

Name: **Prof. Nicholas Mark DICKINSON**

Qualifications: B.Sc.(Hons), Ph.D., C. Biol, F.I. Biol.

Current post: Professor of Environmental Biology, Liverpool John Moores University.

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Date of birth: 30 August 1953

### Summary

B.Sc. (Hons) Liverpool Polytechnic 1976, Ph.D. University of Keele in 1980, followed by lectureship at Kenyatta University in Nairobi and then Liverpool John Moores University. Senior Lecturer, Reader, then Professor of Environmental Biology. Administrative roles have included Programme Leader for Applied Biology and Applied Ecology (TQA Score 23/24). Elected to Fellowship of Institute of Biology in 1998. Enthusiastic teacher and researcher. Teaching interests within the subject areas of environmental biology, applied ecology, ecotoxicology, botany and environmental science. Research activities concerned with the ecological impact of contaminated soils associated with agriculture, urbanization and industry, mostly in the context of to heavy metals and in relation to trees and land reclamation. 50+ publications, in more than 20 international journals, and research funding of £0.5M.

### EMPLOYMENT:

1986- Senior Lecturer (-98), Reader (-03), Professor of Environmental Biology  
School of Biological and Earth Sciences, JMU, Liverpool.

1981 - 1985 Lecturer and Senior Lecturer in Ecology,  
Department of Botany, Kenyatta University, Nairobi, Kenya.

### TEACHING

#### Current teaching (JMU)

B.Sc. programmes in the programme areas of Applied Biology, Applied Ecology, Environmental Science, Wildlife Conservation.

- Level 1: Habitat Ecology; Flora of the British Isles; Environmental Issues\*, Study Skills
- Level 2: Ecology Fieldwork (Mediterranean Field Course)\*, Agriculture and Forestry\*, Environmental Pollution\*; Communities and Ecosystems
- Level 3: Pollution Ecology\*; Applied Soil Science; Honours Projects.  
[Module Leader of courses marked by asterisk\*]

#### Recent overseas teaching

- University of Luleå, Sweden, MSc/PhD programmes in Land Reclamation, December 2003.
- Czech Republic: NATO Advanced Study Institute on Phytoremediation, Trest Castle, August 2002.
- Austria and Czech Republic: IP Sokrates Advanced Study Institute on: Rhizosphere Management. Field course in Upper Austria and North Bohemia, with lectures at University of Vienna and the Czech University of Agriculture in Prague, May 2001
- China: Croucher Advanced Study Institute [Topic: Restoration and Management of Derelict Lands], Hong Kong and Guangdong, China, November 2000

### RESEARCH

Research background in ecosystem studies on temperate and tropical grasslands and tropical agriculture, particularly in relation to disturbance of nutrient cycles and trace metal contamination. Recent interests mainly concerned with metal tolerance and the responses of trees to environmental contamination, ecological reclamation and remediation of contaminated land, creation of healthy soils.

#### Selected international conferences.

U.K.	2003	Land Reclamation 2003, Runcorn (May 2003)
Australia	2000	Remade Lands, Fremantle. International Conference on the Remediation and Management of Degraded Lands <i>'The natural</i>

		<i>attenuation and manipulation of soil contaminants using short rotation forestry</i>
Japan	2003	<i>Invited paper: Japanese Society of Plant Physiology, Osaka. Phytoremediation research and practice: the European context.</i>
China	2004	<i>Plenary Lecture: SOILREM, Nanjing, November 04, Remediation Technology: Application and Management of Polluted Soil in the UK</i> <i>Keynote speech: GEOTROP, March 04, Haikow, Hainan. 'Influence of soil nutrients and heavy metals on biodiversity in the tropics: relevance to land reclamation'.</i>
Hong Kong	2004	<i>Invited Paper: Persistent Toxic Substances (PTS, Nov 04). Arsenic and persistent metals in urban soils: risk assessment and remediation.</i>
	2003	<i>Plenary paper: Wetland Ecosystems in Asia: Function and Management (May 2003) 'Canal remediation demonstration project'</i>
U.S.A.	2003	<i>US-EPA, Chicago. Innovations in Phytotechnology – Beyond the Basics. Workshop. Invited Speaker. 'Cd phytoextraction by woody plants'. <a href="http://clu.in.org/studio/2003phyto/prez/45.pdf">http://clu.in.org/studio/2003phyto/prez/45.pdf</a> <a href="http://clu.in.org/studio/2003phyto/agenda.cfm">http://clu.in.org/studio/2003phyto/agenda.cfm</a></i>
	2002	<i>University of Massachusetts, Amherst</i>
Sweden	1994	<i>Presentation of conference paper to Willow Vegetation Filters conference, Swedish Univ. Agric. Sci., Uppsala.</i>
Hungary	2002	<i>3<sup>rd</sup> European Conference on restoration Ecology (August 2002)</i>

#### Overseas research visits.

Poland	University of Wroclaw, Poland, 1991
India	University of Calicut, Kerala, 1990, 1994
South Africa	University of Transkei and University of Rhodes
China	Zhongshan University, Hainan, Institute of Soil Science, Nanjing.

## SELECTED PUBLICATIONS

### Book Contributions

Lepp, N.W. and Dickinson, N.M. (2003) Natural bioremediation of metal polluted soils – a case history from the UK. *In: Risk Assessment and Sustainable Land Management Using Plants in trace Element Contaminated Soils* (Eds. Mench, M. and Mocquut, B.), Cost Action 837, 4<sup>th</sup> WG2 Workshop, INRA, Bordeaux, France [ISBN 2-9520207-01]

Dickinson, N.M., King, R., Royle, A. et al. (2004) Modelling contamination in an urban canal sediment: some preliminary results from a phytoremediation project. *In: Development in Ecosystems*, M.H. Wong, (Ed). Elsevier B.V. pp. 131-141.

Royle, A., Dickinson, N.M., Putwain, P.D., King, R., Gray-Jones, E. (2003) Phytoremediation of a contaminated dredged canal sediment. *In: Land Reclamation: Extending the Boundaries* (Eds. Moore, H.M., Fox, H.R. and Elliott, S.) A.A. Balkema Publishers, pp. 281-284. [ISBN 90 5809 562 2]

Dickinson, N.M. (2002) 'The Treatment of Modern Landfills' *In: The Restoration and Management of Derelict Land: Modern Approaches* (Eds. M.H. Wong and A.D. Bradshaw) World Scientific Publishing, New Jersey [ISBN 9812382534] pp.167-80.

Lepp, N.W. and Dickinson (1998) 'Biological interactions: the role of woody plants in phytoremediation' *In: Metal-Contaminated Soils: In Situ Inactivation and Phytoremediation* (Ed. Vangronsveld, J. and Cunningham, S.D.) R.G.Landes Company [ISBN: 1-57059-531-3]

Dickinson, N.M. and Lepp, N.W. (1997) 'Metals and trees: impacts, responses to exposure and exploitation of resistance traits'. *In: Contaminated Soils* (Ed. Prost, R.), INRA, Paris, p. 247-254 [ISBN: 2-7380-0775-9]

Dickinson, N.M. (1996) 'Metal resistance in trees'. *In: Heavy Metals and Trees* (Ed. I. Glimmerveen), ICF, Edinburgh, pp. 85-92. [ISBN 0-907284-205]

Lepp, N.W. and Dickinson, N.M. (1987) 'Partitioning and transport of copper in various components of Kenyan *Coffea arabica* stands'. *In: Pollutant Transport and Fate in Ecosystems* (Edited by P.J. Coughtrey, M.H. Martin and M.H. Unsworth), Blackwell Scientific Publications, Oxford, pp. 289-99.

Dickinson, N.M. (1986) 'The Natural Ecosystem' *In: Tropical Ecology* (Edited by D.E. Pomeroy and M.W. Service), Longman, London, pp. 5-33 and 74-92.

Dickinson, N.M. (1986) 'Aspects of Plant Ecology'. *In: Tropical Ecology* (Edited by D.E. Pomeroy and M.W. Service), Longman, London, pp. 5-33 and 74-92.

#### Academic Journals

Dickinson, N.M. and Pulford, I.D. (2004) Cadmium phytoextraction using short-rotation coppice *Salix*: the evidence trail. *Environment International* (*in press*)

Rawlinson, H., Dickinson, N., Putwain, P. and Nolan, P. (2004) Woodland establishment on old-style landfill sites in N.W. England. *Forest Ecology and Management* 202, 265-80.

Ma, Y., Dickinson, N.M. and Wong, M.H. (2003) Interactions between earthworms, trees, soil nutrition and metal mobility in amended Pb/Zn mine tailings from Guandong, China. *Soil Biol. Biochem.* 35, 1369-1379

Wisniewski L. and Dickinson, N.M. (2003) Toxicity of copper to *Quercus robur* (English Oak) seedlings from a copper-rich soil. *Environmental and Experimental Botany*, 50, 99-107.

Ma, Y., Dickinson, N.M. and Wong, M.H. (2002) 'Toxicity of Pb/Zn mine tailings to the earthworm *Pheretima* and the effects of burrowing on metal availability' *Biol. Fert. Soil* 36, 72-78.

Dickinson, N.M. (2000) Strategies for sustainable woodlands on contaminated soils. *Chemosphere* 41, 259-263

Dickinson, N.M., MacKay, J.M., Goodman A and Putwain, P. (2000) 'Planting Trees on Contaminated Soils: Issues and Guidelines' *Land Contamination and Reclamation* 8 (2), 87-101

Dickinson, N.M. (2000) 'Trees as environmental sentinels' *Biologist* 47, .

Punshon, T. and Dickinson, N.M. (1999) 'Metal accumulation and phytoremediation potential of willows'. *International Journal of Phytoremediation* 1 (4), 361-385.

Punshon, T. and Dickinson, N.M. (1997) 'Acclimation of *Salix* to metal stress'. *New Phytologist*, 137, 303-314.

Dickinson, N.M., Watmough, S.A. and Turner, A.P. (1996) 'Ecological impact of 100 years of metal processing at Prescott, North-West England. *Environmental Reviews*, 4(1), 8-24.

Turner, A.P. and Dickinson, N.M. (1993) 'Survival of *Acer pseudoplatanus* L. (sycamore) seedlings on metalliferous soils'. *New Phytologist*, 123, 509-521.

#### Journal editor

Environmental Geochemistry and Health  
International Journal of Phytoremediation