SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL

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Summary Report: Nature Centers & Communities study

CORKSCREW SWAMP SANCTUARY AND BLAIR AUDUBON CENTER, NAPLES, FL

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them — including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection
The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection
We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Corkscrew Swamp Sanctuary & Blair Audubon Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ................................................................. 0% (nation-wide = 2%)
- Asian .................................................................................................................. 2% (nation-wide = 5%)
- Black or African American .................................................................................. 8% (nation-wide = 6%)
- Hispanic or Latino ........................................................................................... 5% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ....................................................... 0% (nation-wide = 0.2%)
- White .................................................................................................................. 85% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ............................................................................... 56 (nation-wide = 54)
- Age range of respondents ............................................................................... 19-88 (nation-wide = 19-97)
- Percentage of female respondents .................................................................. 27% (nation-wide = 23%)
- Percentage of married respondents ................................................................. 66% (nation-wide = 67%)
- Percentage of home-owning respondents ...................................................... 75% (nation-wide = 73%)
- Percentage of respondents with children living in their home ..................... 27% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ............... 35% (nation-wide = 46%)
- Average length of residency for respondents in current town .................... 15yrs (nation-wide = 23yrs)
- Average time it would take respondent to drive to center ......................... 44mins (nation-wide = 17mins)

One-hundred and three people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Corkscrew Swamp Sanctuary & Blair Audubon Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center .......................................................... 82% (nation-wide = 62%)
- indicated they had visited center ................................................................. 41% (nation-wide = 60%)
- indicated they had volunteered at center .................................................... 1% (nation-wide = 3%)
- indicated they had donated to center ........................................................... 7% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ............................................................ 5% (nation-wide = 8%)
- believed staff members volunteered in local community ......................... 18% (nation-wide = 28%)
- believed staff members shared similar values as them ............................ 93% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ..................... 62% (nation-wide = 65%)
- believed center provided educational programs for youth ....................... 68% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults... 55% (nation-wide = 61%)
- believed center provided volunteer opportunities ................................... 64% (nation-wide = 67%)
- believed center provided rental facilities .................................................... 22% (nation-wide = 39%)
- believed center provided activities in language other than English ....... 30% (nation-wide = 27%)
- believed center staff members participated in community events .......... 21% (nation-wide = 34%)
- believed their friends like the center ......................................................... 42% (nation-wide = 47%)
- believed their family likes the center ......................................................... 49% (nation-wide = 52%)
- believed their local community likes the center ....................................... 28% (nation-wide = 36%)
- were satisfied with their past visits to the center (visitors only) ........... 86% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only):

- to discover new things ............................................................................. 84% (nation-wide = 88%)
- to enjoy myself .......................................................................................... 95% (nation-wide = 94%)
- to expose my children/family to something new ................................. 72% (nation-wide = 77%)
- to get away from everyday life .............................................................. 77% (nation-wide = 70%)
- to spend time with friends/family ............................................................ 78% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ....... 9% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ....................... 33% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ....................... 0% (nation-wide = 4%)
- I have poor health .................................................................................... 14% (nation-wide = 10%)
I'm too busy with other commitments........................................... 72% (nation-wide = 70%)
My friends/family prefer to go elsewhere......................................... 27% (nation-wide = 31%)
People like me are not treated as well as others [at the nature center]. 1% (nation-wide = 2%)
The entrance or program fees are too expensive............................... 35% (nation-wide = 18%)
There's nothing I like to do [at the nature center]............................. 11% (nation-wide = 13%)
It is far from where I live or work ............................................... 51% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- *Leisure provision* included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- *Environmental connection* included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- *Civic engagement* included bringing together people from different races and ethnicities and linking people to political action.
- *Community resilience* included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of *leisure provision* differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. *Community resilience* and *civic engagement* were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
## PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
<th>Center average</th>
<th>Different than nation-wide average?</th>
</tr>
</thead>
</table>
| Environmental connection | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                         • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                         • Providing access to nature  
                         • Providing a place for children to learn  
                         • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.36 | No |
| Leisure provision      | • Providing a place for physical exercise  
                         • Providing a place for retreat/restoration/relaxation  
                         • Providing a safe place for outdoor recreation | (same as above) | 3.63 | No |
| Civic engagement       | • Helping bring together people from different races/ethnicities  
                         • Linking people to political action  
                         • Providing a place for people in the local community to gather | (same as above) | 2.71 | No |
| Community resilience   | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                         • Developing a sense of pride in the local community  
                         • Making the community a more beautiful place | (same as above) | 3.61 | No |

*a responses from bulleted survey items were averaged to create indices ['value set' in column one]; *b only statistically significant differences shown (p < .05)

## PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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| Environmental connection | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                         • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                         • Providing access to nature  
                         • Providing a place for children to learn  
                         • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.34 | No |
| Leisure provision      | • Providing a place for physical exercise  
                         • Providing a place for retreat/restoration/relaxation  
                         • Providing a safe place for outdoor recreation | (same as above) | 4.03 | No |
| Civic engagement       | • Helping bring together people from different races/ethnicities  
                         • Linking people to political action  
                         • Providing a place for people in the local community to gather | (same as above) | 3.43 | No |
| Community resilience   | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                         • Developing a sense of pride in the local community  
                         • Making the community a more beautiful place | (same as above) | 3.81 | No |

*a responses from bulleted survey items were averaged to create indices ['value set' in column one]; *b only statistically significant differences shown (p < .05)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

LIKELIHOOD OF SUPPORTING NATURE CENTER
Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate................................................................. 40% (nation-wide = 45%)
  o highly likely to donate...................................................... 2% (nation-wide = 6%)
- likely to volunteer.............................................................. 31% (nation-wide = 38%)
  o highly likely to volunteer.................................................. 4% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)......................... 60% (nation-wide = 65%)
  o highly likely to respond to a threat (e.g., development)............ 13% (nation-wide = 19%)

CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


CONTACT INFORMATION FOR THE RESEARCH TEAM

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Nicole Ardoin (theoretical framing and study implications) ...................... nmardoin@stanford.edu
Joe Heimlich (theoretical framing and study implications) ....................... jheimlich@cosi.org
Bob Petty (grant administration) ................................................................. rpetty@audubon.org
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Audubon Center at Debs Park, Los Angeles, CA

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Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
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Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways to communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Audubon Center at Debs Park Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native .............................................. 0% (nation-wide = 2%)
- Asian .................................................................................. 13% (nation-wide = 5%)
- Black or African American .............................................................. 2% (nation-wide = 6%)
- Hispanic or Latino ........................................................................ 33% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ...................................... 0% (nation-wide = 0.2%)
- White ..................................................................................... 50% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent .......................................................... 50 (nation-wide = 54)
- Age range of respondents ............................................................ 22-88 (nation-wide = 19-97)
- Percentage of female respondents .................................................. 24% (nation-wide = 23%)
- Percentage of married respondents ................................................. 58% (nation-wide = 67%)
- Percentage of home-owning respondents ....................................... 68% (nation-wide = 73%)
- Percentage of respondents with children living in their home ............. 33% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ...... 38% (nation-wide = 46%)
- Average number of years respondents lived in current town .......... 23 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ............... 8 mins (nation-wide = 17 mins)

One-hundred and twenty-three people living around your center responded to the survey (approx. locations below)
Attitudes and Behaviors of Audubon Center at Debs Park Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ............................................. 46% (nation-wide = 62%)
- indicated they had visited center .................................................. 30% (nation-wide = 60%)
- indicated they had volunteered at center ..................................... 2% (nation-wide = 3%)
- indicated they had donated to center ............................................ 8% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ........................................... 5% (nation-wide = 8%)
- believed staff members volunteered in local community ............ 14% (nation-wide = 28%)
- believed staff members shared similar values as them ............. 96% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ...... 59% (nation-wide = 65%)
- believed center provided educational programs for youth ....... 59% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults 44% (nation-wide = 61%)
- believed center provided volunteer opportunities .................. 46% (nation-wide = 67%)
- believed center provided rental facilities .................................. 32% (nation-wide = 39%)
- believed center provided activities in language other than English 44% (nation-wide = 27%)
- believed center staff members participate in community events 24% (nation-wide = 34%)
- believed their friends likes the center ....................................... 48% (nation-wide = 47%)
- believed their family likes the center ........................................ 51% (nation-wide = 52%)
- believed their local community likes the center ....................... 28% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ........... 87% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ............................................................. 80% (nation-wide = 88%)
- to enjoy myself ....................................................................... 91% (nation-wide = 94%)
- to expose my children/family to something new ..................... 68% (nation-wide = 77%)
- to get away from everyday life ................................................. 68% (nation-wide = 70%)
- to spend time with friends/family ............................................. 73% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ......... 10% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ................. 36% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ..................... 6% (nation-wide = 4%)
- I have poor health ..................................................................... 4% (nation-wide = 10%)
- I’m too busy with other commitments ....................................... 60% (nation-wide = 70%)
- My friends/family prefer to go elsewhere .................................. 20% (nation-wide = 31%)
Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

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- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
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<td>1 to 5 where 1 = not at all important, and 5 = extremely important</td>
<td>4.45</td>
<td>No</td>
</tr>
<tr>
<td>Leisure provision</td>
<td>• Providing a place for physical exercise&lt;br&gt;• Providing a place for retreat/restoration/relaxation&lt;br&gt;• Providing a safe place for outdoor recreation</td>
<td>(same as above)</td>
<td>3.89</td>
<td>No</td>
</tr>
<tr>
<td>Civic engagement</td>
<td>• Helping bring together people from different races/ethnicities&lt;br&gt;• Linking people to political action&lt;br&gt;• Providing a place for people in the local community to gather</td>
<td>(same as above)</td>
<td>3.31</td>
<td>Yes</td>
</tr>
<tr>
<td>Community resilience</td>
<td>• Contributing to the local economy (e.g., increasing property values or attracting businesses)&lt;br&gt;• Developing a sense of pride in the local community&lt;br&gt;• Making the community a more beautiful place</td>
<td>(same as above)</td>
<td>3.66</td>
<td>No</td>
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*a responses from bulleted survey items were averaged to create indices ('value set' in column one); *b only statistically significant differences shown (p < .05)

## PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**LIKELIHOOD OF SUPPORTING NATURE CENTER**
Percentage who indicated that they were…(calculated only from people who were aware of your center):

- likely to donate.......................................................................................... 57% (nation-wide = 45%)
  - highly likely to donate........................................................................... 8% (nation-wide = 6%)
- likely to volunteer........................................................................................ 47% (nation-wide = 38%)
  - highly likely to volunteer..................................................................... 4% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)........................................ 83% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)................. 25% (nation-wide = 19%)

**CONCLUSION**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


CONTACT INFORMATION FOR THE RESEARCH TEAM

Matt Browning (data collection and analysis) ........................................... brownin@illinois.edu
Marc Stern (theoretical framing and study implications) .......................... mjstern@vt.edu
Nicole Ardoin (theoretical framing and study implications) ...................... nmardoin@stanford.edu
Joe Heimlich (theoretical framing and study implications) ....................... jheimlich@cosi.org
Bob Petty (grant administration) ........................................................... rpetty@audubon.org
SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

Elachee Nature Science Center, Gainesville, GA

Matt Browning, University of Illinois at Urbana-Champaign
Marc Stern, Virginia Tech
Nicole Ardoin, Stanford University
Joe Heimlich, The Ohio State University
Bob Petty, National Audubon Society
Wonjun Choi, University of Illinois at Urbana-Champaign
Summary Report: Nature Centers & Communities study

ELACHEE NATURE SCIENCE CENTER, GAINESVILLE, GA

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them – including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Elachee Nature Science Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ........................................ 4% (nation-wide = 2%)
- Asian ................................................................................. 1% (nation-wide = 5%)
- Black or African American .................................................. 4% (nation-wide = 6%)
- Hispanic or Latino ............................................................... 5% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ......................... 0% (nation-wide = 0.2%)
- White .................................................................................. 84% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ................................................... 55 (nation-wide = 54)
- Age range of respondents .................................................... 21-83 (nation-wide = 19-97)
- Percentage of female respondents ...................................... 17% (nation-wide = 23%)
- Percentage of married respondents ...................................... 74% (nation-wide = 67%)
- Percentage of home-owning respondents .............................. 79% (nation-wide = 73%)
- Percentage of respondents with children living in their home .. 24% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree .... 38% (nation-wide = 46%)
- Average number of years respondents lived in current town .... 25years (nation-wide = 23years)
- Average time it would take respondent to drive to center .......... 12mins (nation-wide = 17mins)

One-hundred and fifty-six people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Elachee Nature Science Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center .......................................................... 93% (nation-wide = 62%)
- indicated they had visited center ............................................................... 76% (nation-wide = 60%)
- indicated they had volunteered at center .................................................. 9% (nation-wide = 3%)
- indicated they had donated to center ...................................................... 28% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ......................................................... 13% (nation-wide = 8%)
- believed staff members volunteered in local community .................. 30% (nation-wide = 28%)
- believed staff members shared similar values as them ....................... 94% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well .............. 67% (nation-wide = 65%)
- believed center provided educational programs for youth .......... 88% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults ... 66% (nation-wide = 61%)
- believed center provided volunteer opportunities .......................... 75% (nation-wide = 67%)
- believed center provided rental facilities ........................................... 51% (nation-wide = 39%)
- believed center provided activities in language other than English ..... 37% (nation-wide = 27%)
- believed center staff members participate in community events ...... 36% (nation-wide = 34%)
- believed their friends likes the center ..................................................... 62% (nation-wide = 47%)
- believed their family likes the center ...................................................... 67% (nation-wide = 52%)
- believed their local community likes the center ................................. 54% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ............. 88% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ........................................................................ 88% (nation-wide = 88%)
- to enjoy myself ..................................................................................... 91% (nation-wide = 94%)
- to expose my children/family to something new ............................... 76% (nation-wide = 77%)
- to get away from everyday life ............................................................ 60% (nation-wide = 70%)
- to spend time with friends/family ....................................................... 85% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ....... 3% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ......................... 29% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ....................... 5% (nation-wide = 4%)
- I have poor health .............................................................................. 11% (nation-wide = 10%)
- I’m too busy with other commitments .............................................. 68% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ........................................ 30% (nation-wide = 31%)
Summary Report: Nature Centers & Communities study

- People like me are not treated as well as others [at the nature center]. 4% (nation-wide = 2%)
- The entrance or program fees are too expensive........................................... 19% (nation-wide = 18%)
- There’s nothing I like to do [at the nature center] ........................................... 10% (nation-wide = 13%)
- It is far from where I live or work ................................................................. 11% (nation-wide = 27%)

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*responses from bulleted survey items were averaged to create indices (‘value set’ in column one); *only statistically significant differences shown (p < .05)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**Likelihood of Supporting Nature Center**

Percentage who indicated that they were… (calculated only from people who were aware of your center):

- likely to donate.......................................................... 50% (nation-wide = 45%)
  - highly likely to donate.......................................................... 9% (nation-wide = 6%)
- likely to volunteer.......................................................... 51% (nation-wide = 38%)
  - highly likely to volunteer.......................................................... 8% (nation-wide = 5%)
- likely to respond to a threat (e.g., development).................. 73% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)........ 28% (nation-wide = 19%)

**Conclusion**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


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Bob Petty (grant administration) ............................................................ rpetty@audubon.org
SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

The Environmental Learning Center, Vero Beach, FL

Matt Browning, University of Illinois at Urbana-Champaign
Marc Stern, Virginia Tech
Nicole Ardoin, Stanford University
Joe Heimlich, The Ohio State University
Bob Petty, National Audubon Society
Wonjun Choi, University of Illinois at Urbana-Champaign
Summary Report: Nature Centers & Communities study

THE ENVIRONMENTAL LEARNING CENTER, VERO BEACH, FL

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them – including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection
The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

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• Seven Ponds Nature Center, Dryden, MI
• Seward Park Audubon Center, Seattle, WA
• Silver Lake Nature Center, Bristol, PA
• The Urban Ecology Center, Milwaukee, WI
• The Wilderness Center, Wilmot, OH

Data Collection
We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of the Environmental Learning Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ................................................................. 2% (nation-wide = 2%)
- Asian ................................................................................................................ 0% (nation-wide = 5%)
- Black or African American ................................................................. 4% (nation-wide = 6%)
- Hispanic or Latino ................................................................. 3% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ...................................... 0% (nation-wide = 0.2%)
- White ........................................................................................................... 89% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ................................................................. 61 (nation-wide = 54)
- Age range of respondents ................................................................. 19-87 (nation-wide = 19-97)
- Percentage of female respondents ....................................................... 16% (nation-wide = 23%)
- Percentage of married respondents ................................................. 71% (nation-wide = 67%)
- Percentage of home-owning respondents ........................................ 78% (nation-wide = 73%)
- Percentage of respondents with children living in their home .... 9% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree .... 34% (nation-wide = 46%)
- Average number of years respondents lived in current town ........ 16 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center .......... 11 mins (nation-wide = 17 mins)

One-hundred and sixteen people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of the Environmental Learning Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center .............................................................. 84% (nation-wide = 62%)
- indicated they had visited center ................................................................... 61% (nation-wide = 60%)
- indicated they had volunteered at center ....................................................... 10% (nation-wide = 3%)
- indicated they had donated to center .............................................................. 22% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member .............................................................. 16% (nation-wide = 8%)
- believed staff members volunteered in local community .............................. 43% (nation-wide = 28%)
- believed staff members shared similar values as them ................................. 95% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ....................... 73% (nation-wide = 65%)
- believed center provided educational programs for youth ......................... 85% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults ......... 75% (nation-wide = 61%)
- believed center provided volunteer opportunities ...................................... 82% (nation-wide = 67%)
- believed center provided rental facilities ...................................................... 37% (nation-wide = 39%)
- believed center provided activities in language other than English .......... 16% (nation-wide = 27%)
- believed center staff members participate in community events .......... 51% (nation-wide = 34%)
- believed their friends likes the center ......................................................... 59% (nation-wide = 47%)
- believed their family likes the center ........................................................... 66% (nation-wide = 52%)
- believed their local community likes the center ........................................ 50% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ......................... 89% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things .................................................................................. 95% (nation-wide = 88%)
- to enjoy myself ............................................................................................. 94% (nation-wide = 94%)
- to expose my children/family to something new ........................................ 85% (nation-wide = 77%)
- to get away from everyday life ................................................................. 41% (nation-wide = 70%)
- to spend time with friends/family ............................................................... 79% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .............. 6% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ............................ 30% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ............................... 2% (nation-wide = 4%)
- I have poor health ......................................................................................... 13% (nation-wide = 10%)
- I’m too busy with other commitments ...................................................... 56% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ................................................. 27% (nation-wide = 31%)
Summary Report: Nature Centers & Communities study

- People like me are not treated as well as others [at the nature center]. 1% (nation-wide = 2%)
- The entrance or program fees are too expensive................................. 15% (nation-wide = 18%)
- There’s nothing I like to do [at the nature center] ................................. 20% (nation-wide = 13%)
- It is far from where I live or work ........................................................... 12% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
<th>Center average</th>
<th>Different than nation-wide average?</th>
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| Environmental connection| • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                          • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                          • Providing access to nature  
                          • Providing a place for children to learn  
                          • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.44           | No                                  |
| Leisure provision       | • Providing a place for physical exercise  
                          • Providing a place for retreat/restoration/relaxation  
                          • Providing a safe place for outdoor recreation | (same as above)        | 3.12           | Yes                                 |
| Civic engagement        | • Helping bring together people from different races/ethnicities  
                          • Linking people to political action  
                          • Providing a place for people in the local community to gather | (same as above)        | 2.78           | No                                  |
| Community resilience    | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                          • Developing a sense of pride in the local community  
                          • Making the community a more beautiful place | (same as above)        | 3.47           | No                                  |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)*

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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                          • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                          • Providing access to nature  
                          • Providing a place for children to learn  
                          • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.46           | Yes                                 |
| Leisure provision       | • Providing a place for physical exercise  
                          • Providing a place for retreat/restoration/relaxation  
                          • Providing a safe place for outdoor recreation | (same as above)        | 3.85           | No                                  |
| Civic engagement        | • Helping bring together people from different races/ethnicities  
                          • Linking people to political action  
                          • Providing a place for people in the local community to gather | (same as above)        | 3.35           | No                                  |
| Community resilience    | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                          • Developing a sense of pride in the local community  
                          • Making the community a more beautiful place | (same as above)        | 3.83           | No                                  |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)*
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (*environmental connection, leisure provision, civic engagement, and community resilience*) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
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- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
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- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**LIKELIHOOD OF SUPPORTING NATURE CENTER**

Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate................................................................. 46% (nation-wide = 45%)
  - highly likely to donate.................................................. 9% (nation-wide = 6%)
- likely to volunteer............................................................. 47% (nation-wide = 38%)
  - highly likely to volunteer.............................................. 11% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)..................... 72% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)........ 20% (nation-wide = 19%)

**CONCLUSION**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: *environmental connection, leisure provision, civic engagement, and community resilience*. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

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Summary Report: Nature Centers & Communities study

GRANGE INSURANCE AUDUBON CENTER AND SCIOTO AUDUBON METRO PARK, COLUMBUS, OH

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STUDY RESULTS

Description of Grange Insurance Audubon Center and Scioto Audubon Metro Park Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS

Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ................................................................. 2% (nation-wide = 2%)
- Asian .................................................................................................................. 2% (nation-wide = 5%)
- Black or African American .................................................................................. 7% (nation-wide = 6%)
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- White ................................................................................................................... 83% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ................................................................................... 49 (nation-wide = 54)
- Age range of respondents ................................................................................. 21-93 (nation-wide = 19-97)
- Percentage of female respondents ...................................................................... 26% (nation-wide = 23%)
- Percentage of married respondents ................................................................. 45% (nation-wide = 67%)
- Percentage of home-owning respondents ...................................................... 65% (nation-wide = 73%)
- Percentage of respondents with children living in their home ...................... 18% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ................. 50% (nation-wide = 46%)
- Average number of years respondents lived in current town ....................... 23 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ............................ 9 mins (nation-wide = 17 mins)

One-hundred and fifty people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Grange Insurance Audubon Center and Scioto Audubon Metro Park Sample

RESPONDENTS' LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center .................................................. 70% (nation-wide = 62%)
- indicated they had visited center ....................................................... 47% (nation-wide = 60%)
- indicated they had volunteered at center ........................................... 2% (nation-wide = 3%)
- indicated they had donated to center .................................................. 6% (nation-wide = 12%)

RESPONDENTS' BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ................................................. 3% (nation-wide = 8%)
- believed staff members volunteered in local community ..................... 12% (nation-wide = 28%)
- believed staff members shared similar values as them ....................... 100% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ............... 64% (nation-wide = 65%)
- believed center provided educational programs for youth ................. 66% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .... 44% (nation-wide = 61%)
- believed center provided volunteer opportunities ............................. 60% (nation-wide = 67%)
- believed center provided rental facilities ......................................... 44% (nation-wide = 39%)
- believed center provided activities in language other than English ...... 25% (nation-wide = 27%)
- believed center staff members participate in community events ......... 35% (nation-wide = 34%)
- believed their friends likes the center .............................................. 51% (nation-wide = 47%)
- believed their family likes the center .............................................. 41% (nation-wide = 52%)
- believed their local community likes the center ............................... 33% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ............... 90% (nation-wide = 87%)

RESPONDENTS' MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ........................................................................ 88% (nation-wide = 88%)
- to enjoy myself .................................................................................. 98% (nation-wide = 94%)
- to expose my children/family to something new ............................... 54% (nation-wide = 77%)
- to get away from everyday life ......................................................... 89% (nation-wide = 70%)
- to spend time with friends/family .................................................... 83% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .......... 9% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ....................... 48% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] .................... 12% (nation-wide = 4%)
- I have poor health ........................................................................... 7% (nation-wide = 10%)
Summary Report: Nature Centers & Communities study

- I'm too busy with other commitments ................................................. 72% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ........................................ 20% (nation-wide = 31%)
- People like me are not treated as well as others [at the nature center]. 0% (nation-wide = 2%)
- The entrance or program fees are too expensive ............................... 10% (nation-wide = 18%)
- There's nothing I like to do [at the nature center] .............................. 13% (nation-wide = 13%)
- It is far from where I live or work ..................................................... 16% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- Leisure provision included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- Environmental connection included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- Civic engagement included bringing together people from different races and ethnicities and linking people to political action.
- Community resilience included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
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<th>Center average</th>
<th>Different than nation-wide average?</th>
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| Environmental connection  | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                            • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                            • Providing access to nature  
                            • Providing a place for children to learn  
                            • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.32           | No                                  |
| Leisure provision         | • Providing a place for physical exercise  
                            • Providing a place for retreat/restoration/relaxation  
                            • Providing a safe place for outdoor recreation | (same as above)        | 4.11           | Yes                                 |
| Civic engagement          | • Helping bring together people from different races/ethnicities  
                            • Linking people to political action  
                            • Providing a place for people in the local community to gather | (same as above)        | 2.99           | No                                  |
| Community resilience      | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                            • Developing a sense of pride in the local community  
                            • Making the community a more beautiful place | (same as above)        | 3.88           | Yes                                 |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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| Environmental connection  | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                            • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                            • Providing access to nature  
                            • Providing a place for children to learn  
                            • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.05           | Yes                                 |
| Leisure provision         | • Providing a place for physical exercise  
                            • Providing a place for retreat/restoration/relaxation  
                            • Providing a safe place for outdoor recreation | (same as above)        | 4.05           | No                                  |
| Civic engagement          | • Helping bring together people from different races/ethnicities  
                            • Linking people to political action  
                            • Providing a place for people in the local community to gather | (same as above)        | 3.54           | No                                  |
| Community resilience      | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                            • Developing a sense of pride in the local community  
                            • Making the community a more beautiful place | (same as above)        | 4.03           | No                                  |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**Likelihood of Supporting Nature Center**
Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate.................................................................................................................. 48% (nation-wide = 45%)
  - highly likely to donate.................................................................................................. 4% (nation-wide = 6%)
- likely to volunteer............................................................................................................... 41% (nation-wide = 38%)
  - highly likely to volunteer............................................................................................ 2% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)......................................................... 64% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)................................. 19% (nation-wide = 19%)

**Conclusion**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


CONTACT INFORMATION FOR THE RESEARCH TEAM

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SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT

Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT

Matt Browning, University of Illinois at Urbana-Champaign
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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them – including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection
The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection
We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Audubon Greenwich Kimberlin Nature Education Center and Sanctuary Sample

RESPONDENTS’ SOCIO-DemoGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ....................................................... 0% (nation-wide = 2%)
- Asian ................................................................................................. 3% (nation-wide = 5%)
- Black or African American ................................................................. 1% (nation-wide = 6%)
- Hispanic or Latino ............................................................................... 2% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ......................................... 0% (nation-wide = 0.2%)
- White ................................................................................................. 89% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ............................................................... 57 (nation-wide = 54)
- Age range of respondents ................................................................. 21-89 (nation-wide = 19-97)
- Percentage of female respondents .................................................... 19% (nation-wide = 23%)
- Percentage of married respondents .................................................. 77% (nation-wide = 67%)
- Percentage of home-owning respondents ........................................ 78% (nation-wide = 73%)
- Percentage of respondents with children living in their home .......... 27% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ...... 61% (nation-wide = 46%)
- Average number of years respondents lived in current town .......... 23 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center .............. 13 mins (nation-wide = 17 mins)

One-hundred and fifty people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Audubon Greenwich Kimberlin Nature Education Center and Sanctuary Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ........................................... 55% (nation-wide = 62%)
- indicated they had visited center ................................................... 31% (nation-wide = 60%)
- indicated they had volunteered at center ...................................... 2% (nation-wide = 3%)
- indicated they had donated to center ............................................ 12% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ............................................. 10% (nation-wide = 8%)
- believed staff members volunteered in local community ............... 20% (nation-wide = 28%)
- believed staff members shared similar values as them ................. 97% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well .......... 62% (nation-wide = 65%)
- believed center provided educational programs for youth ............ 68% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults. 59% (nation-wide = 61%)
- believed center provided volunteer opportunities ...................... 58% (nation-wide = 67%)
- believed center provided rental facilities ................................. 30% (nation-wide = 39%)
- believed center provided activities in language other than English.. 15% (nation-wide = 27%)
- believed center staff members participate in community events .... 26% (nation-wide = 34%)
- believed their friends likes the center ...................................... 37% (nation-wide = 47%)
- believed their family likes the center ....................................... 42% (nation-wide = 52%)
- believed their local community likes the center ......................... 27% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ......... 93% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ................................................................. 83% (nation-wide = 88%)
- to enjoy myself ............................................................................ 93% (nation-wide = 94%)
- to expose my children/family to something new ....................... 77% (nation-wide = 77%)
- to get away from everyday life .................................................... 73% (nation-wide = 70%)
- to spend time with friends/family ................................................. 69% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ...... 7% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ............... 47% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ............... 3% (nation-wide = 4%)
- I have poor health ........................................................................ 4% (nation-wide = 10%)
Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
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| Environmental connection| • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
• Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.26           | No                                  |
| Leisure provision       | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)              | 3.50           | No                                  |
| Civic engagement        | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)              | 2.58           | Yes                                 |
| Community resilience    | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)              | 3.32           | Yes                                 |

*a*responses from bulleted survey items were averaged to create indices (*value set* in column one); *b*only statistically significant differences shown (*p* < .05)

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.26           | No                                  |
| Leisure provision       | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)              | 4.10           | No                                  |
| Civic engagement        | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)              | 3.50           | No                                  |
| Community resilience    | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)              | 3.97           | No                                  |

*a*responses from bulleted survey items were averaged to create indices (*value set* in column one); *b*only statistically significant differences shown (*p* < .05)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

LIKELIHOOD OF SUPPORTING NATURE CENTER

Percentage who indicated that they were…(calculated only from people who were aware of your center):

- likely to donate.......................................................... 35% (nation-wide = 45%)
  - highly likely to donate............................................... 4% (nation-wide = 6%)
- likely to volunteer......................................................... 22% (nation-wide = 38%)
  - highly likely to volunteer............................................. 5% (nation-wide = 5%)
- likely to respond to a threat (e.g., development).................. 54% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)........ 11% (nation-wide = 19%)

CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


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SUMMARY REPORT:
NATURE CENTERS & COMMUNITIES STUDY

February 2016
Hitchcock Nature Center, Honey, Creek, IA

Matt Browning, University of Illinois at Urbana-Champaign
Marc Stern, Virginia Tech
Nicole Ardoin, Stanford University
Joe Heimlich, The Ohio State University
Bob Petty, National Audubon Society
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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them – including both people who visit and people who don’t visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members’ belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study’s results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
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- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
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- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Hitchcock Nature Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ................................................................. 2% (nation-wide = 2%)
- Asian .............................................................................................................. 5% (nation-wide = 5%)
- Black or African American ............................................................................ 2% (nation-wide = 6%)
- Hispanic or Latino ......................................................................................... 2% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander .................................................. 0% (nation-wide = 0.2%)
- White ............................................................................................................ 92% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ........................................................................ 57 (nation-wide = 54)
- Age range of respondents .......................................................................... 20-97 (nation-wide = 19-97)
- Percentage of female respondents .............................................................. 17% (nation-wide = 23%)
- Percentage of married respondents .............................................................. 71% (nation-wide = 67%)
- Percentage of home-owning respondents ................................................ 82% (nation-wide = 73%)
- Percentage of respondents with children living in their home ................ 30% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree .......... 34% (nation-wide = 46%)
- Average number of years respondents lived in current town ................. 32 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ...................... 28 mins (nation-wide = 17 mins)

One-hundred and thirty-three people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Hitchcock Nature Center Sample

Respondents' Level of Involvement at Center
Percentage who:

- indicated they were aware of center ........................................... 74% (nation-wide = 62%)
- indicated they had visited center .................................................. 44% (nation-wide = 60%)
- indicated they had volunteered at center ...................................... 2% (nation-wide = 3%)
- indicated they had donated to center ............................................ 11% (nation-wide = 12%)

Respondents' Beliefs About Center and Its Staff Members
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ........................................... 11% (nation-wide = 8%)
- believed staff members volunteered in local community ............... 20% (nation-wide = 28%)
- believed staff members shared similar values as them ................. 95% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ........... 69% (nation-wide = 65%)
- believed center provided educational programs for youth ............ 73% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .... 56% (nation-wide = 61%)
- believed center provided volunteer opportunities ....................... 63% (nation-wide = 67%)
- believed center provided rental facilities .................................... 52% (nation-wide = 39%)
- believed center provided activities in language other than English .... 17% (nation-wide = 27%)
- believed center staff members participate in community events ...... 25% (nation-wide = 34%)
- believed their friends like the center ......................................... 49% (nation-wide = 47%)
- believed their family likes the center ....................................... 50% (nation-wide = 52%)
- believed their local community likes the center ......................... 32% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ............ 93% (nation-wide = 87%)

Respondents' Motives and Constraints to Visiting Center
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things .................................................................... 87% (nation-wide = 88%)
- to enjoy myself ............................................................................. 96% (nation-wide = 94%)
- to expose my children/family to something new ......................... 88% (nation-wide = 77%)
- to get away from everyday life ....................................................... 78% (nation-wide = 70%)
- to spend time with friends/family ................................................. 82% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don't have a convenient way of getting [to the nature center] .......... 11% (nation-wide = 10%)
- I don't know what there is to do [at the nature center] .................... 33% (nation-wide = 39%)
- I don't think I'm welcome/safe [at the nature center] .................... 3% (nation-wide = 4%)
- I have poor health ......................................................................... 13% (nation-wide = 10%)
- I'm too busy with other commitments ......................................... 69% (nation-wide = 70%)
- My friends/family prefer to go elsewhere .................................... 27% (nation-wide = 31%)
• People like me are not treated as well as others [at the nature center]. 1% (nation-wide = 2%)
• The entrance or program fees are too expensive. 16% (nation-wide = 18%)
• There’s nothing I like to do [at the nature center]. 9% (nation-wide = 13%)
• It is far from where I live or work. 43% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
## PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
<th>Center average</th>
<th>Different than nation-wide average?</th>
</tr>
</thead>
</table>
| Environmental connection | - Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                        | - Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                        | - Providing access to nature  
                        | - Providing a place for children to learn  
                        | - Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.29 | No |
| Leisure provision      | - Providing a place for physical exercise  
                        | - Providing a place for retreat/restoration/relaxation  
                        | - Providing a safe place for outdoor recreation | (same as above) | 3.93 | Yes |
| Civic engagement       | - Helping bring together people from different races/ethnicities  
                        | - Linking people to political action  
                        | - Providing a place for people in the local community to gather | (same as above) | 2.72 | No |
| Community resilience   | - Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                        | - Developing a sense of pride in the local community  
                        | - Making the community a more beautiful place | (same as above) | 3.54 | No |

*responses from bulleted survey items were averaged to create indices (*value set* in column one); *only statistically significant differences shown (p < .05)*

## PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
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                        | - Providing access to nature  
                        | - Providing a place for children to learn  
                        | - Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.26 | No |
| Leisure provision      | - Providing a place for physical exercise  
                        | - Providing a place for retreat/restoration/relaxation  
                        | - Providing a safe place for outdoor recreation | (same as above) | 4.23 | Yes |
| Civic engagement       | - Helping bring together people from different races/ethnicities  
                        | - Linking people to political action  
                        | - Providing a place for people in the local community to gather | (same as above) | 3.66 | No |
| Community resilience   | - Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                        | - Developing a sense of pride in the local community  
                        | - Making the community a more beautiful place | (same as above) | 4.02 | No |

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Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**Likelihood of Supporting Nature Center**

Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate.......................... 53% (nation-wide = 45%)
  - highly likely to donate.................. 10% (nation-wide = 6%)
- likely to volunteer........................ 31% (nation-wide = 38%)
  - highly likely to volunteer........... 8% (nation-wide = 5%)
- likely to respond to a threat (e.g., development) .............. 62% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development) ....... 24% (nation-wide = 19%)

**Conclusion**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

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FURTHER RESOURCES


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SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016
Mitchell Lake Audubon Center, San Antonio, TX

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Bob Petty, National Audubon Society
Wonjun Choi, University of Illinois at Urbana-Champaign
Summary Report: Nature Centers & Communities study

MITCHELL LAKE AUDUBON CENTER, SAN ANTONIO, TX

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OVERVIEW

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Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
### STUDY RESULTS

#### Description of Mitchell Lake Audubon Center Sample

**RESPONDENTS’ SOCIO-DEMOGRAPHICS**

Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ........................................... 4% (nation-wide = 2%)
- Asian ......................................................................................... 1% (nation-wide = 5%)
- Black or African American ....................................................... 3% (nation-wide = 6%)
- Hispanic or Latino ................................................................. 74% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ................................. 0% (nation-wide = 0.2%)
- White ....................................................................................... 26% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ..................................................... 52 (nation-wide = 54)
- Age range of respondents ....................................................... 19-95 (nation-wide = 19-97)
- Percentage of female respondents ........................................... 21% (nation-wide = 23%)
- Percentage of married respondents ....................................... 71% (nation-wide = 67%)
- Percentage of home-owning respondents .............................. 82% (nation-wide = 73%)
- Percentage of respondents with children living in their home .... 32% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ......................................................... 14% (nation-wide = 46%)
- Average number of years respondents lived in current town ...... 35 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ........ 12 mins (nation-wide = 17 mins)

Seventy-two people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Mitchell Lake Audubon Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ........................................ 42% (nation-wide = 62%)
- indicated they had visited center ................................................. 11% (nation-wide = 60%)
- indicated they had volunteered at center ....................................... 1% (nation-wide = 3%)
- indicated they had donated to center ............................................. 3% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ........................................... 3% (nation-wide = 8%)
- believed staff members volunteered in local community .............. 21% (nation-wide = 28%)
- believed staff members shared similar values as them ................ 93% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well .......... 63% (nation-wide = 65%)
- believed center provided educational programs for youth ........... 55% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .... 52% (nation-wide = 61%)
- believed center provided volunteer opportunities ....................... 52% (nation-wide = 67%)
- believed center provided rental facilities ..................................... 21% (nation-wide = 39%)
- believed center provided activities in language other than English .... 31% (nation-wide = 27%)
- believed center staff members participate in community events ...... 32% (nation-wide = 34%)
- believed their friends likes the center ......................................... 35% (nation-wide = 47%)
- believed their family likes the center .......................................... 41% (nation-wide = 52%)
- believed their local community likes the center ......................... 17% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) .......... 75% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things .............................................................. 100% (nation-wide = 88%)
- to enjoy myself ........................................................................... 100% (nation-wide = 94%)
- to expose my children/family to something new ....................... 100% (nation-wide = 77%)
- to get away from everyday life .................................................. 88% (nation-wide = 70%)
- to spend time with friends/family .............................................. 100% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .......... 10% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] .................... 54% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ..................... 11% (nation-wide = 4%)
- I have poor health ..................................................................... 4% (nation-wide = 10%)
- I’m too busy with other commitments ........................................ 69% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ................................... 36% (nation-wide = 31%)
People like me are not treated as well as others [at the nature center]. 4% (nation-wide = 2%)

The entrance or program fees are too expensive........................................ 24% (nation-wide = 18%)

There’s nothing I like to do [at the nature center] ........................................ 13% (nation-wide = 13%)

It is far from where I live or work ................................................................. 7% (nation-wide =27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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| Environmental connection         | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
• Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.58           | Yes                               |
| Leisure provision                | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)         | 4.10           | Yes                               |
| Civic engagement                 | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)         | 3.48           | Yes                               |
| Community resilience             | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)         | 4.13           | Yes                               |

*a responses from bulleted survey items were averaged to create indices ('value set' in column one); *b only statistically significant differences shown (*p < .05*)

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.38           | No                                |
| Leisure provision                | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)         | 4.20           | No                                |
| Civic engagement                 | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)         | 4.08           | No                                |
| Community resilience             | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)         | 4.25           | Yes                               |

*a responses from bulleted survey items were averaged to create indices ('value set' in column one); *b only statistically significant differences shown (*p < .05*)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

LIKELIHOOD OF SUPPORTING NATURE CENTER
Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate................................................................................................. 69% (nation-wide = 45%)
  o highly likely to donate................................................................................. 10% (nation-wide = 6%)
- likely to volunteer............................................................................................ 41% (nation-wide = 38%)
  o highly likely to volunteer................................................................. 14% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)........................................ 72% (nation-wide = 65%)
  o highly likely to respond to a threat (e.g., development)............... 28% (nation-wide = 19%)

CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


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SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

Plains Conservation Center, Aurora, CO

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Joe Heimlich, The Ohio State University
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Summary Report: Nature Centers & Communities study

PLAINS CONSERVATION CENTER, AURORA, CO

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OVERVIEW
Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them – including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Plains Conservation Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ............................................. 3% (nation-wide = 2%)
- Asian ......................................................................................... 6% (nation-wide = 5%)
- Black or African American .......................................................... 9% (nation-wide = 6%)
- Hispanic or Latino ....................................................................... 9% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander .................................... 0% (nation-wide = 0.2%)
- White .......................................................................................... 73% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ......................................................... 52 (nation-wide = 54)
- Age range of respondents ......................................................... 22-79 (nation-wide = 19-97)
- Percentage of female respondents ............................................. 16% (nation-wide = 23%)
- Percentage of married respondents ............................................. 70% (nation-wide = 67%)
- Percentage of home-owning respondents ................................. 76% (nation-wide = 73%)
- Percentage of respondents with children living in their home .... 29% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree 38% (nation-wide = 46%)
- Average number of years respondents lived in current town ...... 21 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ......... 9 mins (nation-wide = 17 mins)

One-hundred and forty-seven people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Plains Conservation Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center .................................................. 65% (nation-wide = 62%)
- indicated they had visited center .......................................................... 29% (nation-wide = 60%)
- indicated they had volunteered at center ............................................. 4% (nation-wide = 3%)
- indicated they had donated to center .................................................... 7% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ..................................................... 3% (nation-wide = 8%)
- believed staff members volunteered in local community ....................... 27% (nation-wide = 28%)
- believed staff members shared similar values as them ......................... 95% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ................... 57% (nation-wide = 65%)
- believed center provided educational programs for youth .................... 75% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults ....... 59% (nation-wide = 61%)
- believed center provided volunteer opportunities ................................ 67% (nation-wide = 67%)
- believed center provided rental facilities .............................................. 23% (nation-wide = 39%)
- believed center provided activities in language other than English ....... 28% (nation-wide = 27%)
- believed center staff members participate in community events ............ 34% (nation-wide = 34%)
- believed their friends likes the center ............................................... 29% (nation-wide = 47%)
- believed their family likes the center ............................................... 50% (nation-wide = 52%)
- believed their local community likes the center .................................. 24% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) .................. 81% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ........................................................................ 97% (nation-wide = 88%)
- to enjoy myself .................................................................................... 90% (nation-wide = 94%)
- to expose my children/family to something new .................................. 87% (nation-wide = 77%)
- to get away from everyday life ............................................................ 66% (nation-wide = 70%)
- to spend time with friends/family ....................................................... 85% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .......... 7% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center]......................... 51% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ......................... 2% (nation-wide = 4%)
- I have poor health ............................................................................. 6% (nation-wide = 10%)
- I’m too busy with other commitments ................................................. 76% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ........................................... 40% (nation-wide = 31%)
Summary Report: Nature Centers & Communities study

- People like me are not treated as well as others [at the nature center]. 6% (nation-wide = 2%)
- The entrance or program fees are too expensive............................... 21% (nation-wide = 18%)
- There’s nothing I like to do [at the nature center] .............................. 17% (nation-wide = 13%)
- It is far from where I live or work .................................................... 16% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
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| **Environmental connection** | - Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
- Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
- Providing access to nature  
- Providing a place for children to learn  
- Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.31           | No                                  |
| **Leisure provision**    | - Providing a place for physical exercise  
- Providing a place for retreat/restoration/relaxation  
- Providing a safe place for outdoor recreation | (same as above)        | 3.37           | Yes                                 |
| **Civic engagement**     | - Helping bring together people from different races/ethnicities  
- Linking people to political action  
- Providing a place for people in the local community to gather | (same as above)        | 2.76           | No                                  |
| **Community resilience** | - Contributing to the local economy (e.g., increasing property values or attracting businesses)  
- Developing a sense of pride in the local community  
- Making the community a more beautiful place | (same as above)        | 3.42           | No                                  |

*responses from bulleted survey items were averaged to create indices ['value set' in column one]; *only statistically significant differences shown (*p* < .05)

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- Providing access to nature  
- Providing a place for children to learn  
- Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.10           | No                                  |
| **Leisure provision**    | - Providing a place for physical exercise  
- Providing a place for retreat/restoration/relaxation  
- Providing a safe place for outdoor recreation | (same as above)        | 3.72           | Yes                                 |
| **Civic engagement**     | - Helping bring together people from different races/ethnicities  
- Linking people to political action  
- Providing a place for people in the local community to gather | (same as above)        | 3.29           | No                                  |
| **Community resilience** | - Contributing to the local economy (e.g., increasing property values or attracting businesses)  
- Developing a sense of pride in the local community  
- Making the community a more beautiful place | (same as above)        | 3.60           | Yes                                 |

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Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that they were likely to support their local nature center. Other factors were included:

- visitation frequency;
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- perceptions of shared values with staff;
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- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**Likelihood of Supporting Nature Center**

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<th>Percentage who indicated that they were…</th>
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<td>40% (nation-wide = 45%)</td>
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<tr>
<td>o highly likely to donate</td>
<td>3% (nation-wide = 6%)</td>
</tr>
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**Conclusion**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

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Summary Report: Nature Centers & Communities study

AUDUBON SOCIETY OF PORTLAND NATURE SANCTUARY AND FACILITIES, PORTLAND, OR

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them — including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward visiting local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Audubon Society of Portland Nature Sanctuary and Facilities Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ................................................................. 4% (nation-wide = 2%)
- Asian ............................................................................................................. 7% (nation-wide = 5%)
- Black or African American ............................................................................. 3% (nation-wide = 6%)
- Hispanic or Latino ....................................................................................... 5% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander .................................................... 0.4% (nation-wide = 0.2%)
- White ........................................................................................................... 82% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ....................................................................... 51 (nation-wide = 54)
- Age range of respondents ......................................................................... 20-94 (nation-wide = 19-97)
- Percentage of female respondents ...................................................... 31% (nation-wide = 23%)
- Percentage of married respondents ........................................................ 56% (nation-wide = 67%)
- Percentage of home-owning respondents ............................................ 61% (nation-wide = 73%)
- Percentage of respondents with children living in their home .......... 23% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ...... 52% (nation-wide = 46%)
- Average number of years respondents lived in current town .......... 20 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ............... 15 mins (nation-wide = 17 mins)

Two-hundred and forty-three people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Audubon Society of Portland Nature Sanctuary and Facilities Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ................................................................. 67% (nation-wide = 62%)
- indicated they had visited center ........................................................................ 43% (nation-wide = 60%)
- indicated they had volunteered at center ............................................................. 4% (nation-wide = 3%)
- indicated they had donated to center .................................................................... 20% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member ................................................................. 5% (nation-wide = 8%)
- believed staff members volunteered in local community ................................. 41% (nation-wide = 28%)
- believed staff members shared similar values as them ...................................... 94% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ............................... 76% (nation-wide = 65%)
- believed center provided educational programs for youth ............................... 80% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .... 73% (nation-wide = 61%)
- believed center provided volunteer opportunities ............................................. 77% (nation-wide = 67%)
- believed center provided rental facilities ......................................................... 41% (nation-wide = 39%)
- believed center provided activities in language other than English .......... 38% (nation-wide = 27%)
- believed center staff members participate in community events .................. 46% (nation-wide = 34%)
- believed their friends likes the center ............................................................. 54% (nation-wide = 47%)
- believed their family likes the center ............................................................. 59% (nation-wide = 52%)
- believed their local community likes the center ....... 40% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ....................... 92% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only):

- to discover new things .............................................................................. 90% (nation-wide = 88%)
- to enjoy myself ......................................................................................... 98% (nation-wide = 94%)
- to expose my children/family to something new ........................................ 76% (nation-wide = 77%)
- to get away from everyday life ................................................................. 74% (nation-wide = 70%)
- to spend time with friends/family ............................................................. 76% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ........ 17% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ......................... 29% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ......................... 1% (nation-wide = 4%)
- I have poor health .................................................................................. 13% (nation-wide = 10%)
Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
<th>Center average</th>
<th>Different than nation-wide average?</th>
</tr>
</thead>
</table>
| Environmental connection | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
• Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.32           | No                                  |
| Leisure provision    | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)                                                          | 3.54           | No                                  |
| Civic engagement     | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)                                                          | 2.86           | No                                  |
| Community resilience | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)                                                          | 3.44           | No                                  |

*responses from bulleted survey items were averaged to create indices ['value set' in column one]; *only statistically significant differences shown (p < .05)*

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
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| Environmental connection | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
• Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well              | 4.28           | No                                  |
| Leisure provision    | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)                                                          | 3.97           | No                                  |
| Civic engagement     | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)                                                          | 3.49           | No                                  |
| Community resilience | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)                                                          | 3.90           | No                                  |

*responses from bulleted survey items were averaged to create indices ['value set' in column one]; *only statistically significant differences shown (p < .05)*
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

LIKELIHOOD OF SUPPORTING NATURE CENTER
Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate......................................................................................... 47% (nation-wide = 45%)
  - highly likely to donate........................................................................ 7% (nation-wide = 6%)
- likely to volunteer................................................................................... 41% (nation-wide = 38%)
  - highly likely to volunteer................................................................. 6% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)..................................... 64% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)............... 18% (nation-wide = 19%)

CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


CONTACT INFORMATION FOR THE RESEARCH TEAM

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Joe Heimlich (theoretical framing and study implications) ................. jheimlich@cosi.org
Bob Petty (grant administration) ................................................................. rpetty@audubon.org
SUMMARY REPORT:
NATURE CENTERS & COMMUNITIES STUDY

Richardson Bay Audubon Center and Sanctuary, Tiburon, CA

February 2016

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Summary Report: Nature Centers & Communities study

RICHARDSON BAY AUDUBON CENTER AND SANCTUARY, TIBURON, CA

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them — including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

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Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Richardson Bay Audubon Center and Sanctuary Sample

RESPONDENTS' SOCIO-DEMOGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ................................................................. 3% (nation-wide = 2%)
- Asian ........................................................................................................... 3% (nation-wide = 5%)
- Black or African American ................................................................. 0.5% (nation-wide = 6%)
- Hispanic or Latino ............................................................................ 4% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ........................................ 0.5% (nation-wide = 0.2%)
- White .......................................................................................................... 85% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ................................................................. 58 (nation-wide = 54)
- Age range of respondents ................................................................ 21-90 (nation-wide = 19-97)
- Percentage of female respondents .................................................... 30% (nation-wide = 23%)
- Percentage of married respondents .................................................. 60% (nation-wide = 67%)
- Percentage of home-owning respondents .......................................... 64% (nation-wide = 73%)
- Percentage of respondents with children living in their home .......... 14% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ....... 66% (nation-wide = 46%)
- Average number of years respondents lived in current town .......... 23 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center .......... 12 mins (nation-wide = 17 mins)

Two-hundred and seven people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Richardson Bay Audubon Center and Sanctuary Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ............................................................. 61% (nation-wide = 62%)
- indicated they had visited center ................................................................. 28% (nation-wide = 60%)
- indicated they had volunteered at center ..................................................... 2% (nation-wide = 3%)
- indicated they had donated to center ............................................................ 8% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who…(calculated only from people who were aware of your center)

- indicated they knew a staff member ............................................................ 2% (nation-wide = 8%)
- believed staff members volunteered in local community ............................ 24% (nation-wide = 28%)
- believed staff members shared similar values as them ............................... 90% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ........................ 51% (nation-wide = 65%)
- believed center provided educational programs for youth ......................... 69% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .......... 61% (nation-wide = 61%)
- believed center provided volunteer opportunities ....................................... 65% (nation-wide = 67%)
- believed center provided rental facilities ..................................................... 30% (nation-wide = 39%)
- believed center provided activities in language other than English .......... 28% (nation-wide = 27%)
- believed center staff members participate in community events ............. 27% (nation-wide = 34%)
- believed their friends likes the center ......................................................... 36% (nation-wide = 47%)
- believed their family likes the center ........................................................... 40% (nation-wide = 52%)
- believed their local community likes the center ......................................... 27% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ....................... 72% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ................................................................................ 89% (nation-wide = 88%)
- to enjoy myself ............................................................................................. 93% (nation-wide = 94%)
- to expose my children/family to something new ....................................... 83% (nation-wide = 77%)
- to get away from everyday life ................................................................. 56% (nation-wide = 70%)
- to spend time with friends/family ................................................................. 80% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ............ 14% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ............................. 57% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ............................... 2% (nation-wide = 4%)
- I have poor health ...................................................................................... 9% (nation-wide = 10%)
Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### Perceived Importance of Nature Center(s) Providing Sets of Values

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<td>• Encouraging environmental behavior (e.g., recycling or saving electricity and water) &lt;br&gt;• Increasing environmental awareness (e.g., introducing people to native wildlife/plants) &lt;br&gt;• Providing access to nature &lt;br&gt;• Providing a place for children to learn &lt;br&gt;• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff)</td>
<td>1 to 5 where 1 = not at all important, and 5 = extremely important</td>
<td>4.42</td>
<td>No</td>
</tr>
<tr>
<td>Leisure provision</td>
<td>• Providing a place for physical exercise &lt;br&gt;• Providing a place for retreat/restoration/relaxation &lt;br&gt;• Providing a safe place for outdoor recreation</td>
<td>(same as above)</td>
<td>3.21</td>
<td>Yes</td>
</tr>
<tr>
<td>Civic engagement</td>
<td>• Helping bring together people from different races/ethnicities &lt;br&gt;• Linking people to political action &lt;br&gt;• Providing a place for people in the local community to gather</td>
<td>(same as above)</td>
<td>2.86</td>
<td>No</td>
</tr>
<tr>
<td>Community resilience</td>
<td>• Contributing to the local economy (e.g., increasing property values or attracting businesses) &lt;br&gt;• Developing a sense of pride in the local community &lt;br&gt;• Making the community a more beautiful place</td>
<td>(same as above)</td>
<td>3.32</td>
<td>Yes</td>
</tr>
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*Responses from bulleted survey items were averaged to create indices (‘value set’ in column one); only statistically significant differences shown (p < .05)*

### Perceived Performance of Nature Center(s) Providing Sets of Values

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<td>1 to 5 where 1 = not at all well, and 5 = extremely well</td>
<td>4.08</td>
<td>No</td>
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<tr>
<td>Leisure provision</td>
<td>• Providing a place for physical exercise &lt;br&gt;• Providing a place for retreat/restoration/relaxation &lt;br&gt;• Providing a safe place for outdoor recreation</td>
<td>(same as above)</td>
<td>3.69</td>
<td>Yes</td>
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<td>Civic engagement</td>
<td>• Helping bring together people from different races/ethnicities &lt;br&gt;• Linking people to political action &lt;br&gt;• Providing a place for people in the local community to gather</td>
<td>(same as above)</td>
<td>3.26</td>
<td>Yes</td>
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<td>Community resilience</td>
<td>• Contributing to the local economy (e.g., increasing property values or attracting businesses) &lt;br&gt;• Developing a sense of pride in the local community &lt;br&gt;• Making the community a more beautiful place</td>
<td>(same as above)</td>
<td>3.79</td>
<td>No</td>
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Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that they were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**LIKELIHOOD OF SUPPORTING NATURE CENTER**
Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate .................................................................................................... 36% (nation-wide = 45%)
  - highly likely to donate ......................................................................... 5% (nation-wide = 6%)
- likely to volunteer ................................................................................................ 26% (nation-wide = 38%)
  - highly likely to volunteer ...................................................................... 2% (nation-wide = 5%)
- likely to respond to a threat (e.g., development) ......................................... 64% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development) ............... 19% (nation-wide = 19%)

**CONCLUSION**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


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SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

Seven Ponds Nature Center, Dryden, MI

Matt Browning, University of Illinois at Urbana-Champaign
Marc Stern, Virginia Tech
Nicole Ardoin, Stanford University
Joe Heimlich, The Ohio State University
Bob Petty, National Audubon Society
Wonjun Choi, University of Illinois at Urbana-Champaign
# Summary Report: Nature Centers & Communities study

**SEVEN PONDS NATURE CENTER, DRYDEN, MI**

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them — including both people who visit and people who don’t visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members’ belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study’s results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Seven Ponds Nature Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native: 0% (nation-wide = 2%)
- Asian: 5% (nation-wide = 5%)
- Black or African American: 4% (nation-wide = 6%)
- Hispanic or Latino: 3% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander: 0% (nation-wide = 0.2%)
- White: 84% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent: 53 (nation-wide = 54)
- Age range of respondents: 20-80 (nation-wide = 19-97)
- Percentage of female respondents: 20% (nation-wide = 23%)
- Percentage of married respondents: 81% (nation-wide = 67%)
- Percentage of home-owning respondents: 79% (nation-wide = 73%)
- Percentage of respondents with children living in their home: 36% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree: 45% (nation-wide = 46%)
- Average number of years respondents lived in current town: 17 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center: 34 mins (nation-wide = 17 mins)

One-hundred and twenty-two people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Seven Ponds Nature Center Sample

RESPONDENTS' LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ............................................................. 45% (nation-wide = 62%)
- indicated they had visited center ..................................................................... 23% (nation-wide = 60%)
- indicated they had volunteered at center ...................................................... 0.8% (nation-wide = 3%)
- indicated they had donated to center ............................................................ 5% (nation-wide = 12%)

RESPONDENTS' BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member .............................................................. 2% (nation-wide = 8%)
- believed staff members volunteered in local community .............................. 9% (nation-wide = 28%)
- believed staff members shared similar values as them ................................... 98% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well .......................... 57% (nation-wide = 65%)
- believed center provided educational programs for youth ............................ 52% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .............. 37% (nation-wide = 61%)
- believed center provided volunteer opportunities ......................................... 42% (nation-wide = 67%)
- believed center provided rental facilities ........................................................ 22% (nation-wide = 39%)
- believed center provided activities in language other than English .............. 13% (nation-wide = 27%)
- believed center staff members participate in community events .................... 26% (nation-wide = 34%)
- believed their friends likes the center ............................................................ 43% (nation-wide = 47%)
- believed their family likes the center ............................................................. 43% (nation-wide = 52%)
- believed their local community likes the center ............................................. 30% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ............................. 89% (nation-wide = 87%)

RESPONDENTS' MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things .................................................................................. 96% (nation-wide = 88%)
- to enjoy myself ................................................................................................ 100% (nation-wide = 94%)
- to expose my children/family to something new .......................................... 91% (nation-wide = 77%)
- to get away from everyday life ...................................................................... 71% (nation-wide = 70%)
- to spend time with friends/family ................................................................... 84% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .................. 12% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ................................. 49% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] .................................. 0% (nation-wide = 4%)
- I have poor health .......................................................................................... 8% (nation-wide = 10%)
- I’m too busy with other commitments ......................................................... 70% (nation-wide = 70%)
- My friends/family prefer to go elsewhere .................................................... 25% (nation-wide = 31%)
• People like me are not treated as well as others [at the nature center]. 0% (nation-wide = 2%)
• The entrance or program fees are too expensive................................. 12% (nation-wide = 18%)
• There’s nothing I like to do [at the nature center].............................. 7% (nation-wide = 13%)
• It is far from where I live or work......................................................... 43% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

• Leisure provision included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
• Environmental connection included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
• Civic engagement included bringing together people from different races and ethnicities and linking people to political action.
• Community resilience included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visiters to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
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  • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
  • Providing access to nature  
  • Providing a place for children to learn  
  • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.47           | No                                  |
| Leisure provision          | • Providing a place for physical exercise  
  • Providing a place for retreat/restoration/relaxation  
  • Providing a safe place for outdoor recreation | (same as above)             | 3.90           | Yes                                 |
| Civic engagement           | • Helping bring together people from different races/ethnicities  
  • Linking people to political action  
  • Providing a place for people in the local community to gather | (same as above)             | 2.82           | No                                  |
| Community resilience       | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
  • Developing a sense of pride in the local community  
  • Making the community a more beautiful place | (same as above)             | 3.65           | No                                  |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); only statistically significant differences shown (p < .05)

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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  • Providing a place for children to learn  
  • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.51           | Yes                                 |
| Leisure provision          | • Providing a place for physical exercise  
  • Providing a place for retreat/restoration/relaxation  
  • Providing a safe place for outdoor recreation | (same as above)             | 4.24           | No                                  |
| Civic engagement           | • Helping bring together people from different races/ethnicities  
  • Linking people to political action  
  • Providing a place for people in the local community to gather | (same as above)             | 3.81           | No                                  |
| Community resilience       | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
  • Developing a sense of pride in the local community  
  • Making the community a more beautiful place | (same as above)             | 4.10           | No                                  |

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Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that they were likely to support their local nature center. Other factors were included:

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- perceptions of shared values with staff;
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- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

### LIKELIHOOD OF SUPPORTING NATURE CENTER

Percentage who indicated that they were... (calculated only from people who were aware of your center):

- likely to donate...........................................................................................................37% (nation-wide = 45%)
  - highly likely to donate .............................................................................4% (nation-wide = 6%)
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- likely to respond to a threat (e.g., development).............................................49% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)......................17% (nation-wide = 19%)

### CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them – including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
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- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Seward Park Audubon Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native.................................................................3% (nation-wide = 2%)
- Asian.............................................................................................................13% (nation-wide = 5%)
- Black or African American...........................................................................4% (nation-wide = 6%)
- Hispanic or Latino...................................................................................... 2% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander...................................................0.9% (nation-wide = 0.2%)
- White.............................................................................................................75% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent.................................................................56 (nation-wide = 54)
- Age range of respondents .....................................................................22-85 (nation-wide = 19-97)
- Percentage of female respondents ......................................................16% (nation-wide = 23%)
- Percentage of married respondents ......................................................82% (nation-wide = 67%)
- Percentage of home-owning respondents ...........................................81% (nation-wide = 73%)
- Percentage of respondents with children living in their home ............26% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree.........66% (nation-wide = 46%)
- Average number of years respondents lived in current town ..........23 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center...............21 mins (nation-wide = 17 mins)

Two-hundred and thirty-three people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Seward Park Audubon Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ............................................................. 29% (nation-wide = 62%)
- indicated they had visited center ................................................................. 10% (nation-wide = 60%)
- indicated they had volunteered at center .................................................... 0% (nation-wide = 3%)
- indicated they had donated to center ........................................................... 2% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member .............................................................. 0% (nation-wide = 8%)
- believed staff members volunteered in local community .............................. 12% (nation-wide = 28%)
- believed staff members shared similar values as them ................................ 97% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well .......................... 47% (nation-wide = 65%)
- believed center provided educational programs for youth .......................... 65% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .............. 61% (nation-wide = 61%)
- believed center provided volunteer opportunities ........................................ 59% (nation-wide = 67%)
- believed center provided rental facilities ...................................................... 35% (nation-wide = 39%)
- believed center provided activities in language other than English .............. 31% (nation-wide = 27%)
- believed center staff members participate in community events ................. 39% (nation-wide = 34%)
- believed their friends likes the center .......................................................... 29% (nation-wide = 47%)
- believed their family likes the center ........................................................... 34% (nation-wide = 52%)
- believed their local community likes the center .......................................... 31% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ........................... 73% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things .................................................................................. 71% (nation-wide = 88%)
- to enjoy myself .............................................................................................. 85% (nation-wide = 94%)
- to expose my children/family to something new ......................................... 70% (nation-wide = 77%)
- to get away from everyday life .................................................................... 70% (nation-wide = 70%)
- to spend time with friends/family ............................................................... 76% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .......... 19% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ......................... 58% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] .............................. 5% (nation-wide = 4%)
- I have poor health ....................................................................................... 8% (nation-wide = 10%)
- I’m too busy with other commitments ....................................................... 68% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ................................................... 45% (nation-wide = 31%)
People like me are not treated as well as others [at the nature center]. 3% (nation-wide = 2%)

The entrance or program fees are too expensive ................ 35% (nation-wide = 18%)

There’s nothing I like to do [at the nature center] ......................... 23% (nation-wide = 13%)

It is far from where I live or work .................................................. 50% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of **leisure provision** differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. **Community resilience** and **civic engagement** were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### Perceived Importance of Nature Center(s) Providing Sets of Values

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
<th>Center average</th>
<th>Different than nation-wide average&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
</table>
| Environmental connection   | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                              | • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                              | • Providing access to nature  
                              | • Providing a place for children to learn  
                              | • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff)  |
|                            | 1 to 5 where 1 = not at all important, and 5 = extremely important           | 4.25                   | No             |                                               |
| Leisure provision          | • Providing a place for physical exercise                                    | (same as above)        | 3.62           | No                                            |
| Civic engagement           | • Helping bring together people from different races/ethnicities            | (same as above)        | 3.15           | Yes                                           |
| Community resilience       | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                              | • Developing a sense of pride in the local community  
                              | • Making the community a more beautiful place |
|                            | (same as above)                                                             | 3.51                   | No             |                                               |

<sup>a</sup>responses from bulleted survey items were averaged to create indices ['value set' in column one]; <sup>b</sup>only statistically significant differences shown (p < .05)

### Perceived Performance of Nature Center(s) Providing Sets of Values

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
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<th>Different than nation-wide average&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
</table>
| Environmental connection   | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                              | • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                              | • Providing access to nature  
                              | • Providing a place for children to learn  
                              | • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff)  |
|                            | 1 to 5 where 1 = not at all well, and 5 = extremely well                    | 3.82                   | Yes            |                                               |
| Leisure provision          | • Providing a place for physical exercise                                    | (same as above)        | 3.65           | No                                            |
| Civic engagement           | • Helping bring together people from different races/ethnicities            | (same as above)        | 3.33           | No                                            |
| Community resilience       | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                              | • Developing a sense of pride in the local community  
                              | • Making the community a more beautiful place |
|                            | (same as above)                                                             | 3.60                   | No             |                                               |

<sup>a</sup>responses from bulleted survey items were averaged to create indices ['value set' in column one]; <sup>b</sup>only statistically significant differences shown (p < .05)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that they were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

LIKELIHOOD OF SUPPORTING NATURE CENTER

Percentage who indicated that they were...(calculated only from people who were aware of your center):

- likely to donate........................................................................................................28% (nation-wide = 45%)
  - highly likely to donate ................................................................. 2% (nation-wide = 6%)
- likely to volunteer................................................................................................31% (nation-wide = 38%)
  - highly likely to volunteer ................................................................. 2% (nation-wide = 5%)
- likely to respond to a threat (e.g., development).......................................... 59% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)............ 19% (nation-wide = 19%)

CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


CONTACT INFORMATION FOR THE RESEARCH TEAM

**Matt Browning** (data collection and analysis) ........................................... brownin@illinois.edu

**Marc Stern** (theoretical framing and study implications) ........................ mjstern@vt.edu

**Nicole Ardoin** (theoretical framing and study implications) .................. nmardoin@stanford.edu

**Joe Heimlich** (theoretical framing and study implications) ................. jheimlich@cosi.org

**Bob Petty** (grant administration) ............................................................... rpetty@audubon.org
SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

Silver Lake Nature Center, Bristol, PA

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Joe Heimlich, The Ohio State University
Bob Petty, National Audubon Society
Wonjun Choi, University of Illinois at Urbana-Champaign
Summary Report: Nature Centers & Communities study

SILVER LAKE NATURE CENTER, BRISTOL, PA

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This report summarizes the study’s results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
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Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of Silver Lake Nature Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as... (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native.............................................................. 3% (nation-wide = 2%)
- Asian ............................................................................................................. 2% (nation-wide = 5%)
- Black or African American .......................................................................... 30% (nation-wide = 6%)
- Hispanic or Latino........................................................................................ 2% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander .................................................. 0% (nation-wide = 0.2%)
- White........................................................................................................... 57% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ........................................................................ 51 (nation-wide = 54)
- Age range of respondents ........................................................................... 20-74 (nation-wide = 19-97)
- Percentage of female respondents ............................................................... 28% (nation-wide = 23%)
- Percentage of married respondents ............................................................. 70% (nation-wide = 67%)
- Percentage of home-owning respondents .................................................. 79% (nation-wide = 73%)
- Percentage of respondents with children living in their home .................... 31% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree.............. 34% (nation-wide = 46%)
- Average number of years respondents lived in current town .................... 21 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ......................... 12 mins (nation-wide = 17 mins)

Two-hundred and thirty-three people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of Silver Lake Nature Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ............................................................. 21% (nation-wide = 62%)
- indicated they had visited center ..................................................................... 10% (nation-wide = 60%)
- indicated they had volunteered at center ...................................................... 2% (nation-wide = 3%)
- indicated they had donated to center ............................................................ 3% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who...(calculated only from people who were aware of your center)

- indicated they knew a staff member .............................................................. 5% (nation-wide = 8%)
- believed staff members volunteered in local community ............................ 30% (nation-wide = 28%)
- believed staff members shared similar values as them ............................... 95% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ........................ 50% (nation-wide = 65%)
- believed center provided educational programs for youth ........................ 68% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults ........ 58% (nation-wide = 61%)
- believed center provided volunteer opportunities ....................................... 68% (nation-wide = 67%)
- believed center provided rental facilities ...................................................... 42% (nation-wide = 39%)
- believed center provided activities in language other than English .......... 21% (nation-wide = 27%)
- believed center staff members participate in community events ............. 32% (nation-wide = 34%)
- believed their friends like the center ............................................................. 39% (nation-wide = 47%)
- believed their family likes the center ............................................................. 39% (nation-wide = 52%)
- believed their local community likes the center ......................................... 22% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ....................... 78% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ................................................................................. 67% (nation-wide = 88%)
- to enjoy myself .............................................................................................. 100% (nation-wide = 94%)
- to expose my children/family to something new ........................................ 67% (nation-wide = 77%)
- to get away from everyday life ...................................................................... 67% (nation-wide = 70%)
- to spend time with friends/family ............................................................... 78% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] .......... 0% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center]. .............................. 19% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] .............................. 11% (nation-wide = 4%)
- I have poor health ....................................................................................... 26% (nation-wide = 10%)
- I’m too busy with other commitments ...................................................... 60% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ............................................... 16% (nation-wide = 31%)
• People like me are not treated as well as others [at the nature center]. 5% (nation-wide = 2%)
• The entrance or program fees are too expensive........................................ 6% (nation-wide = 18%)
• There’s nothing I like to do [at the nature center]......................................... 0% (nation-wide = 13%)
• It is far from where I live or work .................................................................... 10% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

• Leisure provision included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
• Environmental connection included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
• Civic engagement included bringing together people from different races and ethnicities and linking people to political action.
• Community resilience included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
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| Environmental connection   | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
                              • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                              • Providing access to nature  
                              • Providing a place for children to learn  
                              • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.26 | No |
| Leisure provision          | • Providing a place for physical exercise  
                              • Providing a place for retreat/restoration/relaxation  
                              • Providing a safe place for outdoor recreation | (same as above) | 4.12 | Yes |
| Civic engagement           | • Helping bring together people from different races/ethnicities  
                              • Linking people to political action  
                              • Providing a place for people in the local community to gather | (same as above) | 2.80 | No |
| Community resilience       | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                              • Developing a sense of pride in the local community  
                              • Making the community a more beautiful place | (same as above) | 3.82 | No |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)*

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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                              • Providing access to nature  
                              • Providing a place for children to learn  
                              • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 3.86 | No |
| Leisure provision          | • Providing a place for physical exercise  
                              • Providing a place for retreat/restoration/relaxation  
                              • Providing a safe place for outdoor recreation | (same as above) | 3.79 | No |
| Civic engagement           | • Helping bring together people from different races/ethnicities  
                              • Linking people to political action  
                              • Providing a place for people in the local community to gather | (same as above) | 3.78 | No |
| Community resilience       | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                              • Developing a sense of pride in the local community  
                              • Making the community a more beautiful place | (same as above) | 3.67 | No |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)*
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that they were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**LIKELIHOOD OF SUPPORTING NATURE CENTER**

Percentage who indicated that they were… (calculated only from people who were aware of your center):

- likely to donate........................................................................................................42% (nation-wide = 45%)
  - highly likely to donate ..................................................................................5% (nation-wide = 6%)
- likely to volunteer................................................................................................37% (nation-wide = 38%)
  - highly likely to volunteer .............................................................................5% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)..............................................63% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development)...............................16% (nation-wide = 19%)

**CONCLUSION**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


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**Bob Petty** (grant administration) ............................................................ [rpetty@audubon.org](mailto:rpetty@audubon.org)
SUMMARY REPORT: NATURE CENTERS & COMMUNITIES STUDY

February 2016

The Urban Ecology Center, Milwaukee, WI

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Marc Stern, Virginia Tech
Nicole Ardoin, Stanford University
Joe Heimlich, The Ohio State University
Bob Petty, National Audubon Society
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Summary Report: Nature Centers & Communities study

THE URBAN ECOSYSTEM CENTER, MILWAUKEE, WI

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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them — including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

• Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
• Audubon Center at Debs Park, Los Angeles, CA
• Elachee Nature Science Center, Gainesville, GA
• The Environmental Learning Center, Vero Beach, FL
• Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
• Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
• Hitchcock Nature Center, Honey Creek, IA
• Mitchell Lake Audubon Center, San Antonio, TX
• Plains Conservation Center, Aurora, CO
• Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
• Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
• Seven Ponds Nature Center, Dryden, MI
• Seward Park Audubon Center, Seattle, WA
• Silver Lake Nature Center, Bristol, PA
• The Urban Ecology Center, Milwaukee, WI
• The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways to communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of the Urban Ecology Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native .................................................. 2% (nation-wide = 2%)
- Asian .............................................................................................................. 3% (nation-wide = 5%)
- Black or African American ................................................................. 31% (nation-wide = 6%)
- Hispanic or Latino .................................................................................... 4% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ........................................ 0% (nation-wide = 0.2%)
- White .............................................................................................................. 54% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent ................................................................. 49 (nation-wide = 54)
- Age range of respondents ................................................................. 21-81 (nation-wide = 19-97)
- Percentage of female respondents .................................................. 41% (nation-wide = 23%)
- Percentage of married respondents ................................................ 40% (nation-wide = 67%)
- Percentage of home-owning respondents ....................................... 49% (nation-wide = 73%)
- Percentage of respondents with children living in their home .......... 44% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree..... 43% (nation-wide = 46%)
- Average number of years respondents lived in current town .......... 30 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center ............. 9 mins (nation-wide = 17 mins)

One-hundred and four people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of the Urban Ecology Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:

- indicated they were aware of center ............................................................. 73% (nation-wide = 62%)
- indicated they had visited center ............................................................... 41% (nation-wide = 60%)
- indicated they had volunteered at center .................................................. 5% (nation-wide = 3%)
- indicated they had donated to center ......................................................... 15% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who... (calculated only from people who were aware of your center)

- indicated they knew a staff member ......................................................... 21% (nation-wide = 8%)
- believed staff members volunteered in local community ....................... 57% (nation-wide = 28%)
- believed staff members shared similar values as them  .......................... 99% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ................... 72% (nation-wide = 65%)
- believed center provided educational programs for youth .................. 81% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults .... 69% (nation-wide = 61%)
- believed center provided volunteer opportunities ................................. 71% (nation-wide = 67%)
- believed center provided rental facilities ............................................... 59% (nation-wide = 39%)
- believed center provided activities in language other than English .... 37% (nation-wide = 27%)
- believed center staff members participate in community events ....... 51% (nation-wide = 34%)
- believed their friends likes the center ....................................................... 53% (nation-wide = 47%)
- believed their family likes the center ....................................................... 47% (nation-wide = 52%)
- believed their local community likes the center .................................... 51% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ................... 88% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)

- to discover new things ............................................................................... 95% (nation-wide = 88%)
- to enjoy myself .......................................................................................... 87% (nation-wide = 94%)
- to expose my children/family to something new ................................... 68% (nation-wide = 77%)
- to get away from everyday life ................................................................. 74% (nation-wide = 70%)
- to spend time with friends/family ............................................................. 76% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting (only includes those who had visited the center previously at least once):

- I don’t have a convenient way of getting [to the nature center] ........ 13% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center]. ....................... 39% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ......................... 4% (nation-wide = 4%)
- I have poor health ................................................................................... 11% (nation-wide = 10%)
- I’m too busy with other commitments ................................................... 70% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ............................................ 25% (nation-wide = 31%)
People like me are not treated as well as others at the nature center. 3% (nation-wide = 2%)

The entrance or program fees are too expensive. 21% (nation-wide = 18%)

There’s nothing I like to do at the nature center. 15% (nation-wide = 13%)

It is far from where I live or work. 17% (nation-wide = 27%)

Community Valuation of Nature Centers

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
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                             | • Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
                             | • Providing access to nature  
                             | • Providing a place for children to learn  
                             | • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.34 | No |
| **Leisure provision**      | • Providing a place for physical exercise  
                             | • Providing a place for retreat/restoration/relaxation  
                             | • Providing a safe place for outdoor recreation | (same as above) | 3.73 | No |
| **Civic engagement**       | • Helping bring together people from different races/ethnicities  
                             | • Linking people to political action  
                             | • Providing a place for people in the local community to gather | (same as above) | 3.41 | Yes |
| **Community resilience**   | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                             | • Developing a sense of pride in the local community  
                             | • Making the community a more beautiful place | (same as above) | 3.80 | Yes |

*responses from bulleted survey items were averaged to create indices ('value set' in column one); *only statistically significant differences shown (p < .05)

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                             | • Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.34 | No |
| **Leisure provision**      | • Providing a place for physical exercise  
                             | • Providing a place for retreat/restoration/relaxation  
                             | • Providing a safe place for outdoor recreation | (same as above) | 4.15 | No |
| **Civic engagement**       | • Helping bring together people from different races/ethnicities  
                             | • Linking people to political action  
                             | • Providing a place for people in the local community to gather | (same as above) | 3.91 | Yes |
| **Community resilience**   | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
                             | • Developing a sense of pride in the local community  
                             | • Making the community a more beautiful place | (same as above) | 4.26 | Yes |

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Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

• visitation frequency;
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• whether or not a respondent knew a center staff member; and
• past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

LIKELIHOOD OF SUPPORTING NATURE CENTER
Percentage who indicated that they were...(calculated only from people who were aware of your center):

• likely to donate.................................................................56% (nation-wide = 45%)
  o highly likely to donate ..............................................8% (nation-wide = 6%)
• likely to volunteer..........................................................47% (nation-wide = 38%)
  o highly likely to volunteer .........................................4% (nation-wide = 5%)
• likely to respond to a threat (e.g., development).............75% (nation-wide = 65%)
  o highly likely to respond to a threat (e.g., development).....15% (nation-wide = 19%)

CONCLUSION

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

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FURTHER RESOURCES


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OVERVIEW

Nature centers hold tremendous potential to serve as hubs for learning and connection, not only between people and nature, but also between fellow community members. This study examined the relationship between nature centers and the people living around them — including both people who visit and people who don't visit but still perceive value in a nature center existing in their community. Our ultimate goal is to help strengthen the link between nature centers and their communities. To this end, we studied three qualities of the nature center-community relationship. First, we determined the values that community members hold toward local centers. Second, we measured the extent to which different factors prevented community members from visiting local centers. Third, we tested a range of hypothetical predictors of nature center support to understand why community members might donate, volunteer, or respond to a threat at their local center.

Through online surveys with over 2,400 respondents living near 16 nature centers across the United States, we identified four distinct values community members feel local centers should, and often do, provide: environmental connection, leisure provision, community resilience, and civic engagement. We also determined that lack of awareness was the major constraint to visitation for our sample of respondents. The next most significant constraints were financial, time, and transportation limitations. Lastly, we found a broad range of factors that encouraged people to support local centers. Most prominently, community members' belief that their local center provided the four value sets identified in this study were the strongest predictors of members' reported likelihood to support their local center. Other significant predictors included positive evaluations of staff members, perceptions of positive attitudes toward the center held by other community members, familiarity with center activities, pro-environmental attitudes, and previous support.

This report summarizes the study's results and provides a comparison of responses collected from people living around your nature center to people living around all 16 centers in our national sample. It is important to note that your local sample of respondents was not statistically representative of the broad community surrounding your center. Therefore, the trends shared here may not apply across your entire local community. The primary purpose of sharing our study results is to provide insights into how people who answered the survey in your area might be similar or different to people living around other nature centers in our study, as well as identification of the diverse sets of values centers might provide, possible constraints to visitation, and possible predictors of support.
RESEARCH METHODS

Center Selection

The nature centers in this study were a subset of a list developed by senior staff members of the National Audubon Society and the Executive Director of the Association for Nature Center Administrators representing their opinions of some of the best centers in the country. The centers in our sample, selected to ensure geographic distribution, included those listed below:

- Corkscrew Swamp Sanctuary and Blair Audubon Center, Naples, FL
- Audubon Center at Debs Park, Los Angeles, CA
- Elachee Nature Science Center, Gainesville, GA
- The Environmental Learning Center, Vero Beach, FL
- Grange Insurance Audubon Center and Scioto Audubon Metro Park, Columbus, OH
- Audubon Greenwich Kimberlin Nature Education Center and Sanctuary, Greenwich, CT
- Hitchcock Nature Center, Honey Creek, IA
- Mitchell Lake Audubon Center, San Antonio, TX
- Plains Conservation Center, Aurora, CO
- Audubon Society of Portland Nature Sanctuary and Facilities, Portland, OR
- Richardson Bay Audubon Center and Sanctuary, Tiburon, CA
- Seven Ponds Nature Center, Dryden, MI
- Seward Park Audubon Center, Seattle, WA
- Silver Lake Nature Center, Bristol, PA
- The Urban Ecology Center, Milwaukee, WI
- The Wilderness Center, Wilmot, OH

Data Collection

We hired a marketing firm to invite local residents to take the surveys. For urban centers, residents living within a 4-5 mile radius were randomly selected. For suburban and fringe centers, the radii were 6-12 miles, and for rural centers, the radius was 20 miles. Despite inviting 192,000 local people within each population to take the survey, we were unable to achieve statistically representative samples of any single community. Rather, we received 2,276 completed surveys across the entire national sample. As such, the results shared in this report do not represent the values and beliefs of the entire community surrounding your center. They are provided to enable a comparison of respondents in your general area to respondents at all other centers combined (we refer to these as the “nation-wide” results in this report). Survey invites were sent in two rounds. The first round started with a postal letter invitation in both English and Spanish. These included a website link to the online survey. One half of the initial sample received a $2 bill as a token of appreciation along with their invitation to encourage response. Two follow-up email reminders were also sent. The second round used an email invitation and two email reminders. The surveys took respondents approximately eight minutes to complete on average. We included a range of survey items to attempt to answer our three primary research questions (in what ways do communities’ value nature centers, what factors lead community members to support nature centers, and what issues constrain community members from visiting nature centers). We also collected self-reported race/ethnicity and length of residency to understand differences between community groups. Other socio-demographic variables were provided by the marketing firm using multiple sources, which have been found to be approximately 95% accurate in identifying the true characteristics of sample members.
STUDY RESULTS

Description of the Wilderness Center Sample

RESPONDENTS’ SOCIO-DEMOGRAPHICS
Percentage who identified as… (sum of percentages may be >100%, because respondents could identify with more than one race or ethnicity in the survey).

- American Indian or Alaska Native ...................................................... 2% (nation-wide = 2%)
- Asian ...................................................................................................... 1% (nation-wide = 5%)
- Black or African American ............................................................... 1% (nation-wide = 6%)
- Hispanic or Latino ............................................................................... 0.7% (nation-wide = 7%)
- Native Hawaiian or other Pacific Islander ....................................... 0% (nation-wide = 0.2%)
- White ..................................................................................................... 93% (nation-wide = 78%)

Other traits of local sample of respondents:

- Average age of respondent .............................................................. 55 (nation-wide = 54)
- Age range of respondents ............................................................... 28-88 (nation-wide = 19-97)
- Percentage of female respondents .................................................. 14% (nation-wide = 23%)
- Percentage of married respondents ............................................... 80% (nation-wide = 67%)
- Percentage of home-owning respondents ...................................... 80% (nation-wide = 73%)
- Percentage of respondents with children living in their home ........ 34% (nation-wide = 26%)
- Percentage of respondents with college degree/graduate degree ...... 30% (nation-wide = 46%)
- Average number of years respondents lived in current town ............ 29 years (nation-wide = 23 years)
- Average time it would take respondent to drive to center .............. 29 mins (nation-wide = 17 mins)

One-hundred and forty-one people living around your center responded to the survey (approx. locations below).
Attitudes and Behaviors of the Wilderness Center Sample

RESPONDENTS’ LEVEL OF INVOLVEMENT AT CENTER
Percentage who:
- indicated they were aware of center ............................................................. 77% (nation-wide = 62%)
- indicated they had visited center ................................................................. 65% (nation-wide = 60%)
- indicated they had volunteered at center .................................................... 6% (nation-wide = 3%)
- indicated they had donated to center ........................................................... 23% (nation-wide = 12%)

RESPONDENTS’ BELIEFS ABOUT CENTER AND ITS STAFF MEMBERS
Percentage who…(calculated only from people who were aware of your center)
- indicated they knew a staff member ........................................................... 11% (nation-wide = 8%)
- believed staff members volunteered in local community ......................... 33% (nation-wide = 28%)
- believed staff members shared similar values as them ............................. 91% (nation-wide = 95%)
- indicated they trusted staff members to do their jobs well ...................... 73% (nation-wide = 65%)
- believed center provided educational programs for youth ....................... 85% (nation-wide = 74%)
- believed center provided educational programs/trainings for adults......... 74% (nation-wide = 61%)
- believed center provided volunteer opportunities .................................... 76% (nation-wide = 67%)
- believed center provided rental facilities .................................................. 52% (nation-wide = 39%)
- believed center provided activities in language other than English .......... 15% (nation-wide = 27%)
- believed center staff members participate in community events ............ 24% (nation-wide = 34%)
- believed their friends likes the center ...................................................... 59% (nation-wide = 47%)
- believed their family likes the center ....................................................... 72% (nation-wide = 52%)
- believed their local community likes the center ...................................... 42% (nation-wide = 36%)
- were satisfied with past visits to the center (visitors only) ...................... 88% (nation-wide = 87%)

RESPONDENTS’ MOTIVES AND CONSTRAINTS TO VISITING CENTER
Percentage who indicated the following items were a major reason to visit (visitors only)
- to discover new things ............................................................................ 81% (nation-wide = 88%)
- to enjoy myself ......................................................................................... 96% (nation-wide = 94%)
- to expose my children/family to something new .................................... 80% (nation-wide = 77%)
- to get away from everyday life .............................................................. 79% (nation-wide = 70%)
- to spend time with friends/family ......................................................... 88% (nation-wide = 81%)

Percentage who indicated the following items were major issues/challenges that prevented them from visiting
(only includes those who had visited the center previously at least once):
- I don’t have a convenient way of getting [to the nature center] ........... 5% (nation-wide = 10%)
- I don’t know what there is to do [at the nature center] ......................... 29% (nation-wide = 39%)
- I don’t think I’m welcome/safe [at the nature center] ........................... 1% (nation-wide = 4%)
- I have poor health .................................................................................. 12% (nation-wide = 10%)
- I’m too busy with other commitments .................................................. 82% (nation-wide = 70%)
- My friends/family prefer to go elsewhere ........................................... 36% (nation-wide = 31%)
• People like me are not treated as well as others [at the nature center]. 1% (nation-wide = 2%)
• The entrance or program fees are too expensive................................. 19% (nation-wide = 18%)
• There’s nothing I like to do [at the nature center]................................. 8% (nation-wide = 13%)
• It is far from where I live or work ............................................................. 62% (nation-wide = 27%)

**Community Valuation of Nature Centers**

To measure the perceived value of nature centers, we asked survey respondents about the importance and performance of 14 items reflecting services that nature centers might provide. These items were initially based on the sets of values found for museums and further developed through a 2014 proof-of-concept study at six U.S. nature centers by the three principal investigators of this study (Ardoin, Heimlich, and Stern).

Perceptions of importance were solicited by asking, ‘How important is it to you that [the nature center’s name] does each of the following?’ (range = 1 to 5 where 1 = ‘not at all important’ and 5 = ‘extremely important’). Perceptions of performance were measured by asking, ‘How well does [the nature center’s name] actually accomplish each of the following?’ (range = 1 to 5 where 1 = ‘not at all well’ and 5 = ‘extremely well’).

An exploratory factor analysis on respondents’ importance scores suggested four underlying value sets that community members hold toward nature centers:

- **Leisure provision** included providing opportunities for physical exercise, safe outdoor recreation, retreat, restoration, and relaxation.
- **Environmental connection** included promoting environmental awareness and behaviors, protecting wildlife habitats and natural areas with ecosystem services, and providing places to learn.
- **Civic engagement** included bringing together people from different races and ethnicities and linking people to political action.
- **Community resilience** included beautifying the local community, contributing to the local economy, and developing a sense of pride in the local community.

We created importance indices for each of these factors by averaging respondents’ importance scores for those items that loaded most strongly on each factor. Similarly, we created performance indices by averaging performance scores. We compared the average score for each index between community sub-groups in our nation-wide sample (e.g., different educational levels or races/ethnicities) and found a number of statistically significant differences. The valuation of leisure provision differed between visitors and non-visitors to the centers, while the valuation of the other three factors did not. This suggests that community members value the existence of nature centers even if they do not personally visit. Community resilience and civic engagement were particularly valued among respondents who were non-White, those who were younger, those who were less educated, and those who lived in urban areas.

Your center’s average importance and performance scores, and whether or not these scores varied in a statistically significant way from our nation-wide sample, are identified on the next page.
### PERCEIVED IMPORTANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

<table>
<thead>
<tr>
<th>Value set</th>
<th>Survey items</th>
<th>Range</th>
<th>Center average</th>
<th>Different than nation-wide average?</th>
</tr>
</thead>
</table>
| Environmental connection | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
• Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all important, and 5 = extremely important | 4.28           | No                                  |
| Leisure provision        | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)            | 3.83           | Yes                                 |
| Civic engagement         | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)            | 2.76           | No                                  |
| Community resilience     | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)            | 3.51           | No                                  |

*responses from bulleted survey items were averaged to create indices (‘value set’ in column one); *only statistically significant differences shown (p < .05)

### PERCEIVED PERFORMANCE OF NATURE CENTER(S) PROVIDING SETS OF VALUES

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| Environmental connection | • Encouraging environmental behavior (e.g., recycling or saving electricity and water)  
• Increasing environmental awareness (e.g., introducing people to native wildlife/plants)  
• Providing access to nature  
• Providing a place for children to learn  
• Providing wildlife habitat or ecosystem services (e.g., slowing storm water runoff) | 1 to 5 where 1 = not at all well, and 5 = extremely well | 4.30           | No                                  |
| Leisure provision        | • Providing a place for physical exercise  
• Providing a place for retreat/restoration/relaxation  
• Providing a safe place for outdoor recreation | (same as above)            | 4.10           | No                                  |
| Civic engagement         | • Helping bring together people from different races/ethnicities  
• Linking people to political action  
• Providing a place for people in the local community to gather | (same as above)            | 3.63           | No                                  |
| Community resilience     | • Contributing to the local economy (e.g., increasing property values or attracting businesses)  
• Developing a sense of pride in the local community  
• Making the community a more beautiful place | (same as above)            | 3.78           | No                                  |

*responses from bulleted survey items were averaged to create indices (‘value set’ in column one); *only statistically significant differences shown (p < .05)
Predictors of Nature Center Support

We found that a broad range of factors significantly predicted the likelihood of community members indicating they would donate, volunteer, or otherwise support their local nature center. The four sets of values nature centers provide (environmental connection, leisure provision, civic engagement, and community resilience) were the strongest and most consistent predictors of whether respondents in our sample indicated that were likely to support their local nature center. Other factors were included:

- visitation frequency;
- respondents’ commitment to nature;
- perceptions of staff performance (e.g., how well they perform their jobs);
- perceptions of shared values with staff;
- perceptions of whether nature center staff volunteer in the local community;
- awareness of nature center activities (e.g., children’s programs, adult programs, and rental facilities);
- perceptions of the attitudes about the center from friends, family and other community members;
- whether or not a respondent knew a center staff member; and
- past donations to the nature center or volunteering at the center.

A majority of respondents indicated they would engage in at least one form of support behavior. Your center’s results in comparison to the nation-wide sample are below.

**Likelihood of Supporting Nature Center**

Percentage who indicated that they were... (calculated only from people who were aware of your center):

- likely to donate........................................................................................................41% (nation-wide = 45%)
  - highly likely to donate ......................................................................................4% (nation-wide = 6%)
- likely to volunteer................................................................................................36% (nation-wide = 38%)
  - highly likely to volunteer ..............................................................................2% (nation-wide = 5%)
- likely to respond to a threat (e.g., development)..............................................56% (nation-wide = 65%)
  - highly likely to respond to a threat (e.g., development).........................16% (nation-wide = 19%)

**Conclusion**

Our study suggests centers have the potential to hold considerable value in broad ways to diverse groups of people living around them. In particular, we identified four key sets of values that appear broadly important to local communities and were linked to support for local centers: environmental connection, leisure provision, civic engagement, and community resilience. These values provide food-for-thought for centers, as they consider their place within their local communities. Expanding beyond the more traditional roles for nature centers could expand centers’ reach and enhance local support.

Our national findings were generally quite similar to those which we found in the sample of people living around your center who responded to our survey. While this latter sample is not representative for all people living around your center, this study’s findings provide a basic understanding of the ways in which the broader community might value your center’s existence, the reasons the broader community might not visit your center, and the reasons that the broader community might donate, volunteer at, or otherwise support your center. We encourage further research with representative samples of community members to understand how best to serve the diverse groups of people living around your center.
ACKNOWLEDGEMENTS

We greatly appreciate all the nature center directors, staff, and community members who gave generously of their time to participate in the interviews and surveys. We are also grateful to our National Audubon Society and Association of Nature Center Administrators colleagues who assisted with this work. This work was supported by an Institute of Museum and Library Services award.

FURTHER RESOURCES


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