

Celebrating Women of Discovery

by Moki Kokoris

Polar explorers and researchers are a rare breed. Even less commonly do they happen to be women, some of whom excel in their fields of interest and study extraordinarily enough to merit our attention and also accolades from notable institutions and organizations. WINGS WorldQuest is one such organization, whose mission it is to recognize and support visionary women who dedicate their lives to the advancement of scientific inquiry and environmental conservation. WINGS WorldQuest proudly shares and disseminates their stories and knowledge, with the objective of inspiring a new generation of female explorers, scientists and environmental stewards.

Each year, WING WorldQuest holds its Women of Discovery Awards gala event, which honors cutting-edge scientists and adventurers for making significant contributions to world knowledge through exploration. The awardees for 2011 were chosen for their pioneering research in human/environmental conflict, atmospheric chemistry, marine conservation, and Arctic survival.

The Sea Award was given to Anna Cummins, a specialist in marine conservation, sustainability, and ecology education.

The Courage Award went to Canadian herpetologist Kate Jackson for her groundbreaking work with snakes in Africa as chronicled in *Mean and Lowly Things: Snakes, Science, and Survival in the Congo*.

The Humanity Award was given to Gladys Kalema-Zikusoka, founder of Conservation Through Public Health, who has been instrumental in gorilla conservation in her native Uganda.

The Earth Award was granted to Catherine Powers, who studies mass extinction events, and noted that the extinction process in marine communities can be detected by the distribution of marine invertebrates that live on the ocean floor.

Separately, in recognition of their outstanding contributions to exploration and scientific research, WINGS WorldQuest also honored three women, who are already established in their respective careers, as Fellows:

Polly Wiessner, an anthropologist who spent three decades studying social networks and survival among the Kalahari Bushmen of southern Africa, and issues of warfare, reli-



Gretel Ehrlich with her Inuit guide. Greenland.

gion, and exchange among the Enga of Papua New Guinea. Her more recent research focuses on the impact of globalization on traditional systems to understand how people adapt to a rapidly changing world.

Katey Anthony, who made headlines in 2007, when she and her team determined that methane bubbling out of numerous lakes in the Arctic was the likely source of the spike in atmospheric methane at the end of the last Ice Age. Her estimates are that ten times the amount of methane that is currently in the atmosphere will be released from these lakes as the Earth warms and permafrost thaws.

For on-the-spot confirmation of gas content, Katey strikes a match just above the hole. When flames leap out of the opening ... she has found methane.

Gretel Ehrlich, who is considered one of the great environmental writers of our time. She is the author of 14 books, including *The Solace of Open Spaces*, which was an overnight success, winning her many literary awards, and *This Cold Heaven: Seven Seasons in Greenland* and *The Future of Ice: A Journey into Cold*, both of which focus on life in the Arctic in a time of global warming.

Because of their polar bearing, Katey's and Gretel's Arctic endeavors warrant further elaboration.

Dr. Katey M. Walter Anthony is currently Assistant Professor at the Water and Environmental Research Center at the University of Alaska in Fairbanks, and is the recipient of the National Geographic Society's Early Explorer Award. She is also project coordinator for Russian-U.S. collaboration to monitor long-term climate change in cold regions, worked as Research Program Manager at The Prince William Sound Science Center and was a member of the Exxon Valdez Oil Spill Trustee Council. Katey also contributed methane research data to Al Gore's presentations to the U.S. Senate, and her work was included in numerous scientific articles and media ventures on climate change.

As the polar regions warm, rapidly thawing permafrost creates new Arctic lakes in a process called thermokarst lake formation. Katey's research reveals that as these lakes appear, the carbon that had been locked in the ground for thousands of years, converts to methane and carbon dioxide — the two most potent and volatile greenhouse gases. Traveling through Alaska and Russia, Katey explored this dangerous, self-perpetuating cycle: thawing permafrost caused by global warming releases methane, which contrib-

utes to global warming. The effects of the gas inside the bubbles she observed in Siberia's lake ice will eventually be felt across the entire planet. It is estimated that 50 billion tons of methane could enter the atmosphere from these lakes alone, which could cause global warming to accelerate beyond all previous projections.

Katey's fieldwork often brings her to areas that have been dubbed "drunken forests" — places where thawing permafrost has transformed woodlands into soggy wetlands dotted with dead and dying trees that tilt at haphazard angles. On particularly wet and cold mornings, she and her team put on frozen-stiff clothes, and venture out onto thin lake ice. After shoveling off snow, they chop open holes in the ice and lower plastic bubble traps into the water. A valve allows samples to be taken and brought back to the lab for further analysis. But for on-the-spot confirmation of gas content, Katey strikes a match just above the hole. When flames leap out of the opening — at times as high as the trees themselves — she has found methane. One of her more famous videos showing this phenomenon can be viewed at the following link: <http://www.youtube.com/watch?v=YegdEOSQotE>

Her connection with Siberia began when she was a high school exchange student, and her bond with the country and its people intensified when she returned to the region to work at a science station as a graduate student. According to Katey, Russian scientists were first to link thawing permafrost with methane release, and her long-term understanding of their unique capabilities helped her facilitate collaborations between scientists in Alaska and Russia, who now work together to monitor climate change.

Her fieldwork endeavors are harsh, risky and oftentimes lonely, but for Katey, they are deeply rewarding. She says, "I feel such a strong emotional tie with these extreme remote places. People who can last here love it. We chop firewood, collect berries, and fish. I like preserving those relationships with the land. When life is a little bit hard, it makes you appreciate the times you can come in and have a cup of soup."

Katey's statement is mirrored by a similar quotation by Gretel Ehrlich: "Everything in nature invites us constantly to be what we are.... There is nothing in nature

that can't be taken as a sign of both morality and invigoration."

A devout environmentalist, consummate world traveler, and dubbed the Walt Whitman of Wyoming, Gretel Ehrlich is the author of 14 books, many of which earned awards such as the PEN Henry David Thoreau Prize and the Whiting Award. Her writing has appeared in *The New York Times*, *National Geographic*, *Harpers*, *The Atlantic*, *Time*, *Life*, *Architectural Digest*, *Audubon*, *Tricycle* and *Outside Magazine*, among other publications. In 2000, Gretel's *National Geographic Adventure* article on the Inuit of Greenland was

nominated for a Feature Writing Award by the National Magazine Awards.

After being struck by lightning in 1991 (she recounted her ordeal and recovery in a memoir titled *A Match to the Heart*), she journeyed to Greenland to "get above tree line," where the latitude and altitude helped her manage and treat her irregular heartbeats. Made possible by a National Geographic Expeditions Grant for the 2007 International Polar Year, Gretel traveled to the Arctic by skin boat, fixed-wing aircraft, helicopter, reindeer, and dogsled to live among the Inuit people. Through her narratives, she shares with her readers her extensive scientific and cultural expertise, and probes Inuit spirituality.

It is in *This Cold Heaven* that she chronicled her many expeditions to Greenland over the course of seven years, during which she immersed herself in the subsistence lifestyle of Inuit hunters who, as the Arctic continue to warm and melt, are witnessing the destruction of their ecosystem and their way of life. The book talks about the history of the Inuit people who have existed there for nearly five thousand years, but it is Gretel's personal stories that bring it all to vivid light. Gretel experienced Greenland in every season, including the "dark time," and she also traveled on the ice during the bright midnight sun months. Interlaced with her accounts are excerpts from Knud Rasmussen's [the Danish-Inuit explorer and ethnographer] expedi-

tion notes, written between 1917 and 1924, which help elucidate the spiritual and material life of the Inuit hunter and villager before modernization.

When asked during an interview whether there is anyone in Greenland who doesn't know or isn't in some way related to Knud Rasmussen, Gretel mirthfully says: "Probably a couple of people. It's a tiny population. Of course, there are people... but everywhere you go, there is somebody whose grandmother sewed for him or whose great uncle traveled with him. He went on seven big expeditions and then he was around a lot so everybody had something to do with him."

With her deep insights and understanding of their society, Gretel believes that Inuit culture will survive, but with many adaptations and strong resolve. Their subsistence lifestyle is threatened by dramatic and rapidly changing conditions across the Arctic as a whole as the negative impacts of global warming multiply, but the Greenland Inuit have the political sophistication to fight for what they want. They travel to the capitol and testify in front of Parliament, insisting that they wish to maintain their traditional ways of life. There are enough of them who haven't been co-opted by the material empires of the West. They

Gretel traveled to the Arctic by skin boat, fixed-wing aircraft, helicopter, reindeer, and dogsled to live among the Inuit people.



Methane pockets accumulated in winter lake ice are flammable. Katey Walter Anthony, researcher with the Water & Environmental Research Center at the University of Alaska Fairbanks, lights methane as it escapes from a bubble in a frozen lake in Siberia.

love their life. They are proud of who they are. They love nothing better than to go out with their dogs on the ice. They are also very aware that this is a fight for everyone everywhere to keep what's good and what should be respected.

So, it is to WINGS WorldQuest who salutes them and to the women honorees and their passions that we owe our gratitude, and whose endeavors we should all strive to not only encourage but also emulate. □