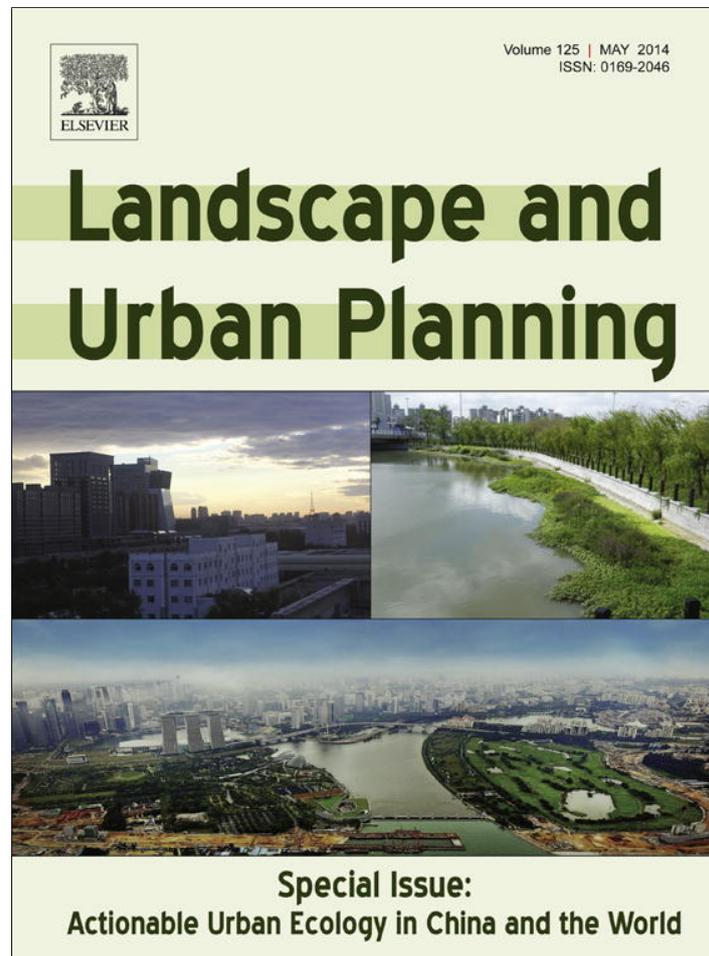


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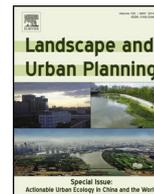
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Research Note

Nature discourses in the residential yard in Minnesota

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HIGHLIGHTS

- We describe nature discourses in homeowners' discussions about yard care.
- 42% of participants discussed yards in terms of "nature" or "natural," unprompted.
- Discourses included nature as lawn management type, ecological actor, aesthetic attributes, limited time/maintenance, and nature in relation to human function.
- Participants used the term nature as though it had an agreed upon meaning.
- Broad references to nature in public outreach messages should be refined.

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ABSTRACT

The residential yard is a relatively unexamined context of nature discourses. We analyzed residents' nature discourses in their yards that emerged during group discussions about yard care choices in the Minneapolis–Saint Paul metropolitan area of Minnesota, USA. We found the following nature discourses: nature as a lawn management type, ecological actor, aesthetic attributes, and limited time and maintenance, and nature in relation to human function. However, participants used the term nature as though it had an agreed upon meaning. These nature discourses are one example of the complexity of homeowner conceptualizations of their yards. The presence of multiple nature discourses discussed as a single idea highlights the need to refine broad references to nature in public outreach messages that seek to promote urban ecosystem quality through yard care choices. Also, the discourse of nature as ecological actor in the yard may be a starting place for communication about ecosystem functions.

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1. Introduction

"Nature" means different things to different people, across time and contexts, and these meanings of nature, expressed in nature discourses, may influence our interactions with the non-human world (e.g., Cronon, 1996; Mills, 1982; Williams, 2005). Although nature discourses have been studied extensively, the residential yard is a relatively unexamined context of nature discourses. Examining the content and variety of nature discourses in the context of the residential yard is important because residents' ideas about nature in their yards can serve as rationales for different yard management choices (Clayton, 2007; Larson, Casagrande, Harlan, & Yabiku, 2009; Nelson, Monroe, & Johnson, 2005). Landscape

management decisions in turn influence the form, function, and quality of urban ecosystems (e.g., Cadenasso & Pickett, 2008; Fissore et al., 2012; Goddard, Dougill, & Benton, 2010). Also, cultural concepts of nature may conflict with ecological quality and function of landscapes (Nassauer, 1995). Therefore, there is a need to understand what residents mean by "nature" and "natural" in their yards.

In this Research Note, we examine the content of nature discourses in the context of the residential yard that emerged in residents' discussions about their yard care choices in the Saint Paul–Minneapolis metropolitan area of Minnesota, USA. We also discuss the implications of these discourses for public outreach messages that seek to promote urban ecosystem quality through yard care stewardship.

2. Methods

We examined residents' nature discourses in the residential yard that emerged in group discussions about yard care choices

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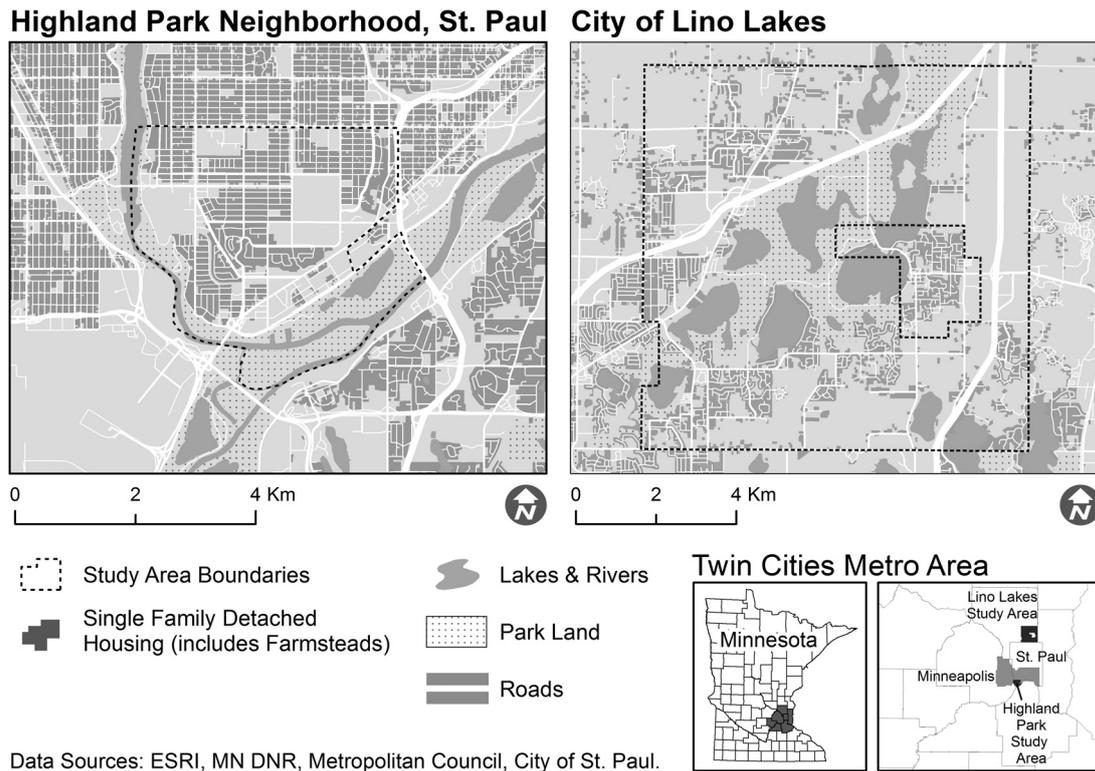


Fig. 1. Map of study sites in Minnesota, USA (Data sources include the following: Roads: Esri; City Boundaries layer (2011), Land Use (2010), and Lakes and Rivers (2005): Metropolitan Council; MN County boundaries: MN DNR.) created in ArcGIS.

in an urban and suburban area of the Saint Paul–Minneapolis metropolitan area of Minnesota, USA (see Fig. 1 Map of study sites in Minnesota, USA). These discussions were part of a larger, mixed-method study that examined how people integrate urban ecosystem concepts into the descriptions and stories they tell about their yard choices (see Dahmus & Nelson, 2014).

2.1. Study sites

Our study sites were the Highland Park neighborhood of Saint Paul in Ramsey County and the city of Lino Lakes in Anoka County, both in the Saint Paul–Minneapolis metropolitan area of Minnesota (see Fig. 1 Map of study sites in Minnesota, USA). We based our study site selection on the following criteria (as described in Dahmus & Nelson, 2014): (1) geographic location along an urban to suburban gradient within Ramsey and Anoka Counties to compare resident stories at different housing densities, (2) the absence of a major interactive lawn care program for homeowners to minimize external programming influences during the study period, (3) limited previous contact by researchers with the area, given their ongoing projects in several cities, and (4) close proximity to significant water bodies to hold distance to a water body constant.

Our urban study site, Highland Park, is a neighborhood located on the eastside of the Mississippi River in Saint Paul, Minnesota's capital. Highland Park has a combination of older housing, commercial areas, and light industry. Well-known features of this area include the Highland Village shopping area, the Ford Motor Company plant (recently closed), and mature trees. Highland Park has a population of 24,078, an estimated annual median household income of \$62,396, and approximately 5914 owner-occupied housing units (Metropolitan Council, 2012; Wilder Foundation, 2011).

Our suburban study site, the city of Lino Lakes, is located in the north suburban section of the Minneapolis–St. Paul metropolitan area (www.ci.lino-lakes.mn.us) at the intersection of I-35E and

I-35W. It has lakes, wetlands, new housing, and commercial centers. A primary amenity of the area is Rice Creek Chain of Lakes Regional Park. Lino Lakes has a population of 20,216, an estimated annual median household income of \$93,591, and 5558 owner-occupied housing units (Metropolitan Council, 2012).

2.2. Group discussion recruitment

Our “Yard Care Choices in Urban Living” survey served as our recruitment tool for participants in group discussions about yards choices. In April 2011, we mailed this survey to 2000 single-family, owner-occupied households in both Highland Park and Lino Lakes, for a total of 4000 surveys. Our survey sample frame included owner-occupied, detached residences because homeowners are more likely than renters to have control over yard care decisions, and detached residences are more likely than multiple housing units to have yards. We received 942 completed surveys, a response rate of 24%. Our non-response bias tests indicated that our survey participants may contain biases for households that have owned their home slightly longer, identify racially as white, have slightly higher levels of education and income, and are slightly older.

To recruit participants for discussions, we included a question on the survey that asked participants if they were interested in participating in information exchanges about yard care choices during the summer of 2011. 667 participants indicated interest in participating in these exchanges. We mailed invitations to participate in two yard choices discussions to these residents, and 73 residents accepted our invitation. 62 residents participated in the group discussions (39 from Highland Park and 23 from Lino Lakes). We divided participants into discussion groups of approximately 8–10 people based on participants' schedules (with 4 discussion groups in Highland Park and 3 discussion groups in Lino Lakes). We compared survey participants who participated in discussions with those who did not on a variety of criteria including

demographic variables (i.e. education, race, length of homeownership, income, home value, children living at home, age, lot size) and basic yard care (i.e. fertilizing, watering, knowledge of lawn inputs). Discussants and survey-only participants showed no significant differences in regard to these variables, with the exception of Highland Park discussants being slightly older with fewer children living at home than Highland Park survey-only participants, and Lino Lakes discussants being more educated than Lino Lakes survey-only participants.

2.3. Data collection

During discussions, we asked participants about their expectations for and experiences with their lawns and yards, the different purposes lawns and yards serve for them, and how they saw their yards and yard care practices linked with the surrounding area. Our central discussion questions included: “What are your experiences with and expectations for your lawn and yard?” and “What type of lawn and yard do you have and want?” We did not ask direct questions about concepts of nature or use the terms “nature” or “natural” in discussion prompts. This is in contrast to focus group methodologies that examine ideas or practices around particular concepts (e.g., [Gamble and Kassardjian \(2008\)](#) about attitudes about biotechnology or [Bates \(2005\)](#) about understanding of genetics). This approach offers rich contextual data about ideas of nature embedded within people’s descriptions of their yard management practices; however, it does not probe concepts of nature directly and most likely does not capture the range of ideas of nature among participants.

Following focus group protocol, we designed group discussions to ensure that all participants contributed and to minimize monopolization of the discussion by dominant voices (e.g., see [Krueger & Casey, 2000](#); [Stewart, Shamdasani, & Rook, 2007](#)). For example, we first asked each participant to write down their own thoughts about the central discussion questions. This strategy provides data about each participant’s own reflections about a topic first so that their responses are less determined by responses in a discussion chain. Second, we asked each participant to describe to the group their thoughts about the discussion questions. Finally, we encouraged the group to discuss individuals’ ideas about the questions. We audio recorded and transcribed all discussions upon consent of participants.

2.4. Data analysis

One approach to analyzing ideas of nature is the creation of typologies or themes from empirical studies about this concept. For example, [Gobster \(2001\)](#) examined “visions of nature” held by stakeholders about the restoration of an urban park in Chicago. He found the following “visions of nature”: designed landscape, habitat, recreation, and pre-European settlement landscape. Similarly, [Buijs \(2009\)](#) examined lay people’s “images of nature” in the Netherlands. He found the following: the wilderness image (pristine nature); the inclusive image (nature and culture interrelated); the aesthetic image (nature as managed and accessible); and the functional image (nature as intensively managed and improved). In Ontario, Canada, [Cadieux \(2011\)](#) found two dominant discourses of nature in land use planning conflicts in exurbia: nature as management and nature as amenity.

Following this approach, we analyzed concepts of nature evident in participants’ yard stories and grouped them into discourses. We analyzed meanings of “nature” and “natural” only when participants specifically used these words; we did not assume that participants were talking about nature if they described terms often associated with ideas of nature (e.g., wild, habitat, wildlife). We

coded participants’ descriptions of “nature” and “natural” using NVIVO 8, a qualitative data analysis software.

While focus groups can “provide an in-depth exploration of a topic about which little is known” ([Stewart et al., 2007, p. 109](#)), these data are considered “idiosyncratic” in contrast to survey data. Therefore, we offer exploratory data to build theory about nature discourses in yards that can be further examined in future study; however, our findings should not be applied generally to other places and contexts.

3. Results and discussion

We examined urban and suburban residents’ emergent nature discourses in the residential yard during group discussions about their yard care choices. 42% of participants (43% of participants from suburban Lino Lakes and 41% of participants from urban Highland Park) discussed or described yards in terms of “nature” or “natural,” *unprompted*. Most participants who discussed nature or natural with respect to residential yards had positive associations with these concepts (92%).

Consistent with the larger body of literature on ideas of nature, we found that the terms nature and natural also mean different things to different people in the context of their yards. In addition, as [Cadieux \(2011\)](#) found in exurban planning discourses, most participants discussed the terms nature and natural as though there were general agreement about their meanings, despite the different meanings they expressed about the terms. We found the following nature discourses in the residential yard: (1) nature as a lawn management type, (2) nature as an ecological actor, (3) nature as aesthetic attributes, (4) nature as limited time and maintenance; and (5) nature in relation to human function. 54% of participants who used the terms nature or natural expressed multiple themes.

3.1. Nature as a lawn management type

A conflicting discourse of nature that emerged in discussions is whether the lawn, an element of the yard that scholars argue has been taken-for-granted or naturalized (e.g., [Feagan & Ripmeester, 1999](#)), is natural or not. 33% of participants who used the terms nature and natural juxtaposed what is natural in the yard with the lawn, implying that lawn is not natural. For example, one person stated, “We have a one acre lot and about 80 percent of it is just left natural, so we have just a small plot of grass,” and another stated, “It’s not a natural thing to have a lawn, so they . . . are putting native flowers in and stuff.” In contrast, others described lawns as natural but only in terms of how the lawn area was managed: low input practices were natural, such as no watering, while other high input management practices, such as multiple fertilizing events or weekly mowing, were not. These findings are similar to other studies in which some participants described the lawn as nature and others did not ([Larson et al., 2009](#); [Nelson et al., 2005](#)). In addition, our findings suggest some residents consider only a certain type of lawn management regime—the low-input lawn—to be natural.

3.2. Nature as an ecological actor

36% of participants who used the terms nature or natural used the words as *actors* in a dynamic residential yard. Participants described nature in their yards as having agency to protect the surrounding areas or to care for their yards. Nature’s actions included operating as buffers for adjacent water bodies (e.g., “All we’ve got is just the natural plantings, and the whole idea was for the runoff to the lake, to absorb it, rather than having all that running into the lake”) or being a care-taker of the residential yard by providing water or nutrients (e.g., “We don’t water. We let Mother Nature do that”).

3.3. Nature as aesthetic attributes

Participants described nature in their yards in terms of aesthetic attributes. 20% of participants who used the terms nature or natural associated these terms with positive aesthetic attributes. For example, one respondent stated, “*But yeah, it's beautiful. They had a lot of natural stuff there.*” No participants used negative descriptions of nature or natural with respect to the aesthetics of their own yards. The few negative aesthetic associations with nature appeared in the context of neighbors not properly maintaining their yards (8% of participants). For example, one participant stated, “*Well, natural to him meant weeds everywhere.*” This supports arguments that nature and natural in the residential yard need to appear cared for or maintained (Nassauer, 1995). Furthermore, only one person described nature or natural in terms of “wild,” in contrast with other studies that associate these terms (e.g., Zheng, Zhang, & Chen, 2011).

3.4. Nature as requiring limited time and maintenance

For 17% of participants who discussed the terms nature and natural, the terms implied little time and maintenance required for natural yard vegetation. For example, one participant stated, “*I hate working in the yard. I would prefer to have something that required no maintenance whatsoever, sort of a natural landscape.*” This discourse of nature as requiring limited time and maintenance had the following discrete elements: people who saw (1) nature as whatever grows (e.g., “*Well, just natural growth, whatever takes over.*”); (2) nature as perennial species suited to the yard that required little maintenance after such plantings were established (e.g., “*perennial local flowering plants untended*”); or (3) nature as alternatives for areas where grass was difficult for them to maintain (e.g., “*It's a little bit challenging to mow because there is also a large hedge in front. So, what I'd like to do is to get rid of all the lawn in front, absolutely all of it, and create natural plantings.*” These findings support the need identified by Nassauer (1995) to examine whether concepts of nature are in fact ecologically sound, as some participants in our study who saw nature as “whatever grows” viewed invasive species as natural and desirable, while others emphasized that nature was only native vegetation.

3.5. Nature in relation to human function

Finally, participants conceived of nature in relation to functional uses of the yard. For 27% of participants who used the terms nature and natural, they explained these terms as contributing to or preventing functions of the yard desired by the owners. For example, one respondent stated, “*I think the other thing is functionality of your yard, depending on what you use it for, you know, if you actually do things on your lawn, where grass may be an advantage over having something more natural.*” In another example, participants explained that naturalness promoted privacy but impeded recreation, as found in other studies (Nelson et al., 2005). Finally, similar to other studies that found links between nature in yards and personal enjoyment (e.g., Clayton, 2007), a few participants discussed nature in terms of enjoyment of their yards.

3.6. Suburban and urban discourses

Nature discourses did not vary in relation to the urban gradient. We found few differences in nature discourses in suburban Lino Lakes and urban Highland Park. Other studies have found that the desire to be closer to nature (the surrounding land use, beyond the yard) is a factor in one's choice to move to suburban and exurban areas (e.g., Kaplan & Austin, 2004). Yet, we did not see suburban participants incorporating different nature discourses or a greater

variety of nature discourses in their discussions about yard choices than urban participants.

4. Implications

Residents in the Saint Paul–Minneapolis metropolitan area, Minnesota, USA, expressed multiple nature discourses in the context of the residential yard during discussions about their yard care choices. These discourses included nature as a lawn management type, nature as ecological actor, nature as aesthetic attributes, nature as requiring limited time and maintenance, and nature in relation to human function. However, most residents used the term nature as though it had an agreed upon meaning. These multiple meanings of nature in the context of the residential yard present implications for public outreach messages that seek to promote urban ecosystem quality through yard care stewardship: (i) broad references to nature should be refined and (ii) the discourse of nature as an ecological actor in the yard may be a starting place for communication about ecosystem functions. At the same time, nature discourses in public outreach messages about yard stewardship may not be salient or compelling to many homeowners.

Broad references to nature should be refined or clarified in public outreach messages that seek to promote urban ecosystem quality through homeowners' yard stewardship. In our study, homeowners discussed multiple meanings of nature—that may or may not be consistent with ecological quality—as a single idea. This suggests that recipients of public outreach messages that include the term “nature” may simply apply their own meaning to the term, which may not be consistent with the messages' goal of promoting urban ecosystem quality.

For example, in our study, some of the homeowners who considered vegetation that grows well without human maintenance as natural were describing invasive species. Messages that encourage natural plantings without further clarification may lead to increased use of invasive species, without the homeowner realizing the ecological impacts such species have on the urban ecosystem. Also, some homeowners equated nature or natural with a low-input lawn. Targeted messages using a nature discourse may encourage homeowners to use low-input varieties of turf grass, thus reducing nutrient fluxes from nitrogen or phosphorus. However, at the same time, these messages may lead some homeowners to assume that the low-input lawn, as a natural lawn, requires no time or maintenance. In this situation, soil cover may become sparse, resulting in erosion and degradation of water quality. Homeowners' ecological conceptualizations of the yard's components (Dahmus & Nelson, 2014) should also be considered when constructing outreach messages for yard stewardship around ideas of nature. Based on the findings of this study and others (Harris et al., 2012; Martini, Nelson, Hobbie, & Baker, 2013; Nassauer, Wang, & Dayrell, 2009; Zheng et al., 2011; among others), diverse drivers of residents' yard management suggest these messages need to be context-based, linked with key ecological relationships to improve ecoliteracy, and supported by blended social, economic, and ecological benefits.

Furthermore, a nature discourse that conceptualizes nature as an ecological actor in the yard can be a starting place for communication about ecosystem functions and other environmental issues. Many have identified the challenges associated with homeowners' desires to control nature in their yards or be united with nature (as reviewed and/or found by Clayton, 2007; Cook, Hall, & Larson, 2012; Larson, Cook, Strawhacker, & Hall, 2010). In our study, among those who hosted a nature discourse, some recognized nature as an ecological actor within a dynamic system, whether it was constructing nature to serve a purpose (e.g., serving as a buffer around water bodies) or leaving nature to care for the yard by providing water

and nutrients to vegetation. This discourse of nature as an ecological actor in the yard can be built on in communication efforts about urban ecosystem functions, rather than having to start from the discourse that the yard should remain static, similar to a room in the house that is well-kept, as found in other studies (Clayton, 2007).

Finally, constructing public outreach messages about yard stewardship strategies around nature discourses may not reach all homeowners. For some, the conceptualization of nature in the residential yard is not salient. For instance, approximately half of our discussants listened to others refer to nature in their yards but did not pick up on these conversation chains. Other discourses may be more salient such as the social status of a beautiful yard (Carrico, Fraser, & Bazuin, 2013) or efficient use of resources (Martini et al., 2013).

5. Conclusion

The nature discourses examined in our study are one example of the complexity of homeowner conceptualizations of their yards. The presence of multiple nature discourses among homeowners in the context of their yards supports findings of heterogeneity in yard management practices and decisions in urban ecosystems (e.g., Harris et al., 2012; Larson et al., 2010). Diversity and heterogeneity in discourses appears to be an emergent pattern that should be examined further, in other cities and with mixed methods approaches. This diversity and heterogeneity in discourses should also inform public outreach messages that seek to promote urban ecosystem quality through yard care stewardship.

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