LETTERS

Edited by **Jennifer Sills**

Promises and perils for the panda

AS A GLOBAL conservation icon and China's national treasure, the endangered giant panda has received exceptional attention worldwide. Between 2003 and 2013, giant pandas in the wild increased from 1596 to 1864, according to the results from the latest survey released by the State Forestry Administration (*1*). About two-thirds of the wild giant pandas and 53.8% of panda habitat are within nature reserves (*1*). Pandas in captivity are also thriving.

However, there are long-term threats to panda survival and reproduction, including virus infection ("Captive pandas succumb to killer virus," M. Hvistendahl, In Depth, 13 February, p. 700), habitat fragmentation, low genetic diversity, and human activities. As some old threats have diminished, new threats have emerged. Harvesting forests for fuelwood and timber has declined drastically (*2*), but livestock grazing has increased (*3*). Although illegal poaching has dwindled, climate change is becoming a potential threat. For example, climate change could bring a substantial reduction in the distributional ranges of the dominant bamboo species that comprise almost the entire diet of the panda population in Qinling Mountains of Shaanxi Province (the region with the highest panda density across the panda range) (*4*).

To ensure long-term panda survival, it is important to expand from short-term to long-term strategies from the perspective of coupled human and natural systems (*5*). For example, the State Forestry Administration plans to prohibit encroachments on existing reserves for economic development, but only for the next 2 years. It is imperative to reduce human pressure in the long run by providing local residents with incentives to conserve pandas and panda habitat (*6*) and by providing educational opportunities that will enable young people living in the panda range to find jobs and settle in the cities (*7*). Creating nature reserves in areas where no pandas currently live (such as the northern side of the current panda range) might provide a safer haven for future pandas as the climate changes.

To respond to the Chinese government's call for more panda conservation, detailed data from the panda surveys should be made readily available. Releasing the data can help to analyze how and why panda populations have changed in a particular region that was covered in different surveys. Sharing the data respects the hard work by more than 2000 people surveying in the rugged mountains over 3 years in the latest panda survey alone. Most important, it can help boost promises and reduce perils for the panda.

Jianguo Liu

Center for Systems Integration and Sustainability, Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI 48823, USA.
E-mail: liuji@msu.edu

PHOTO: MARTHA DE JONG-LANTINK/FLICKR

NEXTGEN VOICES

Postdocs reimagined: Last call

You have one more week to respond to the NextGen VOICES survey! Share your thoughts about this question:

Is the idea of the postdoc position obsolete in today's scientific landscape? If so, what should replace it? If not, what one change would you make to improve it?

To submit, go to http://scim.ag/NG_15

Deadline for submissions is 15 May. A selection of the best responses will be published in the 3 July 2015 issue of *Science*. Submissions should be 200 words or less. Anonymous submissions will not be considered.

REFERENCES

1. State Council Information Office of China (2015); www.scio.gov.cn/xwfbh/gbwxwfbh/fbh/Document/1395514/1395514.htm [in Chinese].
2. G. He *et al.*, *Landscape Urban Plan.* **92**, 1 (2009).
3. V. Hull *et al.*, *Biol. Conserv.* **144**, 3028 (2011).
4. M.-N. Tuanmu *et al.*, *Nat. Clim. Change* **3**, 249 (2013).
5. J. Liu *et al.*, *Science* **347**, 1258832 (2015).
6. X. Chen *et al.*, *Conserv. Biol.* **24**, 1469 (2010).
7. J. Liu *et al.*, *Science* **300**, 1240 (2003).

The potential of secondary forests

TROPICAL FORESTS ARE increasingly modified by human activities. Centuries of human–forest interactions have led to a diverse array of forest areas in different phases of succession. In recent decades, forest conversion to cattle pasture or agricultural fields, followed by land abandonment, has led to large areas of second-growth forest in the Amazon. These forests grow rapidly and sequester large amounts of carbon in their biomass, but they tend to be ignored, as most of the debate on the carbon balance of the Amazon basin tends to revolve around old-growth forests.

For example, a recent study has shown that the net carbon uptake of Amazonian old-growth forests has declined by a third per decade from 1990 to 2010 (*1*, *2*). When extrapolated over the whole Amazon basin, these results translate into a reduced role of intact tropical forests in climate change mitigation. This alarming conclusion, however, completely ignores the important role of regenerating forests as carbon sinks. For instance, in 2010 about 25% of formerly deforested areas in Para, Brazil, were occupied by second-growth forests. Although re-growing forests have lower carbon stocks (45 to 48% of old growth forest), their net carbon sequestration rate is up to 20 times higher (4.6 to 5.8 Mg carbon ha^{-1} $year^{-1}$) (*3*) than old-growth forests (*1*). Additionally, about one-quarter of the forests in the Amazon basin are managed for timber production. Net carbon sequestration rates after timber extraction are high, and the application of reduced-impact logging techniques further increases carbon sequestration rates (2.8 Mg ha^{-1} $year^{-1}$ compared with 0.5 for conventionally logged areas) (*4*). Consequently, it is essential to incorporate the carbon sequestration potential of second-growth, logged, and managed forests in future

Published by AAAS

assessments of the Amazon basin as a global carbon sink.

F. Bongers,[1]* R. Chazdon,[2] L. Poorter,[1] M. Peña-Claros[1]

[1]Forest Ecology and Management Group, Wageningen University. 6700AH, Wageningen, Netherlands. [2]Department of Ecology and Evolutionary Biology, University of Connecticut, Storrs, CT 06269–3043, USA.

*Corresponding author. E-mail: Frans.Bongers@wur.nl

REFERENCES

1. R. J. W. Brienen *et al.*, *Nature* **519**, 344 (2015).
2. E. Kintisch, "Amazon rainforest ability to soak up carbon dioxide is falling" (2015); http://news.sciencemag.org/climate/2015/03/amazon-rainforest-ability-soak-carbon-dioxide-falling.
3. Y. Pan *et al.*, *Science* **333**, 988 (2011).
4. T. A. P. West, E. Vidal, F. E. Putz, *Forest Ecol. Manage.* **314**, 59 (2014).

Naming diseases: First do no harm

IN RECENT YEARS, the world has seen the emergence of several new human infectious diseases. Given the rapid and global communication through social media and other electronic means, diseases are now often given common names by stakeholders outside as well as inside the scientific community. The use of names such as "swine influenza" and "Middle Eastern Respiratory Syndrome" has had unintentional negative economic and social impacts by stigmatizing certain industries or communities. Disease names, once given, are difficult to change later even if an inappropriate name is being used. Therefore, it is important that an appropriate name is assigned to a newly identified human disease by whoever first reports it.

In response to such concerns, the World Health Organization (WHO), in close collaboration with the World Organisation for Animal Health (OIE) and the Food and Agriculture Organization of the United Nations (FAO), and in consultation with the International Classification of Diseases (ICD) (*1*), has developed a set of standard best practices for naming new human infectious diseases, with the aim of minimizing unnecessary negative effects on nations, economies, people, and animals. A full description of these best practices is available on the WHO Web site (*2*).

These best practices apply to new infections, syndromes, and diseases of humans that have never been recognized or reported before in humans, that have potential public health impact, and for which no disease name is yet established in common usage. They do not replace the existing ICD system, but rather provide an interim solution prior to the assignment of a final ICD disease name. As these best practices only apply to disease names for common usage, they also do not affect the work of existing international authoritative bodies responsible for scientific taxonomy and nomenclature of microorganisms.

WHO, OIE, and FAO strongly encourage all national, regional, and international stakeholders, including scientists, national authorities, and media, to follow these best practices in the event of the emergence of a new human disease, so that inappropriate disease names do not become established.

K. Fukuda,[1]* R. Wang,[2] B. Vallat[3]

[1]World Health Organization, 1211, Geneva, Switzerland. [2]Food and Agriculture Organization of the United Nations, 00153, Rome, Italy. [3]World Organisation for Animal Health, 75017, Paris, France.

*Corresponding author. E-mail: infectiousdiseasenaming@who.int

REFERENCES

1. World Health Organization, International Classification of Diseases (www.who.int/classifications/icd/en).
2. www.int/topics/infectious_diseases/naming-new-diseases/en.

The views expressed in this Letter are those of the authors and do not necessarily reflect the views or policies of the signatory organizations.