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**we** MAGAZINE

**Climate Change**

**Antarctica**

Not Just Ice and Ocean

**Brazil**

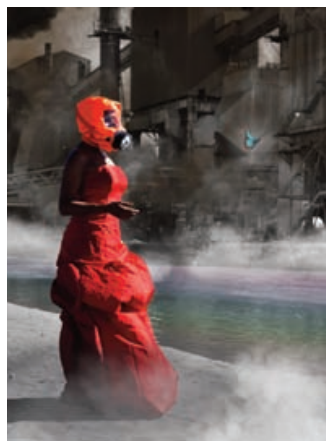
Water Woes, Climate  
Change and Security

# The Deeper Shades of White

**13**

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# CONTRIBUTORS



## Sebastian Copeland

Sebastian Copeland is an award-winning photographer, explorer, author, and environmental activist. Sebastian has led expeditions across the Arctic Sea, Greenland and Antarctica, covering over 8,000 kilometers on skis over the ice and earning four world records in the process. An international speaker on the climate crisis for more than a decade, Sebastian has addressed audiences at the UN, at universities and museums worldwide, and many Fortune 500 companies, warning of the systemic transformations taking place in the polar regions due to anthropogenic activities, and their geopolitical consequences. Sebastian has been noted as a photographer "who has produced works that are of outstanding artistic merit and communicates messages of urgent global significance." Sebastian sits on the board of directors of President Gorbachev's Global Green USA.



## William Shubert

is the Senior Project Coordinator for Internews' Earth Journalism Network. As a coordinator of a global network of environmental journalists, William helps make tools that enable people to connect with each other, find material support, and amplify their local stories to global audiences. In his previous position at National Geographic Magazine, he coordinated translations for the magazine's 32 local language partners. He holds a degree in geography from Humboldt State University with concentrations in cartography, environmental economics, and Chinese studies. Outside of work, he devotes his time to the development of a free school dedicated to community building through education and to collaborative mapping and audio projects.



## Nathalie Rosa Bucher

is a features writer with a passion for the seventh art, a keen interest in culture and mobility, as well as social and environmental subjects. Half French, half German by origin possibly explains why she is drawn to divided countries and diverse societies: she called Cape Town in South Africa home for over a decade before coming to Beirut.



## Mona Samari

Originally Tunisian, and born in London, Mona comes from a human rights and environment protection background, with over ten years' experience as a campaigns and communications professional. Over the years, Mona has worked on a number of human rights campaigns with a special focus on access to information, freedom of expression and whistleblower protection. As part of the International Partnership Group for Azerbaijan, Mona worked on the release of imprisoned Azeri journalist Eynulla Fattulayev, who was awarded the 2012 UNESCO Press Freedom Prize. More recently, Mona established the Middle East Office of ARTICLE 19 in Tunisia and organized workshops for journalists in rural areas of Tunisia on how to guarantee freedom of expression in the new constitution.

In addition to human rights work, Mona has been working on major marine conservation campaigns since 2007, with a special focus on commercial endangered species conservation in European waters and more recently, Antarctic ocean conservation campaigns. Mona was further more involved in the launch of the Arab Youth Climate Movement in 2012. In her spare time, she curates art exhibitions in London.



## Steve Campbell

is the Campaign Director for the Antarctic Ocean Alliance. He has nearly 20 years' experience in environmental and social change campaigning. Steve has worked for Greenpeace in Australia, Papua New Guinea, China, Indonesia, Europe and the Pacific, as well as working for numerous grass roots organizations in Australia. Steve holds an honors degree in law from Macquarie University, Sydney.



## John Weller

is a critically acclaimed photographer, writer and filmmaker whose work ranges from shark protection in Micronesia to Ross Sea (Antarctica) conservation. Weller has been a SeaWeb Fellow since 2005 and was named a Pew Fellow in Marine Conservation in 2009. His library of Ross Sea photographs has been used by conservation organizations all over the world, published in dozens of magazines and publications, including National Geographic; and showcased at the 2009 and 2011 Antarctic Treaty Consultative Meetings. Weller also produced a short film, which was a finalist in the 2010 Blue Ocean Festival.

"The good news is, we have everything we need now to respond to the challenge of global warming. We have all the technologies we need, more are being developed.... But we should not wait, we cannot wait, we must not wait."  
- Al Gore

# CLIMATE CHANGE

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Text & Photos By Sebastian Copeland

# The Deeper Shades of White





Photo by Keith Heger



Sebastian stands  
at 90N degrees,  
the Geographical  
North Pole



Eventually it would seem, everyone who travels there is forced to ponder the same questions: Who am I, and why am I here?

I have spent a significant part of my life traveling the largest bodies of ice in the world on foot. With 8,000 kilometers under my skis, I have fallen through the sea ice into the Arctic sea, I have been beaten by gales, blinded by total white outs—and everything in between. On Antarctica alone, I spent 82 days on skis and kites, crossing 4,000 km of its frigid plateau with no outside help. The temperatures rarely warmed beyond 35C below outside of wind chill. In the winter, these will regularly drop below minus 80C.

Aside from its location at the Earth's southernmost latitudes, what makes Antarctica so cold is its elevation. Ascending the glacier on the way to the plateau, the dry cold air hits you in the face like a fist of needles. Amidst the crevasse fields, the vertical mountain peaks that pierce through the ice on their way to the sky make for a dramatic and spectacular backdrop. But it won't last. Those peaks are gasping for air: they are fighting a losing battle with the mammoth ice sheet that soon buries them the higher you climb.

And after that there is nothing, just endless white space.

Away from the coasts, Antarctica is but a flat desert. There are no food sources, and there is no life. No smells, no significant features, no contrails overhead, and no sounds but for those left by the wind on the

ice and the sky. When the white clouds overtake the terrain and the winds shut off entirely, all that is left is a frigid void. No detail on the ground, no horizon to level your eyes and separate dimensions, and a silence that will pierce your eardrum while booming your heart. A whiteout on Antarctica feels like being lost inside an eggshell. With nothing but sky and frozen matter for months, at an average elevation of 12,000 feet, the ice, to the casual observer, may look like a tedious sheet of white. The visual monotony can seem underwhelming. But I can honestly say that no two days ever look alike. An ice sheet is a powerful entity, alive and dynamic. The Antarctic ice is up to 3 million years old, its mass constantly and unperceptively moving, finally calving to the sea. Deep in the heart of the continent, the only features are the variations in cloud cover, and those left by the wind on the ice, they provide Antarctica its unique visual identity. The sun's low angle combined with a stripped down color spectrum creates monochromatic displays of hard cold light and shadows. High on the plateau, the ice will occasionally take on systematic patterns aligned with the dominant katabatic winds. The carved shapes, called sastrugi, can reach two meters high on Antarctica, sculpted one particle at a time by the violent winds. For the most part, the interior is an endlessly

mangled field of hard ice. Short of riding a rocket to outer space, Antarctica is the closest you'll get to visit another world.

In 1909, Sir Ernest Shackleton had reached what was then the farthest south. By 1911 and 1912 respectively, Amundsen and Scott famously attained 90 degrees latitude south. Since then, countless explorers have been drawn to this land of superlatives attempting to leave their mark. All have experienced to varying degrees the very same feeling that overwhelmed these polar heroes when they set foot on the polar plateau: no other place makes you feel smaller and more alone than Antarctica.

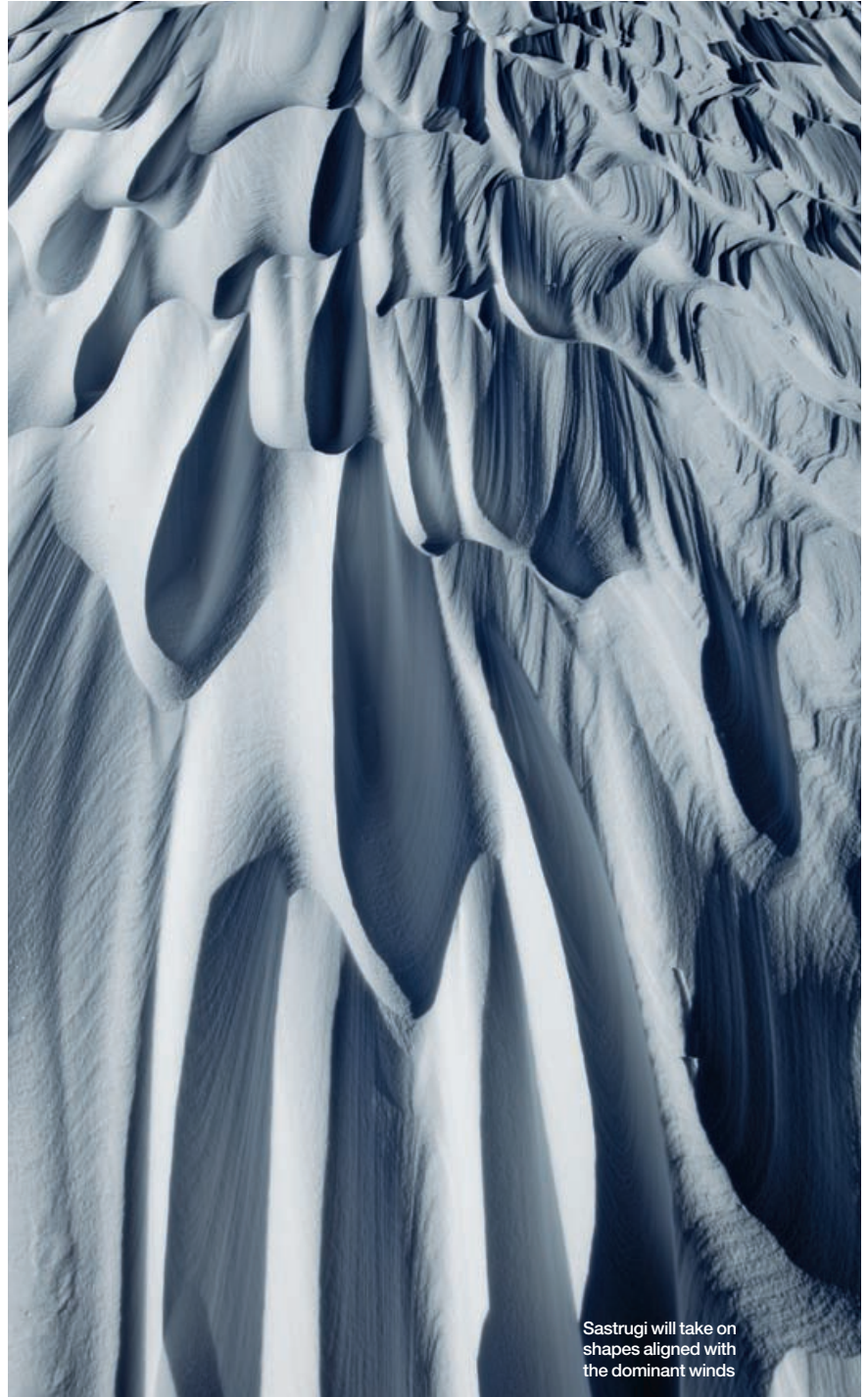
Surprisingly, considering today's technology, the continent retains many of the mysteries it held one hundred years ago. In the age of global positioning systems and scientific breakthroughs, Antarctica remains the least explored landmass in the world. In 2012, giant subterranean lakes where first explored two miles below its surface, revealing up to 15 million year old secrets. While ice cores are now telling stories of the Earth's atmosphere during the last 1.5 million years. Given its isolation from environmental disturbance (sound, pollution) scientists at the South Pole Station can make fair measurements of carbon concentration in the atmosphere. They also have the >



Sastrugi are shapes  
sculpted by the powerful  
Antarctic winds







Sastrugi will take on shapes aligned with the dominant winds

cleanest natural terrestrial lab for neutrino studies. I visited the program there and I felt that I had walked into a Star Trek episode. But Antarctica remains a polarizing and confusing natural phenomenon giving fodder to opinion makers and season tickets to climate deniers. Changes taking place there reflect

the complex non-linear patterns of the Earth and its natural variabilities, commensurate with a landmass one and a half time greater than the US. What happens in East Antarctica does not reflect its western half anymore than climate events in Florida relate to those in Washington State. Some areas of Antarctica have >









Sastrugi head, sculpted one particle at a time, can reach two meters in Antarctica





80 miles per hour winds  
on the ice sheet



Pulling 400 lbs up the  
glacier in East Antarctica is  
like pulling a house uphill!