

# The Science Police

*On highly charged issues, such as climate change and endangered species, peer review literature and public discourse are aggressively patrolled by self-appointed sheriffs in the scientific community.*

**I**n 2013, Canadian ecologist Mark Vellend submitted a paper to the journal *Nature* that made the first peer reviewer uneasy. “I can appreciate counter-intuitive findings that are contrary to common assumption,” the comment began. But the “large policy implications” of the paper and how it might be interpreted in the media raised the bar for acceptance, the reviewer argued.

Vellend’s finding, drawn from a large meta-analysis, challenged a core tenet of conservation biology. For decades, ecologists have held that the accelerated global rate of species extinctions—known as the biodiversity crisis—filtered down to local and regional landscapes. This belief was reinforced by dozens of experimental studies that showed ecosystem function diminished when plant diversity declined. Thus a “common assumption” was baked into a larger, widely accepted conservation biology narrative: urbanization and agriculture, among other aspects of modern society, severely fragmented wild habitat, which, in turn, reduced ecological diversity and eroded ecosystem health.

And it happens to be a true story—just not the whole story, according to the analysis Vellend and his collaborators submitted to *Nature*. In actuality,

plant diversity at localized levels had not declined, they found. To be sure, in landscapes people had exploited (for example, for agriculture or logging), habitat became fragmented and nonnative species invaded. But there was no net loss of diversity in these remnant habitats, according to the study. Why? Because as some native species dropped out, newer ones arrived. In fact, in many places, species richness had increased.

The peer reviewer did not hide his dismay:

Unfortunately, while the authors are careful to state that they are discussing biodiversity changes at local scales, and to explain why this is relevant to the scientific community, clearly media reporting on these results are going to skim right over that and report that biological diversity is not declining if this paper were to be published in *Nature*. I do not think this conclusion would be justified, and I think it is important not to pave the way for that conclusion to be reached by the public.

*Nature* rejected the paper.

Although it was published soon after by the *Proceedings of the National Academy of Sciences*—without triggering media fanfare, much less public confusion—the episode unsettled Vellend, who is an ecology professor at the University of Sherbrooke, in Quebec. His uneasiness was reinforced when he

presented the paper at an ecology conference and several colleagues voiced the same objections as the *Nature* reviewer.

Vellend discusses all this in an essay that is part of a collection titled *Effective Conservation Science: Data Not Dogma*, to be published by Oxford University Press in late 2017. His experiences have left him wondering if other ecology studies are being similarly judged on “how the results align with conventional wisdom or political priorities.”

The short answer appears to be yes.

In their introduction to the upcoming book, the ecologists Peter Kareiva and Michelle Marvier write: “Working as editors for some of the major journals in our field, we have seen first-hand reviewers worrying as much about the political fallout and potential misinterpretation by the public as they do about the validity and rigor of the science.”

The book tackles the philosophical and scientific issues that have divided the field of conservation biology in recent years. A major theme in the fractious debate is the underlying tension between science and advocacy, both of which are coded equally into the DNA of the field. As a 2012 article in the *Chronicle of Higher Education* noted, the schism is fundamentally about “a science grappling with its identity,” or as I put it in an article in the Winter 2015 *Issues in Science and Technology*, a “battle for the soul of conservation science.”

To a certain degree, the rift is also a power struggle. The ecologists who founded conservation biology in the 1980s have served as influential advocates for the preservation of endangered species and biodiversity. They were instrumental in elevating the issue to the top of the global environmental agenda. These well-known scientists, such as E. O. Wilson, Michael Soule, and Stuart Pimm, have strong feelings about the best way to achieve what they believe should be a nature-centric goal. They are protective of the successful cause they launched and, unsurprisingly, dubious of new “human-friendly” approaches to conservation that Kareiva and Marvier, among others, have proposed in recent years.

If conservation science is in service to an agenda, which it is regardless of the approach, then it seems inevitable that research would at times be viewed through a political or ideological prism. The *Nature* reviewer’s politically minded comments provide a case in point. When I talked to Vellend about this, he shared a haunting concern. “The thing that’s worrisome to me, as a scientist, is that here’s one person [the reviewer] who actually, to their credit, wrote down exactly what they were thinking,” he

said. “So how many times has someone spun their reviews a little to the negative, with those sentiments exactly in mind, without actually stating it?”

To what extent unconscious or veiled bias influences scientific peer review is impossible to know, of course. But Vellend has reason to worry about his discipline. In 2012, the editor of the field’s flagship journal, *Conservation Biology*, was fired after she asked some authors to remove advocacy statements they had inserted into their papers. As Vellend reminded me: “People get into our field, in part, with a politically motivated goal in mind—to protect nature and a greater number of species.” That’s totally fine, even admirable, but it also goes to the heart of the conflict roiling conservation biology: how to reconcile its purpose-driven science with its values-driven mission.

Vellend appears to have been caught in the crossfire. His paper revealed a nuanced, complex picture of biodiversity that some ecologists feared would undermine the conservation cause. In case Vellend didn’t get the message, a fellow scientist has gone even further and repeatedly harangued him by e-mail. At one point, Vellend asked the individual to desist, unless his tone became more constructive. The answer was disconcerting and a little creepy: “You better get used to it, because you’re going to be hearing a lot more from me,” the person responded by e-mail. “Consider me your personal scientific watchdog.”

In an article in the Winter 2017 *Issues in Science and Technology*, I reported on the different ways journalists and researchers working in the scientific arena are hounded and sometimes smeared by agenda-driven activists. A similar activity that is equally pernicious, if not much discussed publically, is the different ways scientists are aggressively policed (and also sometimes unfairly tarred) by their peers. It’s the ugly side of science, where worldviews, politics, and personalities collide.

It seems that highly charged issues, such as climate change, engender the most active policing in the scientific community and that the intensity of this policing is proportional to the perceived influence of the person on the receiving end of it. I’ve also observed another common strand: those in the scientific community who become preoccupied with the public interpretation or political implications of scientific findings tend to deputize themselves as sheriffs of scientific literature and public debate.

Although this appears to explain Vellend’s experience, he considers himself one of the lucky ones. “My story stops a few steps short of the horrors I’ve

heard,” he says.

This is true. On one extreme end of the policing spectrum sit people whose reputations have been shredded. Elsewhere along this continuum are those who have been blacklisted from academic meetings, bullied on social media, and slimed in the blogosphere.

Why does it happen, and what is the impact on science?

### **The academic climate**

Until recently, Roger Pielke Jr. spent most of his career teaching in the Environmental Studies program at the University of Colorado, Boulder. An interdisciplinary scholar, his research for over two decades was at the intersection of public policy, politics, and science—largely in the treacherous

in the increased frequency or severity of extreme weather disasters.

If you canvass scholars in the environmental and climate policy world, a number of them will say they cross swords with Pielke, but they also respect him and teach his work. “I disagree with him about many things, but think he is someone who is worth reading and taking seriously,” says Jonathan Gilligan, an environmental sciences professor at Vanderbilt University. “I teach his book *The Climate Fix* every year precisely because I want my students to read someone who is smart and disagrees with me, in order to encourage them to think for themselves.”

This intellectual caliber is presumably what led the statistics whiz Nate Silver to hire Pielke in 2014 to write for FiveThirtyEight, the data journalism website that Silver created that year. Pielke’s first

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climate arena, where every utterance can be weaponized for rhetorical and political combat.

Thus, it is perhaps not surprising that Pielke has come to be defined not so much by his actual research, but by his public commentary and barbed jousting with peers and the reaction that has spawned on Internet forums, influential blogs, and elsewhere.

To the casual observer, his story is a puzzling contradiction. Pielke is among the most cited and published academics on climate change and severe weather. Yet he says he has been told by a National Science Foundation (NSF) officer: “Don’t even bother submitting an NSF proposal, because we won’t be able to find a reviewer who will give you a positive score.”

Pielke defies categorization. He believes that global warming is real and that action to curtail human emissions of greenhouse gases is justified. He is in favor of a carbon tax. At the same time, he has for many years openly feuded with climate scientists. As *Science* magazine noted in 2015, “Pielke has been something of a lightning rod in climate debates, sometimes drawing attacks from all sides as a result of his view on research and policy.” The controversy centers on his research finding that although the climate is warming, this does not necessarily result

column questioned the strength of the evidence supporting the widely shared assertion among climate scientists that extreme weather disasters had become more prevalent in recent decades because of human-caused climate change. The uproar in the climate advocacy community was immediate and furious. Although Pielke had previously presented the same argument in the scholarly literature and in comments to science reporters, advocates were seemingly incensed that this perspective would now receive widespread public attention on Silver’s popular new website.

The Center for American Progress, a left-leaning Washington, DC-based think tank, used its influential blog, *Climate Progress*, to spearhead a campaign to discredit the column and Pielke’s reputation (something its lead blogger had already turned into a pet cause). The effort worked. After it became clear to Pielke that FiveThirtyEight would not let him write about climate issues anymore, he left the site within months of being hired. When news of his departure became public, the editor of the center’s blog bragged in an e-mail (disclosed in a 2016 WikiLeaks dump) to one of its wealthy donors: “I think it’s fair [to] say that without Climate Progress, Pielke would still be writing on climate change for 538.”

The episode followed on the heels of Pielke's clash with John Holdren, then President Obama's science advisor. Holdren had testified to Congress that on the issue of climate change and severe weather, Pielke's interpretation of the data was "not representative of mainstream views on this topic in the climate science community." Pielke found this offensive. He responded on his blog: "To accuse an academic of holding views that lie outside the scientific mainstream is the sort of delegitimizing talk that is of course common on blogs in the climate wars." It is perhaps understandable why Pielke bristled at being characterized as outside the "mainstream." His harshest critics have branded him a climate "skeptic" or "denier," a pejorative tag that has made its way into blogs and some media outlets.

The cumulative effect of the controversies and assault on his reputation by detractors has taken a personal and professional toll. He's become radioactive even to those sympathetic to him: "I've had people tell me, 'I can't be seen working with you, because it might hurt my career.'" Pielke mentions how one "very close colleague" said he had wanted to come to his defense on social media, then admitted: "But I don't want them [Pielke's critics] coming after me."

"I get it," Pielke says.

Unable to escape the tar flung at him in the climate world, he's recently pivoted from climate research to sports governance, also at the University of Colorado. "Yeah, I have a new career now," Pielke says. "I'm sitting in the athletic department. I've moved on." Still, Pielke finds it difficult to let go of his old life completely. Several months ago, he testified before Congress about his climate research and the efforts to silence him. He also remains an active participant on social media, with about a quarter of his tweets climate related.

In December 2016, he penned an op-ed for the *Wall Street Journal* titled, "My Unhappy Life as a Climate Heretic." In the column, Pielke said that he is on the right side of the climate-severe weather debate in terms of where the evidence lies, but that this is an "unwelcome" view because it is perceived to be undermining the climate cause. He went on to say that the "constant attack" on him over the years is a form of bullying that was intended to "drive me out of the climate change discussion."

After Pielke's op-ed was published, Gavin Schmidt, a climate scientist and director of the NASA Goddard Institute for Space Studies, essentially rolled his eyes on Twitter. He said that Pielke "playing the victim card" doesn't cut it and that, in any case, "what

goes around, comes around." Schmidt's tweet (which was part of a larger thread) suggested that Pielke's situation did not owe to qualms about his research; it was more a Karmic reckoning.

Michael Tobis, another climate scientist who has locked horns with Pielke, posted a more judicious response on a widely read climate science blog. "Roger is a problematic figure, who is quick to criticize while being quick to take offense," Tobis wrote. "He's often right and often wrong, which can be a useful role in itself, but he ought to be able to take as well as he gives if he wants the net of his contribution to be constructive."

These views by Schmidt and Tobis are echoed by others in the climate science community. To understand why Pielke has experienced such a backlash, it is necessary to rewind the story more than a decade, to a time when climate scientists were feeling as deeply and unfairly maligned as Pielke feels today.

### The bad old days

In the 1990s and 2000s, as concerns about global warming increased and environmentalists made it their signature issue, climate scientists found themselves thrust into a contentious, high-stakes debate. The planetary implications of their research and the staggering policy and political challenges it presented turned climate science into an academic war zone.

The field came under fire from conservative lawmakers, dissident scientists, industry-funded think tanks, and a small but forceful army of bloggers and pundits whose motivations ranged from honest skepticism to partisan ideology. In this hostile milieu, legitimate, intellectually grounded critiques of climate research and policy were viewed with much suspicion in parts of the climate science community.

When there's a war, people are expected to choose sides: *Are you with us or against us?*

Amidst this backdrop, a group of climatologists in the mid-2000s started a blog called *Real Climate*. (The blogosphere had then just begun to flourish as a vibrant new medium on the Internet.) The site quickly became a locus for smart and often technical commentary on various issues in climate science. It wasn't long before the scientists managing *Real Climate* began taking issue with how politicians, pundits, and journalists mangled climate science.

This was an understandable impulse on their part. Climate science during this time was routinely distorted and derided by partisan, agenda-driven actors. Who better to debunk misrepresentations of the field than those who knew the science best? But

Pielke cautioned the climate science community not to be drawn into rhetorical and political battles over the science. Climate scientists who did this engaged in what he termed “stealth issue advocacy,” which he contended would undermine trust in climate science. Pielke frequently made this argument on his own university blog (then called *Prometheus*) and expanded on the theme more generally in a 2007 book titled *The Honest Broker: Making Sense of Science in Policy and Politics*.

Pielke also made his point in the busy comment threads at the *Real Climate* blog. The scientists managing the site were highly engaged in reader conversations; there were numerous spirited, but civil, exchanges between the *Real Climate* scientists and Pielke in the mid-2000s. Here’s one representative comment from Pielke in November 2005, directed to Gavin Schmidt, a cofounder of *Real Climate*: “My objection with RC [*Real Climate*] is not that you guys act politically, but that you act politically but claim not to be. This mismatch is what I have argued is a factor that contributes to the politicization of science.”

In the ensuing exchange, Schmidt and other *Real Climate* scientists firmly pushed back against this charge, as they had done on previous occasions. They felt that Pielke was trying to elbow them out of the everyday conversation on climate change. What’s more, he was doing this at a time when there were active ideological and politically driven efforts to delegitimize climate science.

It’s important to recall this larger context, because the politics of climate change grew even uglier in the mid-to-late 2000s. This was especially the case in the United States, where conservative politicians and pundits became increasingly contemptuous of climate science, with some referring to global warming as a “hoax.” By the end of the decade, many climate scientists felt so embattled that they lumped all their critics together in one figurative box labeled *enemies*.

We know this because of what happened in 2009, when thousands of e-mails from climate scientists all around the world were swiped from a university server and posted on the Internet. The result was an unfiltered look into the minds of climate scientists, who by this time seem to have collectively hunched into a defensive crouch. The e-mails revealed their mounting frustration, internal scientific disagreements, and push-back strategies, all of which the media dissected and their most hostile opponents relished.

After an “exhaustive review” of the stolen e-mails,

the Associated Press concluded that, among other things, climate scientists “stonewalled” Freedom of Information Act requests and “discussed hiding data,” but that none of the messages called into question the fundamental science of human-driven climate change. Additionally, the news service said that the e-mails also revealed climate scientists to be “keenly aware of how their work would be viewed and used, and just like politicians, went to great pains to shape their message.”

One particularly blatant example of this was a discussion between several climate scientists on how to keep certain research papers with which they disagreed out of a major international report on the state of climate science. They joked they would do this “even if we have to redefine what the peer review literature is!”

To Pielke, “Climategate”—as the episode was dubbed in the media—confirmed everything he’d been saying about “climate scientists hiding a political agenda in the cloth of science.” He excoriated the climate science community on his blog. He unloaded on them in his book *The Climate Fix*, published in 2010, which lays out his formula for energy decarbonization. He did so in damning language, broadly characterizing climate science as a “fully politicized enterprise.” He repeatedly described climate scientists as “activist scientists.”

To many climate researchers who had already endured years of venomous politically motivated attacks on their integrity, this was beyond insulting. To them, the real activists were the so-called climate “skeptics” in the blogosphere and the partisan commentators who had taken the e-mails out of context and used them as kindling to fan the toxic fires of the climate debate. Pielke, in the minds of climate scientists, was throwing gasoline on the flames.

It was a point of no return. That year, Pielke received a taste of what was to come, when during a university speaking tour for *The Climate Fix* he learned that some climate scientists were pressuring administrators to cancel his talks. At one such event at the University of Michigan, the professor who organized it was asked by her colleagues why she had given a venue to a “climate denier.” Some on the faculty of sciences complained to the dean. Pielke’s talk, which was about energy policy, went off without a hitch.

But the relationship between him and the climate science community grew stormier. It also got personal, as some climate scientists resolved to constrain and muddy his public profile. Respected

in his field, Pielke had become a go-to expert in the media. That incensed some climate scientists and their allies; several of them lashed out at reporters privately (and sometimes publicly) and chastised editors and reporters for using Pielke as a source. One prominent long-time climate reporter started jokingly referring to Pielke as “he who shall not be named.”

When I spoke at length with Pielke for this article, he compared his experiences to a recent episode involving Bret Stephens after he joined the *New York Times* roster of opinion columnists in April 2017. In previous years at his perch on the *Wall Street Journal* op-ed page, Stephens penned numerous columns disparaging climate science in terms even more inflammatory than Pielke. Stephens also downplayed the risks posed by climate change and doubted that

regarded as an insightful examination of the fraught cultural and sociopolitical dynamics of the climate debate. He is considered a thoughtful contributor to the field of climate communication. But he has also been critical of some social science research that became the basis for climate messaging campaigns in recent years that emphasize the authority of climate science, which he doesn't think will advance the public debate.

This view has earned Hulme the cold shoulder from some peers, who would seemingly prefer he keep quiet. Absent that, periodic efforts have been made to freeze him out of the climate debate. The most recent attempt occurred after he was invited to participate in a conference on climate communication to be held in Austria in September 2017. Experts at the gathering will offer suggestions on

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humans were largely responsible for it. So after he was hired by the *Times*, the newspaper was inundated by angry complaints. Numerous climate scientists announced on Twitter that they were cancelling their subscription in protest. An online petition circulated calling for the *Times* to recall the hiring of Stephens, who has since modulated his stance on climate change.

Watching this from the sidelines, Pielke saw similarities with what happened to him at FiveThirtyEight and the larger crusade to silence his voice. “This is not an argument about climate science or even climate policy,” Pielke says. “This is an argument about who gets to speak in public on these issues.”

### **Controlling communications**

There might be something to this. Mike Hulme, a British scholar and scientist who is the head of the Department of Geography in the School of Global Affairs at Kings College in London, told me that he's been “blackballed at some meetings, because on issues related to climate communication, I've been deemed not helpful.”

This is a head scratcher. Hulme's 2009 book, *Why We Disagree About Climate Change*, is highly

“how to talk about climate change and climate protection,” according to the conference website.

Hulme recently learned that a member of the conference steering committee—a well-known academic in the field of climate communication—criticized him after his name was floated as one of the prospective panelists. In an e-mail to the steering committee, the academic wrote: “To be honest, I found Hulme's recent work to be disappointingly ambivalent, ambiguous and sometimes downright unhelpful. I know I'm not the only one in the climate community who thinks this. I therefore am less certain that he'll provide the clarity our audience might expect.” The steering committee apparently disagreed. They voted to invite Hulme, so he will attend the meeting, presenting his views on climate communication, no doubt to the consternation and disapproval of some in the audience.

Hulme has observed other forms of policing that seem intended to foreclose certain lines of scientific inquiry. He points to a widely discussed and controversial paper published a few years ago by several prominent researchers who argued against climate scientists investigating the phenomena generally identified as a “pause” or “slowdown” in the rate of

global warming. The authors of the paper asserted that the “pause” was a “contrarian meme” that had seeped into the climate science community.

Never mind that there were actual short-term climate variability trends that had already caught the attention of scientists. The paper implied that climate scientists were “rolling over and having their bellies tickled by these [contrarian] bloggers,” Hulme says. “That’s a soft form of policing, because it’s criticizing scientists who are doing what they are supposed to do. If there is some interesting or unanticipated curious phenomenon in the physical world, well, you should go and investigate and find out why.”

Hulme wasn’t the only one who felt this way. Numerous climate scientists, including Richard Betts, Head of Climate Impacts at the UK’s Met Office, were astonished at the suggestion in the paper that a main avenue of climate research (natural variability) should be ignored. When I revisited the controversy with Betts during a recent e-mail conversation, he said: “Even if scientific discussion of the ‘pause/hiatus/slowdown’ is (rightly or wrongly) perceived by the public and politicians as considering a ‘contrarian meme,’ should this matter? Isn’t investigating all genuine questions simply part of being credible, objective scientists?”

In an ideal world, it shouldn’t matter. But in the zero-sum world that governs the climate debate, every blog post, every op-ed, every tweet, and every study tends to be viewed through an *us against them* lens.

As I was writing this article, one fresh illustration of this mindset jumped out at me. Clifford Mass, a professor of atmospheric sciences at the University of Washington, recently posted an entry on his personal blog that was critical of a recent *Seattle Times* front-page article that attributed the death of a 72-year-old pine tree in the region to climate change. Mass methodically laid out why he believed this was incorrect. The article, he said, was another “unfortunate example” of the media “exaggerating the impacts of global warming.” (In case you’re wondering, Mass has often said that human-caused global warming is real, very serious, and should be tackled.)

Mass, like the climatologists at *Real Climate*, has made a hobby out of fact-checking the media. But whereas *Real Climate* has periodically trained its eye on science distortions occurring in the partisan political and media realm, Mass has focused on mainstream media hyperbole. This has not won him any popularity contests.

Just the opposite, it seems. Mass discussed the

blowback he’s received in a “personal” note at the end of his post on the *Seattle Times* article. “Every time I correct misinformation in the media like this,” he wrote, “I am accused of being a denier, a skeptic, an instrument of the oil industry, and stuff I could not repeat in this family blog. Sometimes it is really hurtful.”

Mass went on to discuss other experiences that included complaints about him within the University of Washington (UW) after he’d called out various hyped stories on climate effects. “One UW professor told me that although what I was saying was true, I needed to keep quiet because I was helping the ‘skeptics.’ Probably not good for my UW career.”

### When messaging and science collide

Ecologists who have been critical of traditional conservation approaches, such as the focus on large wilderness preserves or on the primacy of biodiversity, have faced similar blowback from their peers. *You’re not helping*, they are told.

In the introduction to *Effective Conservation Science: Data Not Dogma*, Kareiva and Marvier write: “In a field that frequently relies upon fear appeals to motivate action, data that run counter to doom-and-gloom messages can be especially unwelcome.”

In part, this owes to a long-standing reliance on crisis imagery and rhetoric to highlight environmental issues. In addition, as the ecologists Brian Silliman and Stephanie Wear write in their essay in the forthcoming book, “many in the conservation community fear that admitting some key principle or strategy is wrong will embolden those in opposition to conservation.” This seems to explain the negative reaction to Mark Vellend’s paradoxical study on biodiversity, which a number of his peers thought would undercut the conservation cause.

A similar impulse appears to be driving some of the policing of scientists in the climate arena. Such behavior is antithetical to the scientific enterprise, Mike Hulme, the British researcher, said to me in a follow-up e-mail exchange: “Is the purpose of science to find evidence that supports a particular advocacy campaign or a policy course or ideological position—to keep ‘on message’? Or is the point of science to investigate (imperfectly, but systematically) how the physical world works? If the latter, then wrinkles in science, conflicts and arguments, due skepticism of previously established findings—all these things are essential.”

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