

World's rivers running on empty: Australian study

Four of the world's great rivers, including the Murray Darling, are all suffering from drastically reduced flows as a direct result of water extraction, according to new research by Australian scientists.



Credit: Leruswing/Wikimedia Commons under Creative Commons CC BY-SA 3.0 licence

The study – led by Australian National University (ANU) researchers Professor Quentin Grafton, Dr Jamie Pittock, Professor Tom Kompas and Dr Daniel Connell of the Crawford School of Public Policy at the ANU – examined the threats from water extractions and climate change on four of the world's iconic river systems, the US Colorado River, the South African Orange River, the Chinese Yellow River and the Murray.

The researchers found that in all four basins, over a long period of time, outflows have greatly reduced as a direct result of increased water extractions, and that urgent changes in governance of water are needed to ensure the systems remain healthy and viable.

‘While climate change will aggravate changes in flows in river systems, current high levels of water extractions remain the principal contributor to reduced flows and degradation of these rivers,’ said Dr Pittock.

Dr Connell added that changes in governance, including sharing the variability between the environment and consumptive users, are urgently required if the health of these rivers is to be maintained.

The researchers said that the key to securing the future of the world's rivers lies in plans to share water use between users and the environment, and water markets to manage allocations. They added that, although the management of the Murray Darling Basin was favourable when compared to other places in the world, there was much more that could be done to ensure a healthy future for the system.

Professor Kompas points out that many sound frameworks are being established in water management throughout the

world, 'but in many cases their implementation needs to be greatly improved'.

The work was conducted with researchers from the University of Queensland, the University of Canberra and international collaborators from universities in the USA, China, and South Africa.

The paper, Global insights into water resources, climate change and governance, has been published in *Nature Climate Change*.¹

Source: ANU

¹ Grafton RQ, Pittock J, Davis R, Williams J *et al.* (2012) Global insights into water resources, climate change and governance. *Nature Climate Change*, doi:10.1038/nclimate1746

From ECOS online <http://www.ecosmagazine.com/?paper=EC12504>