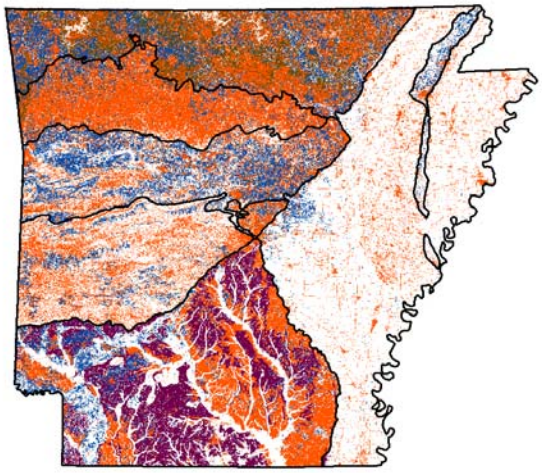
Occurrence Records



Ecoregions where the species occurs:

- ☑ Ozark Highlands
- ☑ Boston Mountains
- ☑ Arkansas Valley
- ☑ Ouachita Mountains
- ☑ South Central Plains
- ☑ Mississippi Alluvial Plain
- ☑ Mississippi Valley Loess Plains

Habitat Map



Habitats	Weight
Interior Highlands Calcareous Glade and Barrens	Data Gap
Interior Highlands Dry Acidic Glade and Barrens	Marginal
Lower Mississippi Flatwoods Woodland and Forest	Marginal
Ozark-Ouachita Dry Oak and Pine Woodland	Optimal
Ozark-Ouachita Dry-Mesic Oak Forest	Marginal
Ozark-Ouachita Pine-Oak Forest/Woodland	Suitable
Ozark-Ouachita Prairie and Woodland	Suitable
Pasture Land	Suitable
Urban/Suburban	Marginal

Thryomanes bewickii
Bewick's Wren

Problems Faced

KNOWN PROBLEM: Breeding habitat loss from clean farming practices.	Threat: Habitat destruction Source: Agricultural practices
KNOWN PROBLEM: Collisions with towers.	Threat: Collision with man-made structures Source: Commercial/industrial development
KNOWN PROBLEM: Competition for nest sites with House Wrens.	Threat: Extraordinary competition for resources Source: Interspecific competiton
POTENTIAL PROBLEM: Breeding habitat loss from succession.	Threat: Habitat destruction or conversion Source: Forestry activities
POTENTIAL PROBLEM: Breeding habitat loss from sucession.	Threat: Alteration of natural fire regimes Source: Fire suppression

Data Gaps/Research Needs

Deterermine distribution and abundance.
Determine dispersal and survival of immatures from adjacent populations outside of Arkansas.
Determine habitat use and ecology.
Determine whether individuals in AR are eastern subspecies.
Study nest site limitations including competition with House Wren.

Conservation Actions

	Importance	Category
Manage for early successional and savanna habitat.	High	Fire Management

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate but some issues, such as bias, may not have been accounted for. Additional targeted surveys in Northwest Arkansas with concomittant population studies are recommended. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

Breeds in open country with a mix of shrubs and open woodland. Eastern populations are often around outbuildings of farms near brushy or wooded areas in cleared or fairly open country. The species has been nearly extirpated as a breeding bird across the entire eastern US, possibly due to habitat change (e.g. habitat succession of abandoned farms), and competition from the more aggressive House Wren for nest cavities. Targeted surveys by Thompson (2011) during 2008-2010 suggest the species has been essentially extirpated as a breeding bird, with occasional recolonizations possible in extreme northwest Arkansas from populations in southwest Missouri. (Arkansas Audubon Society 2012 Clawson 1982, Duzan and others 2003, 2003A, eBird 2014, Evans and Kirkman 1980, Fitzgerald 2000, Hamel 1992, Jacobs 2001, James and Neal 1986, Kennedy and White 2013, Martin and Finch 1995, Robbins and Easterla 1992, Robinson and others 1999, Thompson 2011)

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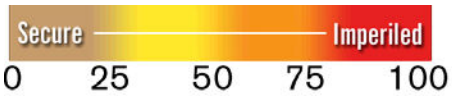
Vireo bellii

Bell's Vireo

Class: Aves
Order: Passeriformes
Family: Vireonidae

Priority Score: 19 **out of 100**



Population Trend: Decreasing

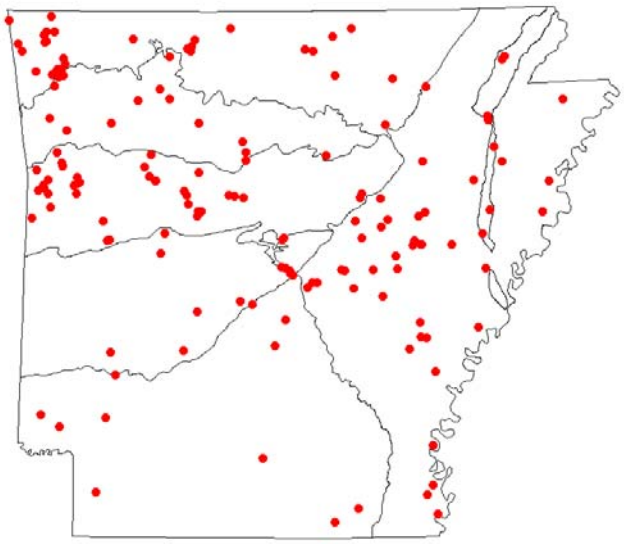
Residence: Breeding

Global Rank: G5 — Secure

State Rank: S3B — Vulnerable breeding species in Arkansas

Distribution

Occurrence Records



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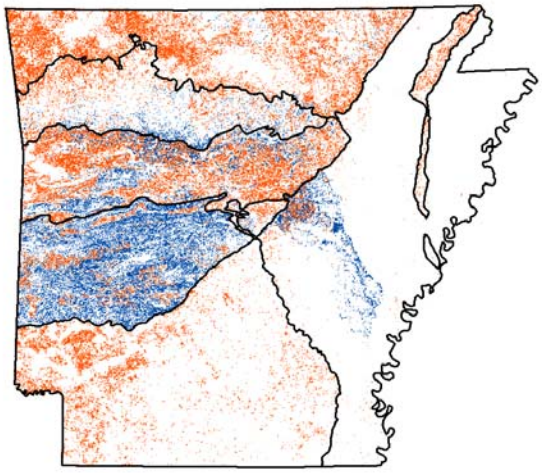
Habitat Map



Habitats

	Weight
Lower Mississippi Alluvial Plain Grand Prairie	Suitable
Ozark-Ouachita Pine-Bluestem Woodland	Suitable
Ozark-Ouachita Prairie and Woodland	Optimal
Pasture Land	Marginal
West Gulf Coastal Plain Calcareous Prairie and Woodland	Suitable

Problems Faced

KNOWN PROBLEM: Loss of extensive early successional habitat with shrub component.	Threat: Altered composition/structure Source: Fire suppression
KNOWN PROBLEM: Loss of extensive early successional habitat with shrub component.	Threat: Habitat destruction or conversion Source: Agricultural practices
KNOWN PROBLEM: Loss of extensive early successional habitat with shrub component.	Threat: Habitat destruction or conversion Source: Urban development
KNOWN PROBLEM: Parasitism by Brown-headed Cowbirds.	Threat: Extraordinary predation/parasitism/disease Source: Parasites/pathogens

Data Gaps/Research Needs

Conduct surveys to improve distribution and abundance information.
Determine if openings in bottomland hardwood restoration areas are utilized on migration or during the nesting season.
Determine the age class and extent of use of early to mid successional bottomland hardwood restoration areas both on migration and during the nesting season.
Determine whether breeding habitat type affects abundance and reproductive success to better focus effective conservation and restoration efforts.
Examine effects of the variability of the timing of arrival on breeding grounds and nest initiation on reproductive success and annual productivity and identify factors underlying this variability.
Identify source and sink populations.

Conservation Actions

	Importance	Category
Establish, restore, and manage shrubby fencerows and hedgerows in pasturelands and crop lands.	Medium	Habitat Restoration/Improvement
Reduce parasitism by Brown-headed Cowbird.	High	Threat Abatement
Restore habitat.	High	Habitat Restoration/Improvement
Restore native grasslands with a shrub component.	Low	Habitat Restoration/Improvement

Monitoring Strategies

The Partners in Flight North American Landbird Conservation Plan indicates that long-term population trend monitoring for this species is generally considered adequate, but some issues, such as bias, may not have been accounted for. Expand efforts to locate and survey potential breeding habitat for this species. Continue to conduct Breeding Bird Surveys at all routes established in Arkansas. Continue tracking of this species by the Arkansas Natural Heritage Commission.

Comments

This species is affiliated with shrubby components of prairies or grasslands where it nests in thickets. Where the habitat is patchy, many nests are parasitized by Brown-headed Cowbirds. (Arkansas Audubon Society 2012, Brown 1993, Hamel 1992, James and Neal 1986, Martin and Finch 1995, National Audubon Society 2002, Rich and others 2004, Sauer and others 2004)

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