



iSaveSpecies—Sustaining Life Summative Evaluation Report

Chicago Zoological Society/Brookfield Zoo

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Executive Summary

The iSaveSpecies project, created by Project Dragonfly at Miami University and a consortium of museums and aquariums, designed and implemented a socially-networked exhibit system to engage family visitors to museums and aquariums in inquiry and conservation. The second wave of the iSaveSpecies exhibit stations focused on *Sustaining Life*, allowing families to conduct research and learn about conservation efforts. Participating zoos incorporated up to three touchscreen-based research and/or action kiosks in an exhibition area.

To support these efforts, the Lifelong Learning Group conducted a summative evaluation to determine the effectiveness of the iSaveSpecies electronic interactive kiosks at engaging families in inquiry, STEM, and conservation actions. The study was designed to answer the question: Do the iSaveSpecies kiosks achieve their desired (collective) outcomes?

Data for this study were collected at four different zoos. This report focuses on the Chicago Zoological Society/Brookfield Zoo; data were collected onsite at the Zoo from adult visitors (N=253) in the Living Coast area. Two types of participants were sought—those who used the iSaveSpecies kiosk and those who did not—to complete a questionnaire or an interview.

The Brookfield Zoo installed only the iSaveSpecies conservation poster interactive and installed variations of this interactive at two kiosks. Because the conservation poster does not require visitors to conduct an inquiry, some of the evaluation questions relating to inquiry skills may not be directly applicable relative to other iSaveSpecies sites. Nevertheless, the study found that visitors who engaged with the iSaveSpecies kiosks at the Brookfield reported they used basic science inquiry skills during their zoo visit. Visitors who interacted with a kiosk reported they were more likely to talk with others in their group about what they observed or did and think about questions about the penguins' behavior. Participants were unlikely to share a question they had about the penguins in response to an open-ended question during an interview.

Visitor scores on how knowledgeable they felt about penguins did not differ significantly between those who interacted with the conservation poster interactive and those who did not. Interviewed visitors who explored one of the poster kiosks learned basic information about penguins, including that “penguins are going to be extinct” and about the different sounds penguins make.

Half of the adult participants were visiting the zoo with a young child. Many of the adults interviewed shared they were too busy watching their children to interact with the kiosks for any length of time and did not learn anything. Additionally parents said they needed more time to gauge if their child had learned something after interacting with the kiosk.

Brookfield Zoo visitors interacting with the iSaveSpecies poster kiosk were more likely to report they shared what they learned with others about penguins or conservation issues than visitors who did not use the iSaveSpecies poster kiosk. Specific conservation actions appear to be influenced by the poster kiosks; especially creating and sharing a conservation poster and donating money to the Chicago Zoological Society.

However, the majority of those interviewed were unable to articulate anything these experiences introduced or remind them that they might do to help the penguins or other aquatic animals and of

the eleven interviewees who shared something they might do to help the penguins, nine made general statements, such as “keeping a clean environment,” and “recycle”. Visitors who complete the poster interactive receive an email prompt at home to view their poster online. This e-mail includes conservation actions they can take, including forwarding the conservation message they created. At this time data is not available to determine the percentage of visitors who took further action at this interactive.

Visitors who engaged with the iSaveSpecies interactive kiosks felt it added value to their zoo visit. Mean scores for those who used the iSaveSpecies kiosks were all well above the midpoint. Respondents indicated they had fun, found a different way to engage with the animals, and received new information from the kiosk. The kiosks provided visitors on opportunity to participate in an activity they could do with others in their group.

The key outcomes of this study include:

- Visitors who interacted with the iSaveSpecies kiosks felt it added value to their zoo visit.
- Visitors who interacted with the iSaveSpecies poster kiosk were more likely to report they shared what they learned with others about penguins or conservation issues than visitors who did not interact with the kiosk.
- Visitors who engaged with the iSaveSpecies kiosks reported they used some basic science inquiry skills during their zoo visit. Visitors who interacted with a kiosk reported they were more likely to talk with others in their group about what they observed or did and think about questions about the penguins’ behavior.
- Visitors who engaged with the iSaveSpecies kiosks reported they were more likely to donate to the Chicago Zoological Society to support animal care and conservation efforts or ask other to do so.

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Introduction

The iSaveSpecies project, created by Project Dragonfly at Miami University and a consortium of zoos and aquariums, designed and implemented a socially-networked exhibit system to engage family visitors to zoos and aquariums in inquiry and conservation. The inquiry and action tools created by the iSaveSpecies team reside in an evolving library of exhibit interactives, modified by partner institutions to suit the particular needs of their visitors.

The first wave of the iSaveSpecies exhibit stations focused on *Great Apes*, the second wave focused on *Sustaining Life*. Both sets of exhibits allow families to conduct research on animals by joining the work of experienced field conservationists. The second wave of exhibits were placed in five partner institutions during 2015 — Boonshoft Museum, Chicago Zoological Society/Brookfield Zoo (Brookfield Zoo), Cleveland Metroparks Zoo (Cleveland Zoo), Oregon Zoo, and Toledo Zoo. These institutions incorporated up to three touchscreen-based research and/or action kiosks in an exhibition area. By building cross-institutional partnerships committed to sustaining life on our planet, the iSaveSpecies project believes that the new tools for inquiry and public action will achieve broad national impact.

To support these efforts, a summative evaluation was conducted to determine the effectiveness of the iSaveSpecies electronic interactive kiosks at engaging families in inquiry, STEM, and conservation actions. This study built on the Great Apes Summative Evaluation (Wojton & Heimlich 2015) and a front end evaluation, which focused on visitor interactions in the Penguin exhibit. The front-end study found that visitors shared a rudimentary understanding that the animals in the Living Coast exhibit need food and space, however they were less likely to indicate the animal's needs for water and shelter, which are also fundamental needs of all animals. Of the five basic needs, visitors were least likely to mention the animals need for social experiences. Visitors believe that penguins communicate through vocalizations and body movements, communicating with others in their colony about diet or danger.

While the prior evaluation provided insight into visitor understanding of the animals in the exhibit before the iSaveSpecies exhibits were installed, this study focused on the efficacy of the iSaveSpecies interactive kiosks engaging visitors and delivering their messages, including encouraging visitors to develop inquiry skills, knowledge of pertinent STEM content, and engaging in specific conservation actions.

A summative design utilized questionnaires and interviews to gather data from zoo visitors. Questionnaire data were gathered from two types of visitors: those who used an iSaveSpecies kiosk and those who did not. Interviews were conducted with adult visitors seen interacting with at least one of the iSaveSpecies kiosks.

The overarching evaluation question for this summative evaluation was: Do the iSaveSpecies kiosks achieve their desired (collective) outcomes? To address this larger question, five sub-questions were asked:

1. Did visitors who engaged with the iSaveSpecies inquiry kiosks report they have used basic science inquiry skills during their zoo visit?

2. Did visitors who engaged with the iSaveSpecies interactive kiosks have a better understanding of the STEM content related to the iSave Species kiosks than those who did not engage with the kiosks?
3. Did visitors who engaged with the iSaveSpecies conservation poster kiosk understand penguin conservation efforts?
4. Did visitors who engaged with the iSaveSpecies conservation poster kiosks report involvement in specific conservation actions?
5. Did visitors who engaged with the iSaveSpecies interactive kiosks feel it added value to their zoo visit?

Methods

The audience for this summative evaluation study was adult visitors to the Living Coast (penguin) exhibition area within the Brookfield Zoo. Two types of participants were sought to better understand the impact of the iSaveSpecies interactives—those who used the iSaveSpecies kiosk and those who did not.

To answer the evaluation questions, two different methods were used: a structured, intercept interview and a questionnaire. Using a continuous ask format, visitors who interacted with one of the iSaveSpecies kiosks were invited to participate in the interview as they finished the interactive. The interviews asked adults to describe what they did at the kiosk (s), and what they gained from the interaction in regards to scientific inquiry and environmental conservation.

The second method was a questionnaire. Since each kiosk had different inquiry goals for participants, separate questionnaires were designed and administered for each of the kiosks. While each questionnaire used the same demographic, conservation, and affect questions; each kiosk questionnaire had different inquiry questions. To better understand the impact of the kiosks, data were collected from those who did and those who did not engage with the kiosk. Visitors were asked to complete the questionnaire after they had passed the iSaveSpecies kiosk. Interview scripts and questionnaires can be found in Appendix A.

All data for the two methods of the study were collected with different groups of visitors. Data gathering was impacted by the uniqueness of the zoo's exhibition area, including the placement of the kiosks within the viewing area.

Data were analyzed collectively. Interview responses were entered into an Excel spreadsheet and coded based on the question and the objectives of the interactive kiosks. During analysis, categories of visitor responses about their knowledge were developed inductively through the coding process (i.e., they emerged from the data itself rather than being prescribed). No demographic information was collected for interviewed visitors.

All questionnaire data were entered into an Excel spreadsheet. Quantitative data were transferred into SPSS for analysis. Open-ended data were coded using coding rubrics developed for this study. Quantitative data were analyzed descriptively and, where appropriate, inferential statistics were used to test specific questions or hypotheses about the data.

Findings

Participants

Visitor participants in this study completed either an interview or a questionnaire. Those who completed interviews are referred to as “interviewees” throughout this report, those who completed questionnaires are referred to as “respondents.” Table 1 illustrates the visitors in each category.

Table 1. Visitor participants by study method

Zoo	Number of Interviewees	Number of Respondents
Brookfield	26	227

Every effort was made to gather data for each interactive kiosk. Table 2 itemizes the frequency of visitors interviewed per kiosk. While the majority of visitors typically commented on only one kiosk, two visitors commented on both kiosks. No demographic information was collected for visitors interviewed.

Table 2. Exit Interviews completed for each interactive kiosk

Interactive Kiosks	Number of Interviewees
Conservation Poster	14
Communication Poster	14

N= 26

Separate questionnaires were designed and administered for each of the kiosks. Table 3 includes a breakdown of questionnaires completed by kiosk. During data collection every effort is made to collect data from a diverse sample; however, data indicate that respondents were likely to be white (77%) females (68%) traveling through the zoo with family (79%). Half of respondents (51%) were exploring the zoo with children age four or younger. The majority of the respondents (54%) were frequent visitors, visiting two or more times each year, many were first time (13%) or infrequent (33%) zoo visitors, visiting once or less per year. More than half of the respondents (61%) spent 5 – 15 minutes with the penguins. The respondents were unlikely to be zoo members (55%). Appendix B contains tables for each of the demographic questions included in the questionnaire.

Table 3. Questionnaires completed for each interactive kiosk

Interactive Kiosks	Number of Respondents
Conservation Poster	110
Communication Poster	117

N=227

Inquiry Skills

The Brookfield Zoo did not install iSaveSpecies interactives that required visitors to participate in inquiry, and so the expectation for inquiry-related outcomes is low relative to iSaveSpecies sites with inquiry interactives. Overall, visitors at the Brookfield Zoo interacting with the iSaveSpecies kiosks were slightly more likely to report using inquiry skills than those who did not interact with the iSaveSpecies kiosk. Communication is a critical skill for scientific inquiry and participants in this study who interacted with the Conservation Poster reported they were more likely to talk with others in their group about what they observed or did during their visit to the penguin area when compared to those who did not interact with the Conservation Poster kiosk in the Living Coast exhibit at the Brookfield Zoo.

How We Know

Table 4 contains the mean ratings for inquiry skills divided by all those who interacted with a poster kiosk (either on this visit or a prior visit) and all those who did not interact with an iSaveSpecies kiosk. In general, respondents who interacted with the kiosks were slightly more likely to report using inquiry skills than respondents who did not use the iSaveSpecies kiosks. Of the three inquiry skills nurtured by these kiosks, two items were found to be slightly positive, “Talked with others in my group about what I observed or did” (4.85 mean rating on a 7 point scale) and “Thought of a question about the penguin’s behavior” (4.51 mean rating). The third item was found to be neutral, “Learned that I am like a penguin” (3.89 mean rating). Using a t-test, no statistically significant differences were found between those who interacted and those who did not interact with the kiosks.

Table 4. Respondents’ use of inquiry skills, separated by interaction with kiosks

Inquiry Skills	Interact Mean	No Interact Mean	Mean Difference	T	df	p
Thought of a question about the penguin’s behavior	4.51	4.31	.204	.780	210	.436
Talked with others in my group about what I observed or did	4.85	4.64	.206	.765	211	.445
Learned that I am like a penguin†	3.89	3.74	.156	.422	111	.674

N ranges from 112 - 212

n for Interaction ranges from 138-140

n for No Interaction range from 73-74

†n for Interaction = 75, n for No Interaction = 38

Tables 5 and 6 illustrate the inquiry skills by kiosk. Patterns of response were generally consistent for both kiosks. Those who engaged with the interactives typically reported higher mean scores than those who did not; with one exception—“Talked with others in my group about what I observed or did” at the Communication Poster, where those who did not interact had a higher mean score than those who interacted. Those who interacted with the Conservation Poster kiosk (Table

5) were more likely to report inquiry skills than those who did not interact with the kiosk. Two inquiry skills were nurtured by the Conservation Poster:

1. Thought of a question about the penguin’s behavior
2. Talked with others in my group about what I observed or did

A statistically significant difference was found for the inquiry skill of “Talked with others in my group”—respondents who interacted with the Conservation Poster.

Table 5. Conservation Poster-Respondents’ mean use of inquiry skills

Inquiry Skills	Interact Mean	No Interact Mean	Mean Difference	T	df	p
Thought of a question about the penguin’s behavior	4.60	3.94	.652	1.677	96	.097
Talked with others in my group about what I observed or did	5.11	4.19	.917	2.372	97	.020*

N ranges from 98-99
n for Interaction ranges from 62-63
n for No Interaction =36

*statistically significant to .05

The Communication Poster supported the development of a third inquiry skill, “Learned that I am like a penguin,” in addition to the two inquiry skills fostered by the Conservation Poster, as illustrated in Table 6. The Communication Poster appears to not have impacted two of the inquiry skills, as respondents who did not interact with the Communication Poster were more likely to report using these inquiry skills than those who did interact with the kiosk:

- Thought of a question about the penguin’s behavior
- Talked with others in my group about what I observed or did

Respondents who interacted with the Communication Poster were more likely to report they used the third skill, “Learned that I am like a penguin;” than those who did not interact with the kiosk; however, the mean rating for both those who interacted and did not interact was neutral trending negative.

Table 6. Communication Poster Respondents’ use of inquiry skills

Inquiry Skills	Interact Mean	No Interact Mean	Mean Difference	T	df	p
Thought of a question about the penguin’s behavior	4.45	4.66	-.211	-.600	112	.550
Talked with others in my group about what I observed or did	4.64	5.08	-.445	-1.206	112	.230
Learned that I am like a penguin	3.89	3.74	.156	.422	111	.674

N= 112-115
n for Interaction ranges from 75-77
n for No Interaction range from 37-38

Compared to the Communication Poster, the Conservation Poster at the Brookfield Zoo appears to be more effective at fostering the two inquiry skills nurtured by both kiosks:

- Thought of a question about the penguin's behavior
- Talked with others in my group about what I observed or did

An essential inquiry skill is the ability to ask questions that lead to investigations. To get a sense of a visitor's ability to do this, interviewees were asked "Based on your viewing in the Living Coast area, what questions do you have about the penguins?" and "How could someone investigate this?" The majority of interviewees (19 out of 26) could not think of a question. These low numbers may be due to the high number of interviewees visiting with young children (50% or 13 of 26 visitors interviewed were with children 5 years of age or younger); travelling with young children may reduce an adult interviewee's ability to articulate a question or formulate an investigation about penguins because other members of their party desire to move to another exhibit. Additionally, respondents might not have found the environment conducive to thinking about a question and/or investigation scenario.

Seven interviewees formulated a question and these questions were classified as simple or investigable. To determine if a question was simple or investigable, responses to the question and investigation were examined collectively. A question was considered simple if the interviewee suggested a keeper needed to answer the question or the answer could be found on the internet, i.e., how old are [the penguins in the exhibit]. A question was considered investigable if the visitor proposed to investigate their question by observing the penguins. For example, one seven year old boy asked if "penguins breathe under water" and would investigate that by "watching them." An adult interviewee wanted to better understand the penguin's relationships—"how they stay together through their entire lives." To find the answer, the interviewee suggested "Tag them, track them." Of the seven questions, five (71%) were found to be investigable.

STEM Content

Data for this study were gathered in late summer when many local schools were already in session. Half of the adult participants were visiting the zoo with a young child. While visitors who interacted with the iSaveSpecies kiosks reported they felt they were no more knowledgeable about penguins than visitors who did not interact with the kiosks, many of the adults interviewed shared they were too busy watching their children to interact with the kiosks for any length of time and thus did not learn anything. Additionally parents said they needed more time to gauge if their child had learned something after interacting with the kiosk.

How We Know

Respondents were asked questions regarding STEM content and asked to rate their agreement on a scale where 1 represents Strongly Disagree and 7 represents Strongly Agree. Data indicate the difference between those who interacted and those who did not interact with the kiosks were negligible. Analyzing the data with an independent samples t-test, there were no statistically significant differences and the mean differences between those who interacted and those who did not was less than .10. (See Table 7.) The data indicate respondents who interacted with an iSaveSpecies kiosk felt slightly less knowledgeable about penguins than visitors who did not interact with the kiosks.

Data were gathered in late summer. As some of the local schools were already in session, the majority of participants in this study were visiting the zoo with young children. Many of the adults interviewed shared they were too busy watching their children to interact with the kiosks for any length of time and did not learn anything. One parent interviewed shared that she can't determine what her children learn during the visit until the ride home, stating, "I won't know until we leave. [I]listen to what they talk about in the car. What they talk about in the car is what they learn/remember." Several adults visiting with young children reported their child learned hand-eye coordination choosing the pictures for their poster.

Interviewed visitors who reported learning something after exploring one of the poster kiosks learned basic information about penguins, including that " penguins are going to be extinct" and about the "different sounds penguins make so their parents can identify them."

Table 7. Respondents' feelings regarding STEM content, separated by interaction with kiosks

	Interact Mean	No Interact Mean	Mean Difference	T	df	p
I feel . . .						
I might like to study penguins (behavior, personality, etc.)	4.23	4.14	.090	.341	216	.734
I understand penguins better	4.78	4.85	-.076	-.330	217	.742

N= 218-222

n for No Interaction ranges from 81-82

n for Interaction ranges from 137-140

Conservation Efforts

Brookfield Zoo visitors interacting with the iSaveSpecies poster kiosk were more likely to report they shared what they learned with others about penguins or conservation issues than visitors who did not use the iSaveSpecies poster kiosk. Specific conservation actions appear to be influenced to some degree by the Poster kiosks; especially creating a conservation poster and sharing it and donating money to the Chicago Zoological Society.

How We Know

When asked to rate their agreement with conservation-themed statements on a scale where 1 represents Strongly Disagree and 7 represents Strongly Agree, respondents who interacted with a kiosk were found significantly more likely to agree that they would share what they learned with others, either at the zoo or via e-mail, as measured by an independent samples t-test. Table 8 illustrates all respondents' feelings regarding their knowledge of conservation issues divided by interaction with the poster kiosks.

Table 8. All Respondents' feelings regarding their knowledge of conservation measures

	Interact Mean	No Interact Mean	Mean Difference	T	df	p
Learned about penguins and conservation issues	4.73	4.42	.308	1.283	211	.201
Shared what I learned about penguins or conservation issues with others, either at the zoo or via e-mail	3.97	3.28	.688	2.477	212	.014*

N= 212-213
n for No Interaction ranges from 73-74
n for Interaction ranges from 139-140

Specific conservation actions appear to be influenced to a degree by the poster kiosks; all of the conservation action statements were rated higher by those who interacted with the poster than those who did not. (See Table 9.) Additionally, two of the four statements were found to have statistically significant differences between those who interacted and those who did not, as measured by a t-test:

- Create a conservation poster and e-mail it to someone
- Donate to the Chicago Zoological Society to support animal care and conservation efforts

For those who interacted with the poster kiosks, one statement, “Create a conservation poster and e-mail it to someone” was found to be slightly negative (3.87 on a 7 point scale). This may be because while visitors explored the poster kiosk, they did not complete the activity and e-mail it to themselves or someone else.

Table 9. Visitors' likelihood of completing specific conservation actions

	Interact Mean	No Interact Mean	Mean Difference	T	Df	p
Create a conservation poster and e-mail it to someone	3.87	2.55	1.326	4.421	215	.000***
Donate your change to this zoo to support animal care and conservation efforts	5.03	4.66	0.357	1.332	217	.184
When fishing and boating, ensure that invasive species are not moved	5.52	5.17	0.361	1.370	214	.172
Donate to the Chicago Zoological Society to support animal care and conservation efforts or ask others to do so	4.94	4.32	0.622	2.318	215	.021*

N ranges from 216-219
n for No Poster ranges from 76-77
n for Poster ranges from 140-142
***statistically significant to .001
*statistically significant to .05

Among the 26 interviewees, 58% (15 of those interviewed) were unable to articulate anything they these experiences introduced or remind them that they might do to help the penguins or other aquatic animals. Of the eleven interviewees who shared something they might do to help the penguins, nine made general statements, such as “keeping a clean environment,” “recycle”, and don’t “litter in the oceans.” Two interviewees shared answers that were more in line with the anticipated behavior outcomes; those statements were “spread awareness of penguins” and donate money by installing a “coin twirly thing near the kiosk to collect coins for penguins.” Visitors who complete the poster interactive receive an email prompt to view their poster online. This e-mail includes conservation actions they can take, including forwarding the conservation message they created, but data is not currently available to determine the percentage of visitors who took further action at this interactive.

Value Added

Visitors who used the iSaveSpecies kiosks found that the kiosks added value to their visit.

How We Know

Respondents who indicated they interacted with a kiosk were asked to rate their level of agreement with a set of value-added statements, where 1 represents Strongly Disagree and 7 represents Strongly Agree. See Table 10. All statements were found to be above the midpoint, indicating visitors were generally pleased with the kiosks. Mean scores were found to be slightly positive to positive, with slightly elevated deviations. This suggests the distribution is skewed slightly positive.

The interviews found that the majority of interviewees were with family groups (18 of 19) and respondents appeared to appreciate that the kiosk was an activity they could do with others in their group. Respondents also indicated they had fun and that the interactive was appealing and provided a different way to engage with the animals.

Table 10. Respondents’ who interacted with a kiosk feelings regarding value added statements

	Mean	Std. Deviation
The touchscreen interactive was appealing	5.07	1.785
The touchscreen interactive provided an activity I could do with others in my group	5.00	1.897
The touchscreen interactive activity provided me a different way to engage with the animals	4.94	1.849
I had fun with the touchscreen interactive activity.	4.93	1.848
The touchscreen interactive provided me with new information	4.74	1.838
Stopping at the touchscreen interactive was worth my time	4.73	1.803
I will look at penguins differently because of the touchscreen interactive activity	4.41	1.942

N ranges from 136-138

Conclusions

The overarching question for this summative evaluation was:

Do the iSaveSpecies kiosks achieve their desired (collective) outcomes?

To answer this question, five sub-questions were asked to allow for analysis of the impact of iSaveSpecies interactive kiosks on the different outcomes.

- Did visitors who engaged with the iSaveSpecies inquiry kiosks report they have used basic science inquiry skills during their zoo visit?

Despite that the Brookfield Zoo interactives did not prompt visitors to conduct inquiry, there is evidence that a few inquiry skills were supported to some degree. Closed-ended questions indicate the kiosks appear to be effective in promoting basic inquiry skills and increasing visitors' knowledge of penguins. Visitors who interacted with a kiosk were more likely to talk with others in their group about what they observed or did and think about questions about the penguins' behavior.

An essential inquiry skill is the ability to ask questions that lead to investigations. While responses to a close-ended question indicated respondents asked questions about what they observed, they were less likely to share a question they had about the penguins in response to an open-ended question during an interview. The low number of responses may be due to lack of time at this exhibit or the pressing need to keep an eye on young children in the party.

Another factor, the high percentage of visitors in this sample who were infrequent zoo visitors, might also limit visitor's time with the questionnaire as research indicates that infrequent visitors to a museum or zoo try to see as much as possible and spend less time with any individual exhibit. Finally, respondents might not have found the environment conducive to pondering a question and/or investigation scenario.

- Did visitors who engaged with the iSaveSpecies interactive kiosks have a better understanding of the STEM content related to the iSave Species kiosks?

No, visitor scores on how knowledgeable they felt about penguins did not differ significantly between those who interacted with the conservation poster interactive and those who did not. Interviewed visitors who explored one of the poster kiosks learned basic information about penguins, including the "penguins are going to be extinct" and about the different sounds penguins make.

Half of the adult participants were visiting the zoo with a young child. Many of the adults interviewed shared they were too busy watching their children to interact with the kiosks for any length of time and did not learn anything. Additionally parents said they needed more time to gauge if their child had learned something after interacting with the kiosk.

- Did visitors who engaged with the iSaveSpecies conservation poster kiosk understand penguin conservation efforts?
- Did visitors who engaged with the iSaveSpecies conservation poster kiosks report involvement in specific conservation actions?

To some extent. Brookfield Zoo visitors interacting with the iSaveSpecies poster kiosk were more likely to report they shared what they learned with others about penguins or conservation issues than visitors who did not use the iSaveSpecies poster kiosk. Specific conservation actions appear to be influenced by the poster kiosks; especially creating and sharing a conservation poster and donating money to the Chicago Zoological Society.

However, the majority of those interviewed were unable to articulate anything they these experiences introduced or remind them that they might do to help the penguins or other aquatic animals and of the eleven interviewees who shared something they might do to help the penguins, nine made general statements, such as “keeping a clean environment,” and “recycle”. Data to determine the percentage of visitors that took conservation actions at home in response to email prompts provided at the end of completing the interactives is unavailable at this time.

- Did visitors who engaged with the iSaveSpecies interactive kiosks feel it added value to their zoo visit?

Yes, mean scores for those who used the iSaveSpecies kiosks were all well above the midpoint. Respondents indicated they had fun and found a different way to engage with the animals. The kiosks provided visitors on opportunity to participate in an activity they could do with others in their group.

Appendix A: Data Collection Instruments

Date:
Number:

Sample Interview

This zoo has recently installed some new interactive touch screen kiosks in this area and we are trying to better understand who uses these and what visitors might gain from these experiences. I noticed you interacting with one and would like to ask you a few questions about the kiosk and your experience. It will take about five minutes and your participation is voluntary and your responses are completely confidential.

Which Exhibit: Poster 1 Poster 2 (Communication)

I believe someone in your group explored the interactive touchscreen kiosk? Is that correct? Can you tell me who?

What did you[they] do with it?

What, if anything, did you[they] learn from this interactive touchscreen kiosk?

Talk to me about how this/these experiences [with the kiosks] helped you understand penguins?

Based on your viewing in The Living Coast, what questions do you have about the Penguins' behavior?

How could someone investigate this?

This zoo is committed to conserving animals in the wild. Did these experiences introduce you to or remind you of things you might do to help the penguins or other aquatic animals?



Brookfield Zoo The Living Coast 1 Poster Questionnaire Summer 2015

This zoo has recently installed some new touch screen interactive kiosks in this area and we are trying to better understand who uses these kiosks and what visitors might gain from these experiences. The survey will take you about five minutes to complete. Your participation is voluntary and your responses are completely confidential.

During your visit today, about how much time did you spend in The Living Coast?

- Less than 3 minutes
- 3 – 5 minutes
- 5 – 10 minutes
- 10 – 15 minutes
- 15 + minutes



During your visit today, do you remember seeing this touch screen interactive kiosk?

- Yes No

Did you, or anyone in your group, interact with the touch screen interactive kiosk (push buttons, read information, etc.)?

- Yes No

Who in your group interacted with the touch screen interactive kiosk?

Check all that apply.

- Adult Youth

Did you or anyone from your group already interact with this touchscreen interactive kiosk on an earlier visit to this zoo?

- Yes No

To what degree do you believe you did any of the following during your visit to The Living Coast?

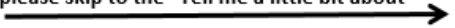
	Definitely Not	Absolutely Yes					
Learned about penguins and conservation issues	1	2	3	4	5	6	7
Shared what I learned about penguins or conservation issues with others, either at the zoo or via e-mail	1	2	3	4	5	6	7
Thought of a question about the penguin's behavior	1	2	3	4	5	6	7
Talked with others in my group about what I observed or did	1	2	3	4	5	6	7

How likely are you to participate in these conservation actions, where 1 represents very unlikely and 7 represents very likely.

	Very Unlikely	Very Likely					
Create a conservation poster and e-mail it to someone	1	2	3	4	5	6	7
Donate your change to this zoo to support animal care and conservation efforts	1	2	3	4	5	6	7
When fishing and boating, ensure that invasive species are not moved	1	2	3	4	5	6	7
Donate to the Chicago Zoological Society to support animal care and conservation efforts or ask others to do so	1	2	3	4	5	6	7

We would like to know if that interaction changed the way you feel about science and conservation. Please rate the extent to which you agree with the following statements using a scale from 1 (strongly disagree) to 7 (strongly agree).

I feel . . .	Strongly Disagree	Strongly Agree					
I am more aware that penguins need to be protected	1	2	3	4	5	6	7
I can help penguins	1	2	3	4	5	6	7
I might like to study penguins (behavior, personality, etc.)	1	2	3	4	5	6	7
I understand penguins better	1	2	3	4	5	6	7
I would like to work to help save penguins in the wild	1	2	3	4	5	6	7
I visit this zoo to learn and/or support conservation	1	2	3	4	5	6	7

If you used any of the touchscreen interactive kiosks today, please answer the next question. **If not, please skip to the "Tell me a little bit about yourself" section.** 

We would like to know if the touchscreen interactive kiosks **added value** to your experience at the zoo. Please rate the extent to which you agree with the following statements using a scale from 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree				Strongly Agree		
Stopping at the touchscreen interactive was worth my time	1	2	3	4	5	6	7
The touchscreen interactive was appealing	1	2	3	4	5	6	7
The touchscreen interactive provided an activity I could do with others in my group	1	2	3	4	5	6	7
I had fun with the touchscreen interactive activity	1	2	3	4	5	6	7
The touchscreen interactive activity provided me a different way to engage with the animals	1	2	3	4	5	6	7
The touchscreen interactive provided me with new information	1	2	3	4	5	6	7
I will look at penguins differently because of the touchscreen interactive activity	1	2	3	4	5	6	7

Please tell me a little about yourself.

Are you a member of this zoo? Yes No

Are you Male Female

About how often do you visit this zoo? (Select the one best answer)

- Today is my first visit
- I haven't visited for many years
- Once every few years
- About once a year
- 2-4 times per year
- 5+ times per year

Who are you visiting the zoo with today? (Please check all that apply)

- Alone
- Date
- Family
- Friends
- Organized Group (i.e., Scouts, Church, School, etc.)

What is your race/ethnicity? (Please check all that apply)

- African American/Black
- American Indian/Native Alaskan
- Asian/Asian American
- Latino(a) or Hispanic
- Native Hawaiian/Pacific Islander
- White, Non-Hispanic

What are the ages of the adults in your group? (Please check all that apply)

- 18-29
- 30-39
- 40-49
- 50-59
- 60+

What are the ages of the children in your group (if any)? (Please check all that apply)

- Infant – less than 2 years old
- 2 – 4 years old
- 5 – 7 years old
- 8 – 12 years old
- 13 – 17 years old



Brookfield Zoo The Living Coast 2 Poster Questionnaire Summer 2015

This zoo has recently installed some new touch screen interactive kiosks in this area and we are trying to better understand who uses these kiosks and what visitors might gain from these experiences. The survey will take you about five minutes to complete. Your participation is voluntary and your responses are completely confidential.

During your visit today, about how much time did you spend in The Living Coast?

- Less than 3 minutes
- 3 – 5 minutes
- 5 – 10 minutes
- 10 – 15 minutes
- 15 + minutes



During your visit today, do you remember seeing this touch screen interactive kiosk?

- Yes No

Did you, or anyone in your group, interact with the touch screen interactive kiosk (push buttons, read information, etc.)?

- Yes No

Who in your group interacted with the touch screen interactive kiosk? Check all that apply.

- Adult Youth

Did you or anyone from your group already interact with this touchscreen interactive kiosk on an earlier visit to this zoo?

- Yes No

To what degree do you believe you did any of the following during your visit to The Living Coast?

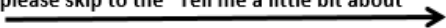
	Definitely Not	Absolutely Yes					
Learned about penguins and conservation issues	1	2	3	4	5	6	7
Shared what I learned about penguins or conservation issues with others, either at the zoo or via e-mail	1	2	3	4	5	6	7
Thought of a question about the penguin's behavior	1	2	3	4	5	6	7
Talked with others in my group about what I observed or did	1	2	3	4	5	6	7
Learned that I am like a penguin	1	2	3	4	5	6	7

How likely are you to participate in these conservation actions, where 1 represents very unlikely and 7 represents very likely.

	Very Unlikely	Very Likely					
Create a conservation poster and e-mail it to someone	1	2	3	4	5	6	7
Donate your change to this zoo to support animal care and conservation efforts	1	2	3	4	5	6	7
When fishing and boating, ensure that invasive species are not moved	1	2	3	4	5	6	7
Donate to the Chicago Zoological Society to support animal care and conservation efforts or ask others to do so	1	2	3	4	5	6	7

We would like to know if that interaction changed the way you feel about science and conservation. Please rate the extent to which you agree with the following statements using a scale from 1 (strongly disagree) to 7 (strongly agree).

I feel . . .	Strongly Disagree	Strongly Agree					
I am more aware that penguins need to be protected	1	2	3	4	5	6	7
I can help penguins	1	2	3	4	5	6	7
I might like to study penguins (behavior, personality, etc.)	1	2	3	4	5	6	7
I understand penguins better	1	2	3	4	5	6	7
I would like to work to help save penguins in the wild	1	2	3	4	5	6	7
I visit this zoo to learn and/or support conservation	1	2	3	4	5	6	7

If you used any of the touchscreen interactive kiosks today, please answer the next question. **If not, please skip to the "Tell me a little bit about yourself" section.** 

We would like to know if the touchscreen interactive kiosks **added value** to your experience at the zoo. Please rate the extent to which you agree with the following statements using a scale from 1 (strongly disagree) to 7 (strongly agree).

	Strongly Disagree			Strongly Agree			
Stopping at the touchscreen interactive was worth my time	1	2	3	4	5	6	7
The touchscreen interactive was appealing	1	2	3	4	5	6	7
The touchscreen interactive provided an activity I could do with others in my group	1	2	3	4	5	6	7
I had fun with the touchscreen interactive activity	1	2	3	4	5	6	7
The touchscreen interactive activity provided me a different way to engage with the animals	1	2	3	4	5	6	7
The touchscreen interactive provided me with new information	1	2	3	4	5	6	7
I will look at penguins differently because of the touchscreen interactive activity	1	2	3	4	5	6	7

Please tell me a little about yourself.

Are you a member of this zoo? Yes No

Are you Male Female

About how often do you visit this zoo? (Select the one best answer)

- Today is my first visit
- I haven't visited for many years
- Once every few years
- About once a year
- 2-4 times per year
- 5+ times per year

Who are you visiting the zoo with today? (Please check all that apply)

- Alone
- Date
- Family
- Friends
- Organized Group (i.e., Scouts, Church, School, etc.)

What is your race/ethnicity? (Please check all that apply)

- African American/Black
- American Indian/Native Alaskan
- Asian/Asian American
- Latino(a) or Hispanic
- Native Hawaiian/Pacific Islander
- White, Non-Hispanic

What are the ages of the adults in your group? (Please check all that apply)

- 18-29
- 30-39
- 40-49
- 50-59
- 60+

What are the ages of the children in your group (if any)? (Please check all that apply)

- Infant – less than 2 years old
- 2 – 4 years old
- 5 – 7 years old
- 8 – 12 years old
- 13 – 17 years old

Appendix B: Demographic Tables

Table 11. Amount of time spent with penguins

	Number	%
Less than 3 minutes	11	6
3 – 5 minutes	20	10
5 – 10 minutes	61	31
10 – 15 minutes	59	30
15 + minutes	46	23

N = 197

Table 12. Zoo membership

	Number	%
Yes	97	45
No	117	55

N = 214

Table 13. Visit frequency

	Number	%
Today is my first visit	29	13
I haven't visited for many years	21	10
Once every few years	21	10
About once a year	28	13
2-4 times per year	58	27
5+ times per year	59	27

N = 216

Table 14. Others in respondents' group

	Number	%
Family	186	79
Friends	34	14
Date	27	11
Alone	2	1
Group	2	1

N = 225

Table 15. Ages of adults in respondents' group

	Number	%
18-29	76	34
30-39	99	44
40-49	52	23
50-59	24	11
60+	30	13

N = 224

Table 16. Ages of children in respondents' group

	Number	%
Infant – less than 2 years old	61	27
2 – 4 years old	89	40
5 – 7 years old	57	26
8 – 12 years old	45	20
13 – 17 years old	22	10

N = 223

Table 17. Respondents' Gender

	Number	%
Male	70	32
Female	148	68

N = 218

Table 18. Respondents' Race/Ethnicity

	Number	%
African American/Black	14	6
American Indian/Native Alaskan	3	1
Asian/Asian American	5	2
Latino(a) or Hispanic	43	19
Native Hawaiian/Pacific Islander	1	0
White, Non-Hispanic	174	77

N = 225