Figs. 1 & 2. Mammal hall before (top) and after (bottom), showing the extent of new exhibition treatments.

Unapologetically Scientific

The Science (and Art) of Communicating Global Crises

Frank J. Hein

Designing difficult conversations into exhibitions requires a departure from the standard exhibition planning process. This was one of the key findings from the Santa Barbara Museum of Natural History's most recent exhibition renovation.

Introduction

The Santa Barbara Museum of Natural History (SBMNH) opened three renovated spaces to the public in 2018: The *Bird Habitat Hall, Mammal Hall, and Santa Barbara Gallery* exhibitions. The exhibitions were designed, among other things, to elevate the conversation on climate change, biodiversity loss, escalating human impacts on the planet, and other large-scale ecological issues (figs. 1 & 2).

Our museum is moderately sized and regionally focused, with approximately 180,000 visitors per year. This article focuses on the mechanics of creating crisis-focused exhibitions from the perspective of our museum design team.[1]

Throughout the article, we focus specifically on climate change as the main topic of discussion and analysis, but the exhibitions also addressed topics like biodiversity, extinction, human impacts, and increased fires and floods. All these topics required a similar attention to detail and process.

Background and Early Epiphanies

Generally, exhibition designers use the same basic steps from concept, to schematic design, to final design, production and installation. We discovered, though, that

1 Our design team included museum staff; Gallagher & Associates, a museum planning and design firm; Cinnabar, a design/build firm; Prey Taxidermy, Dixon Studios, a design and fabrication firm specializing in dioramas; and additional talented contractors.

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WHAT ARE MAMMALS?
HAVE HAIR
NURSE THEIR YOUNG FROM MILK-PRODUCING GLANDS
GIVE BIRTH TO LIVE YOUNG
MAMMALS ALSO . . .
ARE "WARM-BLOODED"


WILD THINGS
Gaining a Foothold
Sheep Can Handle Steep
One of three California subspecies, Desert Bighorn Sheep are right at home in steep, isolated mountains. Mo
of California's nearly 4,000 Desert Bighorn Sheep are four
in the mountain ranges of the Mojave and Sonoran deserts.
HOW ARE THEY DOING IN CALIFORNIA?
WHAT'S FOR DINNER?
Desert Bighorn Sheep feed on
grasses, herbs, and shrubs. The
can eat cactus by first scraping
off the sharp spines with their
hooves and horns.

creating exhibitions dealing with "existential crises" required us to modify our design process in several key ways. The logic behind these changes may be of interest to exhibition designers and museum leadership alike.

During preliminary design we realized that our team was preparing the museum to take a long-term, public position on controversial, politically-charged topics. Typically, shifts in organizational philosophy, messaging, and mission are initiated at the highest organizational levels. What we initially viewed as exhibition design needed to be reframed to address an evolving organizational mission and vision.

This led us to actively pursue board-level involvement in order to formally address the nature and gravity of the organizational change ahead. We viewed the step of adding "natural future" to our natural history portfolio to be a significant step needing board approval.

Trustees and staff come to any organization with different backgrounds and mindsets, and we could not assume universal agreement on our messaging. The resulting dialogue and exchange of ideas proved to be positive and motivational for the museum, and we were able to reach universal board-level agreement on how to proceed.

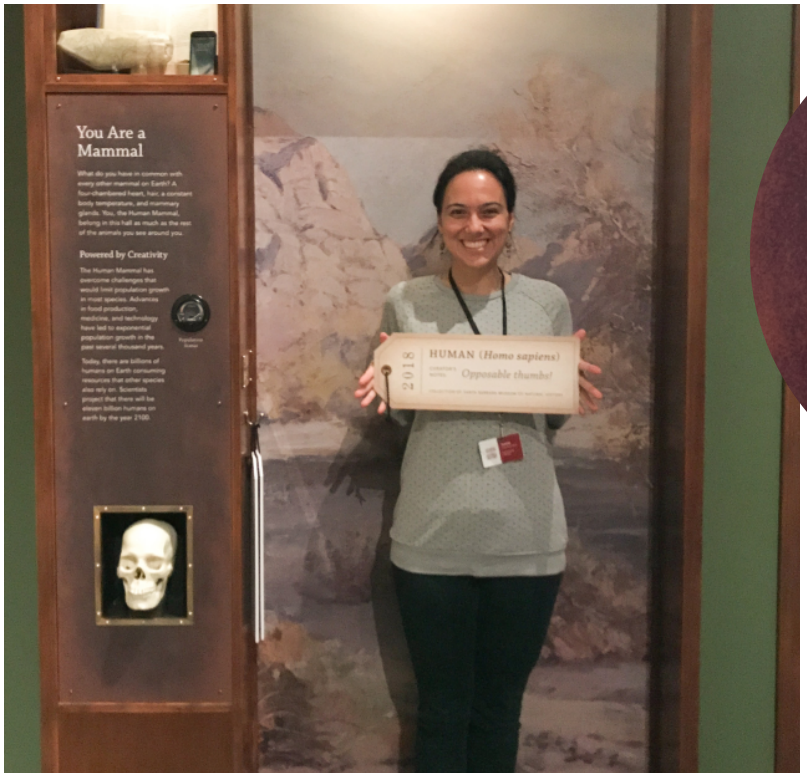
Our challenge was to invite the board to engage without inviting them to design. To that end we drafted what we now refer to as the "Exhibits Manifesto," which codified the ground rules for the museum's exhibits team when dealing with controversial topics. It gave us a rubric for protecting the museum's reputation while wading into relatively uncharted waters. The following excerpts give a sense of the document:

> We are a place of *evidence-based* science and are eager to convey what science supports, even if considered controversial by some. We are a scientific organization, not a political one. Our exhibits do not advocate for a particular policy, but actively convey the scientific facts behind topics that may be debated in the political arena.
>
> What do we do when science conflicts with people's beliefs? We serve as a trusted, neutral resource for knowledge even when (or especially when) that knowledge may be provocative.
>
> We present a balance between the beauty and resilience of nature, and concern for the natural world – including subject areas that may raise alarm or discomfort.

With our direction now officially board-sanctioned, we returned to the exhibit design process intending to ask the "usual" questions, but instead found ourselves asking new ones, while sometimes finding atypical answers to standard questions.

What About Politics?

Most scientific organizations try to remain politically neutral, but what do you do when a topic like climate change has become so politically charged? We reasoned that there is little risk in clearly stating what is known



Figs. 3 & 4. Note how the (fun) human mammal selfie station is integrated with messaging intended to raise concern.

and knowable. This positioned us to give a full-throated defense of the science behind the issues, something we were eager to do. Defending science, logic, and reason hasn't been necessary in the past, but it is a reality that we felt needed to be addressed.[2]

There is nothing political about the statement: "The science is clear. The climate is changing." It is measurable and testable. It is scientifically accurate. Yet it sounds political. At first that seemed problematic, but we grew to see it as positive. Our content had the feel of a political stance, when in fact it was scientifically solid. This was something of a revelation, and influenced much of our messaging.

What if Our Visitors Don't Want to Hear Bad News?

Another unusual aspect of our new climate exhibits was that nearly all the information we were delivering was inherently alarming and/or depressing. How could we point out very real threats to global survival while keeping our audience engaged and delighted?

We approached this in several ways. We opted for "distributed doom" over "concentrated doom" whenever possible. We had three halls to work with, and each was positioned to deliver a balance of wonder, beauty, and reason for concern. By distributing climate change messaging throughout *Santa Barbara Gallery, Mammal Hall, and Bird Habitat Halls* we could repeat key points with a lighter touch, using different modes. Another approach was to strategically position decidedly "un-fun" topics like the role of the human mammal in the extinction of species next to intentionally fun interactives like our "I'm a Mammal" selfie station (figs. 3 & 4).

When "bad news" content needed to be concentrated, as in our climate and biodiversity section in the *Santa Barbara Gallery*, we balanced it with good news. Opposite a red panel (representing danger) showing biodiversity crashing, we placed an equally weighted green panel (calm)

2 Institutions and their programs are free to "go political" as they see fit, and we sometimes do. Permanent exhibitions are a durable representation of museum values, while political stances are almost by definition divisive or fleeting, making them less than ideal for permanent display.

Fig. 5. The content and visual design of this exhibit balance bad news on the red panels (left) with good news on the green panels (right). The video touchscreen allows dynamic content updates as new climate stories emerge.

Fig. 6. Climate change, extinction, and habitat loss are addressed in the center room, flanked by exhibitions celebrating biodiversity and existing wild spaces.

showing how land trusts, public agencies, and "people like you" are able to protect large landscapes with high conservation values (fig. 5).

We also took advantage of architectural opportunities to purposefully and thoughtfully choreograph the visitor experience. The *Santa Barbara Gallery* is composed of three distinct spaces. We designed the entry area to celebrate the diversity of wild things and places in our region. The center room deals with "bad news," and the third space celebrates the habitats, plants, and animals that still thrive in our area. Regardless of which direction you approach the exhibit hall from, you will enter and exit on a positive note (fig. 6).

Who Is Our Audience?

It is worth noting that in our part of California, climate change may have already tipped into acceptance by the general public. California is recognized as a comparatively liberal state, but more significantly, we've been feeling the impacts of climate change at a level that's hard to deny.[3] We avoided wading into "climate controversy" by stating the issue as established knowledge and moving on. In our role as a scientific organization, we focused on what the science supports and on the subsequent data-driven ramifications.

One normally tries to avoid preaching to the choir, yet on these topics, it turns out the choir is our audience. We chose to *empower* our choir by providing scientifically valid information they can incorporate and extend into their social discourse (fig. 7).

3 In December of 2017, as we designed our exhibitions, the Santa Barbara region suffered the largest wildfire in California's history. After unusually intense rains, fatal mudslides in Montecito quickly followed. The fire and mudslides claimed a total of 23 lives and destroyed 1,063 structures. Just seven months later the Mendocino Complex fire, at almost twice the size, gained the distinction of being the largest wildfire in California's history.

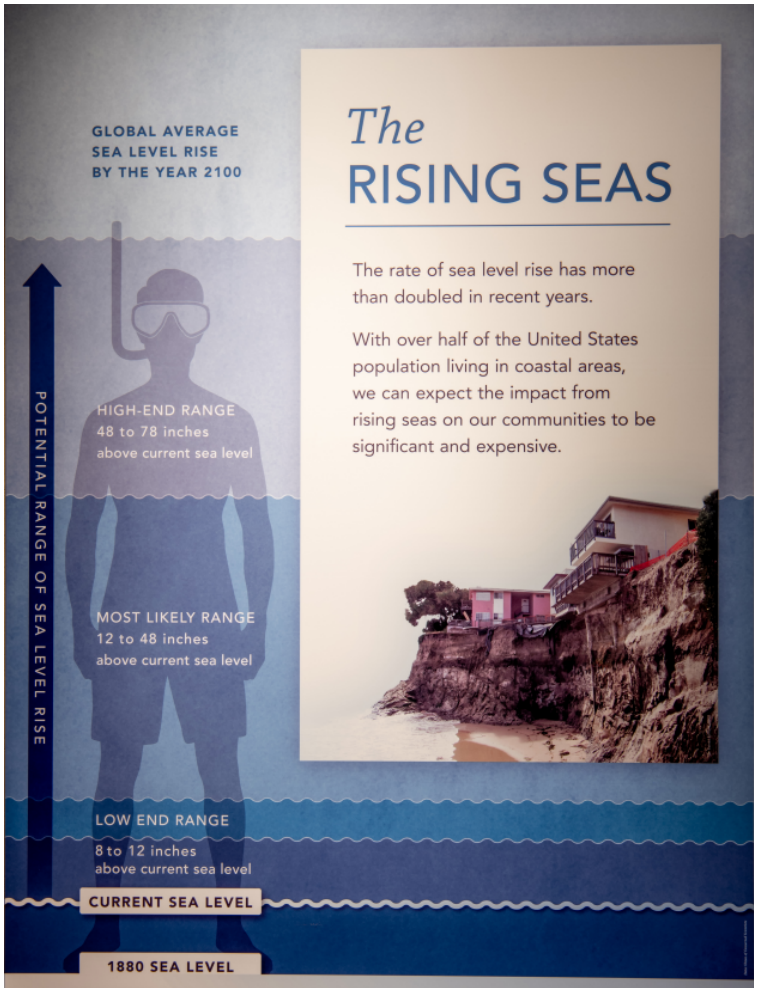


Fig. 7. We reasoned that empowering our visitors to make scientifically valid arguments had a higher likelihood of driving change than using our exhibitions to counter erroneous narratives. Note the playful nature of the snorkeler as a means to lighten an otherwise dark bit of news.

We reminded ourselves that programs have tremendous additive value in being flexible, real-time, and situational. With the denier in mind, we integrated programmatic elements into the exhibits to provide staff and docents with the tools they would need to make a strong case if challenged on key topics like climate (fig. 8, p. 56), evolution, or biodiversity loss.

What if the Conversation Changes?

The answer to this question was simple. "It will." In fact, since we opened our exhibition, it already has. Unlike most natural *history* topics, climate change focuses on our

natural *future*. For that and other reasons, our exhibits were designed to change.

Whenever possible, we used materials and techniques that supported flexibility. For evolving topics, we mounted interpretive information on cleated, vinyl-wrapped Sintra® panels, keeping the cost of updating content low. We included a large touchscreen panel in our climate and biodiversity zone so we could quickly change digital content as needed. We also put financial mechanisms in place to ensure that future updates would be mandatory and resourced.[4]

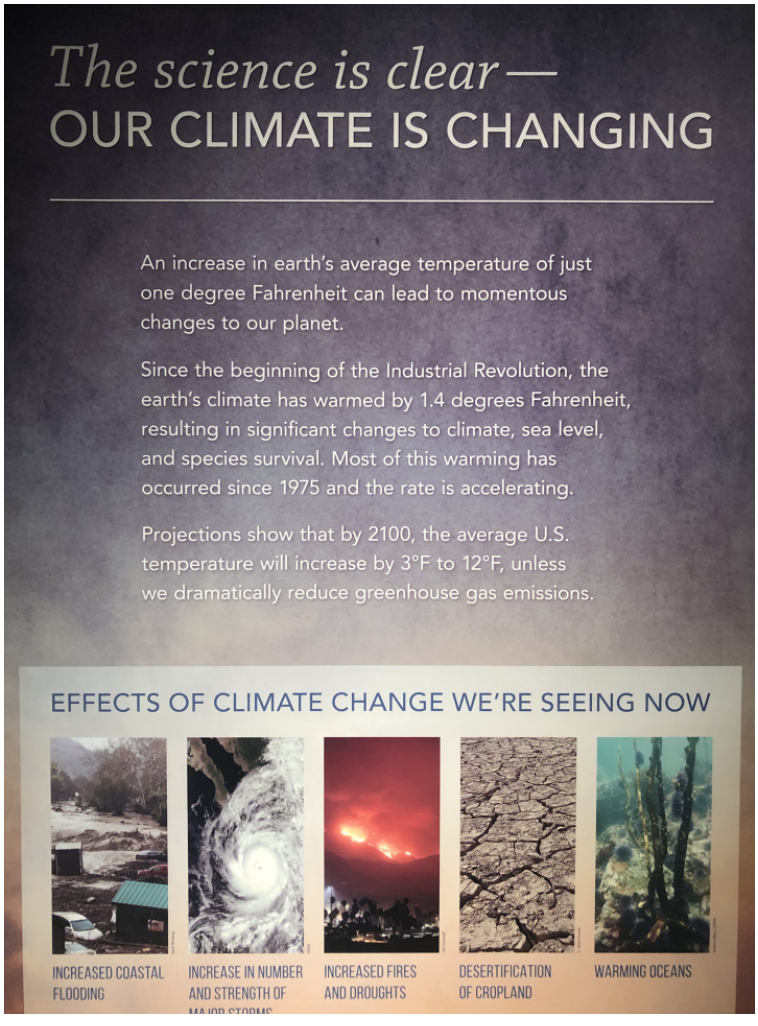


Fig. 8. This panel makes a clear statement about climate change being real. Images of local climate impacts are used as touchstones for docents to literally bring the conversation home by elaborating on the causes and effects of local events.

Results

We built pre- and post-renovation evaluation into our plan. We gathered baseline information on exhibit and diorama dwell times, traffic flow, the nature of interactions, and of visitors' conversations.

Did Challenging Exhibitions Discourage Our Visitors?

- Attendance at our grand opening was sold out and record setting.
- Our 2019 attendance was among the highest in our 103-year history.
- We have received no significant pushback on what we expected to be our most controversial content.

Are Our Visitors Interested?

- Dwell times in the new exhibits have increased by an average of 25 percent across the three exhibitions.
- Conversations among visitors appear to have shifted.
  - Prior conversations primarily focused on "What is that?"
  - Conversations are now more varied, and are more likely to include conservation topics. Cognitive discussions (those that involved intellectual discourse) increased from .02 to 11 percent.
- The museum is now seen as the area's source for reliable information on climate and other ecological hot-button topics. Regional media use our exhibitions to support stories on climate or species loss.

4 Specifically, we allocated a budget for annual updates and made these the formal responsibility of the Exhibits Department.

Visitor Survey Responses in the "Climate Room"

- 8 of 10 visitors surveyed agreed with the statement: "It's about time someone I trust provided reliable information."
- 2 of 10 visitors agreed: "It makes me uncomfortable but I'm glad you did it."
- 0 visitors agreed: "It makes me uncomfortable and I wish you hadn't done it."
- Did we go far enough?
  - "I think yes, because at some point people feel bombarded."
  - "It's appropriate. Any further would be uncomfortable."
  - "Go further and bigger, but this is the right way to begin."
- How would you describe your reaction/ thoughts?
  - "It makes me think, and worries me."
  - "I have a Ph.D. in biology, so it's great! Some people might find it scary, but it's good."
  - "The science makes sense. I like it."
- Can you share any additional thoughts/ comments on this topic?
  - "I'm glad the museum is evolving. The new things are making me want to renew our membership."
  - "I like that the thread runs through all the exhibits."
  - "Museums are obligated to talk about these issues aren't they?"

Worth Noting

- Based on our stay-time observations in the "climate room," visitors may be moving more quickly through the areas that make them uncomfortable. This appears to be especially true in areas of concentrated, emotionally challenging themes, and for parents with young children.

Closing Thoughts

We learned to see the creation of potentially controversial exhibitions not as a task to be completed, but as a conversation to be continued. The up-front choice to invest in flexibility is already paying dividends by providing us a manageable, steady, and budgeted path forward.

Including organization-wide change management in our process – from staff to board level – may have been the single most important decision we made, and it played a significant role in what we consider to be successful exhibitions.

Layering, repetition in multiple modes, and distribution of messaging are proving effective. In addition to our "climate room," we will continue to incorporate a distributed approach to delivering "bad news" in future exhibitions.

It is true that the realities of a California natural history museum will not directly map to all institutions. Regional politics, organizational mission, and *your specific goals* will influence how you approach challenging topics. Your exhibition design process may need to evolve to navigate an evolution from a focus on natural history to an emphasis on our natural future.

Whether that future grows brighter or dimmer is genuinely within the sphere of influence of the broader museum community. By communicating global threats clearly, creatively, and from an unapologetic position of science and reason, we can truly make the world a better place, one exhibition at a time.

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