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# How Access to Plant & Animal Books Affects Participation in Conservation Activities

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**How Access to Plant & Animal Books Affects Participation in Conservation Activities**

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### Abstract

Public libraries are an important resource for communities. Access to plant and animal books impacts a communities' ability to learn about their environment. In this study, the number of plant and animal books available to people through local libraries in northern Kentucky, and neighboring counties in Ohio and Indiana were counted and a survey assessing one's preferences and likeliness to participate in conservation activities was distributed to local residents. Based on the collected data, a statistically significant relationship ( $p < 0.05$ ) was found between access to plant and animal books available at local libraries and the likelihood of people to participate in conservation activities. Further analysis was performed between the total number of shelved plant and animal books at local libraries, the total number of shelved juvenile plant and animal books and the shelved adult plant and animal books, and the total number of plant and animal books in libraries compared to the local household income and number of households near a library. This study found that people that read books about plants and animals were more likely to participate in conservation activities associated with their book preference. This study also found that people living in low-income communities with fewer households are less likely to participate in plant and animal conservation, as compared to higher-income communities with a higher number of households. Additionally, this study found that lower income areas have fewer plant and animal books on the library shelves than higher income areas. Consequently, study results suggest that if more plant and animal books were made available to low-income areas and areas of biological importance through libraries, people may be more likely to conserve the wildlife around them.

*Keywords:* Plant, Animal, Conservation, Library, Books, Poverty

### **How Access to Plant & Animal Books Affects Participation in Conservation Activities**

Conservation requires one to focus on upholding biodiversity while maintaining the health and integrity of ecosystems (Trombulak, Omland, & Robinson, 2004). The livelihood of human beings depends upon the conservation and protection of nature as our health and economic well-being are linked to the success or failure of the conservation of biodiversity (Sachs et al., 2009; Buttker, Allen, & Higgins, 2014). Regardless of the conservation efforts that have taken place thus far, biodiversity is still in a steep decline (Butchart et al., 2010). Yet, despite this decline, we must be optimistic (Swaigood & Sheppard, 2010). People can improve their knowledge about how to conserve and learn about conservation actions through many means, such as visits to a local zoo, visiting protected areas, or reading a book (Clayton, Fraser, & Saunders, 2009; Jensen, 2014; Boyle, 2004; Dolins et al., 2010).

#### **Impact of Books**

Books are a good source for providing a solid understanding of science (Dolins et al., 2010). They can positively influence a child's ability to understand biological details as early as 4 years old (Ganea, Ma, & DeLoache, 2011). In an experiment in Madagascar in which children read a book about a local primate, the Aye-Aye, 50% of those students gained a better understanding of the animal and expressed more willingness to protect local primates and voiced a desire to read more about animals in their local environment (Dolins et al., 2010). Similarly, in a study conducted by Fanini & Fahd (2009) in Morocco, it was found that books can build a positive relationship between children and the herpetofauna within a local park.

Books can also allow for students to have a more solid understanding of the problems affecting the environment and can even serve as an impetus to spark conservation action (Holm, 2012; Burk, 2006; Nel, 2004, p. 174). For example, upon reading a book about the decline of shad, a species of herring, in the Potomac River at an elementary school in Bethesda, Maryland, students started a project to raise and release shad (Burk, 2006). Likewise, after reading *The Lorax* by Dr. Seuss, a 10 year old child wrote Dr. Seuss of her heartfelt emotions that overcame her after reading the book which moved her to start picking up roadside pollution (Nel, 2004, p. 174).

#### **Local Library System**

One of the most important sources of books available to the public is their local library. The public library book collection located in the northern Kentucky counties of Boone, Kenton

and Campbell, the neighboring counties of Clermont and Hamilton in Ohio, and Dearborn, Switzerland, and Ohio counties in Indiana is expansive. The book collection of the public libraries in Cincinnati and Hamilton County alone is the third largest public collection in the U. S. (“What’s New,” 2010, para. 5). These public libraries offer a variety of programs and collection materials in visual and audio formats, and regular books for the public to learn about plants and animals. However, despite the various types of collection materials they house, people still view the primary purpose of a library as a place to store books (Datig, 2014).

Book selection at the Hamilton County Libraries are based on appeal to the patrons, i.e. the less appeal there is for a specific type of book, the less chance that the type of book will be found at the local library (“Policies,” n.d., para. 8). Library patrons ultimately determine which books they want to read. When it comes to plant and animal books, this can potentially have a big impact on one’s willingness to protect key ecological areas. According to Moorman (2006), there is a correlation between understanding ecology and the benefits of having a protected area. Through reading books, one can better understand ecology and the plants and animals that make up various ecosystems while becoming more understanding of why they need to be protected.

### **Study Scope**

The primary purpose of this study is to determine if people that prefer to read plant books will prefer to conserve plants and whether people that prefer to read animal books will prefer to conserve animals. The hypothesis for this study was that adults that have an affinity towards plant or animal books would also have the same affinity to conserve plants or animals. Previous studies have shown children to have a more positive relationship with and be more protective of animals when they read books based on them (Dolins et al., 2010; Fanini & Fahd, 2009). For this reason, the same hypothesis was applied to adults in this study. Other data collected as part of this study will help determine people’s preferences towards reading plant and animal books and whether younger people have more plant and animal books available to them at local libraries. Community members may be more likely to participate in conservation activities, based on whether or not they have conservation-based books available for them to read at their local library. Finally, this study also investigates whether household income and the number of houses have an impact on the accessibility of books. By applying the findings of this study to other cities within the U. S. and abroad, it could be possible to influence how people view conservation and

the importance of one to participate in community conservation activities through the accessibility of books.

### **Methods**

The specific counties that were covered in this study includes the three northern most counties of Kentucky (Kenton, Campbell and Boone counties) and the adjacent counties in Ohio (Hamilton and Clermont counties) and Indiana (Dearborn, Ohio and Switzerland counties). The methods for this research were comprised of two main pieces: a survey within the study area and counting books in the local libraries within the study area. The survey consisted of a total of 17 questions (see Appendix A), which were uniquely created for this study by the researcher. The basis for these survey questions was to determine demographics, whether people visit libraries and how frequently, the likeliness of reading about specific topics, the amount of time people spend reading library books, their interest in sustainable development and conservation activities, and whether or not the participants had a house plant or animal. These questions were asked to determine the typical characteristics of a community, their relationship to their local library and their preferences for plants, animals and conservation activities.

The survey was created online using Typeform and Qualtrics. No visual enhancements were included in the survey. According to Downes-Le Guin, Baker, Mechling, & Ruyle (2012), using a simplified version of a survey without visual enhancements will not impact participation rates or data quality. Additionally, the Likert scale questions were rotated so that no answers appeared first more often than any other which resulted in unbiased answers (Hitzenko, 2013).

The surveys were distributed through two different methods, online and door-to-door. The online survey was distributed via Twitter (i.e. #cincinnati library, #cincinnati public library, #conservation, #nkylib, and #cincylib) and was created using Qualtrics. Respondents completed 18 surveys via Twitter on September 28 and September 29, 2014. An online Typeform survey was also created and filled out by 90 respondents on iPads by going door-to-door. Three people, one responsible for each location, conducted the door-to-door surveys near the local main library branches at Madeira (OH), Covington (KY), and Lawrenceburg (IN). Door-to-door surveys were distributed to respondents on five Saturdays, i.e. September 20, September 27, October 4, October 11, and October 18, 2014, starting at 3 p.m. and ending 5 p.m. EST. The total survey population was 108 participants over the age of 18 and was evenly distributed between genders.

In addition to the surveys, a Google web search was performed on the individual counties included in this study to identify a total of 69 county/city libraries within the study area. For the Dearborn County, Indiana libraries, there was not a central website for the county. In this case, a Google web search under Dearborn County libraries was performed which identified two separate web pages for these libraries (see Appendix B). Once all of the library locations were identified, they were entered onto the data collection sheet.

Within each of the libraries included in this study, the shelved books found under the non-fiction sections of the 580s (plants) and the 590s (animals) were counted in the adult and juvenile sections. The juvenile sections consisted of books contained within beginning reader, juvenile, and teen areas of the libraries which were also indicated on the book stickers located above the Dewey Decimal number (BR – Beginning Readers, J – Juveniles, and Teen – Teen books). The sampling was limited to these specific Dewey Decimal system numbers since these were the specific locations of non-fiction plant and animal books. Each book with a 580 Dewey decimal number was counted as an individual book. Duplicate books were excluded. Books with the same title and a different volume were included, as they were considered different books. Reference books were included when they fell within the 580 and 590 locations. Large Print books were included with the adult counts when they were present. Other reference materials at the libraries were not counted, i.e. DVDs and CDs. Additionally, books on hold, books being read at the time of the counts, and books checked out were not counted as they were located out of the public's reach. The counting process was repeated for the books with a 590 Dewey decimal number.

Due to the opening and closing times associated with all of the libraries and the time available to sample them, there was no set time of the day/week to sample all of the libraries. However, in all cases, the juvenile books in the 580s and 590s sections of the library were counted individually first, followed by the adult books in the 580s and 590s section. Any books that were being read, not included on the shelf, or taken off of the shelf while they were being counted, were not included in the final tallies. The total counts for the juvenile 580s, juvenile 590s, adult 580s and adult 590s sections were separately put onto a data collection sheet, (see Appendix C), next to the library to help identify the associated counts of each.

Household income during the past 12 months, i.e. inflation-adjusted 2012 dollar amounts, and the number of households were retrieved for the zip codes associated with each library; data

was collected for from the U. S. Census Bureau website. This information was exported after all book counts were completed onto a spreadsheet so that the total book counts could be compared to number of households and household income.

A t-test was performed on the total plant and animal books found at the library to determine if there was a difference between the amount of plant and the amount of animal books stored on a libraries' shelf. Another t-test was performed on the total juvenile and adult plant and animal books to determine if there was a difference between the amount of juvenile plant/animal books and the amount of adult plant/animal books stored on a libraries' shelf. A chi-squared analysis was performed on survey participant's likeliness to conserve plants and animals and their reading preferences of plants and animals. In addition, linear regression analysis was performed on the relationship between both household income and the number of households in library locations and the total number of plant and animal books on the library shelves. For all statistical tests associated with this study, an alpha value of 0.05 was used.

### Results

During this study, 108 participants were asked questions associated with the library survey with the participants being evenly distributed amongst gender and the distribution of the participants being 29% from Indiana, 37% from Kentucky, and 34% from Ohio (see Table 1).

Table 1  
*Number of Participants Per State Based on Gender*

<u>Gender</u>	<u>Indiana</u>	<u>Kentucky</u>	<u>Ohio</u>	<u>%</u>
Male	17	23	13	49%
Female	14	17	22	49%
Unanswered	0	0	2	2%
Totals ( $N = 108$ )	31	40	37	100%

There were more participants in the 28-37 years old range (39%), than those of the other age ranges, with 18-27 years old at 33% and 38 years old and greater at 28%. Additionally, 53% of the participants owned a family pet and 65% had a house plant.

A chi-squared test of independence was performed to investigate the relationship between the participants that read plant books and their likeliness to participate in plant conservation. Based on the result of the analysis,  $\chi^2 (5, N = 84) = 38.5, p < 0.001$ , a statistically significant relationship exists. Thus, participants that read about plants (36%) were also more likely to participate in plant conservation.

Another chi-squared test of independence was performed to investigate the relationship between the participants that read animal books and their likeliness to participate in animal conservation. Based on the result of this analysis,  $\chi^2(5, N = 84) = 29.1, p < 0.001$ , a statistically significant relationship was present, indicating that participants that read about animals (64%) were also more likely to participate in animal conservation.

Additionally, 69 libraries were counted in the northern Kentucky counties and the counties neighboring them in Ohio and Indiana. In the libraries counted, there were a total of 2,248 juvenile plant books ( $M = 33, SD = 26$ ), 39,570 juvenile animal books ( $M = 573, SD = 389$ ), 1,117 adult plant books ( $M = 16, SD = 49$ ), and 6,705 adult animal books ( $M = 97, SD = 277$ ). A total of 49,640 books ( $M = 719, SD = 628$ ) were available at the local libraries all serving a total of 458,335 households in the northern Kentucky counties and the neighboring counties in Ohio and Indiana based on the households associated with the same zip codes as the libraries (see Table 2).

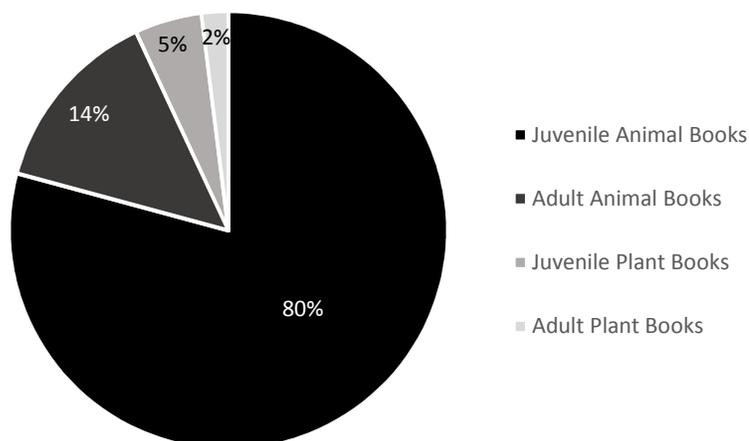
Table 2

*Number of Plant (580s) and Animal (590s) Books Based on the Library Location*

<u>State</u>	<u>County</u>	<u>Juvenile 580s</u>	<u>Juvenile 590s</u>	<u>Adult 580s</u>	<u>Adult 590s</u>
Kentucky	Kenton	363	4,621	136	787
Kentucky	Boone	143	2,710	90	547
Kentucky	Campbell	141	2,560	72	359
Indiana	Dearborn	189	1762	68	557
Indiana	Switzerland	8	148	12	30
Indiana	Ohio	9	238	20	83
Ohio	Clermont	334	6,876	150	1,025
Ohio	Hamilton	1,061	20,655	569	3,317
Totals ( $N = 49,640$ )		2,248	39,570	1,117	6,705

*Note.* Total counts based on number of books on the shelves at the time the books were counted.

The largest percentage of any one category of the total number of books was the juvenile animal category at 80% with the lowest percentage of any one category being the adult plant book category at 2% respectively (see Figure 1). The difference in books between these categories was 38,453 (see Table 2). Since the books on the shelves are stocked based on appeal, juvenile animal books are the most appealing, followed by adult animal books, juvenile plant books, and adult plant books (“Policies,” n.d., para. 8).

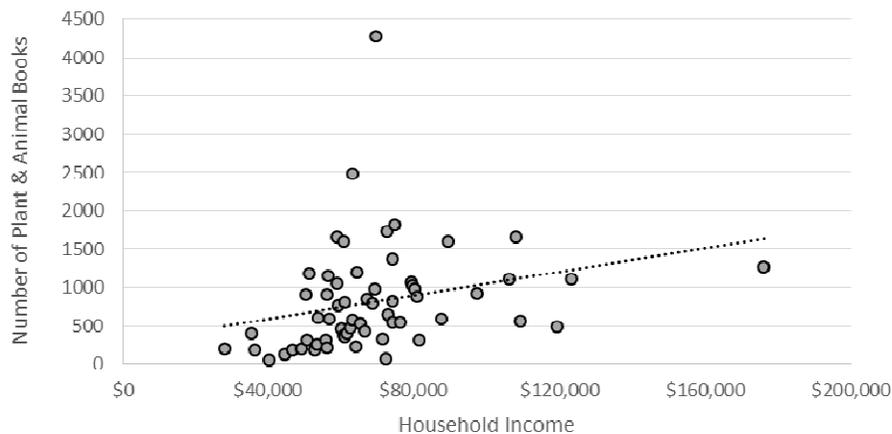


*Figure 1.* The percentage of juvenile plant, juvenile animal, adult plant and adult animal books based on the total books available in northern Kentucky and the surrounding counties in Indiana and Ohio.

In order to determine if there was a significant difference in the number of plant books and the number of animal books on the local library shelves, a two-tailed paired t-test was performed. As a result of the t-test, it was determined that there was a statistically significant difference between the number of plant books ( $M = 49$ ,  $SD = 60$ ) and animal books ( $M = 671$ ,  $SD = 571$ ),  $t(68) = 2.00$ ,  $p < 0.001$ , found on local library shelves. In all library branches, the total number of animal books counted on the shelves exceeded the total number of plant books. Additional supporting evidence can be found in the data which demonstrates extreme differences in the number of plant and animal books found at the local libraries (see Table 2).

The total number of juvenile plant and animal books and the number of adult plant and animal books was also compared using a two-tailed paired t-test. Based on this test, it was determined that there was a statistically significant difference between the total number of juvenile plant and animal books ( $M = 606$ ,  $SD = 410$ ) and the total number of adult plant and animal books ( $M = 113$ ,  $SD = 325$ ),  $t(68) = 2.00$ ,  $p < 0.001$ . Even though the Cincinnati Main Library branch had a higher number of adult plant and animal books than juvenile plant and animal books on the shelves, the number of juvenile plant and animal books and adult plant and animal books was still significantly different. In all branch locations sampled, except for the Cincinnati Main Library branch, there were more juvenile plant and animal books in the local public libraries than adult plant and animal books.

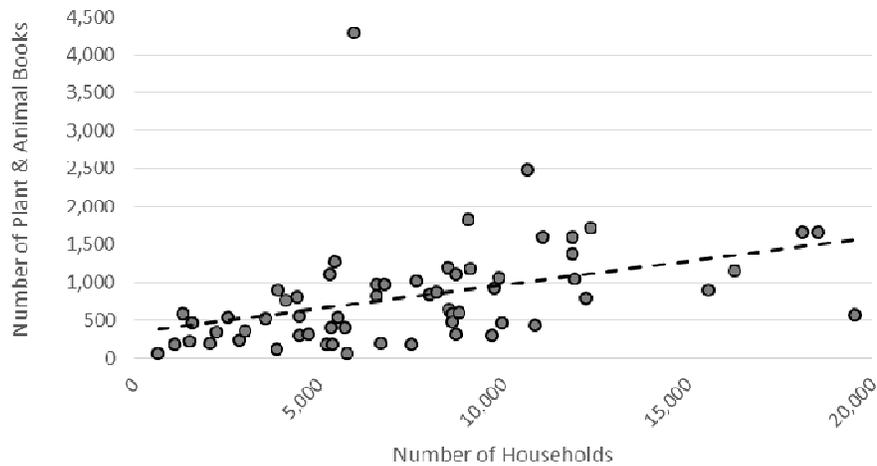
These same book counts were plotted against the mean household income associated with the same zip codes as the local libraries based on U.S. Census data. As the mean household income increased, the number of plant and animal books available on the shelves of the local library increased (see Figure 2). Based on a linear regression analysis, household income in areas located within the same zip codes as the libraries significantly predicted the number of plant and animal books located on the shelves of the library,  $\beta = 0.01$ ,  $t(60) = 2.13$ ,  $p = .04$ . Thus, libraries located in areas with a higher household income have more plant and animal books on the library shelves,  $r^2 = 0.07$ ,  $F(1, 60) = 4.52$ . It should also be noted that instead of 68 library samples, there were only 60 as some libraries were found within the same zip codes. In the cases where a library had the same zip code as another, the number of library books available on the shelves of the local libraries were combined.



*Figure 2.* The total number of plant and animal books available at the local libraries when plotted against the mean household income in the same zip code as the library locations.

The total book counts were also plotted against the number of households associated with the same zip codes as the local libraries based on U.S. Census data. The plotted graph indicates a similar trend to household income in that as the number of households increased so did the total number of books available at the local libraries (see Figure 3). Based on a linear regression analysis, the number of households in areas located within the same zip codes as the libraries significantly predicted the number of plant and animal books located on the shelves of the library,  $\beta = 0.06$ ,  $t(60) = 3.37$ ,  $p = .001$ . The more households that are located near a local library, the more plant and animal books were found on the library shelves,  $r^2 = 0.16$ ,  $F(1, 60) =$

11.38. These were the same libraries that were also mostly found to affect the relationship between book totals and household income.



*Figure 3.* The total number of plant and animal books available at the local libraries when plotted against the total number of households in the same zip code as the library locations.

### Discussion

In this study, it was found that participants that read plant and animal books would be more likely to participate in plant and animal conservation activities. This partially supports the findings of Dolins et al. (2010) in that people who read about an animal would be more willing to protect it. Unfortunately though, fewer children's books have depicted images of nature and animals (Williams, Podeschi, Palmer, Schwadel, & Meyler, 2012). This can result in children being less exposed to nature and could make them less willing to conserve and protect them in the future (Williams et al., 2012; Dolins et al., 2010). This is exacerbated even more in that humans tend to focus conservation efforts based on alluring vertebrates, big appealing species, and related species (Coursey, 1998; Czech, Krausman, & Borkhataria, 1998; Stokes, 2007).

According to Schlegel & Rupf (2010), students have a higher affinity towards animals that they are more knowledgeable about. Consequently, for the children and young adults that do not have access to books, it is possible that they would have a smaller inclination towards conserving species that they know little about. Since there were fewer plant books on the library shelves than animal books, one would be less likely to read a plant book and therefore may be less likely to participate in plant conservation activities as a result. In a study by Burke & Cuttler-Mackenzie (2010), introducing children to picture books, which can be found on library shelves, has an impact on their involvement in community conservation activities. However, it

also must be taken in consideration that people do learn through means other than books which may or may not have an effect on their willingness to participate in community conservation activities.

Being that Cincinnati and Hamilton County library books float between library locations, the data identifies that there is stronger demand for plant and animal books outside of the Cincinnati Main Library branch in some branches more than others. Branches in Hamilton County that had a lack of demand, had a lower number of plant and animal books found in their library. In all branches except the Cincinnati Main Library branch, there were more juvenile plant and animal books than there were adult plant and animal books. Since this branch disseminates books out to other libraries within Hamilton County, fewer juvenile books at this location compared to adult plant and animal books is expected. However, it is unclear as to the reasons behind the interest, whether it is based on what previous readers were interested in reading or whether it is based on if a book is available or not. Further research is necessary to determine the reasons for this trend.

The group of books in this study that had the highest demand was juvenile animal books followed by adult animal books which had the second highest demand. According to the book interest at the local libraries, juveniles have a higher affinity towards animals than adults and is supported by Melson (2001). Although there was a higher number of juvenile plant and animal books, children's access to these books is typically dependent upon their guardian being able to take them to the library. Future research is warranted around surveying children to determine their reading preferences and their likeliness to participate in conservation activities.

This study also found that there were fewer plant and animal books in lower income areas based on the linear regression analysis. However, there was a low  $r^2$  value that is likely the result of several branches, namely Cincinnati Main Library Branch and the Erlanger Branch of the Kenton County Public Library, which had a higher number of plant and animal books per local household income as compared to others. There was also a correlation between the number of households located near a library location and the number of plant and animal books found on the local library shelves. The  $r^2$  value for this analysis was also low due to several branches having a higher number of plant and animal books per number of households as compared to others, namely the same Cincinnati Main Library Branch and the Erlanger Branch of the Kenton County Public Library.

Based on this information, people living in lower income areas with fewer households would be least likely to find a plant or animal book on their local library shelf. Having these books inaccessible to children at their local library can affect their ability to learn about plants and animals and make them less likely to protect them through conservation actions (Dolins et al., 2010; Burke & Cuttler-Mackenzie, 2010). The results from this study go hand-in-hand with the results from Nelson (1980) in that there was a significantly lower understanding of conservation concepts amongst children living in lower-income homes. Furthermore, it has also been identified that conservation action was closely associated with individual income (Oliver, Czech, Haney, & Nyberg, 2004). Therefore, the likeliness of a person to participate in a conservation action will be reduced in lower income areas (Oliver et al., 2004).

One limitation of this study was not including the non-shelved plant and animal books in the totals. Shelf spaces at the libraries where the book counts were taken indicated that few plant and animal books were checked out in some of the libraries, as there was not a lot of room to shelve any that were checked out. Regardless, through the findings of this study, it is encouraging to know that there is an available supply of plant and animal books on the shelves of the local libraries to read for the juveniles and adults in the study area. By reading plant and animal books, people will have a positive impact on conserving the local flora and fauna in the future. Furthermore, by applying what is learned from this study to developing countries and other parts of the U.S., it is important for people to have access to plant and animal books, especially in biodiverse and lower income areas as this can increase one's likeliness to conserve plants and animals.

### **Conclusions**

Library books can serve as an effective means to disseminate knowledge to communities about plant and animal conservation (Burk, 2006; Dolins et al., 2010; Fanini & Fahd, 2009; Holm, 2012). Through this study, it was also determined that a relationship exists between the type of books that adults read (i.e. plant and animals) and their likeliness to conserve these species in the future. This study also found a significant difference in the number of animal and plant books located at the local libraries, with libraries stocking the shelves with more animal books than plant books. This can have an impact on the likeliness of a population to conserve animals over plants.

The number of plant and animal books available for children was found to be much greater than those available for adults which could possibly lead to more conservation efforts of our future generations. However, it was also found that household income and the number of households has an impact on the number of plant and animal books found at the local libraries. Lower income areas with fewer number of households are the most at risk of having fewer plant and animal books available to them to read at local libraries, which was linked in this study to people being less likely to conserve plants and animals. Therefore, it is important to increase the number of plant and animal books at local libraries, along with conservation efforts, especially in areas that have lower household incomes and fewer households.

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## References

- Boyle, S. C. (2004). Opening minds: Interpretation and conservation. *Museum International*, 56(3), 85-93. doi: 10.1111/j.1350-0775.2004.00486.x
- Burke, G., & Cuttler-Mackenzie, A. (2010). What's there, what if, what then, and what can we do? An immersive and embodied experience of environment and place through children's literature. *Environmental Education Research*, 16(3/4), 311-330. doi: 10.1080/13504621003715361
- Burk, S. (2006). The Shad story. *Science and Children*, 43(7), 42-44.
- Butchart, S. H., Walpole, M., Collen, B., van Strien, A., Scharlemann, J. P., Almond, R. E.,...Watson, R. (2010). Global biodiversity: Indicators of recent declines. *Science*, 328(5982), 1164-1168.
- Buttke, D., Allen, D., & Higgins, C. (2014). Benefits of biodiversity to human health and well-being. *Park Science*, 31(1), 24-29.
- Clayton, S., Fraser, J., & Saunders, C. D. (2009). Zoo experiences: Conversations, connections, and concern for animals. *Zoo Biology*, 28(5), 377-397. doi: 10.1002/zoo.20186
- Coursey, D. L. (1998). The revealed demand for a public good: Evidence from endangered and threatened species. *New York University Environmental Law Journal*, 6, 411-449.
- Czech, B., Krausman, P. R., & Borkhartaria, R. (1998). Social construction, political power, and allocation of benefits to endangered species. *Conservation Biology*, 12(5), 1103-1112.
- Datig, I. (2014). What is a library?: International college students' perceptions of libraries. *Journal of Academic Librarianship*, 40(3/4), 350-356. doi: 10.1016/j.acalib.2014.05.001
- Dolins, F. L., Jolly, A., Rasamimanana, H., Ratsimbazafy, J., Feistner, A. T., & Ravoavy, F. (2010). Conservation education in Madagascar: three case studies in the biologically diverse island-continent. *American Journal of Primatology*, 72(5), 391-406.
- Downes-Le Guin, T., Baker, R., Mechling, J., & Ruyle, E. (2012). Myths and realities of respondent engagement in online surveys. *International Journal of Market Research*, 54(5), 613-633. doi: 10.2501/IJMR-54-5-613-633
- Fanini, L., & Fahd, S. (2009). Storytelling and environmental information: Connecting schoolchildren and herpetofauna in Morocco. *Integrative Zoology*, 4(2), 188-195. doi: 10.1111/j.1749-4877.2009.00158.x

- Ganea, P. A., Ma, L., & DeLoache, J. S. (2011). Young children's learning and transfer of biological information from picture books to real animals. *Child Development, 82*(5), 1421-1433.
- Hitczenko, M. (2013). Modeling anchoring effects in sequential Likert scale questions. *Research Review, 20*, 51-53.
- Holm, D. (2012). Exploring environmental empathy in action with children's books. *Reading Improvement, 49*(4), 134-139.
- Jensen, E. (2014). Evaluating children's conservation biology learning at the zoo. *Conservation Biology, 28*(4), 1004-1011. doi: 10.1111/cobi.12263
- Melson, G. (2001). *Why the wild things are: Animals in the lives of children*. Cambridge, MA: Harvard University Press.
- Moorman, R. S. (2006). Benefits of local residents visiting La Selva Biological Station, Costa Rica. *Environmental Conservation, 33*(2), 89-99. doi: 10.1017/S0376892906002955
- Nel, P. (2004). *Dr. Seuss: American Icon*. New York: Continuum.
- Nelson, L. N. (1980). The development of conservation concepts in children from low-income families. *Journal of Psychology, 106*(1), 77-90.
- Oliver, R. W., Czech, B., Haney, J. C., & Nyberg, D. (2004). Linkage of conservation activity to trends in the U.S. economy. *Conservation Biology, 18*(6), 1617-1623.
- Policies – Collection Development. (n.d.). In *The Public Library of Cincinnati and Hamilton County*. Retrieved March 16, 2015, from <http://www.cincinnati.library.org/policies/collectiondevelopment.html>
- Sachs, J. D., Baillie, J. E., Sutherland, W. J., Armsworth, P. R., Ash, N., Beddington, J.,... Jones, K. E. (2009). Biodiversity conservation and the millennium development goals. *Science, 325*(5947), 1502-1503.
- Schlegel, J., & Rupf, R. (2010). Attitudes towards potential animal flagship species in nature conservation: A survey among students of different educational institutions. *Journal for Nature Conservation, 18*(4), 278-290. doi: 10.1016/j.jnc.2009.12.002
- Stokes, D. L. (2007). Things we like: Human preferences among similar organisms and implications for conservation. *Human Ecology, 35*(3), 361-369. doi: 10.1007/s10745-006-9056-7

Swaisgood, R. R. & Sheppard, J. K. (2010). The culture of conservation biologists: Show me the hope! *BioScience*, 60(8), 626-630.

Trombulak, S. C., Omland, K. S., & Robinson, J. A. (2004). Principles of conservation biology: Recommended guidelines for conservation literacy from the Education Committee of the Society for Conservation Biology. *Conservation Biology*, 18(5), 1180-1190.  
doi: 10.1111/j.1523-1739.2004.01851.x

What's New. (2010, October). In *The Public Library of Cincinnati and Hamilton County*.  
Retrieved from <http://www.cincinnati.library.org/news/2010/starlibrary.html>

Williams, J. A., Podeschi, C., Palmer, N., Schwadel, P., & Meyler, D. (2012). The human environment dialog in award-winning children's picture books. *Sociological Inquiry*, 82(1), 145-159. doi: 10.1111/j.1475-682X.2011.00399.x

Appendix A  
Survey

The purpose of this research is to assess plant/animal conservation as it relates to the availability of plant/animal reference material in libraries. This research is being conducted as part of Dustin Ingram's work in a Master's program at Miami University.

Your participation in this research survey is voluntary. You may choose not to participate. The survey should take about 5 minutes to complete and you may stop at any time. If you decide not to participate in this study or if you withdraw from participating at any time, you will not be penalized.

By completing this questionnaire, I agree to participate in this study and state that I am at least 18 years of age, have read and understood this consent form and agree to participate in this research study. Also, I am aware that there are no direct benefits to me as a result of my participation in this research.

Confidentiality of responses will be maintained to the highest degree possible. If you have any questions, you can contact Dustin Ingram at [ingramd@miamioh.edu](mailto:ingramd@miamioh.edu). If you have questions or concerns about the rights of research subjects, you may contact the Research Compliance Office at Miami University at (513) 529-3600 or [humansubjects@miamioh.edu](mailto:humansubjects@miamioh.edu).

1. Do you visit the local library?
  - a. Yes
  - b. No
    - i. How often do you visit the local library?
      1. 1-5 times a year
      2. 6-10 times a year
      3. 11-15 times a year
      4. 15+ times a year
    - ii. How likely are you to read books on the following topics, with 1 being extremely unlikely and 5 being extremely likely:

	Extremely Unlikely (1)	Somewhat Unlikely (2)	Neither Likely Nor Unlikely (3)	Somewhat Likely (4)	Extremely Likely (5)
Animals					
Plants					
Sci Fi					
Drama					
Romance					
Mystery					

- iii. When you read a book, which topic do you prefer to read about more often?
      - a. Plants
      - b. Animals
    - iv. Does the number and variety of books available at your library limit your ability to understand more about plants and animals?
      - a. Yes
      - b. No
    - v. Is your local library an important source of knowledge about plants and animals books you read?
      - a. Yes
      - b. No
2. Do you prefer to read books online or through the local library?
  - a. Online Books
  - b. Local Library Books
3. How much time do you spend reading books borrowed from the library each week?
  - a. < 2 hr. per week
  - b. 2 – 4 hrs. per week
  - c. 4 – 6 hrs. per week
  - d. 6 – 8 hrs. per week
  - e. > 8 hrs. per week
4. Do you know what sustainable development is?

- a. Yes
- b. No
- 5. Do you believe that implementing sustainable development programs in our community will improve and benefit our community?
  - a. Yes
  - b. No
- 6. How likely are you to participate in the following conservation activities, with 1 being extremely unlikely and 5 being extremely likely?

	Extremely Unlikely (1)	Somewhat Unlikely (2)	Neither Likely Nor Unlikely (3)	Somewhat Likely (4)	Extremely Likely (5)
Water Conservation					
Plant Conservation					
Animal Conservation					
Land Conservation					

- 7. Do you have any animals at home that you care for?
  - a. Yes
  - b. No
- 6. Do you have any house plants at home that you care for?
  - a. Yes
  - b. No

Demographics

- 1. Which state do you live in? \_\_\_\_\_
- 2. Which city do you live in? \_\_\_\_\_
- 3. Are you male or female?
  - a. Male
  - b. Female
- 4. What is your age range?
  - a. 18 – 27 yrs. Old
  - b. 28 – 37 yrs. Old
  - c. 38 – 47 yrs. Old
  - d. 48 – 57 yrs. Old
  - e. 58 – 67 yrs. Old
  - f. 68 + yrs. Old

