

Appendix A: Birds

Wood Thrush

Hylocichla mustelina

Federal Listing	N/A
State Listing	N/A
Global Rank	G5
State Rank	S5
Regional Status	Very High



Photo by Pamela Hunt

Justification (Reason for Concern in NH)

The Wood Thrush is one of several still-common forest birds that are experiencing significant population declines across much of their ranges, and as a result is considered a Regional SGCN in the Northeastern United States (USFWS Region 50). It is also on the Partners in Flight Watch List and the focus of a working group dedicated to range-wide and full life cycle conservation of the species. Populations in New Hampshire have declined at 4.77%/year since 1966, and 4.88%/year since 2003. Long term trends are similar in BCR 14 (-4.66%/year) and BCR 30 (-2.85%/year).

Distribution

The Wood Thrush breeds east of the Great Plains from southern Canada to northern Florida, and winters in Middle America from southern Mexico through Costa Rica (Evans et al. 2011). In New Hampshire they occur statewide, but are less common north of the White Mountains and absent from higher elevations (Foss 1994).

Habitat

The Wood Thrush uses a wide range of hardwood and mixed forests with mesic soils and well-developed shrub and sub canopy layers. In some parts of its range the species is considered area sensitive, and often experiences reduced reproductive success in smaller forest fragments (Evans et al. 2011).

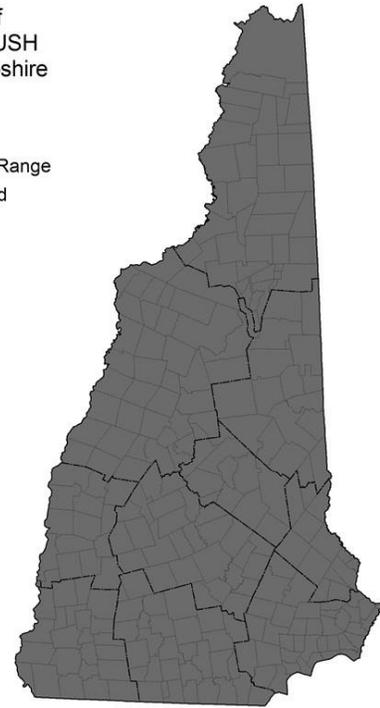
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NH Wildlife Action Plan Habitats

- Appalachian Oak Pine Forest
- Hemlock Hardwood Pine Forest
- Floodplain Habitats
- Northern Hardwood-Conifer Forest

Distribution of
WOOD THRUSH
in New Hampshire

■ Current Range
▨ Localized



Distribution Map

Current Species and Habitat Condition in New Hampshire

Significant rangewide population declines (see Justification).

Population Management Status

Management is not currently in place for this species.

Regulatory Protection (for explanations, see Appendix I)

- Migratory Bird Treaty Act (1918)

Quality of Habitat

Unknown

Habitat Protection Status

Highly variable

Habitat Management Status

Habitat management has not been implemented for this species.

Threats to this Species or Habitat in NH

Threat rankings were calculated by groups of taxonomic or habitat experts using a multistep process (details in Chapter 4). Each threat was ranked for these factors: Spatial Extent, Severity, Immediacy, Certainty, and Reversibility (ability to address the threat). These combined scores produced one overall threat score. Only threats that received a “medium” or “high” score have accompanying text in this profile. Threats that have a low spatial extent, are unlikely to occur in the next ten years, or there is uncertainty in the data will be ranked lower due to these factors.

Habitat conversion due to development on winter grounds (Threat Rank: Medium)

Annual rates of forest loss in some Central American countries are greater than 1%, and winter habitat loss has been proposed as a potentially limiting factor for Wood Thrush populations (Rappole and MacDonald 1994). There is also increasing evidence that habitat quality on the winter grounds can have a significant effect on the population dynamics of migratory birds (Norris et al. 2004), even if habitat is not lost outright to development or agriculture.

Habitat conversion due to development (Threat Rank: Medium)

Ongoing residential and commercial development results in permanent loss of habitats for wildlife. Many forest birds are area sensitive (e.g., Zuckerberg and Porter 2010) and less likely to occupy habitat patches in landscapes with less forest cover. See the forest habitat profiles for more information.

Habitat conversion and degradation from agriculture on winter grounds (Threat Rank: Medium)

Annual rates of forest loss in some Central American countries are greater than 1%, and winter habitat loss has been proposed as a potentially limiting factor for Wood Thrush populations (Rappole and MacDonald 1994). There is also increasing evidence that habitat quality on the winter grounds can have a significant effect on the population dynamics of migratory birds (Norris et al. 2004), even if habitat is not lost outright to development or agriculture.

Habitat conversion and fragmentation from tower and turbine development (Threat Rank: Medium)

Towers and turbines and their supporting infrastructure result in both the direct loss of habitat and fragmentation of adjacent non-cleared forest. Both these impacts can affect forest birds as discussed elsewhere. See the forest habitat profiles for more information.

Habitat conversion and degradation from timber harvest (Threat Rank: Medium)

To the extent that timber harvest can remove mature forest from the landscape, its short-term effects can be similar to those of residential or commercial development for forest birds. At the same time, if regenerating forest contains a different species composition its suitability for specific forest birds could either increase or decrease. Wood Thrushes seem to prefer mid-successional stages of hardwood forest, so most logging activity (at the scale it occurs in NH) is unlikely to significantly affect the species population in the state.

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Habitat degradation from insect pests (introduced species) (Threat Rank: Medium)

To the extent that insect pests can alter forest species composition, they may have trickle down effects on the bird that use these habitats, although detailed studies of these effects have yet to be carried out. See the forest habitat profiles for more information.

Disturbance (parasitism) and mortality from subsidized or introduced predators (Threat Rank: Medium)

In fragmented forest systems, brood parasitism by the Brown-headed Cowbird (*Molothrus ater*) has been implicated in declining forest bird populations (Brittingham and Temple 1983), including Wood Thrush. Although the extent of such parasitism in New Hampshire is unknown, the state's extensive forest cover likely reduces the overall risk (c.f., Hoover and Brittingham 1993). Thrushes and their nests are also subject to predation by human commensals such as free-ranging cats, raccoons, and corvids.

Habitat impacts and disturbance from acid deposition that reduces availability of prey species (Threat Rank: Medium)

Although emissions controls have moderated the pH of precipitation in the northeastern United States, potential long-term effects on ecosystems are now known to include declines in terrestrial invertebrates that require calcium in their shells or exoskeletons. In turn, birds that prey upon such invertebrates may experience prey limitation or insufficient calcium intake, which can compromise reproductive success (Graveland 1998). With specific reference to the Wood Thrush, Hames, et al. (2002) determined that the probability of breeding was negatively correlated with the intensity of acid deposition across the species' range in the eastern United States, and that such a relationship could contribute to observed population declines.

List of Lower Ranking Threats:

Disturbance from noise associated with recreational activity

Habitat impacts from road fragmentation

Actions to benefit this Species or Habitat in NH

No actions identified, but see appropriate forest habitat profile(s) for actions that would likely benefit this species.

References, Data Sources and Authors

Data Sources

Trend data from Breeding Bird Survey (Sauer et al. 2014, above).
NH distribution data from NHBR/NH eBird

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Data Quality

Because this species is easily detected and identifiable, data on distribution and habitat use are generally well known.

2015 Authors:

Pamela Hunt, NHA

2005 Authors:

Literature

Brittingham, M.C., and Temple, S.A. 1983. Have cowbirds caused forest songbirds to decline? *BioScience* 33: 31-35.

Evans, M., E. Gow, R.R. Roth, M.S. Johnson, and T.J. Underwood. 2011. Wood Thrush (*Hylocichla mustelina*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu.bnaproxy.birds.cornell.edu/bna/species/246doi:10.2173/bna.246>

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Hames, R.S, K.V. Rosenberg, J.D. Lowe, S.E. Barker, and A.A. Dhondt. 2002. Adverse effects of acid rain on the distribution of the Wood Thrush *Hylocichla mustelina* in North America. *PNAS* 99: 11235–11240.

Hoover, J.P., and M.C. Brittingham. 1993. Regional variation in cowbird parasitism of Wood Thrushes. *Wilson Bulletin* 105: 228-238.

Norris, D.R., Marra, P.P., Kyser, T.K., Sherry, T.W., and Ratcliffe, L.M. 2004. Tropical winter habitat limits reproductive success on the temperate breeding grounds in a migratory bird.

Rappole, J.H., and M.V. McDonald. 1994. Cause and Effect in Population Declines of Migratory Birds. *Auk* 111: 652-660

Sauer, J.R., J.E. Hines, J.E. Fallon, K.L. Pardieck, D.J. Ziolkowski, Jr., and W.A. Link. 2014. *The North American Breeding Bird Survey, Results and Analysis 1966 - 2013*. Version

Zuckerberg, B. and W.F. Porter. 2010. Thresholds in the long-term responses of breeding birds to forest cover and fragmentation. *Biological Conservation* 143: 952–962.