

SPECIES PROFILE

Eastern Towhee

Pipilo erythrophthalmus

Federal Listing: Not listed

State Listing: Not listed

Global Rank: G5

State Rank: S4B

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ELEMENT 1: DISTRIBUTION AND HABITAT

1.1 Habitat Description

Eastern towhees use a variety of early successional and other shrub-dominated habitats, including pine barrens, old fields, power line corridors, coastal shrub-scrub, and occasionally the shrubby portions of bogs and fens. The species also occurs in forested habitats if overstory trees are scattered (woodland habitat) or the shrub layer is well developed (Greenlaw 1996). In West Virginia, towhees responded positively to defoliation caused by gypsy moth outbreaks (Bell and Whitmore 1997). In Massachusetts pine barrens, towhees occupied habitats at a variety of successional stages and did not appear to select microhabitats within the broader habitat type (Morimoto and Wasserman 1991). In New Hampshire, towhees are sometimes found in the shrubby vegetation on some mountaintops, especially if the area had been burned (Foss 1994).

Fire suppression in southeastern United States pine savannahs results in increasing density and height of hardwood species (Engstrom et al. 1984). At one such site in Florida, towhee numbers increased in the years immediately following initial fire suppression, presumably in response to the increased shrub layer. As succession continued, however, towhee numbers began to decline, and the species was no longer present at the site 15 years after the last burn (Engstrom et al. 1984). These and other data indicate that towhees are often most common in shrubby habitats with low

densities of saplings (vs. shrubs), suggesting in turn that not all early successional stages are equally suitable for the species. In addition, Wells (2003) determined that towhee populations inhabiting powerline rights-of-way were not sustainable. Whether this is a result of generally low habitat availability in the study area (southeastern New Hampshire) or specific habitat characteristics is a subject needing further study.

1.2 Justification

Based on Breeding Bird Survey (BBS) data, eastern towhees have been declining over most of their range. The decline has been particularly severe in the Northeast, where towhees have declined at an annual rate of 3.0% since 1966 (Hagen 1993, Sauer et al. 2004). Elsewhere in the East, the long-term decline may have become less severe since the late 1970s, and in some regions formerly declining towhee populations appear stable or perhaps increasing (Sauer et al. 2004). In New Hampshire, the annual decline of 9.2% is the second largest significant decline of any species based on Breeding Bird Survey (BBS) data (behind the brown thrasher). Breeding Bird Survey data from New Hampshire show the most dramatic decrease in the late 1970s, when the average number per route dropped from 15-20 to 5 over a period of only 5 years (figure 1). Since this large drop, populations have continued to decline, although at a slower rate. Because of these significant population declines across most the species' range, the eastern towhee has been listed as a "stewardship species" in the Eastern Avifaunal Biome by Partners in Flight (Rich et al. 2004). Although towhees are not rare enough to be listed in any jurisdiction, their continued decline and absence from areas of seemingly suitable habitat remains cause for concern (Hagen 1993).

1.3 Protection and Regulatory Status

This species is protected under the Migratory Bird Treaty Act, which prevents the killing of most non-game birds and collection of their nests or eggs.

1.4 Population and Habitat Distribution

In New Hampshire, eastern towhees are largely restricted to areas south of the White Mountains. Data from the BBS and the Breeding Bird Atlas (Foss 1994) show occasional records north of the mountains in the Connecticut and Androscoggin River valleys, but the species should not be expected there and BBS data suggest that towhees were extirpated from this part of the range during the decline in the 1970s. Towhees are fairly evenly dispersed over most of their range, with generally lower densities along the northern periphery (including New Hampshire, Sauer et al. 2004). Given the magnitude of decline, it is reasonable to assume that New England formerly supported a much more significant portion of the species' global population than it does today.

1.5 Town Distribution Map

Not completed for this species.

1.6 Habitat Map

Not applicable

1.7 Sources of Information

Information in this profile was gathered from the relevant scientific literature. Raw BBS data for New Hampshire were obtained via the BBS website.

1.8 Extent and Quality of Data

Because towhees are easily identifiable and widely distributed, data on population distribution and trends are generally assumed to accurately reflect the species' status in the state and across the range as a whole.

1.9 Distribution Research

Very little is known about the demography of this species (Hagen 1993). Data on nest site selection, reproductive success, and response to landscape level habitat change may allow biologists to better under-

stand the mechanisms behind population declines and the absence of towhees from apparently suitable habitat across much of its range in New England.

ELEMENT 5: REFERENCES

5.1 Literature

- Bell, J.L., and R.C. Whitmore. 1997. Eastern Towhee numbers increase following defoliation by gypsy moths. *Auk* 114: 708-716.
- Engstrom, R.T., R.L. Crawford, and W.W. Baker. 1984. Breeding bird populations in relation to changing forest structure following fire exclusion: a 15-year study. *Wilson Bulletin* 96: 437-450.
- Foss, C.R. 1994. Atlas of Breeding Birds of New Hampshire. Audubon Society of New Hampshire, Concord, New Hampshire, USA.
- Greenlaw, J.S. 1996. Eastern Towhee (*Pipilo erythrophthalmus*). In *The Birds of North America*, No. 262. (A. Poole and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA, and The American Ornithologists' Union, Washington, D.C.
- Hagen, J.M., III. 1993. Decline of the Rufous-sided Towhee in the eastern United States. *Auk* 110: 863-874.
- Morimoto, D.C., and F.E. Wasserman. 1991. Dispersion patterns and habitat associations of Rufous-sided Towhees, Common Yellowthroats, and Prairie Warblers in the southeastern Massachusetts pine barrens. *Auk* 108: 264-276.
- Rich, T.D., C.J. Beardmore, H. Berlanga, P.J. Blancher, M.S.W. Bradstreet, G.S. Butcher, D.W. Demarest, E.H. Dunn, W.C. Hunter, E.E. Inigo-Elias, J.A. Kennedy, A.M. Martell, A.O. Panjabi, D.N. Pashley, K.V. Rosenberg, C.M. Rustay, J.S. Wendt, and T.C. Will. 2004. Partners in Flight North American Landbird Conservation Plan. Cornell Lab of Ornithology, Ithaca, New York, USA.
- Sauer, J.R., J.E. Hines, and J. Fallon. 2004. The North American Breeding Bird Survey, Results and Analysis 1966-2003. Version 2004.1, USGS Patuxent Wildlife Research Center, Laurel, Maryland, USA.
- Wells, D.B. 2003. Shrubland bird diversity and productivity along powerline rights-of-way in southeastern New Hampshire. Masters Thesis, University of Vermont, Burlington, Vermont, USA.

5.2 Data Sources

Breeding Bird Survey raw data were obtained from:
<http://www.pwrc.usgs.gov/bbs/retrieval/menu.cfm>

ELEMENT 6: LIST OF FIGURES

Figure 1. Average abundance of the eastern towhee on New Hampshire Breeding Bird Survey Routes, 1966-2004.

