

# Open Space Communities

In residential communities, "open space" is generally considered desirable. Yet what is meant by this term differs widely, with far-reaching environmental and social implications. To investigate these differing perceptions, we queried residents of conventional and conservation subdivisions in the same township regarding their nearby natural environment and other aspects of their residential context. While study participants considered "nature view from home" a top priority, the content of these views differed substantially. The most preferred views, of wooded areas, were relatively unavailable in the conventional communities. Yet these subdivisions might more accurately be experienced as "open." The results of our study thus point to the potential for misunderstandings about "open space" preservation. We conclude with suggestions concerning communication, ordinances, and opportunities for simultaneously benefiting people and the environment.

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Journal of the American Planning Association,  
Vol. 70, No. 3, Summer 2004.  
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## Resident Perceptions, Nature Benefits, and Problems with Terminology

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**T**hough the concept is often left undefined, "open space" in residential areas is generally viewed as an asset. Duany et al. (2000), for example, suggest that "the generous provision of open space" offers the "main advantage" of suburbs over the city (p. 31). With forest, field, and farm steadily giving way to development, many communities express their desire to protect open space by adopting open space ordinances for residential development. Details of these ordinances vary widely, but their common concerns are to concentrate dwelling units in order to increase the undeveloped portion of land for stormwater management, wildlife corridors, and other conservation purposes.

From an environmental perspective, these open space or conservation ordinances offer solutions to some of the challenges posed by the proliferation of subdivisions at the edges of rural areas across the country. At the same time, however, a clustering approach to residential development promoted by such ordinances runs counter to the prevailing "large house, large lot" rendition of the American Dream. Moreover, one of the reasons for desiring such properties is precisely because they permit ownership of "open space." Thus, the very notion of "open space" can lead to contradictory intentions and desires.

## Literature Review

A growing literature documents the many, far-reaching, negative ramifications of sprawl to health and the environment (Jackson & Kochitzky, 2001). Smart growth is gaining considerable attention as a way to address some of these problems. Efforts to counter sprawl require increased housing density. Yet, as Danielson et al. (1999) point out, higher density housing is "a tough sell. Americans appear to hate two things: density and sprawl" (p. 516). Perhaps in part for this reason, increased density and the goals of smart growth have not been readily embraced by builders and developers (Burchell et al., 2000). Some professional groups have developed extensive materials to show that smart growth need not be antithetical to their missions (e.g., the National Association of Realtors [NAR] publication *On Common Ground* and an Urban Land Institute publication cited in Danielson et al., 1999). Others, notably the National Association of Home Builders (NAHB), have used public surveys to rally support for continued

building of large homes on large lots. Results of such surveys, in turn, have been taken as evidence that the American dream home is unlikely to change in size or setting (Carliner, 1999; Easterbrook, 1999).

It is worth taking a closer look at some of these surveys and what they reveal, especially in the context of our study that focuses on open space issues. Wan's (2002) summary of the NAHB survey results indicates that "buyers want houses that cause rapid development of open space . . . even as they support 'smart growth' policies" (p. 4). The survey of 2,000 households was "done to provide a better understanding of the factors that drive homebuyers' decisions in the marketplace" (NAHB, 2002, n.p.). The results do indeed show that 64% of the respondents wish their home were larger (with no breakdown provided about desire of home size as a function of size of current dwelling). While the survey results show that over a third of the sample would like "walking/jogging/bike trails" in their community, it provides relatively little information about the perceived importance of the nearby natural environment. For example, in a question about residents' considerations in purchasing a home, none of the 16 items focused on the availability of natural areas or "open space." Nor were any of the 10 listed considerations for deciding to buy their current home related to the natural environment.

A year earlier, the NAR (2001) reported results of a survey that focused on open space. It too showed support for growth. However, "in areas under pressure by development, the survey found that more than 80% of voters support preserving farmland, natural areas, stream corridors, true wilderness areas and historic sites, but only [sic] 58% support preserving fallow fields no longer used for farming" (n.p.). These findings are corroborated by numerous ballot initiatives showing strong endorsement for preservation of open space (e.g., Baker, 2000), suggesting that citizens not only think preservation is important but are willing to pay for it.

The economic aspects of open space have also been shown in a number of studies related to residential property values (e.g., Fasold & Lilieholm, 1996; Geoghegan, 2002; Irwin, 2002; Thorsnes, 2002). Lutzenhiser and Netusil (2001) found that both proximity to and the naturalness of nearby open spaces had the greatest effect on home sale price in an economic analysis conducted in Portland, Oregon. Proximity to greenbelts was found to impact the value of nearby homes in a study conducted by Correll et al. (1978) in Boulder, Colorado, shown by a statistically significant decrease in home value with increasing distance from the greenbelt. While Peiser and Schwann (1993) found greenways internal to a residential site add economic value, their study also shows the importance of

proximal open space even if one's property is not directly adjacent to it. Lacy's (1990) study is perhaps most closely related to the present research, as it compared home values of open space and conventional subdivisions. Comparisons between 1968 and 1989 in Amherst, Massachusetts, and for the 1980s in Concord, Massachusetts, both showed substantially greater appreciation of home values for the open space subdivisions.

The massive conversion of field, forest, and farm has had serious consequences. It has reduced residents' access to natural areas and nearby recreational opportunities, sharply decreased tree canopy, destroyed wildlife habitats, and caused negative hydrological consequences. Cluster development can provide opportunity for land preservation, but it is often not a primary consideration. As Whyte (1968) noted, clustering techniques often focus more on increasing density and not on the preservation of the best land on a site.

### Open Space Conservation

Our study focuses on one approach, open space conservation, which specifically considers natural areas and ecological systems in residential development plans. The open space conservation concept as proposed by Arendt (1996, 1999) specifies carefully selected criteria for identifying natural features located within proposed development sites. According to Arendt's approach, 40–60% of a site's buildable land is classified into primary and secondary conservation areas, which are then set aside and saved from development. Attention to the natural processes and local landscape features that are part of the surrounding ecosystem thus separates the land into areas that are to remain development free or preserved as "open space" and areas suitable for building. Homes are then clustered on smaller lots in the buildable areas of a site and are situated in such a way that they take advantage of nearby nature views. These stipulations provide a set of examples of the considerations advocated for green development by the Rocky Mountain Institute (1998). As Danielson et al. (1999) point out, there is not much empirical basis for advocating the benefits of increased housing density. There is, however, empirical support for the importance of the nearby natural environment (Frumkin, 2001; Kaplan et al., 1998).

Our study compared the perceptions of "open space" by residents in subdivisions that were established using an open space ordinance (open space communities, OSCs) with those in the same region who live in more conventional communities (CCs). The focus was on residents' perceptions of the trade-offs achieved by clustering homes on smaller lots in the context of conserving "open space." More precisely, the study addressed the role played by the

natural environment within the residential community by comparing ordinance-based "open space communities" with more conventional subdivisions. From the perspective of planners, the open spaces in these two types of communities have distinct differences. It is less clear, however, whether the residents share this understanding.

## Study Site

Hamburg Township (see Figure 1) is one of the fastest growing townships in Michigan's fastest growing county, Livingston. The county saw a 31% increase in population during the 1990s; Hamburg Township's population is projected to increase by almost 60% in the next two decades (Livingston County, 2000). The study area is about 40 miles northwest of Detroit, close to major transportation routes in southeast Michigan, placing it within a reasonable commuting distance to suburban Detroit (Stanford, 1999). Despite exponential growth over the past decade, according to its official government Web site, the township has "worked hard to preserve [its] rural beauty." Nonetheless, the growth patterns of the study site meet many of the criteria Downs (1998) identified as representative of sprawl, including low density, leapfrog development, segregation of land uses, and reliance on personal cars for transportation.

In 1992, Hamburg Township enacted an open space ordinance to preserve natural areas in residential development using many of the principles of Arendt's (1996, 1999) open space conservation approach (Livingston County, 1996). The ordinance closely follows Arendt's approach and requires the preservation of 40 to 60% of a proposed residential development site. It is included as one of three examples of "Model ordinance language" on the Web site of the U. S. Environmental Protection Agency (1999) addressing the reduction of the effects of sprawl. Stanford (1999) characterizes Hamburg Township's open space ordinance as an *overlay zone* that allows developers who choose to use this approach to site homes on lots smaller than the minimum classification for a particular residential district. For example, an open space community approved for development in an area zoned medium density residential would be permitted a minimum lot size of .68 acre (or 30,000 sq. ft.), which is smaller than the required minimum lot size of one acre. The developer receives a "density bonus" and is permitted to build more homes in cluster fashion around designated open space areas than would be allowed under the normal zoning standards in place. The remaining open space is apportioned into areas left undisturbed and areas developed into common spaces, including

trails and pathways, recreational sites, and open parkland. Arendt (1999) indicated that in the 33 conservation subdivisions built since the ordinance was adopted, more than 1,000 acres of land have been conserved.

## Method

The study consisted of interviews and a survey. The survey had four parts: an open-ended question, rankings of a set of natural features, ratings of a set of photographs of scenes taken in residential communities in the Township, and a set of lifestyle and demographic questions.

## Interviews

To gain an understanding of the open space concept as it is implemented in the Township, we conducted interviews with five Township officials and two local developers. In addition, 15 interviews were held with residents of 13 OSCs. These lasted about an hour each and covered a variety of dimensions of their experience living in the subdivision. In this article, we focus on their answers to the question "What does 'open space community' mean to you?"

## Selection of Survey Communities

Interview information was used in developing a survey (detailed below) that we sent to residents of 11 OSCs and 7 CCs in Hamburg Township. Since the OSCs were all built in the 1990s, we included only CCs that were developed during the same time, including two that were approved after the adoption of the open space ordinance. All communities in the study were at least 90% occupied by the time of the survey, Autumn 2000. We also selected OSCs and CCs with roughly comparable property values. Based on median home value, 5 of the 7 CCs and 5 of the 11 OSCs were below \$250,000 (with \$164,000 the lowest for the CCs and \$170,000 for the OSCs). The highest median value was \$293,000 for the CCs; among the OSCs, two had higher median values (\$312,000 and \$332,000). The selected communities included three CCs and three OSCs that were relatively small (16–25 homes), two of each type that were larger (55–70 homes), and eight in the mid range (30–50 homes). Lot sizes in the CCs are typically at least 1 to 2 acres—larger than in the OSCs, where lots range from .25 to 1 acre and include areas of open space held in joint ownership by the residents.

Original land uses of the sites, based on 1973 aerial photographs, were also comparable. Virtually all the communities included some trees or wooded areas. Three of the OSCs and one CC were built on heavily wooded tracts. Of the four CCs built on agricultural land, each

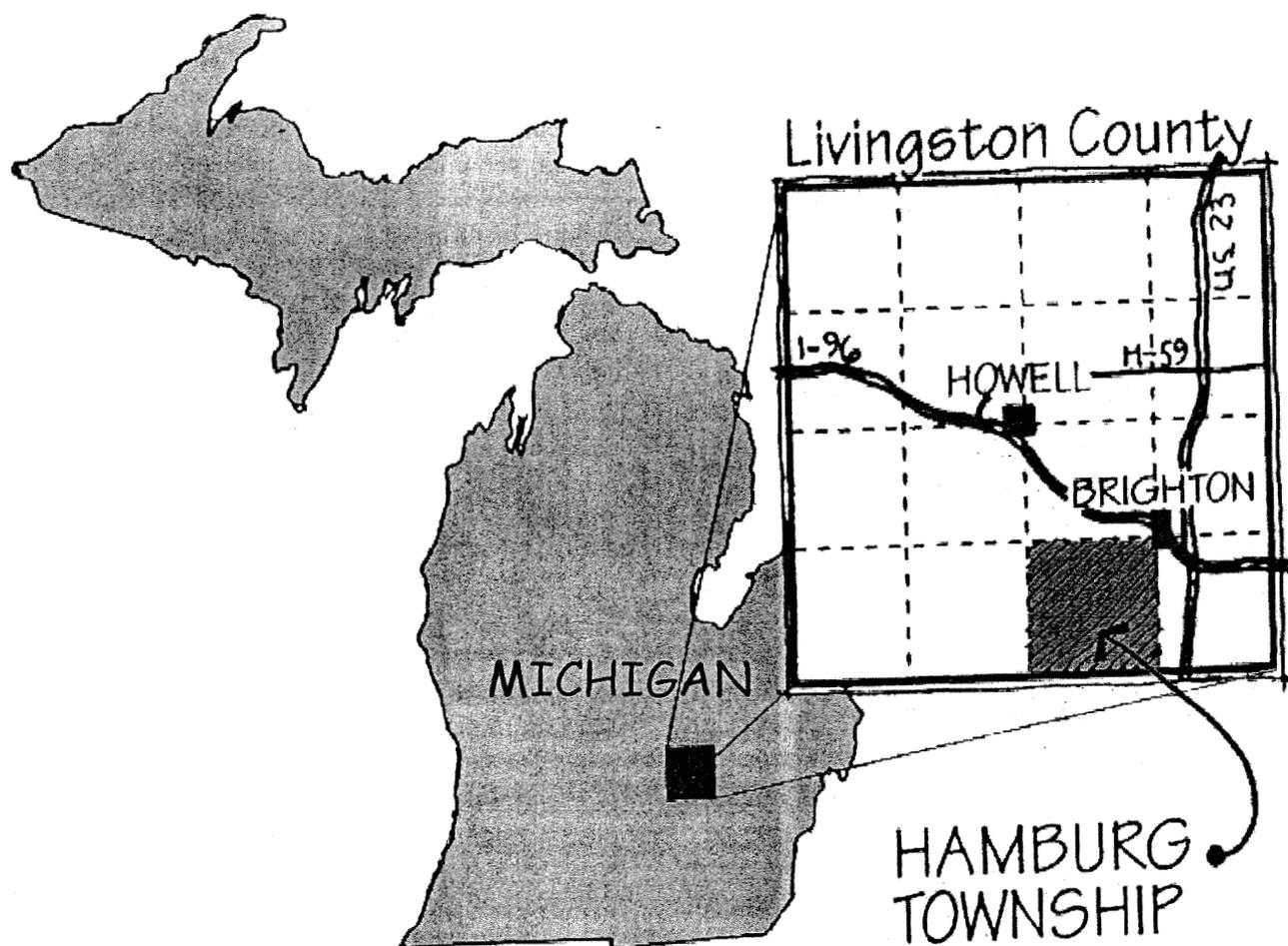


Figure 1. Location of study site in southeastern Michigan.

Source: Adapted from Livingston County (1996), p. 168. Reproduced with permission.

included at least some trees. Of the four OSCs built on previously agricultural land, one had been mostly farm fields and the others had modest pine stands. The remaining sites, built on open fields or meadows, had no evidence of previous farming or trees.

Selection of study sites was further influenced by an analysis of several natural features. Site visits to prospective subdivisions were used to record average number of trees per yard, tree maturity, and approximate percentage of homes with nature views. Because they include considerably more preserved land, OSCs tended to score higher on overall natural features, making it difficult to fully match community types with respect to the natural environment ratings. Nonetheless, the study includes a CC with substantial natural features as well as OSCs that scored well below the median.

### Survey and Photo-Questionnaire

The survey included a variety of approaches to assessing the residents' perception of the physical characteristics of their community. An open-ended question asked: "If you would describe your residential neighborhood to a friend, what 4 or 5 things would you want to be sure to mention?" Participants were also asked to indicate how well 6 natural features (e.g., "woods, forest") characterize their residential neighborhood and 15 physical features (e.g., "large mowed area," "trails, pathways") describe the view from their house; these items used a 5-point rating scale from 1 (not at all) to 5 (very well).

Participants were also asked to rate 24 scenes, contained in a separate three-page booklet with eight black-and-white photographs on each page, in terms of similarity to what they see from their homes. The 5-point rating scale

went from 1 (“I never or rarely see this sort of setting”) to 5 (“very often—it’s like the view from my home”). They were also asked to rate each scene to indicate how much they would like to have such a view from 1 (not at all) to 5 (very much). The scenes, all taken in residential communities in Hamburg Township, included woods, woods with trails, open fields and meadows, waterways and wetlands, and residential settings.

The survey also included a question regarding trade-offs among a variety of choices buyers need to make in selecting a home; questions related to participants’ satisfaction with their neighborhood, problems they perceive, and shared ownership and homeowner association issues; and some demographic questions.

## Results

Surveys were mailed to all residents in the selected communities using information provided by the Township. We could not ascertain whether the names provided included homes that were not occupied or even lots that were not yet built upon. Furthermore, with bulk mailing, misaddressed material is not returned to the sender. Calculation of a return rate is, therefore, at the conservative extreme since it is based on the number of surveys mailed, rather than the number known to have been received. Of the 648 surveys mailed, 231 were returned (36%). The returns were slightly higher in the CCs (38% vs. 34% in the OSCs), and slightly higher the smaller the community (42%, 36%, and 32% for the small, mid-range, and larger communities in the sample, respectively). The analyses reported here are based on returns by 96 CC and 135 OSC residents.

Based on survey responses, the two samples did not differ with respect to gender, work status, or length of commute. Participants in the conventional communities had lived in their homes somewhat longer (mean 4.3 vs. 3.4 years) and had larger lots. Those in the OSCs had somewhat larger families (3.5 vs. 3.2 people sharing the household) and slightly higher income (15 vs. 7% in the top bracket of “over \$150,000”). The two samples are comparable with respect to the proportion of respondents under 40 years (about 45%), while 26% of those from the CCs and only 13% of those in the open space subdivisions were over 50 years.

### The Concept of “Open Space Community”

We posed the question of the meaning of “open space community” in the interviews with Township officials and developers as well as with residents of those communities.

The survey sent to residents of both OSCs and CCs also tapped this issue in an open-ended question.

**Experts’ Understanding.** Township planners and developers articulated a description of open space community that mirrored the principles expressed in Arendt’s presentation of the concept, including the notion of not building on all available land in the development. Their descriptions also included the benefits of following this approach, leading them to the conclusion that this is a win-win approach for planners, developers, and the public. Clustering homes on smaller lots in an open space community, they told us, means more homes per site than in traditional subdivisions and decreased infrastructure expense. Less expense for developers translates into more affordable homes while the clustering of homes and their associated roads and utilities means that more land is preserved.

**Residents’ Understanding: Interviews.** Residents of the OSCs responded quite differently from the planners and developers to the interview question about what open space community means to them. The most frequent response (7 of 15) concerned the presence of shared communal property that is available to everyone in the subdivision. Some mentioned a social dimension, a sense of community that comes from working with one’s neighbors to maintain the shared natural areas and encountering neighbors in the shared spaces. Respondents also described *open* in terms of land that is undeveloped, being able to see across the neighborhood because of a lack of fences, having greater access to natural areas, and having “larger lots than conventional subdivisions.” One participant had never heard the term “open space community,” and said, “I call it ‘out in the country!’”

**Residents’ Understanding: Surveys.** Responses to the open-ended question “Describe your residential neighborhood to a friend” were independently coded by two researchers; their categorizations were in agreement in all but a few instances, which were resolved on the basis of further discussion. The responses show many similarities between the two types of communities. Table 1 lists the categories that were mentioned by at least 10% of survey respondents.

For both types of communities, *natural features* (e.g., scenic view, forest, wildlife, wetland) were the most frequently mentioned, although they received substantially more comment by OSC participants (27%) than residents of CCs (22%). For the latter, *neighborhood characteristics* (e.g., no fences, new homes, no through traffic, cul-de-sacs) were mentioned about as frequently as the natural features. Furthermore, for the CCs, *lot size and space* (e.g., large lots, space around homes) was by far the most fre-

Category	Mentions by $\geq 10\%$ of respondents <sup>a</sup>			
	% OSCs		% CCs	
	Mentions <sup>b</sup>	First mention <sup>c</sup>	Mentions	First mention
Natural features	27	25	22	14
Neighborhood characteristics	16	0	21	12
Peace of mind	13	25	14	15
Open space and trails	13	17	0	0
Social aspects	11	0	13	0
Lot size and space	0	0	16	29
Total	80	67	86	70

a. Listed in descending order of first column.

b. Based on all listed items.

c. Based on items listed first.

Table 1. "Open space" categories mentioned by at least 10% of respondents.

quent item mentioned first (29%); in the OSCs this category was mentioned by just 7% of the respondents. By contrast, *open space and trail characteristics* (e.g., paths, commons area, common wooded area) were almost never mentioned by respondents living in the CCs, but were included by 13% of the OSC respondents. *Peace of mind* (e.g., quiet, peaceful, secluded, private) was comparable in overall mentions for the two community types. This category, however, along with natural features, was most often mentioned first in OSCs (25% of responses vs. 14% of CC participants).

The categories *rural characteristics* (e.g., rural setting, "up-north" feeling), *neighborhood size/density* (e.g., low-density housing/small, cozy), and *local area features* (e.g., nice location, good schools) all received relatively few mentions (less than 10% of either sample). *Social aspects* (e.g., friendly, nice neighbors; close neighborhood feel) were mentioned by slightly over 10% of each sample.

The overall impression from these responses is that while there are substantial similarities between the two types of communities, residents of the OSCs are more likely to include natural features and the common open spaces and trails in their depiction of their community, while those who live in the CCs are more inclined to describe the larger lots and layout of the community.

## Perceptions of Natural Features

**View from Home: Verbal Responses.** Table 2 provides a comparison of responses to the survey question about the view from home, showing several differences between the two types of communities. Forests, wetland, and trails—all rated at mid-scale or higher by OSC residents—are far less characteristic of the CCs. Large mowed areas and fields are more evident in the CCs. These differences may help explain why neighbors' houses are so much more visible in the conventional than the open space communities.

Responses to the question about the extent to which particular kinds of natural features characterize the residential neighborhood paralleled the results in Table 2. Residents of the CCs rated "open field/meadow" significantly higher (mean 3.3) than those in the OSCs, while the latter rated "woods, forest," "wetland area," and "lake, pond, river" significantly higher (means 3.9, 3.7, and 3.6, respectively). For each of these items, the other groups' mean ratings were below 3.0.

**View from Home: Responses to Photographs.** Participants from the OSCs rated each of the five scenes of wooded areas (see Figure 2) as significantly more similar to the view from their home than CC respondents (means 3.8 for OSCs vs. 3.0 for CCs;  $F = 34.44, p < .001$ ). By contrast, the two scenes rated significantly more similar by those in the CCs were of very open areas (see Figure 3). One of these had a wood chip path amidst a mowed area (means

Item	Mean rating <sup>a</sup>			
	All	OSCs	CCs	F <sup>b</sup>
Quiet street	4.42	4.45	4.39	—
Neighbors' houses	4.05	3.81	4.34	14.47***
Landscaping	4.05	3.98	4.13	—
Trees, but not forest	3.94	4.03	3.84	—
Garden/flowers	3.46	3.27	3.70	6.74**
Large mowed area	3.33	2.98	3.76	19.43***
Trails, pathways	2.99	3.90	1.81	128.94***
Forest	2.86	3.14	2.51	9.65**
Wetland/marsh	2.76	3.00	2.45	5.49*
Lake/pond	2.19	2.35	1.98	2.84 <sup>c</sup>
Farmland/field/meadow	2.04	1.87	2.27	4.40*
A park	1.84	1.98	1.65	3.79 <sup>c</sup>
River/stream	1.49	1.51	1.47	—
Busy street	1.43	1.31	1.59	5.83*
Recreation facilities	1.36	1.41	1.29	—

a. Listed in descending order of first-column; 1 = not at all . . . 5 = describes view very well.

b. Based on one-way analysis of variance.

c.  $p < .10$

\* $p < .05$  \*\* $p < .01$  \*\*\* $p < .001$

Table 2. Items in "view from home": Mean ratings by type of community.

3.8 for CCs vs. 3.3 for OSCs,  $F = 9.68$ ,  $p < .005$ ) and the other had a large mowed area with young trees and a backdrop of more mature trees (means 3.7 for CCs vs. 3.1 for OSCs;  $F = 14.06$ ,  $p < .001$ ). While the perceptions of the immediate natural environment differed between the two types of communities, their preference ratings for the scenes showed no significant differences. The two "open" scenes were rated the least preferred by everyone (means 2.0 and 3.0 for Figure 3, top and bottom, respectively), while the forested scenes of Figure 2 were the most preferred (mean 4.4 for all five scenes).

### Contrasting Perspectives

**Priorities and Values.** Participants were asked to consider eight items related to their choice about where to live (see Table 3). They were to prioritize these items by indicating which *two* they considered "most important," "important," "somewhat important," and "least important." For most of the items there was strong agreement between the CC and OSC participants. A majority from both subsamples rated each of the same five items relatively less important (i.e., "least important" or "somewhat impor-

tant"). Furthermore, the same item, "nature view from home," was rated "most important" by a strong majority from both subsamples. Major discrepancies, however, appear in the items that ranked in second place in terms of receiving the highest endorsement. As Table 3 shows, for the CC respondents, having a large residential lot was "most important" for 48% and "least important" for no one. For OSC respondents, only 33% rated lot size "most important" and 13% considered it "least important." By contrast, "nature areas within walking distance" was rated "most important" by 37% of the OSC respondents and only 17% of the CC respondents.

**Problems and Satisfactions.** The survey included 18 items that could be considered negative factors within the residential neighborhood. The only item among these rated above mid-scale was concern about "the current rate of growth in Hamburg Township." CC respondents rated this item significantly higher than OSC respondents (means 3.3 vs. 2.8;  $p < .01$ ). Other items reflecting sprawl (e.g., noise, traffic, and loss of rural character) were all seen as more significant problems for respondents from the CCs. By contrast, respondents from the OSCs were much

Item	Relative importance (%) <sup>a</sup>			
	OSCs		CCs	
	Most	Least	Most	Least
Nature view from home	70	1	62	2
Nature areas within walking distance	37	3	17	5
Large residential lot/yard	33	13	48	0
Large house	20	21	20	26
Not seeing neighbors' houses	12	27	15	26
Recreation areas within walking distance	12	32	8	44
Yard that is easy to maintain	8	25	9	19
Sidewalks	3	75	3	70

Note: The two middle "importance" categories are omitted.

a. Listed in descending order of first column.

Table 3. Trade-offs in choosing where to live.

more likely to consider their homes too close together (means 2.1 vs. 1.4;  $p < .001$ ) and their lots too small (means 1.8 vs. 1.4;  $p < .001$ ). While these differences are significant, the low values of these means suggest that these items are not perceived as major problems for either group.

Several of the satisfaction items included in the survey were related to the natural environment (e.g., view of nature, amount of open space, nearby land preserved, opportunity to see wildlife). These emerged as a factor (principal axis factoring, varimax rotation), with an alpha coefficient of .87. The two samples differed substantially on this measure, with the OSC respondents far more satisfied (means 4.3 vs. 3.8;  $p < .001$ ). The groups did not differ in their satisfaction with the appearance of their communities (4 items, alpha .79) nor with respect to the sense of community (4 items, alpha .85).

## Discussion

This study addressed rapid residential growth in rural areas, a common pattern across the country. Subdivisions have been sprouting beyond the immediate growth ring around the nearest metropolitan centers, especially in areas with strong transportation links that make commuting a reasonable option. The sites in this study, being in the same township, were alike in these respects and in other locational factors, such as the quality of the nearby schools.

The choice of a home, however, depends on more than location, raising the possibility of selection biases that can affect the study results. For many of the participants from the conventional communities (CCs), the decision about where to live was made before the open space communities (OSCs) were available. For those purchasing a home in an OSC, however, nearby CCs were an option. We have no information on whether the open-space-community concept per se entered into the purchasing decisions of any of the participants. On the other hand, residents from both types of communities provided many similar responses in their descriptions of their neighborhood, including the high frequency of mentioning natural features. And respondents from both types of communities indicated that "nature view from home" is their highest priority among the listed items in choosing where to live. It thus seems unlikely that selection on this basis played a major role.

The two types of communities differed in a number of respects. The OSCs included substantial land that is jointly owned by the residents, as well as homes that are relatively nearer each other. The residents' perception of these communities was that they are relatively forested and rich in natural features. Some of these communities had extensive communal ownership of wooded areas somewhat separate from the residential area. Most had trails or pathways in the woods or elsewhere within their shared land.

The CCs, by contrast, had the larger lots. These were often mowed areas with some trees and flower gardens near



Figure 2. Two scenes rated as more similar to the view from home by residents of open space communities.



Figure 3. Two scenes rated as more similar to the view from home by residents of conventional communities.

the home. As is true for the OSCs, fences between properties were not permitted. In the CCs, the resulting landscape is of expansive, sometimes rolling, mowed areas interspersed with trees. This landscape pattern, commonly found in new developments, is striking for its limitations: It does not provide preferred views, desired recreational opportunities, or ecological benefits.

One of the most striking conclusions of the study emerges from the combination of two findings. Based on the trade-off portion of the analyses, it is clear that "nature view from home" is by far the highest priority for both conventional and open space participants. The other finding comes from the satisfaction items. The factor analysis of the items revealed that the OSC respondents had a far higher level of satisfaction with the nearby natural environment than their CC counterparts. As this pattern of findings indicates, the conservation of natural features intended by the open-space-community concept is important to residents and was successfully achieved. This conclusion is particularly noteworthy in light of the uneven implementation of the open space concept. While the choice of secondary conservation areas to be preserved was done with careful attention to ecological and scenic values, some of the builders in our sample assumed that these areas included a strip of land around the perimeter of the subdivision or was equivalent to nonbuildable land. On-site inspections confirmed this weakness. In this situation, it is all the more remarkable that residents of the OSCs were nonetheless highly satisfied with the natural features at their sites.

### Problems with Terminology

While this conclusion has to be regarded as positive, the other major discovery of the study was less so. Responses of the CC residents to this predominant landscape pattern revealed a serious problem with terminology. These residents perceived their surrounding area as "open." It would, in fact, be difficult to describe these landscapes in any other way. While our findings indicate high preference for the natural environment within residential subdivisions, the term "open space" as used by planners does not accurately describe the kinds of natural areas available in these CCs. Nor does it describe the kinds of settings that residents seek. In our study, the OSCs often had extensive woodlands, making them less "open." The CCs, by contrast, were far more open, but not in the sense intended by open space ordinances. In other words, the intuitive, commonly used meaning of "open" is in direct contrast to the way planners use the term. What is more, the planners' usage is matched by neither the physical reality nor the perception of residents.

While the CC respondents saw their subdivisions as "open," those from the OSCs often lacked the planners' understanding of what their communities are trying to achieve. They appreciated having a more natural setting, but did not necessarily associate it with the open space designation. From their perspective, the lack of fences and prevalence of friendly neighbors were equally reflective of living in an open space community. And being "out in the country" made the community feel open as well. In many instances, even the relatively greater density of the housing was not perceived as a trade-off; in fact many of the OSC residents seemed pleased by the size of their lots.

The characterization of open space as "unutilized land" (Benedict & McMahon, 2002) or "unbuilt land or water areas dominated by naturally pervious surfaces" (Heinz Center, 2002, p. 270) is equally applicable to the OSCs and CCs in our study. To resource managers, land use practitioners, and developers, the term "open space" might call to mind a variety of images, including forested areas, meadows, wetlands, and farm fields. To the public, particularly those individuals with limited experience with different types of natural areas, the term "open space" might conjure images of unobstructed landscapes and views.

The failure of the term "open space" to convey the meaning intended by planners has important consequences. Subdivisions advertised as "open space developments" may, in fact, do little to address land preservation. Many of the needs and preferences expressed by participants in our study are not reflected in the conventional large-lot suburban subdivisions. Large native trees are often removed and replaced by ornamental trees, fields and meadows are replaced by flowerbeds and endless lawns, and landscape maintenance is hired out. Little attention is paid to the resulting environmental degradation. At the same time, many residents of ordinance-based OSCs are not clear about what makes their place different. They may not be aware that the natural environment that is preserved as part of their subdivision comes with responsibilities as well as rights. This is particularly critical in terms of the need to maintain and sustain the commonly held natural resources (Austin & Kaplan, 2003).

Part of the problem, then, is finding a term that is meaningful, useful, and minimally misleading. This is no small challenge. While many of the issues raised by Benedict and McMahon (2002) are central to the intentions of open space preservation, their "green infrastructure" designation is unlikely to resolve the terminological problem for professional and lay groups. It is our belief that residents, wildlife, and the environment would all benefit if the expression "conservation development" replaced "open

space development” as the official designation of these more environmentally sensitive patterns of habitation.

## Conclusions and Recommendations

Based on the insights gained from this research, we offer the following recommendations:

1. *Spread the word.* Although the implementation of the conservation development concept in our study communities was far less effective than it might have been, respondents’ reaction to the conserved natural environment was strongly positive. (It should be noted that this finding was not hypothetical or anticipatory, but based on the responses of the people who live in the setting.) This finding needs to be more widely known, since it challenges the commonly accepted assumption that people prefer large houses on large lots.
2. *Change the label.* What planners mean by “open space” referring to natural and unbuilt areas is seriously misunderstood by the lay population, resulting in missed opportunities. The planning profession needs to examine the impact of this term. Further, ordinances encouraging conservation practices need a more suitable and widely understood label for these more environmentally appropriate communities.
3. *Take advantage of an opportunity.* The fact that the conservation development was so highly regarded by the OSC residents, despite flaws in implementation, indicates the existence of an important and largely unrecognized opportunity. Taking advantage of this opportunity, with substantial benefits accruing to the residents, visitors to the area, and the ecosystem as a whole, will require adjustments at several levels. We focus on three such adjustments, dealing with ordinance language, a focus on ecological continuity, and collaboration among experts.
  - *The language of ordinances* articulating a commitment to preserving natural areas needs to be sensitive to issues of both specificity and breadth. In the context of this study, insufficient specificity about what natural features are to be preserved and how they are to be identified led to some developers assuming that land that was difficult to build upon was all that was required. Lack of breadth was a problem as far as the relationship of how the ecosystems in different conservation developments

were to be related to each other. Failure to address issues at this broad scale limits the ecological usefulness of these conservation efforts.

- *Promotion of ecological continuity* requires that development not occur on a project by project basis but rather within a landscape framework. Such a framework would include consideration of natural processes, systems, and habitats, and would contain data about the integrity of these systems as well, including, for example, native species, groundwater hydrology, and animal migrations (Beatley, 2000). It would follow then that any presentation and promotion of developments that take place within this type of framework would incorporate specific language describing the natural features and systems preserved.
- *Planners must cross disciplinary boundaries* in order to develop working relationships with local and state natural resource managers and professionals. Such partnerships can inform the work of planning professionals, allowing planners to guide development within a framework of ecological structure and function. Through interaction and shared dialogue, planners and natural resource managers can attach ecological values to land use guidelines, describe land use in terms of the ecosystems present and the ecological functions supported, and instill an awareness of how land parcels link or are associated with nearby natural areas. The results of the present study suggest that such a more integrated approach will benefit the residents as well.

### Acknowledgements

Funding for this project included support from the USDA Forest Service, North Central Research Station, and the National Urban and Community Forestry Advisory Council (UM Subcontract to University of Washington grant). We also thank the anonymous referees for their helpful comments.

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