

# Message understood

In her 2011 article, *The impact number formats have on judgment and decision making* (<http://goo.gl/z8JfZO>), Colleen Roller, a Decision Architect at Bank of America Merrill Lynch, wrote a line that designers of conservation messages would do well to remember: “the ease with which people can derive meaning dictates the extent to which they will use data”. Taking that to heart might just give Africa’s lions a chance.

Nongovernmental organizations and conservation societies spend large amounts of time and money producing beautiful information-packed graphics in the hope of raising awareness about conservation issues. But some of their designers clearly haven’t read Roller’s article (Google “conservation infographics” and see for yourself). Some people, however, manage to hit the Roller nail right on the head.

Few papers in the recent history of conservation biology can have had a more wrenching impact on our peace of mind than *The lion in West Africa is critically endangered* (*PLoS ONE* 2014; doi:10.1371/journal.pone.0083500). In that work, Philipp Henschel and coauthors reported that there were probably fewer than 250 adult lions left in the whole of West Africa. That number – 250 –

was full of meaning that everyone instantly understood. We all immediately knew that something had gone very wrong, that this time we had really screwed up – the African lion was on the verge of extinction across Africa’s western bulge, and somehow we had not been aware of it. The reason why that “250” made us all look up from whatever we were doing, and the reason news services across the globe ran the story, was because it invited us to make a simple comparison with some imaginary figure we had in our heads. And it compared ridiculously to it. It took us completely by surprise. It was like the bank calling to say you had \$18 left in your account when you thought you had a few thousand. Its meaning was overwhelming.

Back in 2012, Michelle LaRue *et al.* hit that nail too, this time with the opposite kind of news. In their paper *Cougars are recolonizing the Midwest: analysis of cougar confirmations during 1990–2008* (*J Wildlife Manage* 2012; 76: 1364–69) they announced 178 cougar confirmations (physical evidence of a cougar’s presence) in the US Midwest, a region where cougars are not supposed to be. By around 1900, cougars had been shot, trapped, and poisoned into extinction all the way from New York to the Rockies. But in recent years, similar confirmations have

come in from across the midwestern states right through to Connecticut! LaRue *et al.*’s figure again compelled us to make an easy comparison in our heads – 178 versus 0 – and once more the meaning was overwhelmingly clear: cougars were back. The newswires rightly buzzed with what for once was a great conservation story.

But which of these revelations made the most impact on you? Which one made you sit up straighter, made your jaw drop just that little bit lower? I confess that for me it was the West African lion story. Somehow, that plunge from my imaginary number to 250 packed more of a punch than the rise in cougars from 0 to 178. Perhaps, if Roller is right, it was because I had to do a little extra math to see what

the cougar story really meant. There were 178 confirmations, yes, but over 18 years. What was the confirmation rate *now*? And since there is nothing as elusive as a cougar, how many might really be out there? Henschel *et al.*, however, just said “250”. No problem in deriving the meaning there: *catastrophe*.

Nonetheless, it was very easy to derive meaning from both published figures, and if the rest of Roller’s statement is right, that ease ought to lead us to make more *use* of

them, at least in our thinking, and perhaps in our behavior. They certainly forced me to wonder about the size of these species’ wider, non-captive populations, and that revealed another breathtaking result (see the picture): there are no more lions in the whole of Africa than there are mountain lions in North America (US and Canada).

Admittedly, cougar numbers are difficult to determine. By examining state estimates and other data, the Mountain Lion Foundation has suggested a conservative “unlikely to exceed 30 000” for the US, while the University of Victoria suggests 4000 more for Canada. A total of 33 500 therefore seems within reason. The figure of 33 500 given for Africa’s lions is the midpoint of a small range provided by a recent, exhaustive study (*Biodivers Conserv* 2013; 22: 17–35). Remember too, that while cougars appear to be expanding their range, Africa’s lion populations are in retreat.

Like Henschel *et al.*’s 250, these figures unmistakably reveal that Africa is now nowhere near as full of wildlife as our imaginations tell us. I hope Roller is right, and that we will use these data before it’s too late.



33 500



33 500