

**University of Cape Town**  
**Research Report 2008**  
**Faculty of Science**  
**Department of Botany**

(Including the Bolus Herbarium and the Institute for Plant Conservation)

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**Articles in Peer-reviewed Journals**

Anderson, R.J., Anderson, D.R. and Anderson, J.S. 2008. Survival of sand-burriel by seaweeds with crutose bases or life-history stages structures the biotic community on an intertidal rocky shore. *Botanica Marina*, 51: 10-20.

Archibald, S. 2008. African grazing lawns: how fire, rainfall, and grazer numbers interact to affect grass community states. *Journal of Wildlife Management*, 72(2): 492-501.

Balfour, D.A. and Midgley, J.J. 2008. A demographic perspective on bush encroachment by *Acacia karroo* in Hluhluwe-Imfolozi Park, South Africa. *African Journal of Range and Forage Science*, 25(3): 147-151.

Bamuamba, K., Gammon, D.W., Meyers, P., Dijoux-Franca, M.G. and Scott, G. 2008. Anti-mycobacterial activity of five plant species used as traditional medicines in the Western Cape Province ( South Africa). *Journal of Ethnopharmacology*, 117(2): 385-390.

Blanchard, R. and Holmes, P.M. 2008. Riparian vegetation recovery after invasive alien tree clearance in the Fynbos Biome. *South African Journal of Botany*, 74: 421-431.

Bond, W.J. 2008. What limits trees in C4 grasslands and savannas? *Annual Review of Ecology Evolution and Systematics*, 39: 641-659.

Bond, W.J., Higgins, S., Trollope, W. and Williams, R. 2008. Physically motivated empirical models for the spread and intensity of grass fires. *International Journal of Wildland Fire*, 17: 595-601.

Bond, W.J., Silander, J.A., Ranaivonasy, J. and Ratsirarson, J. 2008. The antiquity of Madagascar's grasslands and the rise of C4 grassy biomes. *Journal of Biogeography*, 35: 1743-1758.

Christin, P., Salamin, N., Muasya, A.M., Roalson, E.H., Russier, F. and Besnard, G. 2008. Evolutionary switch and genetic convergence on *rbcl* following the evolution of C4 photosynthesis. *Molecular Biology and Evolution*, 25(11): 2361-2368.

Coetsee, C., February, E.C. and Bond, W.J. 2008. Nitrogen availability is not affected by frequent fire in a South African savanna. *Journal of Tropical Ecology*, 24: 1-8.

Craine, J., Morrow, C. and Stock, W.D. 2008. Nutrient concentration ratios and co-limitation in South African grasslands. *New Phytologist*, 179: 829-836.

- Cramer, M.D., Hoffmann, V. and Verboom, G.A. 2008. Nutrient availability moderates transpiration in *Ehrharta calycina*. *New Phytologist*, 179: 1048-1057.
- Duffin, K.I., Gillson, L. and Willis, K.J. 2008. Testing the sensitivity of charcoal as an indicator of fire events in savanna environments: quantitative predictions of fire proximity, area and intensity. *Holocene*, 18(2): 279-291.
- Edkins, M.T., Kruger, L.M., Harris, K. and Midgley, J.J. 2007. Baobabs and elephants in Kruger National Park: nowhere to hide. *African Journal of Ecology*, 46: 119-125.
- Foxcroft, L., Parsons, M., McLoughlin, C.A. and Richardson, D.M. 2008. Patterns of alien plant distribution in a river landscape following an extreme flood. *South African Journal of Botany*, 74: 463-475.
- Foxcroft, L., Richardson, D.M. and Wilson, J.R.U. 2008. Ornamental plants as invasive aliens: problems and solutions in Kruger National Park, South Africa. *Environmental Management*, 41: 32-51.
- Gillson, L., Ekblom, A., Willis, K.J. and Froyd, C. 2008. Holocene palaeo-invasions: the link between pattern, process and scale in invasion ecology. *Landscape Ecology*, 23: 757-769.
- Hawkins, H.J., Hettasch, H., Mesjasz-Przybylowicz, J., Przybylowicz, W. and Cramer, M.D. 2008. Phosphorus toxicity in the Proteaceae: a problem in post-agricultural lands. *Scientia Horticulturae*, 117: 357-365.
- Hedderson, T.A. and Longton, R.E. 2008. Local adaptation in moss life histories: population-level variation and a reciprocal transplant experiment. *Journal of Bryology*, 30: 1-11.
- Hedderson, T.A. and Zander, R. 2008. *Algaria nataliei* (Pottiaceae), a new moss genus and species from the Western Cape Province of South Africa. *Journal of Bryology*, 30: 192-195.
- Hedderson, T.A. and Zander, R. 2008. *Chenia ruigtevleia* (Pottiaceae), a new moss species from the Western Cape Province of South Africa. *Bryologist*, 111(3): 496-500.
- Hedderson, T.A. and Zander, R. 2008. *Vrolijkheidia circumscissa* (Pottiaceae), a new moss genus and species from the Succulent Karoo of South Africa. *Journal of Bryology*, 30: 143-146.
- Hoffman, M.T. and Vogel, C. 2008. Climate change impacts on African rangelands. *Rangeland Journal*, 30(3): 12-17.
- Kleizen, C., Midgley, J.J. and Johnson, S.D. 2008. Pollination systems of *Colchicum* (Colchicaceae) in Southern Africa: evidence for rodent pollination. *Annals of Botany*, 102: 747-755.
- Knox, E.M., Heenan, P.B., Muasya, A.M. and Murray, B.G. 2008. Phylogenetic position and relationships of *Lobelia glaberrima* (Lobeliaceae), a new alpine species from southern South Island (New Zealand). *New Zealand Journal of Botany*, 46: 77-85.
- Knox, E.M., Muasya, M. and Muchhala Nathan, N. 2008. The predominantly South American Clade of Lobeliaceae. *Systematic Botany*, 33(2): 462-468.

Lawes, M., Griffiths, M., Midgley, J.J., Boudreau, S., Eeley, H.A.C. and Chapman, C.A. 2008. Tree spacing and area of competitive influence do not scale with tree size in an African rain forest. *Journal of Vegetation Science*, 19: 729-738.

McCormick, A., Cramer, M.D. and Watt, D. 2008. Changes in photosynthetic rates and gene expression of leaves during a source-sink perturbation in sugarcane. *Annals of Botany*, 101: 89-102.

McCormick, A., Cramer, M.D. and Watt, D. 2008. Culm sucrose accumulation promotes physiological decline of mature leaves in ripening sugarcane. *Field Crops Research*, 108: 250-258.

McCormick, A., Cramer, M.D. and Watt, D. 2008. Regulation of photosynthesis by sugars in sugarcane leaves. *Journal of Plant Physiology*, 165: 1817-1829.

McDowell, N., Pockman, W.T., Allen, C.D., Breshears, D.D., Cobb, N., Kolb, T., Plaut, J., Sperry, J., Williams, D.G., Yezzer, E.A. and West, A. 2008. Mechanisms of plant survival and mortality during drought: why do some plants survive while others succumb to drought? *New Phytologist*, 178: 719-739.

Midgley, J.J. and Rebelo, A.G. 2008. Life-history evolution as an explanation for the absence of the tree life-form in Cape fynbos. *South African Journal of Science*, 104: 89-90.

Moncrieff, G., Kruger, L.M. and Midgley, J.J. 2008. Stem mortality of *Acacia nigrescens* induced by the synergistic effects of elephants and fire in Kruger National Park, South Africa. *Journal of Tropical Ecology*, 24: 655-662.

O'Farrell, P.J., Donaldson, J., Hoffman, M.T. and Mader, A.D. 2008. Small mammal diversity and density on the Bokkeveld escarpment, South Africa - implications for conservation and livestock predation. *African Zoology*, 43(1): 117-124.

Palmer, A.R., Taylor, D., Fuentes, S., Macinnis-Ng, C., Zeppel, M., Yunusa, I., February, E.C. and Eamus, D. 2008. The use of pre-dawn leaf water potential and MODIS LAI to explore seasonal trends in the phenology of Australian and Southern African woodlands and savannas. *Australian Journal of Botany*, 56: 557-563.

Pirie, M.D., Humphreys, A.M., Galley, C., Barker, N., Verboom, G.A., Orlovich, D., Draffin, S.J., Lloyd, K., Baeza, C.M., Negritto, M., Ruiz, E., Sanchez, J.H.C., Reimer, E. and Linder, P. 2008. A novel supermatrix approach improves resolution of phylogenetic relationships in a comprehensive sample of danthonioid grasses. *Molecular Phylogenetics and Evolution*, 48: 1106-1119.

Rahlao, S.J., Hoffman, M.T., Todd, S.W. and McGrath, K. 2008. Long-term vegetation change in the Succulent Karoo, South Africa following 67 years of rest from grazing. *Journal of Arid Environments*, 72: 808-819.

Robertson-Andersson, D., Potgieter, M., Hansen, J., Bolton, J.J., Troell, M., Anderson, R., Halling, C. and Probyn, T. 2008. Integrated seaweed cultivation on an abalone farm in South Africa. *Journal of Applied Phycology*, 20: 579-595.

Rohde, R. and Hoffman, M.T. 2008. One Hundred years of separation: the historical ecology of a South African 'Coloured Reserve'. *Africa*, 78(2): 189-222.

Scott, G. and Hewett, M. 2008. Pioneers in ethnopharmacology: the Dutch East India Company (VOC) at the Cape from 1650 to 1800. *Journal of Ethnopharmacology*, 115: 339-360.

Shane, M., Cramer, M.D. and Lambers, H. 2008. Root of edaphically controlled Proteaceae turnover on the Agulhas Plain, South Africa: phosphate uptake regulation and growth. *Plant Cell and Environment*, 31: 1825-1833.

Tolley, K., Chase, B. and Forest, F. 2008. Speciation and radiations track climate transitions since the Miocene Climatic Optimum: a case study of Southern African chameleons. *Journal of Biogeography*, 35: 1402-1414.

Waldram, M. 2008. Breeding Biology of *Ranitomeya biolat* in the Tambopata Region of Amazonian Peru. *Journal of Hepatology*, 42(2): 232-237.

Waldram, M., Bond, W.J. and Stock, W.D. 2008. Ecological engineering by a mega-grazer: white rhino impacts on a South African Savanna. *Ecosystems*, 11: 101-112.

Willis, K.J., Gillson, L. and Virah-Sawmy, M. 2008. Nature or nurture: the ambiguity of C4 grasslands in Madagascar. *Journal of Biogeography*, 35: 1741-1742.

#### **Peer-reviewed published conference proceedings**

Lyons, C., Picker, M.D. and Carrick, P. 2008. Community structure of soil invertebrates under differing restoration practices - alluvial diamond-mined sites in South Africa. In A. Fourie, M. Tibbett, I. Weiersbye, and P. Dye (eds), *Proceedings of the Third International Seminar on Mine Closure, 14-17 October 2008, Johannesburg, South Africa*. Nedlands, Western Australia: Australian Centre for Geomechanics, The University of Western Australia. ISBN 9780980418569.

Schreiner, G.O., Pienaar, E., Van Eeden, J.D., Hoffman, M.T. and Carrick, P. 2008. An ecological evaluation of rehabilitation interventions on phosphate mined land in the West Coast Fossil Park from 1996-2008. In A. Fourie, M. Tibbett, I. Weiersbye and P. Dye (eds), *Proceedings of the Third International Seminar on Mine Closure, 14-17 October 2008, Johannesburg, South Africa*. Nedlands, Western Australia: Australian Centre for Geomechanics, The University of Western Australia. ISBN 9780980418569.

#### **Doctoral degrees**

Anderson, P. 2008. The impacts grazing along environmental gradient in the Kamiesberg, South Africa. Supervised by Professor M.T. Hoffman.

Conrad, F. 2008. Molecular systematics, biogeography and dating of the tribe Haemantheae (Amaryllidaceae) and the Phylogeography of *Clivia*. Supervised by Professor T. Hedderson.

Manyanga, P. 2008. Evolution of life history strategies in Lophoziaceae. Supervised by Professor T. Hedderson.

Nowell, T. 2008. The spatial and temporal dynamics of diversification in *Tylecodon*, *Cotyledon* and *Adromischus* (Crassulaceae) in Southern Africa. Supervised by Dr G.A. Verboom.

#### **Master's degrees (by research)**

Blanchard, R. 2008. To what extent are the alien plant clearing methods currently used in the Western Cape resulting in riparian ecosystem recovery? Master of Science. Supervised by Professor M.T. Hoffman.

Khavhagali, V., Craine, J. 2008. Forest colonisation of savannas: patterns and process. Master of Science. Supervised by Professor W.J. Bond.

Staver, A. 2008. Spatial and temporal variability in Acacia population dynamics. Master of Science. Supervised by Professor W.J. Bond.

Underhill, J., Tolley, K. and Van Noort, S. 2008. Phylogeny and co-divergence in the fig-fig wasp mutualism: sycoecine and agaonidid fig (Chalcidoidea, Hymenoptera) associated with Ficus section Galglychia (Moraceae). Master of Science. Supervised by Professor T. Hedderson.