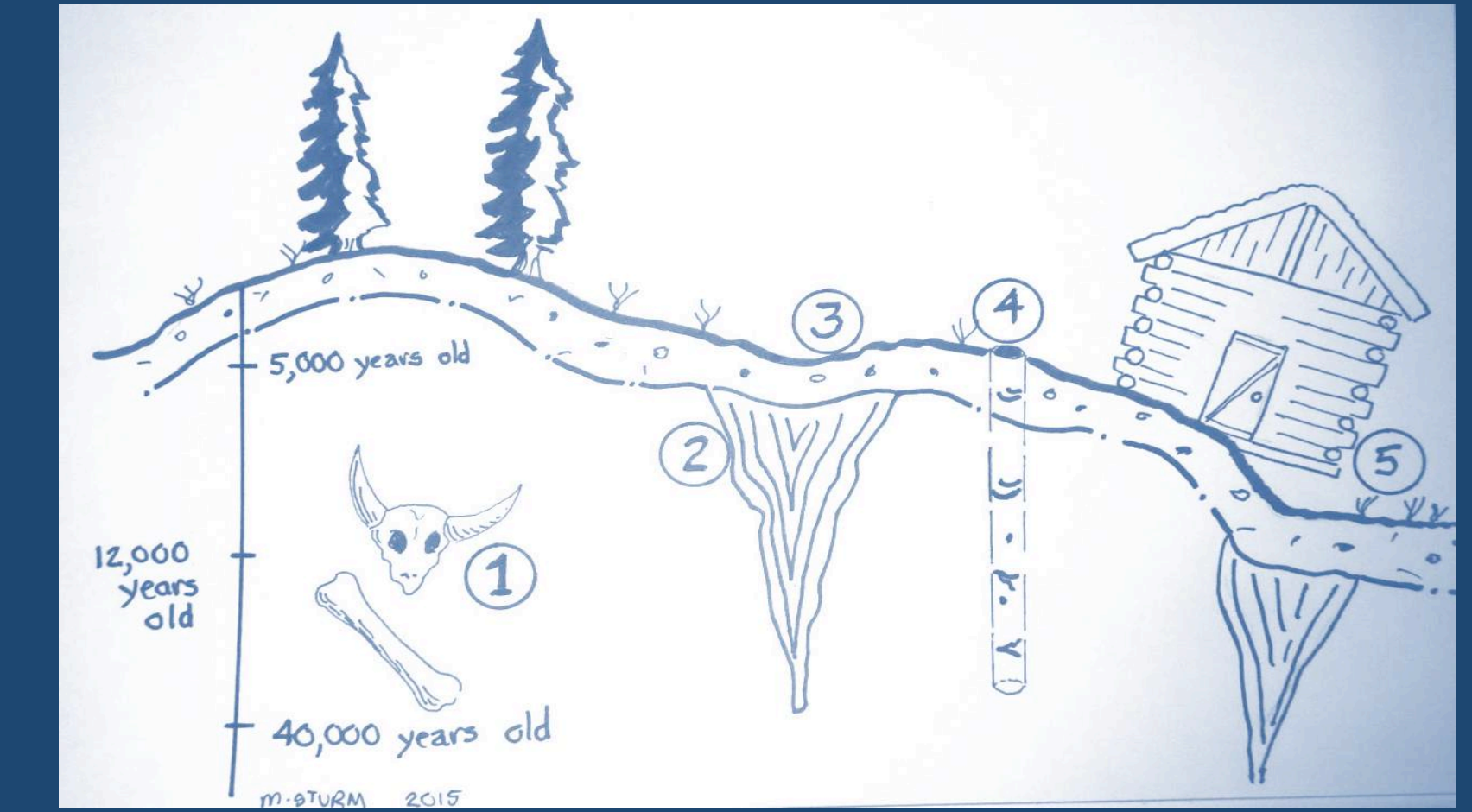




It's Cold and it's Cool!

Using Permafrost to Teach Climate Change



Project Overview

Hot Times in Cold Places: The Hidden World of Permafrost is collaborative research project between the University of Alaska Fairbanks (UAF) and the Oregon Museum of Science and Industry (OMSI). The project aims to engage the public and broaden understanding about the nature and prevalence of permafrost, its scale on the earth and the important role it plays in the **global climate**. It builds on 50 years of informal education and outreach at the Alaskan Permafrost Tunnel, the nation's only underground facility for research related to permafrost and climate. UAF is engaging audiences in Alaska by improving the visitor experience at the Tunnel and taking traveling programs to Native villages. **A traveling museum exhibition on permafrost & climate change will be available through OMSI in 2018.**

Pingo Peat says:



Research on Learning

What is the power of a real object? We are using ethnographic methods to study learning using real, simulated and virtual objects. We will observe, videotape, and interview visitors to the permafrost tunnel in Fairbanks and the museum exhibit in Portland.

- What is the nature of visitor talk with respect to explanations and elaborations about permafrost, tipping points, climate change, & geological time?
- How do attributes of “realness” (scale, resolution, uniqueness, history and adherence to an original) affect visitors experience of objects, as perceived through the senses and emotions?
- What is the nature of science identity work when visitors engage with real, virtual and replicated objects?

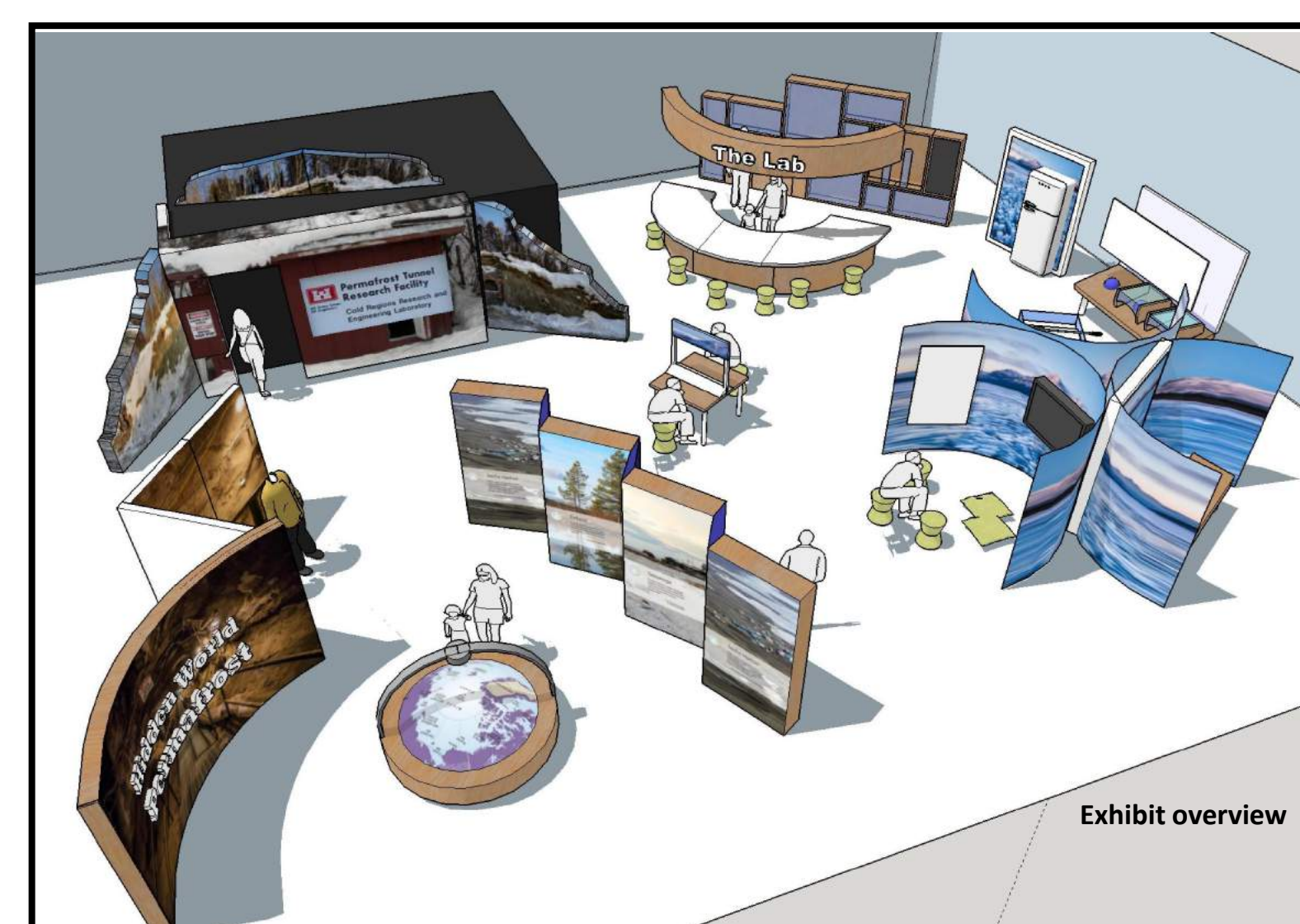


Grief Caring
Urgency Hope
Awareness Empowerment



Goals & Audience

- Improve visitor experiences at the permafrost tunnel with new tours, exhibits and signage in the tunnel and in a new log cabin visitor center.
- Create and disseminate traveling programs and exhibits about permafrost and climate change to **remote Native communities in Alaska.**
- Produce an interactive traveling exhibition designed to **engage families at science museums** in the big idea that “Permafrost is old, cold, huge, and thawing so fast it will change our world.”
- Conduct research on the relative importance of real replicated materials in ISL.



Evaluation Findings

Front End Evaluation / 80+interviews, observations at Tunnel in Fox, AK, and OMSI in Portland, OR

- Nearly all participants in both Alaska and at OMSI **indicated an understanding of climate change.**
- Participants noted a **lack of confidence in their scientific knowledge about the causes and consequences of climate change**
- Alaska participants focused on **adaptation to climate change**, whereas many Oregon participants focused on the need to **mitigate change** in addition to adaptation.

Exhibit Prototyping / Interviews, observations at OMSI, Portland, OR

- Content is relevant to **pre-existing interest in climate change.** Arctic's distance, disbelief in climate change attributed to any lack of relevance.
- Visitors have varied interest in **talking to others in community about actions & mitigating climate change.** Cite lack of knowledge of a “controversial” topic.
- **Emotional response/** card sort 7 emotions/ n=34/ Primary emotions: Caring=11, Urgency=10, Hope=6 Grief=5 Excitement=3, Awareness=1.

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