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Research Paper

Evaluating the National Wildlife Federation's Certified Wildlife Habitat™ program

Steffenie A. Widows[a,1], David Drake[b,*]

[a] 8633 Amber Oak Court, Orlando, FL 32817, USA
[b] Department of Forest and Wildlife Ecology, University of Wisconsin-Madison, 1630 Linden Drive, Madison, WI 53706, USA

HIGHLIGHTS

- We evaluated the National Wildlife Federation's (NWF) Certified Wildlife Habitat™ program in the Orlando, Florida area.
- NWF Certified yards provided more abundant and higher quality wildlife habitat relative to non-certified yards.
- The NWF Certified Wildlife Habitat™ program needs to improve habitat connectivity between Certified yards and other larger blocks of habitat.
- The presence of fencing was one of the biggest problems with the certified yards and contributes to a lack of habitat accessibility.
- The NWF's Certified Wildlife Habitat™ program appears to be successful as an outreach program that encourages landowners to landscape and manage their property to benefit wildlife.

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ABSTRACT

The National Wildlife Federation's (NWF) Certified Wildlife Habitat™ program strives to provide habitat for wildlife, primarily in human-dominated landscapes. The main objective of our research project was to determine if yards certified in the NWF's program offered wildlife habitat not available in non-certified yards in the same neighborhood. A second objective was to validate the applications of certified landowners by examining habitat listed on their certification application relative to what was available in their yard.

Our project focused on neighborhoods within the greater Orlando, Florida metropolitan area. We visited 50 certified yards, 50 neighboring, non-certified yards, and 50 non-adjacent, non-certified yards in the same neighborhood. To evaluate the yards, we used an ecological check-list to determine the quality and quantity of wildlife habitat in each yard. Based on the results of our study, there were significant differences in both quality and quantity of habitat found in certified versus non-certified yards. The Certified Wildlife Habitat™ program is successful in that yards in the NWF program offer wildlife habitat that is not available in non-certified yards. However, our biggest recommendation for the NWF program is that it needs to have a larger, more contiguous landscape scope. Certified yards need to be adjacent, or in close enough proximity to one another that they can act as a contiguous landscape in and of themselves, but also have connection to and coordination with other larger blocks of habitat.

1. Introduction

As of 2010, 81% of Americans lived in urban environments (U.S. Census Bureau, 2010). A number of negative ecological consequences have been documented as a result of increased urbanization, among them the loss and fragmentation of native vegetation and habitats, and associated local and regional species extinctions and overall reduced diversity of wildlife species (Gaston, Warren, Thompson, & Smith, 2005; McCleery, Moorman, Wallace, & Drake, 2012). Diminished biodiversity, combined with less time spent outdoors (children in particular) and in degraded urban habitats, has led to a cycle of disaffection and apathy some have termed the extinction of experience (Miller, 2005; Pyle, 1978; Turner, Nakamura, & Dinetti, 2004). People less connected with natural areas tend to be less motivated to protect said areas (Miller, 2005; Schultz, 2000).

Urban ecosystems are very dynamic and always in a state of change (Colding, 2007). Residential yards and gardens constitute

* Corresponding author. Tel.: +1 608 890 0445.
E-mail addresses: swidows@aol.com (S.A. Widows), ddrake2@wisc.edu (D. Drake).
[1] Tel.: +1 407 538 1273.

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a large percentage of the urban footprint, and could provide substantial and relatively stable wildlife and plant habitat if managed more thoughtfully and collaboratively (Lerman & Warren, 2011). Additionally, creating and managing habitat in yards may restore and strengthen connections and interactions between humans and nature (Miller, 2005).

A number of studies in the United Kingdom (UK) and Phoenix, Arizona have looked at the conservation value of residential yards. Goddard, Dougill, and Benton (2013) examined why people garden for wildlife in Leeds, UK and found that watching or attracting wildlife was an important motivator, but not as important as the esthetic appearance or the relaxing effect gardening had. They examined 13 wildlife-friendly garden features and found that the mean number of features across all yards was 5.1, with flowering plants, shrubs/hedges, and trees being the most common habitat features. Bird feeders were the most common wildlife-specific habitat feature, with 75% of surveyed households providing bird food (Goddard et al., 2013). Gaston et al. (2007) examined urban domestic gardens in 5 UK cities and found bird feeding was the most common garden activity to benefit wildlife. The authors also found that gardening for wildlife increased with increasing size of garden and increased amount of ground cover. Gaston et al. (2005) conducted a telephone survey of 250 random households in Sheffield, UK and found that 87% of respondents had gardens, with small gardens being much more common than large gardens (mean garden size was 151 m^2, SE = 8.8). Regarding garden features beneficial for wildlife, 48% of respondents with gardens had at least some trees, 29% had compost piles, 26% had nest boxes, and 14% had gardens that contained ponds. In Phoenix, Arizona, Lerman and Warren (2011) examined the efficacy of attracting native birds to residential yards using native landscaping. They found that habitat in residential yards explained patterns of urban bird communities twice as well compared to habitat features at a regional scale. Moreover, Lerman and Warren (2011) demonstrated the importance of using native plants to attract native wildlife, but found that as neighborhoods aged, they were also more likely to support an invasive bird community.

Existing ecological structure in yards, homeowner associations covenants, codes, and restrictions, and social norms within the community often dictate the landscaping choices for residents (Richards, Mallette, Simpson, & Macie, 1984; Larson, Cook, Strawhacker, & Hall, 2010; Lerman, Turner, & Bang, 2012; Martin, Peterson, & Stabler, 2003). Rather than government policies encouraging wildlife-friendly gardening strategies, various non-government organizations have started initiatives to incent people to landscape in ways that benefit wildlife (Goddard, Dougill, & Benton, 2010). The National Wildlife Federation's (NWF) Certified Wildlife Habitat™ program is one such initiative. This program started in 1973, with the main goals to educate homeowners on the benefits of keeping their property in a more natural state, decrease the negative environmental effects of suburban development, and provide habitat for wildlife in urbanized areas (National Wildlife Federation, 2009). Although the majority of the wildlife habitats are created in suburban yards, Certified wildlife habitats can be balconies, workplaces, schools, farms, or even community gardens. The NWF Certified Wildlife Habitat™ program provides a template, in the form of a certification application, for homeowners to use in order to create/restore wildlife habitat through sustainable land management. The NWF template consists of a check-list that focuses on providing five key components: food and water sources, places for cover and to raise young, and sustainable gardening practices.

Homeowners are asked to provide elements from each of the five components within their property, and because specific elements are not stipulated by NWF, they vary across yards and regions. Providing food may include planting native forbs, shrubs, and trees, or providing supplemental feeders and food sources. Water sources may include natural features like lakes, ponds, or streams, or human-provided sources like birdbaths or rain gardens. Native vegetation, brush piles, and nest boxes are examples of wildlife shelter and places to raise young. Sustainable gardening practices may include mulching, composting, or elimination of chemical pesticides and fertilizers.

Although the program seems like a great tool to educate and encourage homeowners to create and restore wildlife habitat on their property, the Certified Wildlife Habitat program has never been evaluated in its 41-year existence. Furthermore, participation in the program is purely voluntary and there is no verification from the NWF that what homeowners are putting on the application to certify their yard is actually true. Therefore, the main objective of our study was to determine if yards enrolled in the NWF Certified Wildlife Habitat™ program offered increased quantity and quality of wildlife habitat as compared to non-certified yards in the same neighborhood. For the purpose of our study, we are defining habitat quality on each evaluated property based on availability of food, water, and shelter, as well as accessibility and proximity of habitat components to wildlife. A second objective was to validate the applications of certified homeowners by examining habitat listed on their certification application relative to what was available in their yard.

2. Methods

Our study focused on select neighborhoods within the Orlando, Florida, metropolitan area. We chose the Orlando area as our study site because it is one of the fastest growing and largest metropolitan areas and is representative of suburban areas throughout the United States. Therefore, results from our study should be helpful in providing guidance to the NWF Certified Wildlife Habitat™ program in other metropolitan areas. The NWF provided a database with completed applications from homeowners in Orange and Seminole Counties that were enrolled in the Certified Wildlife Habitat™ program. There were 212 single-family residences within the two combined counties that had certified their property. We contacted each of the 212 homeowners by mail to seek permission to access and evaluate their property. We evaluated properties of the first 50 respondents who granted us access to their property. We also conducted an identical field evaluation on 50 adjacent, non-certified yards and 50 random, non-adjacent, non-certified yards. The non-certified properties were always in the same neighborhood (i.e., subdivision) as the certified property. Facing the certified property from the street, the adjacent, non-certified yard to the right of the certified yard was always chosen to be evaluated, unless a right-side neighbor did not exist. In those cases, the adjacent house to the left of the certified house was chosen. To select the random, non-adjacent, non-certified property, we chose a random cardinal direction, walked between 1 and 3 blocks and chose a random house. All the fieldwork and data collection took place June-July 2010.

To perform our field assessment of all 150 properties, we used the NWF Wildlife Habitat Certification application form that each homeowner is required to complete in order to certify their property. However, we modified the basic application to include specific questions for more detailed information about wildlife habitat provided by each certified property (see Appendix A).

We documented general property characteristics, including approximate property value, size and shape, the type of area (urban, suburban, or rural) in which the property was located, and the housing density of the neighborhood. We determined size and shape of each lot using Google Maps. We defined urban, suburban, and rural and housing density based on the Orange and Seminole County, Florida zoning and land use codes. Within the urban and suburban