



## Mammal Hall Study Report

Evaluation by National Park Service Media Specialists of  
New Exhibits at the National Museum of Natural History  
Smithsonian Institution, Washington, DC  
March 9, 2004



Harpers Ferry Center planners, designers, producers, and other staff reviewed exhibits in the new **Kenneth E. Behring Family Hall of Mammals**. They also met with Smithsonian project staff afterwards to discuss the project.

HFC Wayside Exhibit Planner Rich Helman examines the opening exhibit which set the theme for what followed.

### The Mammal Hall

The project contains 22,500 square feet of exhibits and cost \$31 million, including the cost of demolition and architectural restoration of a 25,000 square foot space, establishment of a taxidermy lab off-campus, educational programs, and other work. The general contractor was Grunley Walsh. Subcontractors included Maltbie, Academy Studios, Northern Light, and Research Casting Inc. The project took five years to complete.

The original mammal exhibition opened in 1910; this new hall opened November 15, 2003. The Smithsonian web article cited below describes the exhibit:

"The newly opened Kenneth E. Behring Family Hall of Mammals invites visitors to explore the incredible diversity of mammals, including humans, and the processes by which they arose and continue to adapt. Featuring 274 exciting taxidermied mounts and a dozen mammal fossils in a variety of environments—from polar to desert regions and from dry to humid environments—the exhibit tells the story of mammal evolution through adaptation to changing habitats. This message is reinforced throughout - "You are a mammal; meet your relatives, past and present; all mammals evolved from a common ancestor and share common characteristics; as the world changed, mammals became more diverse; come find out how."

Located in the museum's restored west wing, this permanent, 25,000-square-foot interactive hall sets a new standard for museum biology halls in both content and design, by combining a passionate and detailed commitment to scholarship with fresh interpretive approaches custom-designed to meet the needs of our primary visitor audience - Families. The new hall is set within a dramatic and well-lit space that has been fully restored to its original Beaux Arts architectural intent."

For more information on the Hall of Mammals, please see  
<http://www.mnh.si.edu/mammals/>.

## Study Agenda

- 10:15a** HFC staff arrive at National Museum of Natural History. SI Project Manager Sally Love gives orientation talk near the gift shop off the Rotunda.
- 10:30a** Individuals and small groups see the Mammal Hall exhibits. Lunch and breaks scheduled individually.
- 1:00p** Meet at the North Lobby (Constitution Ave. side) to proceed to meeting room. Discussion with Smithsonian Project staff about the project and media development.
- 3:00p** HFC staff board bus to return to HFC.

## Study Objectives and Methodology



The image shows a printed evaluation form titled "Mammal Hall Study" from a field trip to the Smithsonian Institution on March 9, 2004. The form includes a header with the National Park Service logo and the Smithsonian Institution logo. Below the title, there are two small photographs of mammal exhibits. The form lists "Evaluation Categories" and "AAM Standards for Museum Exhibitions and Indicators of Excellence" with a numbered list of 17 criteria. The criteria include: 1. Academic excellence, 2. Content, 3. Evaluation, 4. Interpretive Content/Activities, 5. Design and Production, 6. Interpretive Media Content, Safety, Accessibility, 7. Production Issues, 8. Labeling/Graphic Design, 9. Media/Technology (IT), 10. Object Conservation (OC), 11. Research (R), 12. Content/Quality of Media (QM), 13. Development/Management (DM), 14. Labeling/English Proficiency (EP), 15. Cartography (C), 16. Natural History specimen schedules (SS), and 17. Other.

The objectives were to conduct an interdisciplinary review of the new Kenneth E. Behring Family Hall of Mammals; to meet with Smithsonian project staff to learn about lessons learned, media development processes, and new media techniques; and to share with the Smithsonian staff our ideas and perspectives on the exhibition and our various disciplines.

On the bus all HFC participants received a one-page evaluation form to be used for recording notes on the exhibition. Evaluation criteria were also passed out to all, and review comments were to be keyed to seventeen (17) criteria to be found in the two criteria documents, "Standards for Museum Exhibitions and Indicators of Excellence, American Association of Museums," and "HFC Exhibit Requirements and Disciplines, Interpretive Media Institute."

The study was attended by forty-eight (48) staff from Harpers Ferry Center representing many specialties in media work including project managers, writer/editors, planners, designers, AV producers, exhibit producers, managers, curators, conservators, AV technical specialists, and cartographers. Their comments and questions were offered at a meeting with Smithsonian project staff that afternoon, as well as in written comments contained in this report. The comments are reproduced in full, with only minor editing here and there to correct grammatical errors or to interpret words or phrases which the transcriber could not make out.



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## Selected Evaluation Criteria Categories

“Standards for Museum Exhibitions and Indicators of Excellence”  
*American Association of Museums*

1. Audience awareness
2. Content
3. Collections
4. Interpretation/Communication
5. Design and Production
6. Ergonomics: Human Comfort, Safety, Accessibility

“Exhibit Requirements and Disciplines”  
*HFC Interpretive Media Institute*

7. Production Values (3)
8. Exhibit Lighting (7)
9. Writing and Editing (8)
10. Object Conservation (9)
11. Illustrations (12)
12. Diverse Points of View (22)
13. Developing Technologies (28)
14. Limited English Proficiency (33)
15. Cartography (40)
16. Natural History Specimens/Models (41)
17. Other ...

The study was sponsored by the HFC Media Development group, the National Museum of Natural History, and the HFC Interpretive Media Institute.

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## Written Comments by Category

### 1. Audience awareness

- Excellent for all ages. I saw kids and elders in wheelchairs –all loving the exhibits.
- Intent to serve children was very apparent and objective was met in several ways. Could have been some information perhaps at a higher level. Intellectually and physically to serve adults more.
- Concepts presented are so simple, straightforward, clear and well presented that I think audience awareness is quite high.
- The family and age 10 and younger audience really responded well to the exhibits and the movie. All age groups went through the exhibition slowly. A great indicator of positive audience awareness.
- Excellent. Kids loved exhibit.
- You can't go wrong with animals, especially babies. Even if you have bad labels, the animals



will draw attention.

- A target audience was children 10 and under and their families. Concepts and media were understandable for school children –not too much text, many animals and targeted key concepts and lessons and interactive elements –good educational experience. Audience was interested and engaged.
- Labels in first cases need names on animals on plinths. One visitor complained they couldn't find the manatee.
- Exhibit shows a consistent treatment of child-friendly exhibits. From heights of exhibit structures to the brevity of text.
- There were a lot of kids in the exhibit and all seemed to be really engaged, especially with the tactile models and interactive elements.
- Exhibit is well organized (without being too linear or too rigidly divided, as in a grid.) Visitor can browse through it comfortably. Not too overwhelming, even though it is a large exhibit.
- Designed for a family – it generally works, except liquid crystal screens, when viewed from a low angle.
- The mammals were arranged in a very natural and interest provoking way. Amazed to see them in actual life-size form. Best part of visit.
- Not everyone believes in evolution. Strongly presented “ theory” would offend those of opposite belief especially since it is a family-children oriented exhibit.
- Visitors focused on active animal groupings and seemed to get most of the content/messages from these elements. Touch screens rather than the mechanical interactives were more frequently used. Text was mainly read by older audience and children on treasure hunt. The glazed floor was avoided. Visitors stepped around it. The floor videos were actively watched, especially during environmental changes. When a button didn't work the child focused on the malfunction button and not only missed the message due to malfunction but all surrounding messages.
- I noticed several small children responding well to the exhibits and devices designed for them.
- Language is wonderful for children, e.g. “ snack attack.”

## 2. Content



- Collections are well displayed though some will require a high-level of ongoing maintenance. Arrangements and mounts are critical to the message and some of the best use of artifacts that I've seen.
- The environments of the mammal exhibits did not give a feel of identity, i.e. sterile, modern, rods instead of trees. Mammals so life-like and habitats are not.
- Very easy to understand scientific information presented.
- Much of the content, i.e. the natural history of mammals, is superb. But, the strong presentation of evolution as fact rather than theory, and the lack of recognition of other viewpoints, will strongly offend those who doubt the truth of evolution.
- The animals and the ways they are displayed are excellent.
- Wonderful object displays but pretty short on concepts and ideas.
- Good balance of making things that appeal to adults as well as children.
- Very interesting animals. Animals that are not well known. Good variety.

- Excellent. The three main points are re-enforced throughout.
- Another strength of the exhibits is what you experience “up close and personal” with panels containing interactives of various kinds and interesting information. I also think the tactile elements are a positive element.
- The “meet your relatives” theme is engaging and makes the visitor feel a part of things. It also provides a way to focus a subject that may be large and complex to interpret.
- Solid content easily presented. Key concepts reinforced throughout. Diversity, adaptation to environment, evolution, etc. I still miss the dioramas.
- Great sense of humor throughout, e.g. the chimpanzee in the theater. A really bad day for dinosaurs.
- “How many zebras do you count” exhibit does not explain how the stripes are helping the zebras; a little too subtle for children.
- Meet one of your oldest relatives. From one ancestor many mammals. The DNA illustrations are confusing. Are they all different? Am I seeing evolution through time? Am I seeing animals with similar DNA?
- The exhibition and movie adhere to the stated goals very well (which makes for a series of positive reinforcing experiences). The level of info presented hits it just right (so rarely done!)
- Exhibit shows great respect for the integrity of the content. Collections are appropriately used for the simple clear messages presented.
- Excellent content all through. Good to see a proper treatment of evolution and no apologies. Very easy to understand, simple but also factually sound.
- I wish there could be a bit more text. How do platypuses lay and incubate eggs? Are eggs leathery or hard?
- Content was succinctly and clearly expressed through text (and readable format). Some messages were incomplete due to malfunctioning interactives. The active arrangement of objects provided strong visual messages.
- Loved how the pica looks like it is talking to the moose.

### 3. Collections

- Outstanding collection of specimens.
- Looking forward to Europe-Asia.
- Objects are in a nearly ideal situation for taxidermy, yet very accessible for visitors.
- The specimens are superb-the best taxidermy I’ve seen. I question the metal poles and human-made flooring. It strips the specimens too much from their context (the small videos and elevated video projections don’t provide enough context for me.)
- Great variety/excellent conditions. Would have liked more labels next to collection.
- Amazing quantity with amazing detail. Taxidermy brings them to life.
- Excellent taxidermy specimens presented. Many varieties including out-of-the-ordinary ones were showcased. Objects mounted appropriately. Conservation requirements considered.
- Spectacular taxidermy.
- Fine.
- Some mammals are exposed to the elements. No protective casing and not sealed or filtered.
- Collections are well displayed, though some will require a high-level of ongoing maintenance. Arrangements and mounts are critical to the message and some of the best use of artifacts that I’ve seen.



- The presentation of objects is excellent. Besides the incredible lions and wildebeest exhibit, I especially liked the beaver lodge with the coyote on top.
- Spectacular taxidermy.
- Conservation of collections.
- Overall, the Mammal Hall exhibition achieves high marks as an interpretive exhibit; however, I do not feel that it achieves a successful balance between protecting and displaying the marvelous but

highly vulnerable mammal specimens. Critical collection conservation issues do not appear to have been dealt with satisfactorily; these include the use of open display resulting in the consumptive use of very fragile specimens and environmental control issues.

#### 4. Interpretation/Communication

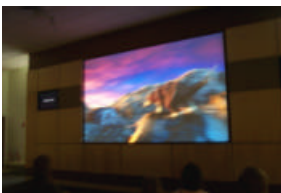
- Message was clear. Interpretive media were used well. Assumptions and points-of-view were not well identified or defined.
- Complex messages were presented in new and evocative ways in the AV production , objects communicated clear messages. Graphic design was neutral, focusing on content. The conscious choice to not layer context meant a clearer and clearer communication of messages. However, some messages were told through means (i.e. crawl through spaces) not available to all audiences.
- The plaques that identified the mammals were confusing especially in the main hall. Could not find referenced mammals. Children would have difficulty.
- The two large exhibit “boxes” at the beginning need to have better labeling so the visitor does not have to crowd around the base of the exhibit. Somehow suspend the labels with the animals.
- The giraffe “hologram” or short/tall image is very interesting, helpful in comparing the size.
- Nice job with the night life exhibit with the different “eyes” seen in the dark. Also, the polar bear. Cold exhibit.
- The exhibit presents its interpretation objectives in multiple ways. The vertical back light stands are hard to read.
- Graphics and text panels are more similar to what I am used to seeing in modern zoos-not museums. A good thing, I think –more accessible, less academic.
- Effective message was delivered. Liked interactive, audio, film, specimens, touchable casts, questions and answers coherent. Some simple interactives were too elementary to be accurate (retractable paw, etc.)
- Very good. However, I didn’t feel like there was an orientation. Not sure about organizational principle of exhibit. Loved the film. The shining eyes exhibits seems a waste—the graphic demonstrated the meaning of the “light” .
- Giraffe analogy of evolution very well done—appealed to many senses/human connection.
- The low tech interactives are some of the very best that I’ve experienced, combining meaningful messages with engaging interaction. I saw many children (some adults) manipulating them.



- The editing job must have been incredible! The focus, clarity of messages, succinctness of text, direct connection of exhibit elements made the interpretive messages immediate, easy to understand, fun to learn, and appropriate for the length of our visit (2 hours in museum).
- Panel at entry to left maybe too text heavy for entry area.
- Excellent job on movie in Evolution Theater. Story well told and informative.... I could see kids loved it.
- The movie was too loud. The written material for the deaf was too far away from the screen. You couldn't see the movie and read at the same time.
- Movie screen too large for space.
- Labeling poor. Some animals not labeled; labels too small; labels not in order with animals; pictures of animals don't match orientation of animals.
- Very difficult to connect specimens and labels. Silhouettes and location not consistent. Some specimens not included.

## 5. Design and Production

- Very good. Some problems with details. Some labels for species were difficult to connect with the correct exhibits objects.
- In most instances, the media was appropriate and articulated well the themes. Some design elements didn't work due to malfunction, poor instructional information, or intent was confused.
  - Examples include: the electrostatic panels were behind chairs that invited you to sit which missed the high tech interaction as well as message and a mechanical interactive raised the water over the hippo to get him dry which was opposite of the intent.
- Touch screens and films were very effective visual tools especially for children. Some interactive devices did not work.
- Background film very good. Hard to see at times, unclear. While there someone with glasses could not see the screen behind the zebra.
- Very easy to get around and find different locations. Very good locators.
- The images on the rear projection glass panels need to be larger.
- Airy, large spaces especially in main hall.
- My first impression of this exhibit was that the animals were presented as jewel-like objects. Then in our discussion it was made clear that this was Robert Sullivan's vision. It works. The design articulates the vision.
- An architect has run wild. Those I-beams used to hold up 30 lbs. of lights are ridiculous and overpowering. The screen works well, for me. The frosted glass panels, used for rear projection would be better if they were joined together.
- Odd disconnect between architectural restoration back to 1910 appearance and aggressively "modern industrial" exhibit structure and lighting design. Design is in danger of looking dated long before the end of its lifetime. Lighting support beams are too industrial-looking and massive, too "trendy."



- The film was excellent and enjoyable. It was the right length and good for both children and adults. It did a very good job of explaining how natural selection works. The animation was excellent. The tone was fun-loving. This element was not "trendy" and should last well.
- Height of many of the animals was frustrating. I would have rather seen them behind glass but at eye level.

- The exhibit on nocturnal animals seemed weak to me and the interactives didn't quite provide the experience intended.
- Entry-very clean, contemporary, refreshing approach for the subject. Almost sparse. Art museum display of objects is very different, but leads visitors to focus on individual animals. Intro panel is upstaged by other nearby elements.
- I think this exhibit will be seen as a "design of our time" – because of the sparse, post-modern treatment. Perhaps an over correction from the text-heavy dioramas of the 1950s – era exhibits.
- Overall-good. In the orientation, many small animals were up too high on solid platforms and difficult to see, esp. for children. Animal ID labels missing or not placed by animal (some). Floor video not easily understood.
- The timeline monuments were distracting and I most often went right by them. Need to simplify.
- Didn't understand the need for the scaffolding between the Sahara and the rainforest; seemed a bit overkill to hang 50 ft of fabric.
- The tongues (giraffe and okapi) really bring the exhibit to life.
- The individual and small groupings of animals are the heart of this exhibition, yet their identification labels are very difficult to use. (I overheard visitors reacting negatively about this). The abstract life backgrounds diminished the experience. I would prefer mural backdrops or none at all.
- Wish that there were a few immersive environments where visitors (especially the target 10 and under) can "suspend their disbelief" and imagine being in the same context as the specimens. But a beautiful and educational show that I will enjoy experiencing in the years to come. Thank you!
- Labels too small, not well placed. Like the exclamation/orange notations to flag interactive elements, but not consistent everywhere. Some of the AV interactives unclear with open ended questions.

- Architectural elements a bit "heavy" with large beams for light support structure.
- I liked the open and uncrowded look.
- "How does a lion grab its prey" – I thought the lever was broken off. I tried several times but couldn't figure it out. But some 3-4 year old came by and did it right away. Not intuitive or signed enough for me.
- Difficult to find the animals from the written material.



- A panel showing short and long necked giraffes has too much wasted space at the bottom.
- Several exhibits have no signs at all.



## 6. Ergonomics: Human Comfort, Safety, Accessibility

- Generally good. There was a bit of a bottleneck/jam-up at the theater entrance. A few of the exhibits (Australia, Far North) were off the beaten path. I almost missed the Far North.
- As much of the intended audience was children, a number of elements that were designed for them were not accessible to other audiences.
- Chairs provided in the Evolution Theater were uncomfortable. Too short, too hard. Text screens are too far from main screen. Diverts attention from screen.
- Screen is too large for intended audience in Evolution Theater.
- The overall exhibit was very accessible and very well lit with room to move.
- (Really need an AV Category) Sound is a problem –it’s a loud, cacophonous (is that a word?) sound environment. Sounds should be animal sounds, but that thunderstorm seems to dominate. I can’t help wondering what a blind person would experience. Echoes due to all the hard surfaces is another problem.
- Accessibility for the blind should have been better addressed for such a large budget exhibit. Tactile elements were bones or other small elements of the animals. Why couldn’t touchable models of animals been used at each “continent”? What about more exhibits about animal sounds? (I saw one). What about touchable fur?
- Captions for film were too far from the screen. They should offer audio description.
- Very comfortable. Kid friendly. I like the amount of light in the space, but the trade off is that the projection video and screen effects are very washed out.
- Very comfortable, open design. Great combination of brief text and open spaces.
- Lots of benches. Space very open. Not claustrophobic at all.
- Some animals too high to be easily seen. Film caption difficult to read while viewing film (?) for hearing impaired. Some label captions missing.
- Typography well chosen. Easy to read. A few ID labels were too small and not well placed.
- Touch, touch, touch. The models and casts added another dimension to the stories. Wanted more.
- The sound level in the Main Hall is a bit too loud. Possibly on a crowded day it might be appropriate but I think it’s a bit too much and distracting. Otherwise high quality.
- The words for the film should be closer to the screen; plenty of benches placed throughout exhibit; interactive screens slightly small; lighting in each room poor. (Difficult to read some text).
- Captions to the side make it difficult for me to concentrate on images on screen.
- The exhibition was a pleasure to walk through. It is a beautiful show and has avoided the “overdose of objects” one typically sees in museums.
- Captioning for movie too far from screen –ask visitors who rely on it for their evaluation.
- Excellent use of space, placing of objects, windows and objects placed at the child’s level. Good lighting. Open walkways –plenty of elbow room despite big crowds.
- Good accessibility in all aspects!
- Placement of specimen info sometimes does not map to specimen location. Uneven level of detail/quality of specimen silhouettes (possibly because of tight install time table?) Labels otherwise excellent. Nice, consistent info chunking.
- Labels too small. Good accessibility. Like open areas and gentle ramps.
- Noise levels were very uncomfortable. “As mammals adapted” case: type nearest you should be larger. Also, that same small type should be larger in darker areas. Movie: I covered my ears to depend on the text. It was too hard for me because the visuals were in two different locations (text and film).

- Everything seemed accessible and safe.
- Tactiles –bones great. But need more whole animals, like the carnivore tactiles. Text fonts good– all sans serif.
- Like fish and wildlife exhibit down the hall. Having fur to touch was helpful to all, not just blind. Also hoofs.

## 7. Production Values

- The video and footprints in the floors are good. They help with exhibit and object fatigue and maximize display space.
- It is easy to see that the money went to the great hall. The exhibit style and quality drops when you leave it.
- Materials and fabrication seemed very appropriate –simple, exposed structures.
- High quality exhibit throughout. Pleasant environment.

## 8. Exhibit Lighting

- The lighting was excellent. The use of lights for special effects (such as push button to highlight a specific feature) was very effective. The overall light provided by the skylight was great.
- Some illuminated exhibits reflected in the exhibits opposite and were confusing.
- I find the lighting in the great hall wonderful but the side halls appear old fashioned, uninviting, and dated.
- Great natural light in the main hall. Some of the side rooms could have used more object lighting. Backlit displays were very effective and attractive.
- Love the natural light; very little glare; more glare in back exhibits. Love the back lighting. Very easy to read. Lighting in gazelle strange (legs turn red).
- Most of the lighting was very good. The two cases in the orientation area, however, were not well lit. In addition the glass floor to ceiling made for a distracting glare. The animative for the glass is also distracting.
- Excellent titles and text. Some of the best I've seen. And the right amount too.
- Some of the interactive lift-up flaps cast a shadow over inside text when opened. Nice variation of lighting levels throughout the space.
- Structures for overhead lighting really distracted from the original (restored) exhibit space. But fiber optics in the porcupine case is wonderful.

## 9. Writing and Editing

- The writing was good. Brief and to the point. Questions posed were provocative.
- Labels were good, but minimalist.
- Incredible job of editing, distilling own text to a point where it works in an exhibit setting and will actually get read. Text is supportive to story, not the primary means of communications.
- Just the right amount of text. Easy to follow and comprehend. Enjoyed the human connections. Interacted well with graphics and objects.
- Right amount of text; able to read everything and “get it”. Plot overwhelmed us “look on wall.” Would have liked more labels next to the animals.
- Excellent, succinct, fun, lively yet serious text. Not too much, not condescending –it respects the visitor in its simplicity and focus.

## 10. Object Conservation



- Exhibit conservation (lighting, environment, mounting) was considered. Pest control of animals was addressed in the taxidermy techniques (hooves-models, tanning) and constant inspection. No mention of a conservator on the team.
- The collections on exhibit are not overcrowded and currently appear to be in good to very good condition. The primary conservation concerns and issues include the following:
  - No inclusion of a conservation specialist on the exhibit team.
  - Specimen location and exhibit mounting makes future rotation highly problematic.
  - Long-term, open display technique for taxidermy is inadvisable.
  - Open display exposure of fur and tissue to dust, pests and climatic cycling is highly consumptive.
  - The excessive maintenance required of the exposed skins and hair/fur represents a major deterioration factor and expense.
  - Monies are not available to replace the exposed mounts in the exhibit's African Hall.
  - There is no ambient humidity control in the Mammals Hall (RH was 26%) and exhibit cases do not employ available micro-climatic control technology.
  - Skin and hair products are so responsive to moisture changes that some macro or micro.
  - RH control strategy should be provided.
  - Exhibit cases are not well-sealed and as a result air-exchange occurs readily and with it changes in RH, and the entry of pests and airborne soil.
  - Exhibit lighting in cases tends to over-light the upper regions of the cases and specimens located there.
  - It appears that cases are being heated as a result of lighting design: lighting attics and display chambers are not sealed against air exchange; in several cases such as the curved case heat producing lamps are within the display chamber (see backlit text boxes).
  - In a number of instances internally located fiber optic lighting is invisible because of the intensity of ambient light.

## 11. Illustrations

- Good. I like the video illustration of animal digesting grass.
- Some difficulties with timelines—strange graphics. I liked the illustrations on the interactives. Love the ventriculars –used effectively and sparingly.

## 12. Diverse Points of View

- No recognition that some audiences don't believe in evolution.

- There is only one point of view. Where is the diversity?
- Biased one-point-of-view presentation regarding evolution. Presented as fact, not theory. No acknowledgment of other religious beliefs about the subject.
- I like how many things invite you to touch them or manipulate them to see a concept in action. The hippo's eyes/ears/nose all on top of the head, etc.
- Film: nice inclusion of both male and female mammal reps. However, I am not seeing great diversity on the human models throughout the exhibit, which is especially striking since the audience today is very diverse.
- Access for children is thoughtful.

### 13. Developing Technologies



- Touch screen AV was very good and effective
- Effective touch screens; only one out of order.
- Well thought through, appropriate use of new display technologies. Interactives have high interpretive values. Loved the bat vision interactive. Nice use of LCD switch able glass. Monitors on floor a good idea, but programming on monitors was too subtle- didn't quite get intent.
- Like the predator interacting- effectively explain characteristic of animals in touch screen; small screen.
- It is great to see the original architecture of the space and the natural lighting. The large metal beams for the exhibits lighting seem out of place and compete for attention with the "stars of the show" – the animals.
- Electrostatic glass probably not worth value. Not well placed/integrated with button/test.
- Rear projection in glass good concept, but was washed out.
- The glass cases in the main hall are very interesting, almost free standing glass panels. I wonder why they have no tops. Do they vacuum the animals each day?

### 14. Limited English Proficiency

- Text was simple, largely geared to children or parents talking to children. This was good for those of limited English proficiency.

### 15. Cartography

- Most fairly simple and direct to show climate and diversity change over time.
- Simple, but effective-good use of ventricular imagery. Could have used a few more wayfinding signs and "You Are Here's."
- Would like to have some more ways to illustrate some of the information and concepts.
- Could be maps where the various animals lived.
- Needs key to colors on map of Africa in "Forest gives way to ..."
- Additional maps are needed to locate habitats and even to locate the continents.
- Pangaea-optical change world map. I think 2-3 maps of progression would work better. Yet the giraffe optical change worked great.
- "Where to find your relatives" exhibit map was not oriented to how you are standing.

## 16. Natural History Specimens/Models

- The animals and the ways they are displayed are excellent.
- Superb!
- Excellent quality taxidermy forms core of the exhibit's strength. A lot of time, money and resources were spent on it and it shows. Good range and variety in types and sizes of mammals. The really large animals are eye-poppers!



- Only a few models used, emphasis on quality taxidermy is effective. Natural grasses will be difficult to maintain.
- Quality of taxidermy exceptional, esp. cat catching bird.
- Excellent wonderful positions, esp. giraffe drinking water. Some were placed too high (didn't even know they were there). Love some of the dioramas—show things we can't normally see (i.e., beaver).
- Beautiful specimens with fantastic and very natural/dynamic posing. Some inconsistent use of natural/artificial props, i.e. orangutan swinging on pipes/trees. Otherwise the clean modernistic exhibit works very well. The animals really stand out.

## 17. Other

- I like the use of overhead specimens to which your attention is drawn eventually by the textual matter.
- Family friendly! Wonderful job. Great for kids. Especially the screens in the floor and the wildebeest video on the digestive system and poop-takes the cake.
- Transparent covering over foot shapes is becoming obscured by glare and scratches.
- I liked the bush baby sounds.
- I liked the thunderstorms and sounds of rain.
- Like the comparison of dogs and cats. Loved the primate in the theater.
- N.A. area much different in feel from Africa part—very 1950s feel.
- Excellent film. Made use of existing graphics and footage. Perfect length. The message was clear and reinforced.
- The AV components- eat or be eaten and predator-prey were outstanding. I wanted to see every other AV component after seeing these two. Great starting touch screens with animal pictures to select from. The 8-minute film was very well done. I watched it all and wanted to see it again.
- All labels were easy to read and inviting.
- Entrance to exhibit needs more decompression space. Perhaps if the three panels (ear, hair, milk) could spill into rotunda. These panels block the exhibit cases anyway.

- Good informative interactives. Lots of touch opportunities. Lion's paw interactive should be more anatomically correct. The monitors in the floor do not work! I did not know what was supposed to happen.
- Overall-excellent presentations. Great for kids. Displays at their level.
- I liked the footprints on the floor, but left wondering what animal left them.
- Great companion "Teachers Guide" – a model to be emulated.

### Follow-up Comments by SI Project Manager Sally Love

"While we didn't have a conservator on the core team, we worked very closely with several of them on staff here who were with us every step of the way, and who helped inform our decisions on what to exhibit and how to exhibit them. The specimens that are not behind glass are ones that we can more readily obtain replacements for – a trade-off we felt was important to break even more barriers between the animals and our visitors. As far as evolution being presented as fact and not theory - that was deliberate on our part. We're in the business to research and describe evolutionary relationships, and our exhibits ought to reflect that. For us, it's fact, and we're not going to open up a theological debate. The specimen ID labels are dreadful, and that's something we intend to fix quickly..."

### HFC Staff who Participated in the Study

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