

# Climate change position statement by the Zoological Society of London

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After reviewing the best available science, ZSL supports the conclusion that current levels of atmospheric carbon dioxide (CO<sub>2</sub>) have very likely exceeded their safe planetary boundary and risk forcing the planet's climate system into a chaotic transitional state. The consequences include extensive loss of sea ice, ice-sheets and mountain glaciers with resultant dangerous sea level rise; thawing and release of frozen carbon and methane hydrates; ocean acidification; shifting climate zones; extreme weather events and mass biodiversity loss. The socioeconomic and wider consequences for humanity are severe.

The uncertainties in climate science are acknowledged, however there is greater understanding and agreement around the key scientific issues than is generally appreciated. This includes the role that climate system inertia plays in masking the true impact of current CO<sub>2</sub> levels. By the time these impacts become evident it will be too late to avoid them or the amplifying feedbacks they will generate. ZSL therefore calls on world leaders to agree and implement policies to restore Earth's energy balance by curtailing further growth of CO<sub>2</sub> emissions and returning atmospheric CO<sub>2</sub>

concentrations to below 350 parts per million (ppm) while it is still possible to do so.

Essential actions for achieving this are the phasing out of coal emissions by 2030; avoiding emissions from oil shale, tar sands and other unconventional fossil fuels; reversing the destruction of natural habitats and the negative net impact of agricultural practices. It is still possible to retain a relatively safe climate state but only if we act in time.

ZSL is addressing the global warming threat by working to reduce our organisation's carbon footprint; undertaking research to inform policy; raising awareness and implementing conservation activities to help mitigate and adapt to climate change impacts.



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## Supporting information (clicking on URLs will link directly to publications)

- Anderson K. & Bows A (2011) *Beyond 'dangerous' climate change: emission scenarios for a new world*. Phil. Trans. R. Soc. A 369, 20-44  
<http://rsta.royalsocietypublishing.org/content/369/1934/20.full>
- Hansen J. et al (2005) *Earth's Energy Imbalance: Confirmation and Implications*. Science 308: no. 5727, pp. 1431 – 1435  
<http://www.sciencemag.org/cgi/content/abstract/308/5727/1431>
- Hansen J. et al (2008) *Target Atmosphere CO<sub>2</sub>: Where should Humanity Aim?* The Open Atmospheric Science Journal 2: 217 – 231.  
[http://pubs.giss.nasa.gov/abstracts/2008/Hansen\\_etal.html](http://pubs.giss.nasa.gov/abstracts/2008/Hansen_etal.html)
- Hansen J.E. et al (2011) *The case for Young People and Nature: A Path to a Healthy, Natural, Prosperous Future*.  
[http://www.columbia.edu/~jeh1/mailings/2011/20110505\\_CaseForYoungPeople.pdf](http://www.columbia.edu/~jeh1/mailings/2011/20110505_CaseForYoungPeople.pdf)
- Hoegh-Guldberg O. & Bruno J.F. (2010) *The Impact of Climate Change on the World's Marine Ecosystems*. Science 328: 1523-1528.  
<http://www.sciencemag.org/cgi/content/abstract/328/5985/1523>
- Khela S. & Pearce-Kelly P. (2011) *An Iterative Reference List of Climate Change Science, Policy and Related Information. ZSL Indicators and Assessments Unit and WAZA/CBSG Climate Change Task Force*. <http://www.bioclimate.org/references/search?category=996333211>
- Rockström J. et al (2009) *Planetary boundaries: Exploring the safe operating space for humanity*. Ecology and Society 14(2):32 [online] URL: [www.ecologyandsociety.org/vol14/iss2/art32/](http://www.ecologyandsociety.org/vol14/iss2/art32/)
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- Trumper K. et al (2009), *The Natural Fix? The role of ecosystems in climate mitigation*. A UNEP rapid response assessment. United Nations Environment Programme, UNEP-WCMC, Cambridge, UK. [http://www.unep.org/publications/search/pub\\_details\\_s.asp?ID=4027](http://www.unep.org/publications/search/pub_details_s.asp?ID=4027)
- Veron J.E.N. et al (2009) *The coral reef crisis: The critical importance of <350ppm CO<sub>2</sub>*. Marine Pollution Bulletin 58: 1428 – 1436.  
[http://www.elsevier.com/wps/find/L01\\_402.cws\\_home/mpb\\_featured](http://www.elsevier.com/wps/find/L01_402.cws_home/mpb_featured)
- Veron J.E.N. (2011) *Ocean Acidification and Coral Reefs: An emerging big picture*. Diversity 3: 262 – 274.  
<http://www.mdpi.com/1424-2818/3/2/262/pdf>

An extensive range of climate change information is available on [www.bioclimate.org](http://www.bioclimate.org)