Glacially Speaking

By Jim Cornfield

PHOTO © KONRAD STEFFEN

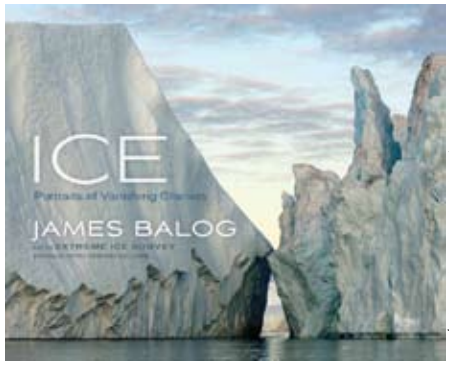
Mt. Kilimanjaro – Furtwangler Glacier, July 27, 2005.

Anyone who is attending *PDN*'s PhotoPlus Expo this year at New York's Javits Convention Center (Oct. 24-27) will be offered the extraordinary opportunity of previewing, just prior to its release, the new, award-winning independent film, *Chasing Ice*. It details the creation of photographer James Balog's project known as the "Extreme Ice Survey." Balog (the movie's de facto star) will be on-hand as one of the Expo's keynote speakers to elaborate on the mission of EIS, and offer his personal take on the rigors involved in its production.

Begun six years ago, EIS is a stunningly ambitious photographic achievement in which remote intervalometer-driven time-lapse cameras and resulting lavish imagery have documented the surrender of our planet's great glaciers to the relentless press of global warming. As you read this, the film is only a few days away from debuting on theater screens. For those of us who'll see it, and also for those who won't, the essence of EIS has been distilled in an annotated, elegantly reproduced large-format collection from the prestigious publishing house of Rizzoli called *ICE: Portraits of Vanishing Glaciers*, with photos and commentary by Balog, and a lyrical epilogue by environmental advocate Terry Tempest Williams.

A Natural Archive

Earth's most frigid realm, known to most scientists as the cryosphere, encom-



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ICE: Portraits of Vanishing Glaciers
Photographs and Text by James Balog
Epilogue by Terry Tempest Williams
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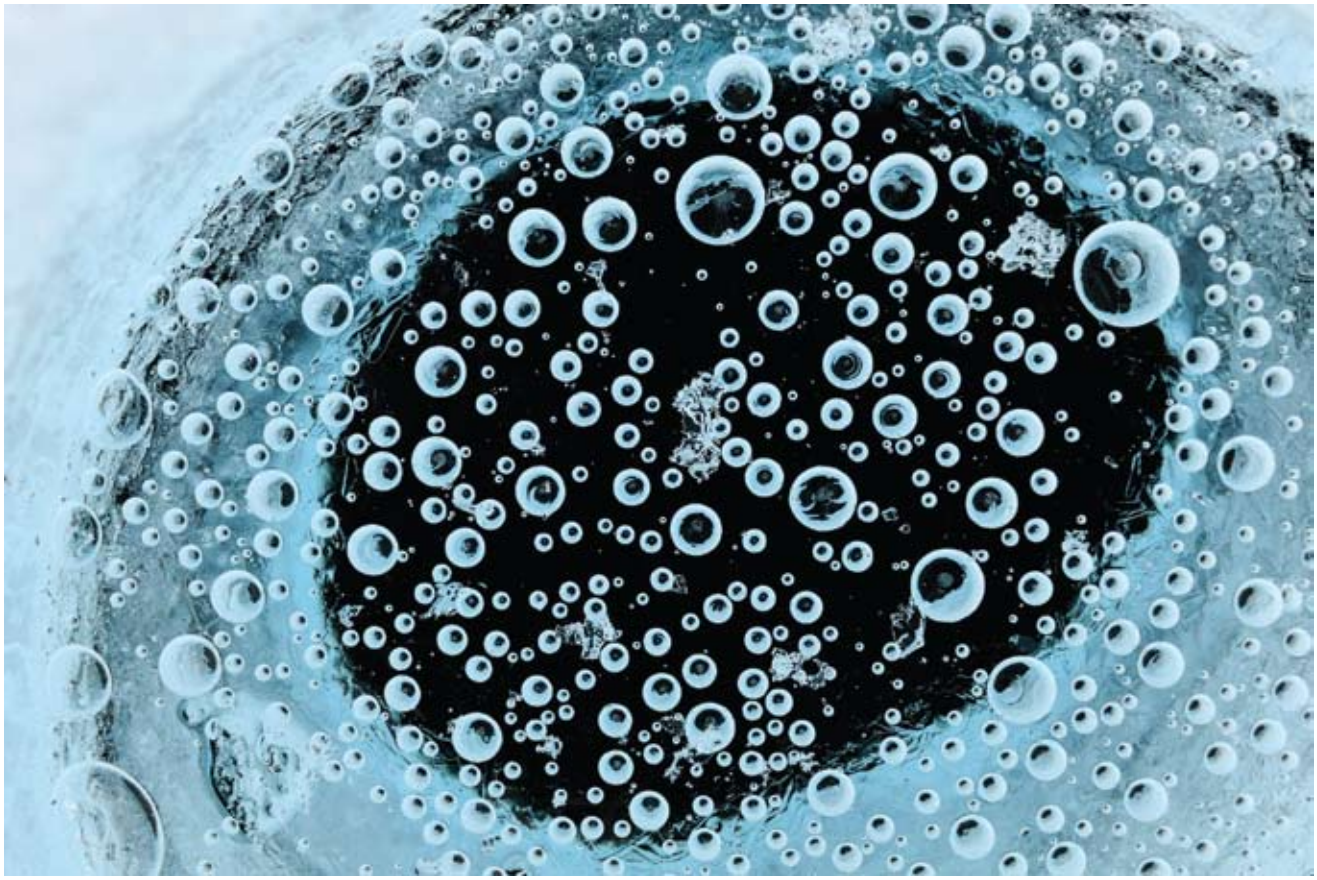

PHOTO © JAMES BALOG

passes the entire portion of the natural world that consists of water in its solid state. That's 70 percent of all the freshwater on earth, which consists of 5.8 million cubic miles of sea ice, river and lake ice, snow cover, the polar ice caps, frozen ground, permafrost, and the cryosphere's superstars—Earth's gigantic, slow-moving glaciers.

The process by which glaciers are formed, beginning with the accretion and compacting of snowfall that, over time, stubbornly refuses to melt is, perforce, a gradual phenomenon. The resulting masses of crystal blue ice date back thousands, in some cases millions, of years, making the glacier a reliable archive of our natural history. For years, core samples from these landforms, through the analysis of frozen dust particles, isotopes and trapped gas bubbles, have given up detailed clues to past geologic and climatic events. And, it's no surprise to anyone that in today's world the glaciers are documenting another phenomenon—an environmental catastrophe in the making.

Williams spells it out in one spare poetic verse:

"Ice holds the history of the world.
The history of the world is melting."

Network of Robots

Balog's career as an environmental photographer, with scores of credits in *National Geographic*, *Vanity Fair*, the *New Yorker* and so on, has been built upon observing the vulnerability of powerful motifs in the life of our planet: endangered animal species; the fate of old-growth forests; and more recently, the dazzling mutability of the world's great ice sheets. He's always been deeply affected by the other-worldly beauty of this sometimes maddeningly and unpredictable substance: "Fickle as air," he writes in the book's introduction, "obdurate as rock, ice mutates into forms that seem more the substance of dreams than the dimensional world."

PHOTO © JAMES BALOG

Above: *Bubbles of ancient air rise from Greenland Ice Sheet as it melts, Greenland, July 2008.*

Left: *Greenland trip, June 2010, with Ginny Jordan, Harvey Stone and Adam Lewinter.*

You may look at the amazing images on these pages—such as the macro shot of air bubbles that are 15,000 years old and escaping from the melting Greenland Ice Sheet, or the vertically striated walls of fast-melting Furtwangler Glacier on black substratum atop Mount Kilimanjaro—and wonder, "Am I still on Planet Earth?" The key word here is "melting," and Balog's emotional connection to the phantasmagoria of the icy world is driven by the understanding that, however beautiful the process, his camera is recording a vanishing resource. This understanding was the genesis of the Extreme Ice Survey. Right now, EIS's network of 27 astonishingly rugged remote-controlled cameras (Balog calls them his "little robotic friends") is photographing 18 glaciers from Greenland, Iceland, Alaska and the Andes, to the Nepalese Himalaya (just south of the dreaded Khumbu Ice Fall; the nightmare of every Mt. Everest wannabe since Edmund Hillary), and the Rocky Mountains. The cameras are built to operate in practically lunar extremes of temperature and winds to 160 mph, each generating around 8,000 frames per year, and nearly all documenting the steady diminution of their respective ice fields as greenhouse gases accelerate the heating of our atmosphere. What they demonstrate, Balog asserts, is not open for debate: "There's nothing hypothetical about this process," he writes; "the science has been understood in general terms for more than a century and quantified by real-world measurements for half a century." But he knows that no amount of anguished rhetoric, or ominous warnings from scientists, speak as eloquently to the sadly politicized issue of global warming as his photographs, the images made by other EIS team members [like scientist and EIS adviser Dr. Konrad Steffen, who shot the image on pg. 30 here] and especially his far-flung robotic messengers. These devices, Balog writes, add a fourth dimension to the photographic process: "time…constantly re-sculpting every molecule of frozen water. [The robots'] eyes blink open every 1,800 seconds, recording landscapes that will never be seen again in the foreseeable history of civilization."

Anyone who doubts, since the advent of digital imaging, that the camera is legitimate as a teller of facts should look to this extraordinary collection in *ICE* and the silent truth to which it bears witness. There's no fancy post-production at work here, no Photoshop or labored HDR imaging, but instead, for the most part, just the remote-controlled work of EIS drones, deployed across the globe to watch and to capture a grave incremental change to our planet. And every serious photographer should consider the book's other, implicit and ironic, message: that such a dire story can be told by elegant and rhapsodic imagery—in this case, Balog writes, by "the art and architecture of ice." **RF**

Writer and photographer Jim Cornfield (www.jimcornfield.net) is a regular contributor and book reviewer for Rangefinder. *He's also published features for* Scientific American Earth 3.0 *on whale and butterfly migrations, permafrost studies in northern Canada, and the behavior of great white sharks.*