

## **Resolution 67.2**

**Emergency resolution on avoiding disastrous and unmanageable climate change and ocean acidification impacts by returning atmospheric CO<sub>2</sub> concentrations to below 350 parts per million while it is still possible to do so.**

### **The 67<sup>th</sup> WAZA Annual Conference, Melbourne 11 October 2012**

RECOGNIZING NASA's confirmation (27 August 2012) that Arctic sea ice has shrunk to a new low in the era of detailed satellite observations as further evidence that atmospheric concentrations of carbon dioxide (CO<sub>2</sub>) have already exceeded their safe planetary boundary;

CONCERNED that climate system inertia is masking the true impact of current CO<sub>2</sub> levels and the amplifying feedback effects they are already starting to generate;

ALARMED that their combined impacts will include unstoppable disintegration of sea ice, ice-sheets and mountain glaciers with resultant dangerous sea level rise and greatly reduced freshwater supplies; thawing and release of frozen carbon and methane hydrates; ocean acidification; shifting climate zones; extreme weather events and mass biodiversity extinctions with profound consequences for humanity;

RECOGNISING that the essential mitigation actions are a linear phase-out of coal emissions by 2030; avoiding emissions from 'hard to reach' conventional oil and gas reserves, avoiding emissions of oil shale, tar sands and other unconventional fossil fuels and reducing current atmospheric CO<sub>2</sub> concentrations to below 350 parts per million (ppm), especially through reversing the destruction and degradation of natural habitats and the negative net impact of agricultural practices;

FURTHER RECOGNISING that the fate of biodiversity and humanity is dependent on these dangers and mitigation imperatives being acknowledged and effectively addressed;

#### **Therefore**

REQUESTS all WAZA members to:

- Actively reduce CO<sub>2</sub> emissions wherever possible and, where it is not possible, to compensate for via best practice habitat support initiatives.
- Call on world leaders to avoid disastrous and unmanageable climate change and ocean acidification impacts by implementing the essential mitigation actions detailed in this emergency resolution for curtailing further growth of CO<sub>2</sub> emissions and returning atmospheric CO<sub>2</sub> concentrations to below 350ppm while it is still possible to do so.
- Prioritise awareness raising and visitor engagement focus on these threat and response issues.

## Supporting information

NASA (27 August 2012) *Arctic sea ice shrinks to new low in satellite era* <http://www.nasa.gov/topics/earth/features/arctic-seaice-2012.html>

National Snow and Ice Data Center (NISDC) *August 27 2012 Arctic Sea Ice News & Analysis* <http://nsidc.org/arcticseaicenews/>

AMAP, 2011. *Snow, Water, Ice and Permafrost in the Arctic (SWIPA): Climate Change and the Cryosphere*. Arctic Monitoring and Assessment Programme (AMAP), Oslo, Norway. xii + 538 pp. <http://amap.no/swipa/>. With briefing video:

[http://www.youtube.com/watch?v=RTF2Ll9g\\_W4MM](http://www.youtube.com/watch?v=RTF2Ll9g_W4MM)

*Arctic summer sea ice tipping point*. 2011 Video briefing featuring Dr's Ted Scambos, Robbie Macdonald, Don Perovich, Mark Serreze and Vladimir Romanovsky. <http://vimeo.com/34547995>

Anthony *et al* (2012) *Geologic methane seeps along boundaries of Arctic permafrost thaw and melting glaciers*. *Nature Geoscience* 5: 419-426. <http://www.nature.com/ngeo/journal/v5/n6/full/ngeo1480.html>

Barnosky *et al* (2012) *Approaching a state shift in Earth's biosphere*. *Nature* 486: 52-58. <http://www.nature.com/nature/journal/v486/n7401/full/nature11018.html>

DeConto *et al* (2012) *Past extreme warming events linked to massive carbon release from thawing permafrost*. *Nature* 484: 87-91. <http://www.nature.com/nature/journal/v484/n7392/full/nature10929.htm>

Duarte *et al* (2012) *Abrupt Climate Change in the Arctic*. *Nature Climate Change* 2: 60–62. <http://www.nature.com/nclimate/journal/v2/n2/full/nclimate1386.html>

Hansen *et al* (Submitted) *Scientific Case for Avoiding Dangerous Climate Change to Protect young People and Nature*. *Proc. Natl. Acad. Sci.* <http://pubs.giss.nasa.gov/abs/ha08510t.html>

Hansen *et al* (2011) *Earth's energy imbalance and implications* *Atmos. Chem. Phys.*, 11, 13421-13449 <http://www.atmos-chem-phys.net/11/13421/2011/acp-11-13421-2011.html>

Kort *et al* (2012) *Atmospheric observations of Arctic Ocean methane emissions up to 82° north*. *Nature Geoscience* <http://www.nature.com/ngeo/journal/vaop/ncurrent/full/ngeo1452.html>

Koven *et al* (2011) *Permafrost carbon-climate feedbacks accelerate global warming*. *PNAS* <http://www.pnas.org/content/early/2011/08/17/1103910108.full.pdf>

Isaksen, *et al* (2011), *Strong atmospheric chemistry feedback to climate warming from Arctic methane emissions*, *Global Biogeochem. Cycles*, 25, GB2002, <http://www.atmos.washington.edu/academics/classes/2011Q2/558/IsaksenGB2011.pdf>

Veron, J.E.N. (2011) *Ocean Acidification and coral reefs: An emerging big picture*. *Diversity* 2011, 3, 262-274 <http://www.mdpi.com/1424-2818/3/2/262/pdf>

*An Iterative Reference List of Climate Change Science, Policy & Related Information*. World Association of Zoos and Aquariums, Botanic Gardens Conservation International, Zoological Society of London and IUCN's Conservation Breeding Specialist Group and Climate Change Specialist Group. <http://www.waza.org/en/site/conservation/climate-change>

## Emergency climate change and ocean acidification resolution Annex

### 1. New,

This emergency resolution is responding to newly published science and real-time impact observations. These predominantly, but not exclusively, pertain to polar, montane and methane hydrate cryosphere impacts and their implications. The latest such development is NASA's confirmation (27 August 2012) that Arctic sea ice has shrunk to a new low in the period of accurate satellite observations. These developments strongly support the scientific case that atmospheric concentrations of carbon dioxide have exceeded their relatively safe planetary boundary of 350ppm and urgently need returning below this level if disastrous and unmanageable climate change and ocean acidification impacts are to be avoided.

**2. Urgent,**

The above impact developments together with amplifying feedbacks and climate system inertia considerations imply a greatly reduced response time for implementing the essential mitigation actions highlighted in the resolution.

**3. Could not have been foreseen.**

In addition to the newly published science, impact observations and their elevated threat implications, the resolution is necessitated by the continued inadequate formal recognition (across intergovernmental, national, academic, environmental and socio-economic sectors) of the threat severity and policy response imperatives. Resultant continued tracking of worst-case IPCC emission scenarios with no sign of effective commitment to, or implementation of essential mitigation actions highlights the current lack of effective engagement, especially in context of the greatly reduced response time remaining.

**4. Responds to matters of the agenda.**

The threat and response issues addressed by this emergency resolution are highly relevant to our community's overarching conservation interests and highlights the critical role that our community has in determining best conservation responses and helping to resolve the current dilemma of insufficient threat acknowledgement and inadequate policy responses to this great environmental crisis.