

CSIRO and Bureau of Meteorology (2014): *State of the Climate 2014*. 16 pp.

- www.csiro.au/State-of-the-Climate-2014
- www.bom.gov.au/state-of-the-climate/2014

References and data

GENERAL

Braganza, K., Power, S., Trewin, B., Arblaster, J., Timbal, B., Hope, P., Frederiksen, C., McBride, J., Jones, D., and Plummer, N. 2011. 'Update on the state of the climate, long-term trends and associated causes'. In: Keenan, T.D. and Cleugh, H.A. (eds.) CAWCR Technical Report No. 036. Centre for Australian Weather and Climate Research, Canberra, Australia. 106pp.

BoM and CSIRO (2012) *State of the Climate 2012* <http://www.csiro.au/state-of-the-climate-2012>

Bureau of Meteorology, Climate Change Tracker (2103) <http://www.bom.gov.au/climate/change/>

CSIRO and Bureau of Meteorology (2007). *Climate change in Australia*. Technical Report. www.climatechangeinaustralia.gov.au

CSIRO Sea-level data <http://www.cmar.csiro.au/sealevel/>

Donat, M. G., et al. (2013), Updated analyses of temperature and precipitation extreme indices since the beginning of the twentieth century: The HadEX2 dataset, *J. Geophys. Res. Atmos.*, 118, 2098–2118, doi:10.1002/jgrd.50150

Donat, M.G., L.V. Alexander, H. Yang, I. Durre, R. Vose, J. Caesar, 2013: Global Land-Based Datasets for Monitoring Climatic Extremes. *Bull. Amer. Meteor. Soc.*, 94, 997–1006. doi: <http://dx.doi.org/10.1175/BAMS-D-12-00109.1>

IPCC (2012) Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change [Field, C.B., et al. (eds.)]. Cambridge University Press, Cambridge, UK, and New York, NY, USA, 582 pp.

IPCC, 2013: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp.

Trewin BC (2013) A daily homogenized temperature data set for Australia. *Int J Climatol* 33: 1510-1529.

1. AUSTRALIA'S CLIMATE

Temperature

Fawcett, RJB, B C Trewin, R Smalley and K Braganza (2013). On the changing nature of Australian monthly and daily temperature anomalies. In proceedings of the Australian Meteorological and Oceanographic Society, Annual Conference.

Fawcett RJB, Trewin BC, Braganza K, Smalley RJ, Jovanovic B, Jones DA (2012) On the sensitivity of Australian temperature trends and variability to analysis methods and observation networks. CAWCR Research Report 50, Bureau of Meteorology, Melbourne, 66 pp.

Karoly, D. J. & Braganza, K. Attribution of recent temperature changes in the Australian region. *J. Clim.* 18, 457–464 (2005).

Rainfall

Arblaster JM and Meehl GA (2006) Contributions of external forcings to Southern Annular Mode trends. *Journal of Climate* 19: 2896–2905.

Cai W and Cowan T (2006) SAM and regional rainfall in IPCC AR4 models: can anthropogenic forcing account for southwest western Australian winter rainfall reduction? *Geophysical Research Letters* 33: L24708, doi:10.1029/2006GL028037.

Cai W and Cowan T (2008) Dynamics of late autumn rainfall reduction over south eastern Australia. *Geophysical Research Letters* 35: L09708, doi:10.1029/2008GL033727.

CSIRO (2012) Climate and water availability in south-eastern Australia: A synthesis of findings from Phase 2 of the South Eastern Australian Climate Initiative (SEACI), CSIRO, Australia, September 2012, 41 pp.

Drosowsky, W., 2005: The latitude of the subtropical ridge over eastern Australia: the L index 11 revisited, *Int. J. Climatol.*, 25, 1291-1299.

Durack, Paul J., Susan E. Wijffels and Richard J. Matear (2012) Ocean Salinities Reveal Strong Global Water Cycle Intensification During 1950 to 2000. *Science*, 336 (6080), pp 455-458. DOI: 10.1126/science.1212222

Frederiksen CS, Frederiksen JS, Sisson JM and Osbrough SL (2011) Australian winter circulation and rainfall changes and projections. *International Journal of Climate Change Strategies and Management*, Vol. 3 Iss: 2, pp.170 - 188

Gallant, A. J. E., K. J. Hennessy, and J. S. Risbey, 2007: Trends in rainfall indices for six Australian regions: 1910-2005. *Australian Meteorological Magazine*, 56, 223-239.

- Gillett, N. P., and D. W. J. Thompson, 2003: Simulation of recent Southern Hemisphere climate change. *Science*, 302, 273 – 275.
- Hope PK, Drosowsky W and Nicholls N (2006) Shifts in the synoptic systems influencing southwest Western Australia. *Climate Dynamics* 26: 751–764. doi:10.1007/s00382-006-0115-y.
- Hope, P., Timbal, B. & Fawcett, R. (2010). Associations between rainfall variability in the southwest and southeast of Australia and their evolution through time. *Int. J. Climatol.* 30, 1360–1371
- Hu, Y., L. Tao, and J. Liu, 2013: Poleward expansion of the Hadley circulation in CMIP5 simulations. *Adv. Atmos. Sci.* 30, pp 790-795.
- Jorgen S. Frederiksen and Carsten S. Frederiksen. 2011. "Twentieth Century Winter Changes in Southern Hemisphere Synoptic Weather Modes," *Advances in Meteorology*, vol. 2011, Article ID 353829, 16 pages, doi:10.1155/2011/353829.
- Jovanovic, B., Braganza, K., Collins, D. and Jones, D.J., 2013. Climate Variations and Change evident in high-quality climate data for Australia's Antarctic and remote island weather stations. *Aust. Met. Oceanogr J.*, Vol.62, 4, 247-261
- Jovanovic, B., D. Collins, K. Braganza, D. Jakob, and D. A. Jones, 2011, A high-quality monthly total cloud amount dataset for Australia: *Climatic Change*, v. 108, p. 485-517.
- Lorenzo M. Polvani, Darryn W. Waugh, Gustavo J. P. Correa, Seok-Woo Son. (2011) Stratospheric Ozone Depletion: The Main Driver of Twentieth-Century Atmospheric Circulation Changes in the Southern Hemisphere. *Journal of Climate* 24:3, 795-812
- Murphy, B. and B. Timbal, 2008: A review of recent climate variability and climate change in south-eastern Australia, *Int. J. Climatol.*, 28(7), 859-879.
- Nicholls N (2009) Local and remote causes of the southern Australian autumn-winter rainfall decline, 1958–2007. *Climate Dynamics*, doi:10.1007/s00382-009-0527-6.
- Polvani, L.M, D.W. Waugh, G.J.P. Correa and S.-W. Son: Stratospheric ozone depletion: the main driver of 20th Century atmospheric circulation changes in the Southern Hemisphere?, *J. Clim.*, 24, 795-812. 2011.
- Risbey J, Pook M, McIntosh P, Wheeler M and Hendon H (2009) On the remote drivers of rainfall variability in Australia. *Monthly Weather Review* 137(10): 3233–3253.
- Thompson, D.W.J., S. Solomon, P.J. Kushner, M.H. England, K.M. Grise and D.J. Karoly, (2011) Signatures of the Antarctic ozone hole in Southern Hemisphere surface climate change. *Nature Geoscience*. doi:10.1038/ngeo1296.
- Timbal, B., R. Fawcett, 2013: A Historical Perspective on Southeastern Australian Rainfall since 1865 Using the Instrumental Record. *J. Climate*, 26, 1112–1129. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00082.1>
- Timbal B, Arblaster J and Power S (2006) Attribution of the late 20th century rainfall decline in South-West Australia. *Journal of Climate* 19(10): 2046–2062.
- Timbal, B. and W. Drosowsky, 2012: "The relationship between the decline of South Eastern Australia rainfall and the strengthening of the sub-tropical ridge", *Int. J. of Climatol.*, DOI: 10.1002/joc.3492
- Timbal B, Arblaster J, Braganza K, Fernandez E, Hendon H, Murphy B, Raupach M, Rakich C, Smith I, Whan K and Wheeler M (2010) Understanding the anthropogenic nature of the observed rainfall decline across South Eastern Australia. CAWCR Technical Report No. 026 http://www.cawcr.gov.au/publications/technicalreports/CTR_026.pdf
- Ummenhofer, C. C., M. H. England, P. C. McIntosh, G. A. Meyers, M. J. Pook, J. S. Risbey, A. S. Gupta, and A. S. Taschetto, 2009: What causes southeast Australia's worst droughts?, *Geophys. Res. Lett.*, 36, L04706, doi: 10.1029/2008GL036801.
- van Ommen, T.D., Morgan, V. (2010) Snowfall increase in coastal East Antarctica linked with southwest Western Australian drought *Nature Geoscience* 3. 267-272, doi:10.1038/NCEO761
- Watterson, I. G. (2010), Relationships between southeastern Australian rainfall and sea surface temperatures examined using a climate model, *J. Geophys. Res.*, 115, D10108, doi:10.1029/2009JD012120.
- Clarke, H., Lucas, C. and Smith, P. 2012. Changes in Australian fire weather between 1973 and 2010. *Int. J. Climatol.* doi: 10.1002/joc.3480
- Hoerling, M., et al., 2013: Anatomy of an extreme event. *J. Clim.*, 26, 2811–2832.
- Hansen, J., M. Sato, and R. Ruedy, 2012: Perception of climate change. *Proc. Natl. Acad. Sci.*, 109, 14726-14727, E2415-E2423, doi:10.1073/pnas.1205276109.
- Lewis, S. C., and D. J. Karoly (2013), Anthropogenic contributions to Australia's record summer temperatures of 2013, *Geophys. Res. Lett.*, 40, 3705–3709, doi:10.1002/grl.50673.
- Lucas C. (2010) On developing a historical fire weather dataset for Australia. *Australian Meteorological and Oceanographic Journal* 60. 1-14
- Lucas, C., 2010, A high-quality historical humidity database for Australia, CAWCR Technical Report No 024, Australia.
- Meehl, G. A., J. M. Arblaster, and C. Tebaldi (2007), Contributions of natural and anthropogenic forcing to changes in temperature extremes over the United States, *Geophys. Res. Lett.*, 34, L19709, doi:10.1029/2007GL030948.
- Otto, F. E. L., N. Massey, G. J. van Oldenborgh, R. G. Jones, and M. R. Allen, 2012: Reconciling two approaches to attribution of the 2010 Russian heat wave. *Geophys. Res. Lett.*, 39, L04702
- Perkins, S. E., L. V. Alexander, 2013: On the Measurement of Heat Waves. *J. Climate*, 26, 4500–4517. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00383.1>
- Perkins, S. E., L. V. Alexander, and J. R. Nairn (2012), Increasing frequency, intensity and duration of observed global heatwaves and warm spells, *Geophys. Res. Lett.*, 39, L20714, doi:10.1029/2012GL053361.
- Peterson, T. C., P. A. Stott and S. Herring (2012) Explaining Extreme Events of 2011 from a Climate Perspective. *Bull. Am. Meteor. Soc.*, 1041-1067.
- Peterson, T. C., M. P. Hoerling, P. A. Stott and S. Herring, Eds., 2013: Explaining Extreme Events of 2012 from a Climate Perspective. *Bull. Amer. Meteor. Soc.*, 94 (9), S1–S74.
- Rahmstorf, S., and D. Coumou, 2011: Increase of extreme events in a warming world. *Proc. Natl. Acad. Sci. U.S.A.*, 108, 17905–17909.

Heatwaves and fire weather

- Alexander, L.V. and Arblaster, J.M. 2009. Assessing trends in observed and modelled climate extremes over Australia in relation to future projections. *Int. J. Climatol.*, 29, 417–435. doi: 10.1002/joc.1730.
- Alexander LV, Hope P, Collins D, Trewin B, Lynch A, Nicholls N. 2007. Trends in Australia's climate means and extremes: a global context. *Australian Meteorological Magazine* 56: 1–18.

Santer, B. D., et al., 2009: Incorporating model quality information in climate change detection and attribution studies. *Proceedings of the National Academy of Sciences of the United States of America*, 106, 14778–14783.

Sillmann, J., V. V. Kharin, X. Zhang, F. W. Zwiers and D. Bronaugh (2013): Climate extreme indices in the CMIP5 multi-model ensemble. Part 1: Model evaluation in the present climate, *J. Geophys. Res.*, 118, doi: 10.1002/jgrd.50203.

Sillmann, J., V. V. Kharin, F. W. Zwiers, X. Zhang and D. Bronaugh (2013): Climate extreme indices in the CMIP5 multi-model ensemble. Part 2: Future climate projections, *J. Geophys. Res.*, 118, doi: 10.1002/jgrd.50188.

Stott, P. A., D. A. Stone, and M. R. Allen, 2004: Human contribution to the European heatwave of 2003. *Nature*, 432, 610–614.

Trewin, B. and Smalley, B. 2013. Changes in extreme temperatures in Australia, 1910 to 2011. 2013 AMOS National Conference, Melbourne, 11-13 February 2013.

Trewin, B. and H. Vermont. 2010. Changes in the frequency of record temperatures in Australia, 1957–2009. *Australian Meteorological and Oceanographic Journal* 60: 113–119.

Heavy rainfall

Christidis, N., P.A. Stott, D.J. Karoly and A. Ciavarella, 2013, An attribution study of the heavy rainfall over eastern Australia in March 2012 [in “Explaining Extreme Events of 2012 from a Climate Perspective”]. *Bull. Amer. Meteor. Soc.*, 94 (9), 558–561

Donat, M. G., L. V. Alexander, H. Yang, I. Durre, R. Vose, R. J. H. Dunn, K. M. Willett, E. Aguilar, M. Brunet, J. Caesar, B. Hewitson, C. Jack, A. M. G. Klein Tank, A. C. Kruger, J. Marengo, T. C. Peterson, M. Renom, C. Oria Rojas, M. Rusticucci, J. Salinger, A. S. Elayah, S. S. Sekele, A. K. Srivastava, B. Trewin, C. Villarroel, L. A. Vincent, P. Zhai, X. Zhang and S. Kitching (2013), Updated analyses of temperature and precipitation extreme indices since the beginning of the twentieth century: The HadEX2 dataset, *J. Geophys. Res.*, doi:10.1029/2012JD018606.

Evans J.P. and I. Boyer-Souchet, 2012, Local sea surface temperatures add to extreme precipitation in northeast Australia during La Niña, *Geophys. Res. Lett.*, 39:L10803. doi:10.1029/2012GL052014

Hendon, H.H, Eun-Pa Lim J.M. Arblaster and D. L. T. Anderson (2013) Causes and predictability of the record wet east Australian spring 2010 *Clim Dyn* DOI 10.1007/s00382-013-1700-5

Gallant, A. J. E., D. J. Karoly and K. L. Gleason (2013): Consistent Trends in a Modified Climate Extremes Index in the U.S.A., Europe and Australia, *J. Climate*, 27, 1379–1394. doi: <http://dx.doi.org/10.1175/JCLI-D-12-00783.1>

King, A. D., S. C. Lewis, S. E. Perkins, L. V. Alexander, M. G. Donat, D. J. Karoly, and M. T. Black, 2013, Limited Evidence of Anthropogenic Influence on the 2011-12 Extreme Rainfall over Southeast Australia [in “Explaining Extreme Events of 2012 from a Climate Perspective”]. *Bull. Amer. Meteor. Soc.*, 94 (9), 555–558

Power, S., M. Haylock, R. Colman, and X. Wang, 2006: The predictability of interdecadal changes in ENSO and ENSO teleconnections. *J. Climate*, 8, 2161–2180.

Rotstayn LD, Jeffrey SJ, Collier MA, Dravitzki SM, Hirst AC, Syktus JJ, Wong KK. 2012. Aerosol- and greenhouse gas-induced changes in summer rainfall and circulation in the Australasian region: a study using single-forcing climate simulations. *Atmos. Chem. Phys.* 12:6377–6404. doi:10.5194/acp-12-6377-2012.

Santer, B. D., et al., 2007: Identification of human-induced changes in atmospheric moisture content. *Proceedings of the National Academy of Sciences of the United States of America*, 104, 15248–15253.

Smith, I., 2004: An assessment of recent trends in Australian rainfall. *Aust. Met. Mag.*, 53, 163–173.

Wentz, F. J., L. Ricciardulli, K. Hilburn, and C. Mears (2007), How much more rain will global warming bring?, *Science*, 317 (5835), 233–235, 10.1126/science.1140746

Tropical Cyclones

Callaghan, J. and Power, S. 2010.

A reduction in the frequency of severe landfalling tropical cyclones over eastern Australia in recent decades. *Clim. Dyn.* doi:10.1007/s00382-010-0883-2

Knutson TR, McBride JL, Johnny Chan J, Emanuel K, Holland G, Landsea C, Held I, Kossin JP, Srivastava, AK, Sugi M. Tropical cyclones and climate change. *Nature Geosci* 2010, 3:157–163.

Kuleshov, Y., Fawcett, R., Qi, L., Trewin, B., Jones, D.A., McBride, J. and Ramsay, H. 2010. Trends in tropical cyclones in the South Indian Ocean and the South Pacific Ocean. *J. Geophys. Res.*, 115, D1. doi: 10.1029/2009JD012372

2. GLOBAL ATMOSPHERE AND CRYOSPHERE

Bintanja R, van Oldenborgh GJ, Drijfhout SS, Wouters B and Katsman CA (2013) Important role for ocean warming and increased ice-shelf melt in Antarctic sea-ice expansion. *Nature Geosci.* 6, 376–79

Hartmann, D.L., A.M.G. Klein Tank, M. Rusticucci, L.V. Alexander, S. Brönnimann, Y. Charabi, F.J. Dentener, E.J. Dlugokencky, D.R. Easterling, A. Kaplan, B.J. Soden, P.W. Thorne, M. Wild and P.M. Zhai, 2013: Observations: Atmosphere and Surface. In: *Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Holland, P. R., and R. Kwok (2012), Wind-driven trends in Antarctic sea-ice drift. *Nat. Geosci.*, 5(12), 872–875

Holland, P. R., and R. Kwok (2012), Wind-driven trends in Antarctic sea-ice drift. *Nat. Geosci.*, 5(12), 872–875

Li X, Holland DM, Gerber EP and Yoo C (2014) Impacts of the north and tropical Atlantic Ocean on the Antarctic Peninsula and sea ice. *Nature*, 505, 538–542

Liu JP and Curry JA (2010) Accelerated warming of the Southern Ocean and its impacts on the hydrological cycle and sea ice. *Proc. Natl. Acad. Sci. USA*, 107, 14987–14992

Stammerjohn, S., R. Massom, D. Rind and D. Martinson. 2012. Regions of rapid sea ice change: An inter-hemispheric seasonal comparison. *Geophysical Research Letters*, 39, L06501, doi:10.1029/2012GL050874.

Stammerjohn, S.E., Martinson, D.G., Smith, R.C., Yuan, X., and Rind, D., 2008: Trends in Antarctic annual sea ice retreat and advance and their relation to El Niño–Southern Oscillation and Southern Annular Mode variability. *J. Geophys. Res.*, 113, doi:10.1029/2007JC004269

Turner J, Comiso JC, Marshall GJ, Lachlan-Cope TA, Bracegirdle T, Maksym T, Meredith MP, Wang Z and Orr A (2009). Non-annular atmospheric circulation change induced by stratospheric ozone depletion and its role in the recent increase of Antarctic sea ice extent *Geophys. Res. Lett.*, 36, L08502

Vaughan, D.G., J.C. Comiso, I. Allison, J. Carrasco, G. Kaser, R. Kwok, P. Mote, T. Murray, F. Paul, J. Ren, E. Rignot, O. Solomina, K. Steffen and T. Zhang, 2013: Observations: Cryosphere. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

3. OCEANS

Boening, C., J. K. Willis, et al. (2012). “The 2011 La Niña: So strong, the oceans fell.” *GEOPHYSICAL RESEARCH LETTERS* 39(19): L19602

Burgette, R. J., C. S. Watson, et al. (2013). “Characterizing and minimizing the effects of noise in tide gauge time series: relative and geocentric sea level rise around Australia.” *Geophysical Journal International*. Doi: 10.1093/gji/ggt131

Church, J.A., P.U. Clark, A. Cazenave, J.M. Gregory, S. Jevrejeva, A. Levermann, M.A. Merrifield, G.A. Milne, R.S. Nerem, P.D. Nunn, A.J. Payne, W.T. Pfeffer, D. Stammer and A.S. Unnikrishnan, 2013: Sea Level Change. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Church, J. A. and N. J. White (2011). “Sea-Level Rise from the Late 19th to the Early 21st Century.” *Surveys in Geophysics* 32(4-5): 585-602.

Domingues, C. M., J. A. Church, et al. (2008). “Improved estimates of upper-ocean warming and multi-decadal sea-level rise.” *Nature* 453(7198): 1090.

Fasullo, J. T., C. Boening, et al. (2013). “Australia’s unique influence on global sea level in 2010–2011.” *GEOPHYSICAL RESEARCH LETTERS* 40(16): 4368-4373.

Jevrejeva, S., J. C. Moore, et al. (2008). “Recent global sea level acceleration started over 200 years ago.” *Geophysical Research Letters* 35: L08715, doi:08710.01029/02008GL033611.

Kleyapas, J.A., R.A. Feely, V.J. Fabry, C. Langdon, C.L. Sabine, and L.L. Robbins, 2006. Impacts of Ocean Acidification on Coral Reefs and Other Marine Calcifiers: A Guide for Future Research, report of a workshop held 18–20 April 2005, St. Petersburg, FL, sponsored by NSF, NOAA, and the U.S. Geological Survey, 88 pp.

Levitus, S., J. I. Antonov, et al. (2012). “World ocean heat content and thermocline sea level change (0–2000 m), 1955–2010.” *Geophys. Res. Lett.* 39(10): L10603.

Masters, D., R. S. Nerem, et al. (2012). “Comparison of Global Mean Sea Level Time Series from TOPEX/Poseidon, Jason-1, and Jason-2.” *Marine Geodesy* 35(sup1): 20-41.

Purkey, S. G. and G. C. Johnson (2010). “Warming of Global Abyssal and Deep Southern Ocean Waters between the 1990s and 2000s: Contributions to Global Heat and Sea Level Rise Budgets.” *Journal of Climate* 23(23): 6336-6351.

Ray, R. D. and B. C. Douglas (2011). “Experiments in reconstructing twentieth-century sea levels.” *Progress In Oceanography* 91(4): 496-515.

Rhein, M., S.R. Rintoul, S. Aoki, E. Campos, D. Chambers, R.A. Feely, S. Gulev, G.C. Johnson, S.A. Josey, A. Kostianoy, C. Mauritzen, D. Roemmich, L.D. Talley and F. Wang, 2013: Observations: Ocean. In: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Kleyapas, J.A., R.A. Feely, V.J. Fabry, C. Langdon, C.L. Sabine, and L.L. Robbins, 2006. Impacts of Ocean Acidification on Coral Reefs and Other Marine Calcifiers: A Guide for Future Research, report of a workshop held 18–20 April 2005, St. Petersburg, FL, sponsored by NSF, NOAA, and the U.S. Geological Survey, 88 pp.

4. GREENHOUSE GASES

Allison, C.E. and Francey, R.J. 2007. Verifying Southern Hemisphere trends in atmospheric carbon dioxide stable isotopes. *Journal of Geophysical Research*, 112, D21304, doi:10.1029/2006JD007345.

Arnold, T.,P. Steele et al., 2013. Nitrogen trifluoride global emissions estimated from updated atmospheric measurements, PNAS, 110, 2029-2034, doi:10.1073/pnas.1212346110.

Bousquet, P., B. Ringeval, I. Pison, E. Dlugokencky, E-G. Brunke, C. Carouge, F. Chevallier, A. Fortems-Cheiney, C. Frankenberg, D. Hauglustaine, P. Krummel, R. Langenfelds, M. Ramonet, M. Schmidt, P. Steele, S. Szopa, C. Yver, N. Viovy & P. Ciais, 2011. Source attribution of the changes in atmospheric methane for 2006-2008, *Atmos. Chem. Phys.*, 11, 3689-3700.

Chevallier, F., P. Ciais , T. Conway, T. Aalto, B. Anderson, P. Bousquet, E. Brunke, L. Ciattaglia, Y. Esaki, M. Fröhlich, A. Gomez-Pelaez, L. Haszpra, P. Krummel, R. Langenfelds, M. Leuenberger, T. Machida, F. Maignan, H. Matsueda, J-A. Morguï, H. Mukai, T. Nakazawa, P. Peylin, M. Ramonet, L. Rivier, Y. Sawa, M. Schmidt, P. Steele, S. Vay, A. Vermeulen, S. Wofsy & D. Worthy, 2010. CO2 surface fluxes at grid point scale estimated from a global 21-year reanalysis of atmospheric measurements, *J. Geophys. Res.*, 115, D21307,doi:10.1029/2010JD013887.

Cressot, C., ...P. Krummel, P. Steele & R. Langenfelds et al., 2014. On the consistency between global and regional methane emissions inferred from SCIAMACHY, TANSO-FTS, IASI and surface measurements, *Atmos. Chem. Phys.*, 14, 577-592, doi:10.5194/acp-14-577-2014.

Etheridge, D. M., Steele, L. P., Langenfelds, R. L., Francey, R. J., Barnola, J. M., and Morgan, V. I. 1996. Natural and anthropogenic changes in atmospheric CO2 over the last 1000 years from air in Antarctic ice and firn. *Journal of Geophysical Research – Atmospheres*, 101 (D2): 4115-4128 doi:10.1029/95jd03410.

Francey, R. J., Trudinger, C. M., van der Schoot, M., Krummel, P. B., Steele, L. P. and Langenfelds, R. L. 2010. Differences between trends in atmospheric CO2 and the reported trends in anthropogenic CO2 emissions, *Tellus*, 62B, 316-328, doi: 10.1111/j.1600-0889.2010.00472.x.

- Francey, R., C. Trudinger, M. Van der Schoot, R. Law, P. Krummel, R. Langenfelds, P. Steele, C. Allison et al., 2013. Atmospheric verification of anthropogenic CO₂ emission trends, *Nature Climate Change*, 3, 520-524, doi:10.1038/nclimate1817.
- Fraser, A., P. Palmer, L. Feng, L., H. Boesch, A. Cogan, R. Parker, E. Dlugokencky, P. Fraser, P. Krummel, R. Langenfelds, S. O'Doherty, R. Prinn, P. Steele, M. van der Schoot & R. Weiss, 2013. Estimating regional methane surface fluxes: the relative importance of surface and GOSAT mole fraction measurements, *Atmos. Chem. Phys.*, 13, 5697-5713, doi:10.5194/acp-13-5697-2013.
- Keeling, R.F., Paplawsky, B., Bracchi, K., Cox, A. and Porter, L.W. 2007. Measurements of atmospheric O₂/N₂ ratios at Cape Grim, Baseline 2005-2006, Australian Bureau of Meteorology and CSIRO Marine and Atmospheric Research, 61-62.
- Kirschke, S., J. Canadell, P. Fraser, P. Krummel, R. Langenfelds, P. Steele et al., 2013. Three decades of methane sources and sinks, *Nature Geoscience*, 6, 813-823, doi:10.1038/NGEO1955.
- Krummel, P.B., Fraser, P.J., Steele, L.P., Porter, L.W., Derek, N., Rickard, C., Ward, J., Dunse, B.L., Langenfelds, R.L., Baly, S., Leist, M.A. and McEwan, S. 2011. The AGAGE in situ program for non-CO₂ greenhouse gases at Cape Grim, 2007-2008: methane, nitrous oxide, carbon monoxide, hydrogen, CFCs, HCFCs, HFCs, PFCs, halons, chlorocarbons, hydrocarbons and sulphur hexafluoride, *Baseline 2007-2008*, Australian Bureau of Meteorology and CSIRO Marine and Atmospheric Research, 67-80.
- Langenfelds, R.L., Steele, L.P., Leist, M.A., Krummel, P.B., Spencer, D.A. and Howden, R.T. 2011. Atmospheric methane, carbon dioxide, hydrogen, carbon monoxide, and nitrous oxide from Cape Grim flask air samples analysed by gas chromatography, *Baseline 2007-2008*, Australian Bureau of Meteorology and CSIRO Marine and Atmospheric Research, 62-66.
- Law, R., P. Steele, P. Krummel & W. Zadorowski, 2010. Synoptic variations in atmospheric CO₂ at Cape Grim: a model intercomparison, *Tellus B*, 62, 810-820, DOI: 10.1111/j.1600-0889.2010.00470.x.
- Levin, I., Naegler, T., Kromer, B., Diehl, M., Francey, R.J., Gomez-Pelaez, A.J., Steele, L.P., Wagenbach, D., Weller, R. and Worthy, D. 2010. Observations and modelling of the global distribution and long-term trend of atmospheric ¹⁴CO₂, *Tellus*, 62B, 26-46, doi: 10.1111/j.1600-0889.2009.00446.x.
- Luthi, D. et al. 2008. High-resolution carbon dioxide concentration record 650,000–800,000 years before present. *Nature*, 453, 379-382. doi:10.1038/nature06949.
- MacFarling Meure, C., Etheridge, D., Trudinger, C., Steele, P., Langenfelds, R., van Ommen, T., Smith A. and Elkins J. W. 2006. Law Dome CO₂, CH₄ and N₂O ice core records extended to 2000 years BP. *Geophysical Research Letters*, 33 (14), 10.1029/2006GL026152.
- Miller, B., M. Rigby, L. Kuijpers, P. Krummel, P. Steele, M. Leist, P. Fraser, A. McCulloch, C. Harth, P. Salameh, J. Muhle, R. Weiss, R. Prinn, R. Wang, S. O'Doherty, B. Grealley & P. Simmonds, 2010. CHF₃ (HFC-23) emission trend response to HCFC₂ (HCFC-22) production and recent CHF₃ emissions abatement measures, *Atmos. Chem. Phys.*, 10, 7875–7890, doi:10.5194/acp-10-7875-2010.
- Muhle, J., A. Ganesan, B. Miller, P. Salameh C. Harth, B. Grealley, M. Rigby, L. Porter, P. Steele, C. Trudinger, P. Krummel, S. O'Doherty, P. Fraser, P. Simmonds, R. Prinn & R. Weiss, 2010. Perfluorocarbons in the global atmosphere: tetrafluoromethane, hexafluoroethane and octofluoropropane, *Atmos. Chem. Phys.*, 10, 5145–5164, doi:10.5194/acp-10-5145-2010.
- Newland, M., C. Reeves, D. Oram, J. Laube, W. Sturges, C. Hogan, P. Begley and P. Fraser, 2013. Southern hemispheric halon trends and global halon emissions, 1978-2011, *Atmos. Chem. Phys.*, 13, 5551-5565, doi:10.5194/acp-13-5551-2013.
- Nevison, C., E. Dlugokencky, G. Dutton, J. Elkins, P. Fraser, B. Hall, P. Krummel, R. Langenfelds, S. O'Doherty, R. Prinn, P. Steele & R. Weiss, 2011. Abiotic and biogeochemical signals derived from the seasonal cycles of tropospheric nitrous oxide, *Atmos. Chem. Phys.*, 11, 3713–3730, doi:10.5194/acp-11-3713-2011.
- Oram, D., F. Mani, J. Laube, M. Newland, C. Reeves, W. Sturges, S. Penkett, C. Brenninkmeijer, T. Röckmann & P. Fraser, 2012. Long-term tropospheric trend of octafluorocyclobutane (c-C₄F₈ or PFC-318), *Atmos. Chem. Phys.*, 12, 261-269.
- Park, S., Croteau, P., Boering, K.A., Etheridge, D.M., Ferretti, D., Fraser, P.J., Kim, K.-R., Krummel, P.B., Langenfelds, R. L., van Ommen, T. D., Steele, L. P. and Trudinger, C.M. 2012. Variations in the isotopic composition of atmospheric nitrous oxide since 1940. *Nature Geoscience*, doi:10.1038/ngeo1421.
- Patra, P., S. Houweling, M. Krol, P. Bousquet, D. Belikov, D. Bergmann, H. Bian, P. Cameron-Smith, M. Chipperfield, K. Corbin, A. Foutems-Chieney, A. Fraser, E. Gloor, P. Hess, A. Ito, S. Kawa, R. Law, Z. Loh, S. Maksyutov, L. Meng, P. Palmer, R. Prinn, M. Rigby, R. Saito & C. Wilson, 2011. TransCom model simulations of CH₄ and related species: linking transport, surface flux and chemical loss with CH₄ variability in the troposphere and lower stratosphere, *Atmos. Chem. Phys.*, 11, 12813-12837.
- Petit, J. R. et al. 1999. Climate and atmospheric history of the past 420,000 years from the Vostok ice core, Antarctica. *Nature*, 399, 429–436. doi:10.1038/20859.
- Rigby, M., Prinn, R.G., Fraser, P.J., Simmonds, P.G., Langenfelds, R.L., Huang, J., Cunnold, D.M., Steele, L.P., Krummel, P.B., Weiss, R.F., O'Doherty, S., Salameh, P.K., Wang, H.J., Harth, C.M., Mühle, J. and Porter L.W. 2008. Renewed growth of atmospheric methane, *Geophys. Res. Lett.*, 35, L22805, doi:10.1029/2008GL036037.
- Rigby, M., J. Muhle, B. Miller, R. Prinn, P. Krummel, P. Steele, P. Fraser, P. Salameh, C. Harth, R. Weiss, B. Grealley, S. O'Doherty, P. Simmonds, M. Vollmer, S. Reimann, J. Kim, K. Kim, R. Wang, J. Olivier, E. Dlugokencky, G. Dutton, B. Hall & J. Elkins, 2010. History of atmospheric SF₆ from 1973 to 2008, *Atmospheric Chemistry and Physics*, 10, 10305-10320
- Rigby, M.,P. Krummel, P. Steele, P. Fraser, et al., 2013. Re-evaluation of the lifetimes of the major CFCs and CH₃CCl₃ using atmospheric trends, *Atmos. Chem. Phys.*, 13, 2691-2702.
- Rubino, M., D. Etheridge, C. Trudinger, C. Allison, R. Langenfelds, P. Steele, R. Francey et al., 2013. A revised 1000 year atmospheric ¹³C-CO₂ record from Law Dome and South Pole, Antarctica, *J. Geophysical Research*, 118, 8482-8499, doi:10.1002/jgrd.50668.
- Saikawa, E.,P. Fraser, P. Krummel, P. Steele et al., 2012. Global and regional emissions estimates for HCFC-22, *Atmos. Chem. Phys.*, 12, 10033-10050.
- Saikawa, E., ...R. Langenfelds, P. Krummel, M. van der Schoot, P. Fraser, P. Steele et al., 2013. Global and regional emissions estimates for N₂O, *Atmos. Chem. Phys. Discuss.*, 13, 19471-119525.
- Sapart, C., ...D. Etheridge et al., 2013. Reconstruction of the carbon isotopic composition of methane over the last 50 yr based on multi-site firn air measurements, *Atmos. Chem. Phys.*, 13, 6993-7005.

- Steele, L.P., Krummel, P.B., Spencer, D.A., Rickard, C., Baly, S., Langenfelds, R.L. and van der Schoot, M. 2011. Baseline carbon dioxide monitoring, *Baseline 2007-2008*, Australian Bureau of Meteorology and CSIRO Marine and Atmospheric Research, 51-53.
- Thompson, R., ...R. Langenfelds, P. Krummel, P. Fraser, P. Steele et al., 2013. Inter-annual variability in tropospheric nitrous oxide, *Geophys. Res. Letts.*, 40, 1-6, doi:10.1002/grl.50721.
- Thompson, R., ...R. Langenfelds, P. Krummel, P. Steele, P. Fraser et al., 2014. Nitrous oxide flux history 1999–2009 from a global atmospheric inversion, *Atmos. Chem. Phys.*, 14, 1801-1817.
- Trudinger, C., Enting, I., Rayner, P., Etheridge, D., Buizert, C., Rubino, M., Krummel, P., and Blunier, T., 2013, How well do different tracers constrain the firn diffusivity profile?: Atmospheric Chemistry and Physics, v. 13, p. 1485-1510.
- Sturrock, G. A., Etheridge, D. M., Trudinger, C. M., Fraser, P. J., and Smith, A. M., 2002a, Atmospheric histories of halocarbons from analysis of Antarctic firn air: Major Montreal Protocol species: *Journal of Geophysical Research - Atmospheres*, v. 107, no. D24, p. 4765, doi:4710.1029/2002JD002548.
- Vollmer, M., B. Miller, M. Rigby, S. Reimann, J. Muhle, P. Krummel, S. 365mfc, HFC-245fa, HFC-227ea and HFC-236fa, *J. Geophysical Research*, 116, D08304, doi:10.1029/2010JD015309.
- Xiao, X., R. Prinn, P. Fraser, R. Weiss, P. Simmonds, S. O'Doherty, B. Miller, P. Salameh, C. Harth, P. Krummel, A. Golombek, L. Porter, J. Elkins, G. Dutton, B. Hall, P. Steele, R. Wang & D. Cunnold, 2010. Atmospheric three-dimensional inverse modelling of regional industrial emissions and global oceanic uptake of carbon tetrachloride, *Atmos. Chem Phys.*, 10, 10421-10434.
- O'Doherty, J. Kim, T.-S. Rhee, R. Weiss, P. Fraser, P. Simmonds, P. Salameh, C. Harth, R. Wang, P. Steele, D. Young, C. Lunder, O. Hermansen, D. Ivy, T. Arnold, N. Schmidbauer, K.-R. Kim, B. Grealley, M. Hill, M. Leist, A. Wenger & R. Prinn, 2011. Atmospheric histories and global emissions of the anthropogenic hydrofluorocarbons (HFCs) HFC-
- ## 5. FUTURE CLIMATE SCENARIOS FOR AUSTRALIA
- Abbs, D. (2010). The impact of climate change on the climatology of tropical cyclones in the Australian region. *CSIRO Climate Adaptation Flagship Working Paper 11*. 24 pp. www.csiro.au/~.../WP11%20CAF%20climchange%20tropcyclones.pdf
- CSIRO and Bureau of Meteorology (2007). *Climate change in Australia*. Technical Report. www.climatechangeinaustralia.gov.au.
- Lucas C, Hennessy KJ and Bathols JM (2007) *Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts*. Bureau of Meteorology, CSIRO, Bushfire CRC, Melbourne. 84 p. <http://www.royalcommission.vic.gov.au/getdoc/c71b6858-c387-41c0-8a89-b351460eba68/TEN.056.001.0001.pdf>
- IPCC AR4 (2007) *Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. (Eds Solomon S, Qin D, Manning M, Chen Z, Marquis M, Averyt KB, Tignor M and Miller HL). Cambridge University Press, Cambridge, UK and New York, NY, USA
- IPCC, 2013: *Climate Change 2013: The Physical Science Basis*. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 1535 pp
- Rafter, A. and Abbs, D. (2009). An analysis of future changes in extreme rainfall over Australian regions based on GCM simulations and Extreme Value Analysis. *CAWCR Research Letters*, Issue 3, pp. 44-49.
- Kirono, D.G.C., Kent, D.M., Hennessy, K.J. and Mpelasoka, F. (2011). Characteristics of Australian droughts under enhanced greenhouse conditions: Results from 14 global climate models. *Journal of Arid Environments*, 75 (2011) 566e575, doi:10.1016/j.jaridenv.2010.12.012