

HOW THE PUBLIC VALUES URBAN FORESTS

by R. Bruce Hull IV

Abstract. Results of this study confirm the intensity with which people value urban forests. Following Hurricane Hugo, residents of Charleston, South Carolina were interviewed and over 30% identified urban forests as being the most significant feature that was damaged. Results also indicate the numerous and diverse values associated with the urban forest: positive emotions evoked by the urban forests (11.6%), contribution to community image and aesthetics (9.5%), energy conservation (6.4%), personal values and memories (5%), environmental quality (3.4%), opportunities for leisure activities (2.3%) and functional concerns (1%).

Numerous publications hail the benefits of urban forests (7,11,15,16). These benefits include aesthetics, community identity, human stress reduction, energy and water conservation, wildlife habitat, enhanced property values and much more. The purpose of this paper is to identify the benefits that the residents of Charleston, South Carolina ascribe to urban forests. The impetus for the inquiry was the 1989 landfall of Hurricane Hugo, one of the most devastating hurricanes to strike the United States. Since there was considerable damage to the urban forest, we expected residents to be acutely aware of what they had lost.

Methods

During the late spring and summer of 1990, we completed 185 telephone interviews with residents in ten neighborhoods of Charleston. A neighborhood was defined as approximately 100 residential units located within a four to five contiguous street-block area. An attempt was made to select neighborhoods that were approximately equal in the type of damage caused by Hugo (but not in cost of damage), and were homogeneous within themselves but varied from one another in socioeconomic status, age of buildings and density of houses. All neighborhoods had some forest canopy prior to Hugo. Approximately one-third of the residents from each neighborhood were randomly selected from a city directory and mailed a letter explaining that they would be contacted by phone with regards to this study. In total, 346 households were telephoned; 63 refused to par-

ticipate, 185 fully participated. The balance (98) were businesses or people that had moved or could not be reached even after 15 recalls. Thirty three percent of the respondents were male.

Three trained interviewers conducted the twenty minute interview. The interview consisted of an introduction, closed and open ended questions about evacuation, recovery, place attachment, socioeconomic status, and several open ended questions about the values associated with physical features damaged or lost due to Hugo. The latter questions are the topic of this paper.

Residents were asked to identify a physical feature of Charleston damaged by Hugo that was special to them. They were also asked to explain why it was special. The interview was designed to elicit from respondents the values they associated with physical features, i.e., Why was it special? What did it mean to you? How did it make you feel? If they did not identify some aspect of the urban forest or an historic feature in response to this first question, subsequent questions specifically asked whether either of these features were important and, if so, why. There were 2,213 responses. These were categorized by three persons guided somewhat by a similar study by Csikszentmihalyi and Rochberg-Halton (2). Intercoder agreement was 87%.

Results and Discussion

Any mention of trees, forested parks, or urban forests were combined into a category called "urban forest." Thirty percent of the residents identified the urban forest as being the physical feature most special to them. Seventy percent of responses had to do with architectural elements. Churches were mentioned almost as often as trees (27%) and respondent's own homes were a distant third (13%). Other features identified as being special include public buildings (6%), historic structures (6%), retail structures (5%), homes of friends or neighbors (3%), places of employment (1%), and a general "other" category (8%). Re-

spondents were more articulate about why they valued urban forests than they were about any other category. Over 44% of all codeable responses were reasons why urban forests were special, followed by historic structures (23%) and churches (16%).

Over 10% of respondents mentioned that they had previously taken for granted how much they valued the urban forest. Interestingly, no one said that they took for granted the values and benefits associated with any other feature. These findings suggest that trees are a valued component of Charleston and that the extensive damage to the urban forest made residents aware of these values. Perhaps another reason why trees were frequently mentioned was that there was extensive damage to the urban forest. Damage was not limited to trees, however. There was extensive damage to many other aspects of Charleston's environment, e.g., approximately 80% of roofs needed repair of some type.

What follows is a discussion of the reasons residents gave for urban forests being special. Reported is the number of responses that fell within the scope of each category. Also reported is the percentage that this number represents of the total 2,213 reasons offered for why respondents valued urban forests, historic features, personal homes and all other features they identified as being special.

Positive feelings or emotions associated with urban forests were mentioned 257 times, or 11% of the total. Several types of feelings were categorized based upon the scheme offered by Shaver, et al. (14): love (54, 2.4%) delighted (97, 4.4%) relaxed or reflective (68, 3%) other positive feelings (38, 1.8%). *Negative feelings* were mentioned only twice and these were concerns about safety.

These findings support previous research which suggest that nature evokes positive and relaxing emotions, even in urban areas (5,16). Exposure to nature has been found to reduce symptoms of stress and affects length of hospital stay (17,18). In addition, it has been found (5) that the emotions evoked by suburban parks predicted use preference and that these emotions varied predictably with manageable characteristics of park vegetation such as number of trees and understory treatment.

Respondents mentioned that the urban forest

was special because it served to *characterize, differentiate or beautify space*. The number of responses in this category (211) represents 9.5% of all code responses. Responses in this category included beauty, scenery, charm and symbol of Charleston. Trees and parks were mentioned only 3 times as being landmarks, however.

Community image is important because it helps differentiate one place from another (9); it helps define visual character of a place. Clearly, demarcated territory promotes feelings of membership or increases awareness that one is trespassing, depending upon whether one belongs in the setting or not. These qualities of place also may promote a sense of community (10). The aesthetic quality of the environment makes a lasting impression, and trees, in particular, are frequently used to create distinctive character. Trees and parks also serve as landmarks which also make places distinctive and help residents orient themselves.

Respondents mentioned that trees were special because they *provided economic or energy related benefits*. The number of responses in this category (139) represents 6.4% of all reasons given. Responses in this category included shade, temperature moderation, savings in cooling costs, raising of property values and general economic reasons, such as bringing in tourists.

The symbolic nature of place features contribute to a resident's extended self, place identity and ultimately, self identity. These, in turn, contribute to a sense of community, altruistic behavior, health and well-being (1,2,6,10,12). Place features serve as *powerful and rich symbols that convey information about personality, status, and cultural values* (3,4,13). These symbols not only define a place but also define the users of the place, their values, concerns, activities, aspirations and past experiences. Of all the responses, 109 (5%) fell within this general category. Several of the specific meanings associated with urban forestry are described below.

Reasons associated with ones *spiritual belief or hope* were mentioned 11 times, which represents less than 1% of all reasons given, but also contain some of the most poignant. Examples include salvation, something to live for, hope, beauty of life, God's work, and it symbolizes that nature nourishes our soul.

Reasons associated with one's preference for *things that have endured* represented 1% of all reasons. A tree is considered special because it has endured and survived where other things have not. Example statements include: rare, lasted a long time, survived storm, and it did not give up.

Respondents specifically mentioned that they valued the urban forest because it has been preserved or symbolized that *preservation had taken place*. The number of responses of this type (5) represents less than 1% of all the reasons given. Responses included free from development/exploitation, don't like change, preserved for children and it was saved for future generations.

Jacobi and Stokols (6) suggest that things are valued because they provide *connections with the past*. Responses of this type were mentioned 21 times, less than 1% of all reasons given. Example statements include: early American way of life, George Washington was there, black history, and represents early Charleston. Most of these responses referred to parks and gardens rather than particular trees.

Urban forests are valued by some residents because they become associated with or *symbolize groups of people*, especially one's family. Trees and parks were not associated with groups as much as other physical features around Charleston, such as churches, but were mentioned 22 times (<1%) as being a salient reminder of some group, mostly a reminder of some past or current family activity.

Residents value trees because of the *personal memories* trees had come to symbolize. Some respondents were moved to tears by thinking about what memories they had lost by losing trees. Trees were associated 29 times (<1%) with family gatherings, with parents or grandparents who had planted them, and with the long investment of the property owner who cared for them.

Respondents mentioned that the urban forest was special because it contributed to the general *environmental quality* of Charleston. The number of responses in this category (75) represents 3.4% of all reasons given. Responses in this category included statements about a healthy environment, ecology, clean air and wildlife habitat.

Urban forests are also valued because they

provide opportunities for *leisure and escape from city pressures*. More specifically, urban forests were valued as being places for picnicing and socializing, for contemplation, and for exercise. There were 52 responses in this category representing 2.3% of reasons given.

Finally, respondents mentioned that trees were special because they provided some *functional benefits* such as reducing perceived noise and increasing privacy. The number of responses in this category (21) represents 1% of all reasons given.

Conclusions and Implications

These results confirm the intensity with which the public values urban forests: over 30% of respondents identified some aspect of the urban forest as being the **most** significant physical feature of Charleston damaged by the hurricane even though many churches, historical structures and homes were also damaged. The results also indicate the numerous and diverse values associated with the urban forest. Charleston residents identified benefits that range from practical values such as lowering air conditioning bills and increased privacy, to the warm and fuzzy, but no less real values of community image, positive feelings, and reminders of personal memories. These findings, however, must be interpreted with caution because they are dependent upon the sample of residents and the physical conditions of Charleston.

These results suggest the need to promote public awareness of certain benefits of the urban forest. The environmental benefits, the leisure benefits, and the functional benefits are not well recognized by the public. It is curious that the environmental benefits were not mentioned more frequently given the mass media's attention on issues such as the greenhouse effect.

The role of urban forests as symbols of cherished meanings and memories needs to be emphasized as a major benefit deriving from urban forestry. This was one of the more frequently cited reasons why the urban forest was special to residents. Trees symbolize spiritual values, personal memories, reminders of the past, preservation and endurance. All these symbols are highly valued by the public.

Perhaps not as surprising is that the two reasons most frequently given by residents for why they valued urban forests were their 1) contributions to residents' positive feelings and to 2) the distinctive image of Charleston. Unfortunately, we know little of how these effects are produced. Research is needed to better understand how the urban forest should be managed to realize these highly valued benefits.

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Résumé. Les présents résultats confirment l'intensité avec laquelle les gens valorisent les forêts urbaines. Plus de 30% des répondants identifiaient les forêts urbaines comme étant le trait physique le plus significatif de Charleston en Caroline du Sud. Les résultats indiquent aussi les nombreuses et diverses valeurs associées à la forêt urbaine: émotions positives évoquées par la forêt urbaine (11.6%), contribution à l'esthétique et à l'image de la communauté (9.5%), conservation de l'énergie (6.4%), valeurs et souvenirs personnels (5%), qualité de l'environnement (3.4%), occasions d'activités de loisirs (2.3%) et intérêts fonctionnels (1%).