



**Q&A with James Balog (“BAY-log”),
Founder & Director of the Extreme Ice Survey**

www.extremeicesurvey.org

1) *What is the Extreme Ice Survey?*

Founded in 2007 by James Balog, the Extreme Ice Survey (EIS) is an innovative, long-term photography project that merges art and science to give a "visual voice" to the planet's changing ecosystems. One aspect of EIS is an extensive portfolio of single-frame photos celebrating the beauty—the art and architecture—of ice. The other aspect of EIS is time-lapse photography: currently, 27 cameras are deployed at 18 glaciers in Greenland, Iceland, the Nepalese Himalaya, Alaska and the Rocky Mountains of the U.S. These cameras record changes in the glaciers every half hour, year-round during daylight, yielding approximately 8,000 frames per camera per year. We edit the time-lapse images into stunning videos that reveal how fast climate change is transforming large regions of the planet. Finally, EIS supplements the time-lapse record with episodic repeat photography in the French and Swiss Alps, Canada, Iceland and Bolivia.

2) *What is the goal of the Extreme Ice Survey?*

The goal is twofold. First, to document what is happening to the world's glaciers; second, to effectively communicate these findings to policymakers and the public and inspire positive action on climate change.

3) *What is unique about the Extreme Ice Survey?*

EIS marries art and science. Most of the time, art and science stare at each other across a gulf of mutual incomprehension. Art looks at the world through the psyche, the emotions and the unconscious; science looks at the world through rational and quantitative means. The Extreme Ice Survey is dedicated to merging those two parts of human understanding.

Scientists have been studying glaciers for centuries from the ground and for decades using aerial photography and satellite imagery. Dr. Tad Pfeffer, one of EIS's scientific partners, has studied Alaska's Columbia Glacier since the 1990s and has conducted some time-lapse photography (as have other American and European scientists). But the scope, duration, logistical complexity, and socio-political outreach of EIS are unprecedented.

4) What's "extreme" about the Extreme Ice Survey?

The time-lapse cameras can function in and withstand temperatures down to minus 40 F., deep snow, winds to 160 miles per hour, torrential rain and rock fall. Some camera locations are so remote that EIS team members were probably the first people to ever visit the sites. Field teams reach the cameras on foot and on horseback, by dogsled and ski, from fishing boats and helicopters.

5) Who is on the EIS team?

The project is a collaboration between photographers, filmmakers, engineers, scientists and educators, all devoted to documenting and communicating the changes transforming arctic and alpine landscapes today.

6) What gave you the idea for the Extreme Ice Survey?

In the course of shooting assignments on retreating glaciers for *The New Yorker* and *National Geographic* in 2005–06, I was stunned to see that extraordinary amounts of ice were vanishing with shocking speed. Ice that had taken centuries to form was disappearing in just a few years, months or even weeks. This was geologic-scale change happening not just in the dim past or distant future, but right here, right now, in our own time. These observations were the catalyst for the Extreme Ice Survey.

7) Tell us more about the cameras and how they function.

Guided by the recommendations of glaciologists, in 2007, the EIS team installed its time-lapse cameras at sites that represent regional conditions and have high scientific value. Typically these cameras are anchored to cliff faces above the glaciers. It took six months of experimenting to come up with a camera system sturdy and reliable enough for our purposes. We use Nikon D-200 digital single-lens reflex cameras powered by a custom-made combination of solar panels, batteries and other electronics. The cameras are protected by waterproof and dustproof Pelican cases, mounted on



Bogen tripod heads, and secured against arctic and alpine winds by a complex system of anchors and guy wires. Each unit weighs more than 100 pounds. Solar panels collect power that is stored in batteries; customized controllers trigger the cameras only when there is sufficient light. Downloads of digital

images occur as frequently as every few months or as rarely as once a year, depending on how remote a site might be.

7) How does EIS contribute to the dialogue about climate change?

Shrinking glaciers are the canary in the global coal mine. They are the most visible, tangible manifestations of climate change on the planet today. Real-world visual evidence has a unique ability to convey the reality and immediacy of global warming to a worldwide audience, to celebrate the otherworldly beauty of ice-cloaked landscapes and to help scientists better understand the mechanisms of glacial retreat. When people encounter EIS images—whether in an exhibit, on the internet, or in a slide presentation—the response is typically immediate and dramatic. It is the first step toward caring about a distant landscape most of us will never experience in person, connecting the dots between what happens far away, and the rising sea levels, extreme weather and other climate-related issues closer to home.

8) How have “climate skeptics” reacted to the *Extreme Ice Survey*?

Climate change is real. It is not based on computer models; the evidence is in the ice cores, tree rings, deep ocean sediments and the other ways we have of measuring ancient climates. EIS has collected the gold standard of visible evidence of climate change. I have been gratified to hear the former head of exploration for Texaco tell me “I thought this climate change business was BS, but now I understand it.” A Shell Oil employee quit his job and went into sustainable energy. And a retired oil and gas pipeline executive told his daughter: “Most of your environmentalist friends seem like wackos to me, but this guy, James, and his pictures, I believe what he says.”

9) What are some of the milestones in the EIS project?

EIS was fortunate to have a team onsite on May 29, 2008 to record the biggest calving event ever captured on film, a massive and dramatic 75-minute incident at the Ilulissat Glacier in Greenland. A huge block of ice three miles wide and three-fifths of a mile deep—about the size of 3,000 U.S. Capitol Buildings—broke off in a little more than an hour, resulting in a mile of retreat. Click [HERE](#) to see the multi-year time-lapse from Ilulissat Glacier. I was particularly proud to represent NASA and the U.S. State Department at the United Nations Climate Change Conference, COP-15, in Copenhagen (December 2009).

In September 2008, I was honored to join a panel of climate change experts to brief members of the U.S. Congress on the implications of a melting Greenland Ice Sheet. In March 2009, the release of the National Geographic book *Extreme Ice Now* and the NOVA documentary *Extreme Ice* reached untold numbers of people and generated worldwide interest in EIS. I have had the privilege of speaking at many other influential venues, including the TED Global Conference in Oxford, England, in July 2009 (Click

[HERE](#) to see the full TED Talk); the U.S. Embassy in Finland; the Explorers Club in New York; the Aspen Institute's Environment Forum; the California Academies of Sciences & Engineering, several large universities, and National Geographic symposia.

10) How is EIS funded?

Support for EIS has come from grants, individual donations, private foundations and sponsorships. The North Face currently is our main sponsor. Nikon was a vital initial sponsor, providing even to this day, all our cameras and lenses. I have spoken at corporate events for Apple, Qualcomm, Timberland, The North Face, Digital Globe, Nikon and at the 2010 Winter Olympics on behalf of Samsung.

11) *What can one individual do about climate change?*

There are many good websites that suggest ways to reduce your carbon footprint; we list some on the EIS website, www.extremeicesurvey.org, and in the *Extreme Ice Now* book. Even small changes—like reducing how many miles you drive, or switching to energy-efficient appliances—can have a large effect if enough people commit to them. It's also important, especially now, to let your elected representatives know where you stand on global warming. But with the paralysis in our national government, the actions needed to switch to a more carbon efficient civilization will happen person by person, town by town, state by state.

12) *How long do you plan to carry out the Extreme Ice Survey? Are you planning to expand the project to other areas?*

How long the cameras stay out in the field, and whether we make additional deployments largely depends on funding and opportunity. Through our various scientific partners we hope to keep at least some cameras going indefinitely. We are using our knowledge and enthusiasm to photograph other aspects of the fast-changing earth system.

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