Geocachers: Benefits Sought and Environmental Attitudes

Ingrid E. Schneider, University of Minnesota;
Kenneth E. Silverberg, California State University-Long Beach;
Deborah Chavez, USDA Forest Service, Pacific Southwest Research Station

Abstract

Geocaching, an outdoor recreation activity that uses handheld Global Positioning Systems (GPS) to find hidden treasures demarcated on the Internet, emerged in 2000 and has engaged more than 5 million participants in more than 200 countries (www.geocaching.com). Agency responses to geocaching range from collaborative management to exclusion. Effective management, however, depends on knowledge of participants' behaviors and preferences as well as the ability to respond effectively to them. This project profiled geocachers, the benefits they seek in the activity, as well as attitudes toward environmentally responsible behaviors. An electronically administered questionnaire in 2003 revealed geocachers at that time were primarily middle aged, White, and possessed high educational status. Seven benefit factors emerged related to geocaching: physical fitness, nature experiences, learning, stimulation, relaxation, autonomy, and socialization. Benefits sought differed by group type (family vs. alone). Geocachers indicated environmentally responsible behaviors were important. Programming opportunities exist to enhance physical activity, environmental understanding, social cohesion, and revenues. Management challenges include cache placement, cache monitoring, inter- and intragroup conflict, and increased visitation.

Key Words: Technology, geocaching, environmentally responsible behavior, benefits

Authors: Please direct correspondence to: Ingrid E. Schneider, Ph.D., University of Minnesota, Department of Forest Resources & Tourism Center, 1530 Cleveland Avenue North, St Paul, MN 55108. E-mail: ingridss@umn.edu

Introduction and Review of Literature

The role technology plays in outdoor recreation is evolving and of ongoing interest.   More often than not, technology is suggested as a negative correlate to both outdoor recreation and social engagement (Louv, 2010; Pergams & Zaradic, 2006). However, geocaching, an emerging technology-dependent activity may have the potential to increase both outdoor recreation participation and social engagement (Ihamäki & Tuom, 2009).

More than 5 million people in omore than 200 countries geocache (geocaching.com, May 1, 2011). Geocaching involvement includes using a handheld Global Positioning System (GPS) to find or hide caches in public areas based on clues posted on the Internet. Caches take a variety of forms from a small, waterproof container with a logbook to virtual caches such as a statue where the cache hunter has to respond to a question about the site as proof of finding the cache. Caches have been used by organizations to showcase big trees (Wright, 2003) and share geological information (Geological Society of America, 2004).

Through a combination of geography and hide-n-seek, the idea is to place caches all over the world, share their location coordinates on the Internet, and have others search for and find them. Geocaching.com, the primary source for geocachers, provides information and guidelines to participate in the activity.

Appropriately placed and well-maintained caches are recommended by geocaching.com. While caches are ultimately an individual's responsibility, geocaching.com provides guidelines about cache placement, requires written descriptions of caches, and reviews them prior to publishing cache locations for cache seekers. Once found, the cache is placed back where it was found, the cache finder posts an e-mail to the cache owner to let them know the cache was found and provides comments on the cache condition.

Geocaching extends technologically-related recreation behaviors by taking the technology outside. Simultaneously, new challenges and opportunities arise for land managers and planners. The implications for land managers from geocaching are many and varied: off-trail travel, disturbed natural areas, abandoned property, and increased use. Concurrent with the new challenges related to geocaching are opportunities such as visitor benefit attainment. A benefit is defined as "a change… viewed to be advantageous—an improvement in condition or gain to an individual, to a group, to society, or to another entity" (Driver, Brown, & Peterson, 1991). Benefits-based management (BBM) "improves understanding of human interactions with the natural environment, increases the number of management options available to managers, and improves the quality of management actions" (Anderson, Nickerson, Stein, & Lee, 2000). Driver and Bruns (1999) suggested in 1999 and Driver and others (2008) continue to support the idea that benefit management increases collaborative partnerships, long-term monitoring, communication, marketing targeted toward benefit opportunities, and clearer management objectives. Thus, research on benefits can identify specific improvements or the lack thereof that may result to individuals, families, communities, or even larger social groups. Driver and Bruns (1999) suggested more than a decade ago that the two most important tasks for benefits research are 1) to understand how desired and attained benefits vary by type of person, activity, and setting, and 2) to understand what features influence benefit attainment. Thus, understanding if and what benefits are sought from an emerging activity like geocaching is of interest both academically and managerially.

In addition to the benefits sought from geocaching, understanding participants' beliefs about environmentally responsible or low-impact behaviors is also of interest. Due to

cache placement and travel to obtain caches, managers and others are understandably concerned about the environmental impacts of geocaching. Within the activity, seemingly opposing philosophies intersect as caches are hidden in a variety of areas, often off-trail, off-road or in a geological or botanical feature, but a 'cache in-trash out' (CITO) message is espoused (www.geocaching.com). As such, on the one hand, geocachers indicate they are environmentally responsible because they pick up trash, yet they also indicate that off-trail and off-road behavior is acceptable based on cache placement. Thus, the strength of their beliefs about environmentally responsible behaviors is of interest. Because environmental attitudes and beliefs have been linked to environmental behavior in outdoor recreation research (Bright, Manfredo, Fishbein, & Bath, 1993; Kim, Aiery, & Svizas, 2011), it makes sense to examine attitudes as a surrogate to behavior. Although environmentally responsible behaviors are important, scant information exists about geocachers in the published literature. Therefore, this study investigated attitudes toward several low-impact or environmentally responsible behaviors among geocachers based on reliable items adapted from Dyck, Schneider, Thompson, and Virden (2003).

Public land management agency response to geocaching ranges from collaborative management to absolute exclusion (Chavez, Courtright, & Schneider, 2004). Effective management, however, depends on client knowledge. Despite their emergence in the early 2000s, little is known about geocachers, their behaviors, or preferences. Thus, the purpose of this project was to profile geocachers, their activities, if and what benefits they seek in the experience, as well as attitudes toward environmentally responsible behaviors.

Methods

An electronically administered questionnaire was developed and disseminated to geocachers in one U.S. Midwestern state. Potential respondents were geocachers drawn from two sources, the state's Geocaching Association (SGA) and from the web site 'Geocaching.com.'

Sample

The sample consisted of geocachers who had either found or placed a cache in one of several county park systems in a Midwest metropolitan area. This sample was identified through a two-step process. First, using geocaching.com, geocachers who had found or placed caches in metro park systems were identified. Second, the SGA provided their member list. The SGA list and geocaching.com list were compared, de-duplicated and a unique list of 235 respondents emerged.

The 235 geocachers were invited via email to complete a questionnaire using an online survey tool (zoomerang.com). A total of 14 names on the mailing list failed to deliver. Following a modified Dillman technique (2000), an initial invitation and two reminders resulted in 133 returned questionnaires for a 60.2% response rate.

Questionnaire

A four-page questionnaire was designed, approved by the University's Institutional Review Board, and pre-tested. Potential respondents received the questionnaire and introductory letter through email; the letter explained the purpose of the questionnaire and ensured anonymity and confidentiality. Questionnaire sections focused on 1) experience with geocaching, 2) benefits sought while geocaching, 3) general recreation activity, 4) environmentally appropriate behaviors, and 5) demographic information.

Questions related to geocaching experiences included number of years or months participating in the activity, number of caches found and hidden that calendar year, and preferences for caching. Benefits sought for geocaching were developed with modified recreation expe-

rience preferences scales, following Anderson et al. (2000). As such, these 26 items were rated on a five-point Likert scale where 1 = very important and 5 = very unimportant. General recreation activity questions included frequency of participation in 22 other types of outdoor recreation activities. The activities included those used in local and state agency surveys, and included use of the GPS unit beyond geocaching. The list of five environmentally responsible behaviors, adapted from Dyck et al. (2003), asked participants to rate how important each the behaviors were on a 5 point scale where 1 = very important and 5 = very unimportant.

Analysis

Data were entered, cleaned, and checked for singularity and multicolinearity in SPSS. Descriptive analysis provided means, standard deviations, and frequencies to describe the sample and provide information on variables of interest. To reduce the benefit items to a more useful set for managers, principal components factor analysis, with varimax rotation, identified factors among the experience preferences. Standard criteria of factor loadings greater than 0.40 and factors with eigenvalues ≥ 1 were used. Cronbach alpha assessed scale and factor reliability. Differences by group type (family/alone) were explored by comparing computed factor scores with t-tests.

Results

Respondents

Geocaching survey respondents ranged in age from 23 to 70 years, with a mean age of 39.9 years. Respondents were primarily male (85.6%), White (96.1%), and highly educated (47.7% college degree, 14.4% advanced degree; Table 1). Most frequently respondents indicated they worked full time (82.4%) (Table 1).

More than 50% of respondents indicated they engaged in the following outdoor recreation activities: walking/hiking, camping, biking, observing/photographing, swimming, picnick-

ing, driving for pleasure, and relaxing outdoors. Interestingly, just 19.5% of cachers engaged in orienteering. The GPS units were used for other recreation and non-leisure activities, as well as approximately 80% of respondents indicated they used GPS instruments for navigation, hunting, fishing, hiking, and travel.

Geocaching Experience

The average respondent had participated in geocaching for 1.5 years. While participating in geocaching activities, respondents indicated spending roughly 50% of their time with members of their immediate family and 25% alone. Average group size for geocachers was 2.94 people. The great majority of respondents indicated they search for caches (96.9%) rather than hide them Respondents most frequently found four caches between January and September 2003 and hid none. Those who found caches preferred to find them within one-quarter mile from the trail (52.5%) or between one-quarter and one-half mile from the trail (35.2%). Respondents who did hide caches (n= 130) hid an average of 3.72 in the year prior to survey completion. When preferences for cache hiding locations were queried, respondents indicated they preferred to hide them in parks (74.1%), whereas 17.2% indicated other locations (unidentified), and 8.2% did not care where they hid them. More than 83% agreed or strongly agreed that geocaching had increased their number of visits to parks and recreation areas.

Benefits Sought

All 26 benefit items listed were rated at least moderately important to respondent's geocaching experience (Table 2). The most important items were enjoying the scenery, getting exercise, experiencing new and different things, and experiencing nature. Least important to the geocaching experience was meeting new people.

Table 1: Demographic Characteristics Among Geocaching Survey Respondents

Demographic characteristic	N	Percent
Age in years (n =131, <u>M</u>=39.9, <u>SD</u>=10.00)		
20 – 29	21	16.0
30 – 39	47	35.9
40-49	41	31.3
50 – 59	17	13.0
60 – 69	4	3.1
70 +	1	0.8
Total	131	100.1
Education level (n =132)		
Eighth grade	2	1.5
High school/GED	5	3.8
Tech school	14	10.6
Some college	29	22.0
College degree	63	47.7
Advanced degree	19	14.4
Total	132	100.0
Ethnicity (n =127)		
White	122	96.1
Black or African American	1	0.8
American Indian or Alaskan Native & other	3	2.3
Asian	1	0.8
Total	127	100.1
Employment status (n=131)		
Full time	108	82.4
Retired	6	4.6
Part time	3	2.3
Other	14	10.7
Total	131	100.0
Gender (n=132)		
Male	113	85.6
Female	19	14.4
Total	132	100.0

Table 2: Importance of Possible Experiences While Geocaching Among Survey Respondents

Experience	M[a]	SD
To enjoy the scenery of the woods (n=132)	1.3	.53
To get exercise (n=133)	1.5	.64
To experience new and different things (n=132)	1.5	.64
To experience nature (n=133)	1.6	.64
To test my skills and abilities (n=132)	1.7	.64
To participate in recreational activities (n=130)	1.7	.64
To feel healthier (n=132)	1.8	.82
To be close to nature (n=133)	1.8	.79
To challenge myself (n=130)	1.8	.92
To learn about the natural history of the area (n=130)	1.8	.70
To get away from the usual demands of life (n=132)	1.9	.84
To use my own equipment (n=132)	1.9	.94
To learn about the cultural history of the area (n=131)	1.9	.73
To do something with my family (n=132)	1.9	.97
To relax physically (n=133)	2.0	.87
To have a wilderness experience (n=132)	2.0	.88
To have thrills and excitement (n=130)	2.0	.84
To be with people who enjoy the same things I do (n=132)	2.2	1.07
To experience solitude (n=132)	2.4	1.03
To share my skill and knowledge with others (n=131)	2.6	1.01
Other (n=52)	2.6	1.47
To think about my personal values (n=132)	2.6	1.01
To be with members of my group (n=132)	2.6	1.11
To be away from other people (n=133)	2.8	1.10
To be on my own (n=133)	2.9	1.06
To be creative by doing something such as sketching, painting, taking photographs (n=133)	3.0	1.09
To meet new people (n=133)	3.1	1.02

[a]Note: 1 = very important, 2= important, 3 = neither, 4 = very unimportant, and 5 = very unimportant

When the items were factor analyzed, seven factors emerged (in order of importance): physical fitness, experience nature, learn new things, stimulation, relaxation, autonomy, and socialization (Table 3). The factors explained 71.3% of the variance in the items and six of the seven factors had Cronbach alpha reliability coefficients of .60 or greater. Comparing factor scores revealed that benefits sought differed by activity group where those recreating with family members attributed greater importance to socialization and those recreating alone attributed greater importance to autonomy (t=3.37, p < .05; t = -2.20, p < 05, respectively).

Table 3: Factor Loadings for Benefit Items Among Geocaching Survey Respondents

Items	Physical fitness	Nature experience	Learn	Stimulation/ skill	Relaxation	Autonomy	Social
Feel healthier	.84						
Get exercise	.75						
Have a wilderness experience		.80					
Enjoy the scenery of the woods		.78					
Experience nature		.76					
Be close to nature		.61					
Learn natural history of the area			.87				
Learn cultural history of the area			.85				
Participate in recreation activity			.59				
Experience new and different things			.50				
Test my skills and abilities				.86			
Challenge myself				.82			
Have thrills and excitement				.64			
Share skill & knowledge with others				.46			
Experience solitude					.83		
Be away from other people					.78		
Get away from usual demands of life					.71		
Relax physically					.56		
Use my own equipment						.84	
Be on my own						.79	
Be with members of my group							.83
Be with people who enjoy the same things as I do							.82
Meet new people							.71
Scale M	1.6	1.7	1.7	2.0	2.2	2.4	2.7
Alpha (a)	.78	.81	.77	.77	.80	.58	.74
Variance explained (%)				71.3			

With respect to specific attributes to an enjoyable experience, again, all nine items listed were at least moderately important (Table 4). Not surprisingly, the most important attribute to an enjoyable geocaching experience was finding the cache. Also very important to an enjoyable experience was well maintained caches and litter free areas. Least important to the experience was meeting other geocachers.

Table 4: The Importance of Various Attributes to an Enjoyable Experience

	M^a	SD
Finding caches (n=133)	1.6	.79
Well maintained caches (n=133)	1.8	.78
Litter free area (n=132)	1.9	1.04
Overall area maintenance (n=131)	2.2	.93
Clear policies (n=132)	2.3	1.17
Leaving items in a cache (n=133)	2.7	1.21
Caches ½ mile +from parking lots (n=133)	2.8	1.12
Caches 1 mile+ from parking lots (n = 133)	3.0	1.27
Meeting other geocachers (n=131)	3.4	1.02

[a]Note: 1 = very important, 2= important, 3 = neither, 4 = very unimportant, and 5 = very unimportant

Environmentally responsible behaviors

Respondents indicated all five environmentally responsible behaviors presented were important (Table 5). The most important behavior was to pack everything out, followed by removing dog feces, and controlling pets at all times. Least important among the behaviors was the practice to take breaks near trails.

Table 5: The Importance of Environmentally Responsible Outdoor Recreation Behaviors

	M^a	SD
To pack out (n=132)	1.2	.62
To remove dog feces (n=132)	1.5	1.07
To control pets (n=132)	1.5	1.07
To stay on trails* (n=133)	2.3	1.09
To take break near trails* (n=132)	2.5	1.09

[a]Note 1 = very important, 2= important, 3 = neither, 4 = very unimportant, and 5 = very unimportant

Discussion

The benefits geocachers seek are similar to other outdoor recreation activity participants (Anderson et al. 2000; Pierskalla, Lee, Stein, Anderson, Nickerson, 2004). This research revealed that the benefits sought related to socialization did differ by group type, which is not altogether surprising. However, it does support Driver's call for research that assesses if and how benefits are influenced. Certainly additional analysis is possible and encouraged.

Study respondents indicated environmentally responsible behaviors were very important, also similar to other studies (Dyck, et al. 2003). This finding suggests informal management concerns about negative environmental impacts and increasingly irresponsible behaviors by geocachers may be unfounded. However, as identifying environmentally responsible items as important is a socially desirable response, further research about geocacher behavior is necessary. To confirm the implementation of environmentally responsible behaviors, observational techniques may be very appropriate to detail the frequency of geocaching parties traveling off-trail or off-road as well as 'trashing out.'

Several other research opportunities exist with this relatively new user group. Related to the increased visitation, determining what, if any, percentage of geocachers are new outdoor

recreation users is of interest as is the exact increase in visitation to parks/recreation areas geocaching induces. Our questionnaire asked if visitation increased use in the past 12 months; knowing more about this change would be of interest. If and how this experience opportunity has impacted onsite visitor conflict is of interest as the use of the GPS itself may inspire negative attitudes toward the group by those with less positive attitudes toward technology. Further, the fact that geocachers typically go off-trail at some point may also inspire negative feelings toward them.

Obvious other research extensions include location and technology use. This was a first effort in one state and, given the activity's diffusion, exploring other states/countries' participants would be of interest. Working with state or national geocaching associations is highly recommended, however, as obtaining individual cacher information from geocaching.com is very time consuming. For example, in one search (performed by the researchers), a list of 413 caches was provided within a 5-mile radius of a particular zip code.

Management implications

Geocaching-related programming opportunities exist to enhance benefits sought and improve environmental understanding, while enhancing geocacher environmentally responsible beliefs. Certainly geocaching programming or experience opportunity provision requires a diligent analysis of the benefits and costs related to visitor experiences, agency resources and the environmental or cultural resources themselves.

Like other outdoor recreation experiences, activity, nature and learning were important benefits sought. Given the recent emphasis on physical fitness by government and non-government organizations in response to a U.S. obesity epidemic, the physical activity element associated with geocaching is of interest and identifies geocaching as a possible addition to the suite of existing physical experience oppor-

tunities in park and recreation areas. Nature experiences and learning were also very important benefit factors for geocaching. As such, extending the existing efforts of the GSA to other venues may be a programming opportunity to 'cache' important natural, cultural or geologic features. Of course, the challenge of balancing the preservation of the features with increased visitation much be taken into account before embarking and cache placement deserves significant evaluation. Integrating geocaching into existing interpretive events or at existing and well visited features, however, may be an opportunity to enhance existing programming without significant effort or impact. A monitoring program to ascertain the impact of such programming on relevant resource indicators seems most appropriate.

Not surprisingly, the benefits sought differed between the geocachers in this study who were participating with their families and those participating alone. For those with families, the long term impact of the social bonding time is of interest. At least 30 years of research documents that family leisure and recreation enhances family satisfaction (Orthner, 1975, 1976; Zabriskie & McCormick, 2003) as well as couple satisfaction (Holman & Epperson, 1984; Holman & Jacquart, 1988; Johnson, Zabriske, & Hill, 2006). Therefore, as organizations seek to attract and retain the family demographic, geocaching may have appeal due to the socialization benefit sought by family groups. Given the outdoor focus and reliance on technology, geocaching programs may bridge generational and technological divides and bring parents and children or couples together with technology (Bryce & Rutter, 2003; Quigley & Blashki, 2003). However, as the leisure experience varies among group members by age and family role (Martinson, Schwartz, & Vaughan, 2002), identifying the differences of benefits within groups would be fruitful and informative for such efforts.

All five items queried regarding environmen-

tally responsible behavior were important, but pack in/out was the most important as it related to participants and their dogs, in particular. This finding supports the findings related to cachers preferring well-maintained caches and litter free areas. As such, there seems a serendipity with the cacher 'cache in-trash out' messaging espoused by geocaching.com and the preferences and beliefs stated by study respondents. The preference extends to picking up animal feces, which was also important to respondents. Litter of all types is a frequent and common source of visitor conflict (Schneider, 2004) and persistent efforts to engage visitors to 'cache in-trash out' and the related 'pack it in-pack it out' behaviors can diminish this as a visitor issue.

This study reveals that geocachers seek similar benefits to other recreationists, prefer well-maintained and litter free areas similar to other recreationists. The unique impacts of the geocaching experience such as off-trail use and technology-dependence appear to differentiate it from other users at this time. As such, both social and natural resource monitoring around caches seems important. Given the ability of technology to inspire inter-group conflict, monitoring the perceptions and behavior of other visitors seems important. Obviously the natural and cultural resources at and around the cache are also important and relevant and realistic indicators should be selected for monitoring, dependent on management goals and site characteristics.

References

Anderson, D., Nickerson, R., Stein, T., & Lee, M. (2000). Planning to provide community and visitor benefits from public lands. In W. Gartner & D. Lime (Eds.), *Trends in Outdoor Recreation, Leisure, and Tourism* (pp. 197-211). New York: CAB International.

Bright, A. D., Manfredo, M. J., Fishbein, M., & Bath, A. (1993). Application of the theory of planned behavior to the National Park Service's controlled burn policy. *Journal of Leisure Research, 12,* 229-241.

Bryce, J., & Rutter, J. (2003). Gender dynamics and the social and spatial organization of computer gaming. *Leisure Studies, 22*, 1-15.

Chavez, D.C., Courtright, R., & Schneider, I.E (2004). Over the river and through the woods. *Parks & Recreation, 39*, 68-72.

Dillman, D. A. (2000). *Mail and internet surveys: The tailored design method* (2nd ed.). New York: Wiley.

Driver, B. L., & Bruns, D. (1999). Concepts and uses of the benefits approach to leisure. In E. Jackson & T. Burton (Eds.), *Leisure Studies: Prospects for the 21st Century* (pp. 349-369). State College: Venture Publishing.

Driver, B. L., Brown, P., & Peterson, G. (1991). *Benefits of leisure*. State College: Venture Publishing.

Driver, B.L. (Ed.) (2008). *Managing to optimize the beneficial outcomes of recreation*. State College, PA: Venture Publishing, Inc.

Dyck, C., Schneider, I.E., Thompson, M., & Virden, R. J. (2003). Specialization among mountaineers and its relationship to environmental attitudes*. Journal of Park & Recreation Administration, 21,* 44-62.

Geological Society of America. [On-line].Available: http://www.geosociety.org/earthcache/faq.htm. May 1, 2011.

Geocaching.com. [On-line]. Available: http://geocaching.com. May 1, 2011.

Holman, T. B., & Epperson, A. (1984). Family and leisure: A review of the literature with research recommendations. *Journal of Leisure Research, 16,* 277-294.

Holman, T. B., & Jacquart, M. (1988). Leisure-activity patterns and marital satisfaction: A further test. *Journal of Marriage and the Family, 50*, 69-77.

Ihamäki, P. & Tuom, P. (2009). Understanding 21st Century's mobile device based games within boundaries. Proceedings of Digra 2009: *Breaking New Ground: Innovation in Games, Play, Practice and Theory:* 17-22.

Johnson, H. A., Zabriske, R. B., & Hill, B. (2006). The contribution of couple leisure involvement, leisure time, and leisure satisfaction to marital satisfaction. *Marriage & Family Review, 4, 1,* 69-91.

Kim., J. K. A., Airey, D. & Szivas, E. (2011). The multiple assessment of interpretation effectiveness: Promoting visitors' environmental attitudes and behavior. *Journal of Travel Research, 50, (3)*: 321-334.

Louv, R. (2010). *The nature principle*. Chapel Hill: Algonquin Books.

Martinson, A. M., Schwartz, N., & Vaughan, M. W. (2002). Women's experiences of leisure: implications for design. *New Media & Society, 4, 1,* 29-49.

Orthner, D. K. (1975). Leisure activity patterns and marital satisfaction over the marital career. *Journal of Marriage and Family, 37,* 91-102.

Orthner, D. K. (1976). Patterns of leisure and marital interaction. *Journal of Leisure Research, 8,* 98-111.

Pergams, O.R.W. & Zaradic, P.A. (2006). Is love of nature in the U.S. becoming love of electronic media? 16-year downtrend in national park visits explained by watching movies, playing video games, internet use, and oil prices. *Journal of Environmental Management,* 80, 387-393.

Pierskalla, C., Lee, M., Stein, T., Anderson, D.H., & Nickerson, R. (2004). Understanding relationships among recreation opportunities: A meta-analysis of nine studies. *Leisure Sciences, 26,* 163-180.

Quigley, M., & Blashki, K. (2003). Beyond the boundaries of the sacred garden: children and the Internet. *Information Technology in Childhood Education Annual*, 309-317.

Schneider, I.E. (2004). Less stress: How you can manage visitor conflict. *Parks & Recreation, 37,* 69-73.

Wright, T. (2003). Geocaching: Trees as treasure. *American Forests*, 7-9.

Zabriskie, R. B., & McCormick, B. P. (2003). Parent and child perspectives of family leisure involvement and satisfaction with family life. *Journal of Leisure Research, 35,* 163-189.