Confronting climate change in the age of denial

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Forest fire in Yellowstone National Park Credit: Mike Lewelling, National Park Service

People are hard-wired to respond to stories, but climate-denial narratives can be just as compelling as those that convey the facts about global warming. A new collection, "Confronting Climate Change in the Age of Denial," publishing 9 October in the open access journal *PLOS Biology*, explores the challenges and pitfalls of using stories to communicate

scientific evidence around climate change, offering both caveats and potential solutions to telling evidence-based climate change stories that can resonate with the public.

Science communicators and educators have long wrestled with the challenges of communicating evidence that contradicts people's personal, religious, or political beliefs, particularly regarding evolution, vaccine safety, and climate change. A perfect case study of people's tendency to create their own narratives to explain the seemingly inexplicable is the recent viral response to a photo of a starving polar bear. The photographers had hoped the starving bear could help people grasp what the future may hold for animals who can no longer depend on sea ice for hunting and shelter as global warming continues to melt polar ice sheets. But climate change deniers countered by circulating photos of healthy bears to claim that global warming is a hoax.

The collection features two articles by social scientists who offer different perspectives on enlisting narratives to convey climate change science and one by marine mammal experts who set the record straight on the likely impacts of climate change on Arctic wildlife.

"Marine mammals are ecosystem sentinels, capable of reflecting ocean variability through changes in their ecology and body condition," argue Sue Moore, a biological oceanographer, and Randall Reeves, a marine mammal biologist, in "Tracking Arctic Marine Mammal Resilience in an Era of Rapid Ecosystem Alteration." They propose a framework that adds ecological (e.g., geographic range and behavior) and physiological indicators to traditional demographics to provide a more comprehensive view of the health of populations. The authors hope that their framework, which can feed into existing global ocean surveys, offers "a path toward sustainability through improved prediction, more precaution, and wiser policy in this era of global environmental change."

In "Climate Communication for Biologists: When a Picture Can Tell a Thousand Words," psychologists Stephan Lewandowsky and Lorraine Whitmarsh examine strategies for using the anecdotes and images that satisfy our need for narrative without sacrificing scientific accuracy.

Science communication experts Michael Dahlstrom and Dietram Scheufele explore another dimension of the peril and promise of using stories to communicate science in "(Escaping) the Paradox of Scientific Storytelling." Rather than telling stories to simply impart knowledge—which may prove unsuccessful, they say, since increased scientific literacy does not lead to greater acceptance of science—it may be better to tell stories about how scientific knowledge is produced. "In the end, using storytelling to primarily build scientific support through knowledge, attitude, or behavior goals without also engaging scientific reasoning might not help science in the long run."

In publishing this collection, *PLOS Biology* editors hope that everyone who values unbiased scientific evidence thinks about ways to harness storytelling to help people grasp this complex but very real threat to our planet. We need to reclaim the storyline before it's too late.

More information: Liza Gross, Confronting climate change in the age of denial, *PLOS Biology* (2018). DOI: 10.1371/journal.pbio.3000033

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