

Red-headed Woodpecker (*Melanerpes erythrocephalus*) Species Guidance

Family: Picidae – the woodpeckers

Species of Greatest Conservation Need (SGCN)

State Status: [SC/M \(Special Concern/Migratory Bird Protection\)](#) (1997)

State Rank: [S3B](#)

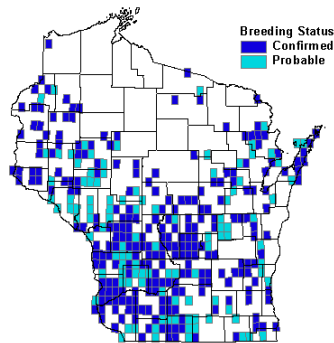
Federal Status: [None](#)

Global Rank: [G5](#)

Wildlife Action Plan

Mean Risk Score: [3.57](#)

Wildlife Action Plan Area of Importance Score: [4](#)



Red-headed Woodpecker Breeding Locations from Breeding Bird Atlas (Cutright et al. 2006)



Photo by Dave Menke, U.S. Fish and Wildlife Service

Species Information

General Description: The Red-headed Woodpecker is a medium-sized (9 in) woodpecker with unmistakable plumage. Sexes are identical, and possess a bright red hood over the head, neck, and throat, a white rump, large white wing patches, glossy blue-black upperparts, and white underparts. The tail is black with white outer feathers. The Red-headed woodpecker's year-round call is described as a high-pitched 'churr' or 'quirr.' During the breeding season, contact calls between pairs and territorial calls are described as 'kwi-urr' or 'queer' (Winkler et al. 1995, Smith et al. 2000). An example of a typical song can be heard here:

<http://www.allaboutbirds.org/guide/Red-headed_Woodpecker/sounds>

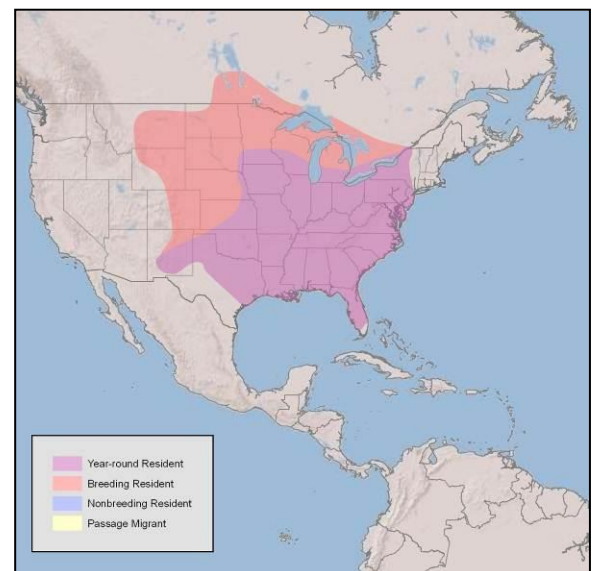
Definitive Identification: The Red-headed Woodpecker is distinguished from all other woodpeckers in Wisconsin by its completely red hood and large white wing patches (Smith et al. 2000).

Similar Species: The Red-bellied Woodpecker (*Melanerpes carolinus*) is similar in size, shape, and call, but has a tan body with black-and-white barring on the back and wings, a small red spot on the belly (sometimes difficult to see), and only a small patch of red on the head and nape. They also have a deeply undulating flight, whereas the Red-headed Woodpecker flies more directly with a "rowing" wing-beat.

Associated Species: Within oak opening habitat in Wisconsin, Red-headed Woodpecker may occur with the following Species of Greatest Conservation Need (SGCN; WNR 2005): Brown Thrasher (*Toxostoma rufum*), Field Sparrow (*Spizella pusilla*), Vesper Sparrow (*Pooecetes gramineus*), Blue-winged Warbler (*Vermivora pinus*), Eastern Meadowlark (*Sturnella magna*), Sharp-tailed Grouse (*T. phasianellus*), and Northern Bobwhite (*Colinus virginianus*). Within oak woodland habitat in Wisconsin, Red-headed Woodpecker may occur with the following SGCN: Whip-poor-will (*Caprimulgus vociferus*), Blue-winged Warbler (*Vermivora pinus*), Cerulean Warbler (*Dendroica cerulea*), and Wood Thrush (*Hylocichla mustelina*).

State Distribution and Abundance: Red-headed Woodpeckers are notably declining in Wisconsin (Sauer et al. 2011), but they remain common in the southern and central part of the state and fairly common in the north. This species is an uncommon winter resident in southern and central Wisconsin (Robbins 1991).

Global Distribution and Abundance: Populations have historically fluctuated from abundant to the verge of extinction, but are showing overall trends of decline throughout their range (Smith et al. 2000). Population

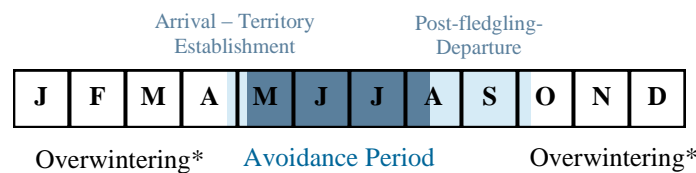


Global Range Map for Red-headed Woodpecker. (NatureServe 2013)

fluctuations may correlate with availability of nesting trees and food. Increases in abundance have been associated with increased beaver (*Castor canadensis*) activity (and thus flooded forests), for example, whereas decreases have been observed with a decline of beech trees (*Fagus grandifolia*), an important food source (Smith et al. 2000). Red-headed Woodpeckers occur from southern Manitoba south through eastern Montana, eastern Wyoming, Nebraska, eastern Colorado, New Mexico, and central Texas; east to central Florida, Georgia, the Carolinas, Virginia, Maryland, and local throughout the New England states north to southern Quebec. Northern populations generally migrate south of Kansas, Iowa, Ohio, and New Jersey (Winkler et al. 1995, Smith et al. 2000).

Diet: Red-headed Woodpeckers are omnivorous, and they divide their diet roughly equally between animals and plants (Terres 1991). Animal foods include ants and wasps (Hymenoptera), weevils and other beetles (Coleoptera), millipedes and centipedes, grasshoppers (Orthoptera), and spiders (Araneae) (Beal 1895). They also eat eggs and/or young of small birds and mice (Bent 1939). Plant food includes corn, berries, cherries, grapes, acorns and beechnuts (Terres 1991). This species stores caches of nuts, corn, and even insects in shallow tree cavities.

Reproductive Cycle: Migratory¹ Red-headed Woodpeckers arrive in Wisconsin between late April and late May (Robbins 1991). In Wisconsin, dates for nests with eggs range from May 12 to June 19 (Robbins 1991). Red-headed Woodpeckers exhibit a Complex Basic Strategy for molt (Howell et al. 2003), which includes complete prebasic, partial preformative, and no prealternate molts (Smith et al. 2000). Molt may begin on the breeding grounds and end on wintering grounds.



*Significant numbers may overwinter in the state if there is an abundant crop of acorns (Robbins 1991).

Ecology: Red-headed Woodpeckers dart out from perches to capture flying insects or glean them from the ground or shrubs but only rarely drill into trees (Bock et al. 1971). This species also stores caches of nuts, corn, and even insects in shallow tree cavities.

Adults frequently return to the same breeding site year after year and may reuse the same cavity. They aggressively defend territorial boundaries during both the breeding and non-breeding seasons. Red-headed Woodpeckers engage in frequent intraspecific disputes and are also known to attack and destroy nests of Northern Flicker (*Colaptes auratus*), Tree Swallow (*Tachycineta bicolor*), Baltimore Oriole (*Icterus galbula*), Eastern Kingbird (*Tyrannus tyrannus*), Eastern Phoebe (*Sayornis phoebe*), Great-crested Flycatcher (*Myiarchus crinitus*), European Starling (*Sturnus vulgaris*), Red-bellied Woodpecker, and even the larger Pileated Woodpecker (*Dryocopus pileatus*). Pairs establish breeding-season territories that are generally greater than seven acres, and winter territories vary from 0.07-2.5 acres (Smith et al. 2000).

A nest hole is drilled by the male into dead tops, bark-free snags, or stumps of large trees between 2.1-24.3 m (7-80 ft) above the ground; most are seven to 11.8 m (23-39 ft) above ground (Smith et al 2000). Cavities are often located in snags with no remaining bark. Preferred trees vary from 30.5-88.9 cm (12-35 in) DBH (diameter at breast height). At Necedah National Wildlife Refuge, the average cavity height is 8.2 m (27 ft) (King and Mueller 2005). The entrance hole is approximately 4.4 cm (1.75 in) wide, and the nest cavity is eight to 24 inches deep (Terres 1991).

Red-headed Woodpeckers occur regularly in oak savannas or other upland habitats with scattered trees, and in floodplain forest and even residential areas (Figs. 2 & 3; Mossman et al. 1991, Smith et al. 2000, Hansen and Mueller 2006).

Females typically lay 4 to 7 eggs, and occasionally as many as 10 (Winkler et al. 1995, Smith et al. 2000). Nests are very rarely parasitized by Brown-headed Cowbirds (*Molothrus ater*; Smith et al. 2000). Both sexes are involved with incubation and care of the nestlings. Young depart the nest after 24 to 31 days (Smith et al. 2000). Pairs often start a second brood while still tending to fledglings of the first (Winkler et al. 1995).

¹ Significant numbers may overwinter in the state if there is an abundant crop of acorns (Robbins 1991).



Red-headed Woodpeckers use both upland and lowland habitats such as the restored oak savanna at left (Pleasant Valley Conservancy State Natural Area in Dane County, © Tom Brock) and the floodplain forest at right (Rush River Delta SNA in Pierce County, Rich Staffen, Wisconsin DNR). Key elements are large snags, high density of dead limbs, and clusters of snags or trees with dead limbs.

Natural Community Associations ([WDNR 2005](#), [WDNR 2009](#)):

Significant: [oak opening](#), [oak woodland](#)

Moderate: Central Sands pine-oak forest, floodplain forest, oak barrens, southern dry forest, southern dry-mesic forest

Minimal: none

Habitat: The Red-headed Woodpecker inhabits a wide variety of habitat types, including deciduous woodlands, lowland and upland habitats, and residential areas (Smith et al. 2000). In Wisconsin, it often occurs in oak savanna, oak barrens, and other open upland sites with scattered trees (Mossman et al. 1991, Hansen and Mueller 2006). Although this species prefers to nest in oak trees, it will choose other tree species where oaks are less numerous (Robbins 1991). At Necedah NWR, this species preferred pin oak (*Quercus palustris*) and big-toothed aspen (*Populus grandidentata*) as nest sites (King et al. 2007). The Red-headed Woodpecker typically nests in dead trees or dead limbs of live trees, but it also uses natural cavities, telephone poles, and other structures.

Researchers have studied Red-headed Woodpecker habitat requirements in a variety of natural and anthropogenic settings under varying disturbance regimes, including restored oak savanna (Waldstein 2012, King et al. 2007), oak woodland/forest (Giese and Cuthbert 2003, Sedgwick and Knopf 1990), golf courses (Rodewald et al. 2005), post-wildfire pine/aspen woodland (Vierling and Lentile 2006), and pine forest (Vierling et al. 2009). Findings vary, but the following general habitat attributes consistently appeal to Red-headed Woodpeckers in most settings: 1) large snags are most favored for nest sites (≥ 25.4 cm [10 in] DBH), 2) high density of dead limbs on the nest tree and within its surroundings are extremely important; dead limbs within 9.7 m (32 ft) of the ground are particularly favored, perhaps due to their provision of a low perch for spying and gleaning ground-dwelling invertebrates (Waldstein 2012), and 3) retention of clusters of snags or live trees with dead limbs favors Red-headed Woodpecker usage over retention of scattered ones (Sedgwick and Knopf 1990, King et al. 2007).

Threats: The Red-headed Woodpecker was persecuted in the late nineteenth century because it was considered an agricultural pest. Nest sites may also have decreased significantly as a result of American elm losses from Dutch elm disease (Adams and Wenger 2011). During the 1940s through early 1960s, application of the insecticide DDT (dichlorodiphenyltrichloroethane) to save elms threatened by Dutch elm disease not only caused a decrease in egg viability, but may also have diminished important insect resources for this species (Adams and Wenger 2011). Today, loss of snags, fire suppression, firewood harvest, vehicle-caused mortality and, most significantly, ecological succession of open woodlands/oak savannas to closed-canopy woodlands, all pose significant threats (Smith et al 2000, Hansen and Mueller 2006). Non-native invasive shrubs such as common buckthorn (*Rhamnus cathartica*) may also degrade savanna and woodland habitat and thus pose a threat to Red-headed Woodpeckers (WDNR 2005).

Climate Change Impacts: In 2011, the Wisconsin Initiative on Climate Change Impacts (WICCI) Wildlife Working Group convened a workshop with bird experts from the University of Wisconsin, Wisconsin DNR, US Geological Survey, and the Western Great Lakes Bird and Bat Observatory to promote understanding of climate sensitivity for Wisconsin's birds and to categorize species into management-priority categories. The Working Group placed Red-headed Woodpecker in the "Hold Action" category, indicating that this species is likely not sensitive to climate change impacts. Oak savanna communities and the animals that rely upon them (including Red-headed Woodpeckers) may benefit from more numerous fires as a result of climate change (WICCI 2011).

Survey Guidelines: Line transects together with call playback are effective techniques for surveying Red-headed Woodpeckers. Conduct surveys during the part of the breeding season when the species is reliably detectable: May 25 to June 30. Carry out three surveys before initiating any project activities, preferably 10 days apart, including at least one survey less than one week prior to proposed project activity. Begin surveys within 15 minutes of sunrise and complete them within 4 hours, or no later than 10 a.m. Conduct surveys during appropriate weather (i.e., no fog, rain, or wind > 10 mph; Ralph et al. 1993).

Survey the entire affected area that contains suitable nesting habitat for Red-headed Woodpeckers. To efficiently survey projects larger than 100 acres, two or more surveyors should conduct concurrent surveys. Mark the entire area with parallel line transects spaced 183 m (200 yd) apart. Survey the site by walking slowly along each line transect, stopping every 183 m to broadcast the Red-headed Woodpecker call. Use an MP3 player or similar audio device attached to a portable megaphone capable of broadcasting sounds up to 183 m. At each 183 m stop, listen for two minutes before broadcasting the call. If no Red-headed Woodpeckers are heard, broadcast pre-recorded Red-headed Woodpecker calls and drumming for three minutes, and then follow with another two minutes of silent observation. While walking between stops and at each stop, look for signs of fresh excavations or active cavities.

Summarize results, including survey dates, times, weather conditions, number of detections, detection locations, and behavioral data and submit via the WDNR online report: <<http://dnr.wi.gov>, keyword “rare animal field report form”>.

Management Guidelines

The following guidelines typically describe actions that will help maintain or enhance habitat for the species. These actions are not mandatory unless required by a permit, authorization or approval.

Red-headed Woodpecker conservation in Wisconsin requires protecting oak savanna, other oak-dominated woodlands, and floodplain forest. Suitable breeding habitat has large snags (> 25.4 cm [10 in] DBH) and/or a high density of dead limbs on the nest tree and within its surroundings, especially low limbs that are within 9.7 m (32 ft) of the ground. Nesting suitability increases when these habitat resources occur in clusters rather than in a scattered distribution. King and collaborators (2007) found that the most reliable predictor of nest occurrence at a Necedah National Wildlife Refuge oak savanna restoration site was density of trees with dead limbs (limbs at least one meter [3.3 ft] long and 10 cm [3.9 in] in diameter), with nest occurrence at 80% with at least seven trees with dead limbs per 0.1 acre. The same study site at Necedah (where 70 pairs of Red-headed Woodpeckers had established nesting territories) was described at a larger scale as having 28 trees/acre and 13 snags/acre (King and Mueller 2005). In a Colorado floodplain forest, Red-headed Woodpeckers favored sites where the ratio of living versus snag trees was roughly equal, and canopy cover was roughly 26% (Sedgwick and Knopf 1990).

Focus management activities in appropriate ecological landscapes, which include [central sand hills](#), [southwest savanna](#), [western coulees and ridges](#), and [western prairie](#), and at important conservation sites such as Necedah National Wildlife Refuge (Juneau County) and Fort McCoy (Monroe County) (WDNR 2005). Tract size evidently has little effect on breeding abundance or success, and therefore excellent opportunities to manage for this species occur on smaller private lands, golf courses, and city parks (Rodewald et al. 2005, Brawn 2006). Because snags and/or live trees with dead limbs are essential to Red-headed Woodpecker habitat, carefully consider the impact of timber management that involves removal of these resources (e.g., pruning dead limbs, conducting salvage timber harvests in areas with high levels of standing dead woody fuel, and firewood harvesting) (King et al. 2007). In savanna restoration projects where canopy opening is desired, girdle target trees to create snags rather than cutting and removing them.

Prescribed fire in natural settings also promotes Red-headed Woodpecker habitat (Au et al. 2008, Brawn 2006, Davis et al. 2000, King et al. 2007, Vierling and Lentile 2006, Waldstein 2012). Fire not only creates snags and dead tree limbs on live trees, it also limits forest succession, limits dominance of or potentially eliminates non-native invasive shrubs, and promotes environmental conditions for growth of native plants in oak-dominated ecosystems. Prescribed fire also can change the character of the understory, but studies on understory influence on nest-site suitability are inconclusive. King and collaborators (2007) observed that low-density understories are favorable to Red-headed Woodpecker usage in restored oak savanna, but Waldstein (2012) found no link between understory character and Red-headed Woodpecker suitability in oak savanna. Vierling and Lentile (2006) found that high-density understories in post-fire aspen stands were more highly favored by Red-headed Woodpeckers than those stands with low-density understories.

Screening Procedures

The following procedures should be followed by DNR staff reviewing proposed projects for potential impacts to the species.

Although the Red-headed Woodpecker is listed as a species of special concern and included in the Natural Heritage Inventory (NHI) database, it is not formally tracked by NHI at this time. Because occurrences for this species are not available to NHI data users, direct observations or other non-NHI data sources would be needed to determine species presence or likelihood of presence. Please see the *Avoidance Measures* if you believe the Red-headed Woodpecker is present where you are working. Note that some users of this

document may choose to assume presence based on habitat and location.

Avoidance Measures

The following measures are specific actions required by DNR to avoid take (mortality) of state threatened or endangered species per Wisconsin's Endangered Species law (s. 29.604, Wis. Stats.) These guidelines are typically not mandatory for non-listed species (e.g., special concern species) unless required by a permit, authorization or approval.

Red-headed Woodpeckers are protected by the Federal Migratory Bird Treaty Act of 1918, which established a prohibition, unless permitted by regulations, to "pursue, hunt, take, capture, kill, attempt to take, capture or kill, possess, offer for sale, sell, offer to purchase, purchase, deliver for shipment, ship, cause to be shipped, deliver for transportation, transport, cause to be transported, carry, or cause to be carried by any means whatever, receive for shipment, transportation or carriage, or export, at any time, or in any manner, any migratory bird, included in the terms of this Convention...for the protection of migratory birds...or any part, nest, or egg of any such bird." (16 U.S.C. 703). Contact the US Fish and Wildlife Service directly for any permits related to the Federal Migratory Bird Treaty Act (see *Contact Information*).

If *Screening Procedures* above indicate that avoidance measures are required for a project, follow the measures below. If you have not yet read through *Screening Procedures*, please review them first to determine if avoidance measures are necessary for the project.

1. The simplest and preferred method to avoid take of Red-headed Woodpeckers is to avoid impacts to Red-headed Woodpeckers, known Red-headed Woodpecker locations, or areas of suitable habitat (described above in the "Habitat" section and in *Screening Procedures*).
2. If Red-headed Woodpecker impacts cannot be avoided, avoid impacts during the **breeding season (May 10 to August 15)**.
3. If Red-headed Woodpecker impacts cannot be avoided, please contact the DNR species expert (see *Contact Information*) to discuss possible project-specific avoidance measures.

Additional Information

References

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Linked Websites:

- Cornell Lab of Ornithology All About the Birds: <http://www.allaboutbirds.org/guide/bells_vireo/id>
- Natural Communities of Wisconsin: <<http://dnr.wi.gov>, key word "natural communities">

- Rare Animal Field Report Form: <<http://dnr.wi.gov>, key word “rare animal field report form”>
- Wisconsin Bird Conservation Initiative All-Bird Conservation Plan: <<http://www.wisconsinbirds.org/plan/species/bevi.htm>>
- Wisconsin Wildlife Action Plan: <<http://dnr.wi.gov>, key word “Wildlife Action Plan”>
- Wisconsin Endangered and Threatened Species: <<http://dnr.wi.gov>, key word “endangered resources”>
- Wisconsin Natural Heritage Inventory Working List Key: <<http://dnr.wi.gov>, key word “Natural Heritage Working List”>
- U.S. Fish and Wildlife Service Birds of Conservation Concern: <<http://www.fws.gov/migratorybirds/>>

Funding

- Natural Resources Foundation of Wisconsin: <<http://www.wisconservation.org/>>
- USFWS State Wildlife Grants Program: <<http://wsfrprograms.fws.gov/subpages/grantprograms/swg/swg.htm>>
- Wisconsin Natural Heritage Conservation Fund
- Wisconsin DNR Division of Forestry

Contact Information (Wisconsin DNR Species Experts for Red-headed Woodpecker)

- [Amy Staffen](mailto:amy.staffen@wisconsin.gov), WI Department of Natural Resources, Bureau of Natural Heritage Conservation (608-261-0747, amy.staffen@wisconsin.gov)
- [Kim Grveles](mailto:kim.grveles@wisconsin.gov), WI Department of Natural Resources, Bureau of Natural Heritage Conservation (608-264-8594, kim.grveles@wisconsin.gov)

Contact Information (Federal Migratory Bird Treaty Permits or Questions)

- [Larry Harrison](mailto:Larry_Harrison@fws.gov), U.S. Fish and Wildlife Service, 5600 American Blvd. West, Suite 990, Bloomington, MN 55437-1458 (612-713-5489, Larry_Harrison@fws.gov)
- See also <<http://www.fws.gov/migratorybirds/mbpermits.html>>

Endangered Resources Review Program Contacts

- General information (608-264-6057, DNRRERReview@wisconsin.gov)

Suggested Citation

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- Gregor W. Schuurman, primary editor

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