

Scion

Waste to Resource (W2R)

A complete list of all publications by the W2R project including collaborators from 2003. Up to date as of July 15th 2008.

For further information on Land treatment, go to:

<http://www.ensisjv.com/WorkingwithEnsis/Collaborations/IndustryCooperativesCRCs/NewZealandLandTreatmentCollective/tabid/292/Default.aspx>

Book Chapters

Ellis, R.J.; van den Heuvel, M.R.; Ling, N., and Dietrich, D.R. 2004: Lack of estrogenic and endocrine disrupting effects of juvenile rainbow trout exposed to a NZ pulp and paper effluent. In: Borton, D.L.; Hall, T.J.; Fisher, R.P.; Thomas, J.F. (Eds.), "Pulp & Paper Mill Effluent Environmental Fate & Effects", DEStech Publications. Lancaster, PA, USA, pp. 67-77.

Hawkins, S.A., Hedley, C., Orr, H.; van den Heuvel, M.R. and Hodson, P.V. 2004. Hazard identification of pulp mill solid waste to aquatic species In: Borton, D.L., Hall, T.J., Fisher, R.P., Thomas, J.F., (Eds.), "Pulp & Paper Mill Effluent Environmental Fate & Effects", DEStech Publications. Lancaster, PA, USA, pp. 429-438.

Koellner, B., Wasserrab, B., Fischer, U., Kotterba, G. and van den Heuvel, M R; 2006. How can toxic effects of pollution of the aquatic environment on the immunocompetence of fishes be detected? - A discussion on the relevance of the biomarkers philosophy, In: Hot Spot Pollutants: Pharmaceuticals in the Environment (Ed. by Dietrich, D R; Webb, S F & Petry, T). Elsevier, pp. 143-164

Landman, M.J., van den Heuvel, M.R. and Ling, N. 2004. Pulp and paper effluent hypoxia interactions in fish, In: Borton, D.L.; Hall, T.J.; Fisher, R.P.; Thomas, J.F.; (Eds.), "Pulp & Paper Mill Effluent Environmental Fate & Effects". DE Stech Publications, Lancaster, PA, USA, pp.506-516.

Marcar, N.E., Theiveyanathan, T. and Magesan, G.N. 2007. Salinity, In "Use of treated sewage water in agriculture: impacts on crop and soil environment", Eds (G. Levy., P. Fine and A. Bar-tal). Blackwell Publishing, Oxford, UK (submitted).

Magesan, G.N., Wang, H., and Quintern, M. 2008. Monitoring and sampling of soil solution in land treatment systems, The 29th Technical Review, New Zealand Land Treatment Collective, Rotorua, New Zealand.

Magesan, G.N. and Wang, H. 2005. Forests as a sink for treated effluent. Section 4.8 in: *New Zealand Institute of Forestry Handbook 2005*, (Editor) M Colley, New Zealand Institute of Forestry Inc, Christchurch, 2005, pp 70-72.

Magesan, G.N. 2004. Land application of municipal wastewater and its influence on soil physical properties and nitrate leaching. Juhasz, Magesan & Naidu (Eds.), *Waste Management*, Science Publishers, USA.

Smith, C.T., Carnus, J-M., Wang, H., Gielen, G., Stuthridge, T., & Tomer, M.D. 2003. Chapter 2.7. Land application of chemi-thermo mechanical pulp and paper mill effluent in New Zealand: From research to practice, pp 177-187, In: *Environmental impacts of pulp and paper waste streams*. (Ed. Stuthridge, T., van den Heuvel, M., Marvin, N., Slade, A., Gifford, J.), Society of Environmental Toxicology and Chemistry, Pensacola, FL. USA.

van den Heuvel, M.R., Bandelj, E., Donald, R., Ellis, R.J., Smith, M.A. Finley, M., McCarthy, L.H., Stuthridge, T.R. 2004. Review of reproductive-endocrine effects of a New Zealand pulp and paper mill effluent, In: D.L. Borton, T.J. Hall, R.P. Fisher and J.F. Thomas (Eds.), *Pulp & Paper Mill Effluent Environmental Fate & Effects*, DEStech Publications, Lancaster, PA, USA, pp 55-66.

van den Heuvel, M.R. 2004. Overview of fish health studies – Progress since 2000, In: D.L. Borton, T.J. Hall, R.P. Fisher and J.F. Thomas (Eds.), *Pulp & Paper Mill Effluent Environmental Fate & Effects*, DEStech Publications, Lancaster, PA, USA, pp. 3-13.

Wang, H., Bolan, N.S., Hedley, M.J., Horne, D.J. 2006. Potential uses of fluidized bed boiler ash (FBA) as a liming material, soil conditioner and sulfur fertilizer, In: *Coal combustion by-products and environmental issues*. K.S. Sajwan, I. Twardowska, T. Punshon, A.K. Alva (ed.) Springer Publishers, New York, USA, pp 202-215.

Refereed Papers

Ataria, J.U., Gooneratne, R., and Tremblay, L.A. 2004. Development of a specific vitellogenin ELISA for the shortfin eel (*Anquilla australis*) *Australasian Journal of Ecotoxicology*, 10:43-52.

Close, M.E., Lee, R., Sarmah, A.K., Pang, L., Dann, R., Magesan, G.N., Watt, J.P.C. and Vincent, K.W. 2008. Pesticide sorption and degradation characteristics in New Zealand soils – a synthesis from seven field trials, *New Zealand Journal of Crop and Horticultural Science*, 36: 9-30.

Close, M.E., Lee, R., Magesan, G.N., Stewart, M.K., Skuse, G. and Bekesi, G. 2005. Field study of pesticide leaching in a Himatangi sand (Manawatu) and in a Kiripaka bouldery clay loam (Northland) *Australian Journal of Soil Research*, 43, 457-469.

Close, M.E., Pang, L., Magesan, G.N., Lee, R., and Green, S.R. 2003: Field study of pesticide leaching in an allophanic soil in New Zealand, Comparison of simulations from four leaching models, *Australian Journal of Soil Research*, 41: 825-846.

Close, M.E., Magesan, G.N., Lee, R., Stewart, M.K., and Hadfield, J.C. 2003. Field study of pesticide leaching in an allophanic soil in New Zealand, *Australian Journal of Soil Research*, 41: 809-824.

Ellis, R. J., van den Heuvel, M. R., Smith, M. A. and Ling, N., 2006. Effects of maternal versus direct exposure to pulp and paper mill effluent on rainbow trout early-life-stages, *Journal of Toxicology and Environ Health* 68:369-387.

Ellis, R. J., van den Heuvel, M. R., Bandelj, E., Smith, M. A., McCarthy, L., Stuthridge, T.R. and Dietrich, D.R. 2003. In vivo and In vitro assessment of the androgenic potential of a pulp and paper mill effluent, *Environ. Toxicol. Chem.* 22:1448-1456 (2003).

Geilen, G.J.H.P., Clinton, P.W., van den Heuvel, M.R., Kimberley, M.O., Greenfield, L.G. 2008. Soil microbial effects and adaptation following exposure to sewage-derived pharmaceuticals, submitted *Soil Biology and Biochemistry*.

Geilen, G.J.H.P., van den Heuvel, M.R., Clinton, P.W., Greenfield, L.G. 2008. Factors impacting on pharmaceutical leaching following sewage application to land. Submitted to *Chemosphere*.

Goven, J. and Langer, E. R. 2008. The potential of public engagement in sustainable waste management: designing the future for biosolids in New Zealand, *Journal of Environmental Management*, in press.

Green, S.R., Vogeler, I., Magesan, G., and Clothier, B.E., 2006. Modelling the water dynamics under a pine tree plantation irrigated with effluent, *Journal of Environmental Quality*.

Hack L.A., Tremblay L.A., Wratten, S.D., Forrester, G. and Keesing, V. 2008. Toxicity of zinc sulphate and atrazine to nauplii and adults of the marine harpacticoid copepod, *Robertsonia propinqua*, *New Zealand Journal of Marine and Freshwater Research*, 42:93-98.

Hack, L.A., Tremblay, L.A., Wratten, S.D., Forrester, G. and Keesing V. 2007. Toxicity of estuarine sediments using a full life-cycle bioassay with the marine copepod, *Robertsonia propinqua*, *Ecotoxicology and Environmental Safety*. Accessed: 1 Feb 2008. <http://dx.doi.org/10.1016/j.ecoenv.2007.12.008>

Hack, L.A., Tremblay, L.A., Wratten, S.D., Lister, A. and Keesing V. 2007. Benthic meiofauna community composition at polluted and non-polluted sites in New Zealand intertidal environments, *Marine Pollution Bulletin*, 54:1801-1812.

Horswell, J., Ambrose, V., Clucas, L., Leckie, A.C., Clinton, P.W. and Speir, T. 2007. Survival of *Escherichia coli* and *Salmonella* spp., after application of sewage sludge to a *Pinus radiata* forest, *Journal of applied Microbiology* 103: 1321-1331.

Kimberley, M., Wang, H., Wilks, P.J., Fisher, C.R., and Magesan, G.N. 2004. Economic analysis of growth response from a pine plantation forest applied with biosolids, *Forest Ecology and Management* 189, 345-351.

Landman M.J., Taylor, S. and van den Heuvel, M.R. 2008. Carotenoid depletion and ovarian dysfunction in common bully exposed to a New Zealand pulp mill effluent. *Aquatic Toxicology*, 87 (4) 303-309.

Landman, M.J., M.R. van den Heuvel, M. Finley, H.J. Bannon, and N. Ling. 2006. Combined effects of pulp and paper effluent and hypoxia on swimming performance, metabolism and hematology of rainbow trout, *Ecotoxicology and Environmental Safety*, 65, 314-322.

Langer, E.R., Goven, J., Leckie, A., Ataria, J., Tremblay, L.A. and Pauling, C. 2007. City-scale consultation drafts biosolids waste strategy, Langer, E.R., 2005. Biosolids management and the community: Travel report, *NZ Journal of Forestry*, 50(3) 41-42.

Leusch, F.D.L., Chapman, H.F., Van den Heuvel, M.R., Tan, B.L.L., Gooneratne, S.R. and Tremblay, L.A. 2006. Bioassay-derived androgenic and estrogenic activity in municipal sewage in Australia and New Zealand, *Ecotoxicology and Environmental Safety*, 65:403-411.

Leusch, F.D.L., Van den Heuvel, M.R., Chapman, H.F., Gooneratne, S.R., Eriksson, A.M.E. and Tremblay, L.A. 2006. Development of methods for extraction and in vitro quantification of estrogenic and androgenic activity of wastewater samples, *Comparative Physiology and Biochemistry Part C*, 143:117-126.

Leusch, F.D.L., Chapman, H.F., Kay, G.W., Gooneratne, S.R. and Tremblay, L.A. 2006. Gonadal histopathology and anal fin morphology in *Gambusia holbrooki* exposed to treated municipal sewage effluent, *Archives of Environmental Contamination and Toxicology*, 50:562-574.

Leusch, F.D.L., Chapman, H.F., Körner, W., Gooneratne, S.R. and Tremblay, L.A. 2005. Efficacy of an advanced biological and nutrient removal plant in Queensland (Australia) to remove estrogenic chemicals, *Environmental Science & Technology*, 39(15) 5781-5786.

Leusch, F.D.L., Van den Heuvel, M.R., Laurie, A.D., Chapman, H.F., Gooneratne, S.R. and Tremblay, L.A. 2005. Quantification of vitellogenin mRNA induction in mosquitofish (*Gambusia affinis*) by reverse transcription real-time polymerase chain reaction (RT-PCR), *Biomarkers*, 10(6):429-438.

Luo, J., Lindsey, S. and Xue, J.M. 2004: Irrigation of Meat Processing Wastewater onto Land. *Agriculture, Ecosystems & Environment* 103, 123-148.

Magesan, G.N., Wang, H., Clinton, P.W. and McIntosh, J. 2008. Nitrate leaching from gorse in New Zealand: A review, *Agriculture Ecosystems and Environment*. (Submitted).

Magesan, G.N., Bolan, N.S. and Lee, R. 2003. Adsorption of atrazine and phosphate as affected by soil depth in allophanic and non-allophanic soils, *New Zealand Journal of Agricultural Research*, 46, 155-163.

Magesan, G.N., Vogeler, I., Clothier, B.E., Green, S.R. and Lee, R. 2003. Solute movement through an allophanic soil, *Journal of Environmental Quality*, 32: 2325-2333.

Magesan, G.N. and Wang, H. 2003. Application of municipal and industrial residuals in New Zealand forests: An overview, *Australian Journal of Soil Research*, 41: 557-569.

Milestone, C. B., Stuthridge, T. R., and Fulthorpe, R. 2007. Role of high molecular mass organics in colour formation during biological treatment of pulp and paper wastewater, *Water Science and Technology* 55(6) 191-198.

Mueller, K., Magesan, G.N., Bolan, N.S. 2007. A critical review of the influence of effluent irrigation on the fate of pesticides in soil, *Agriculture, Ecosystems and Environment*, 120, 93-116.

Oakes, K.D., Tremblay, L.A., and Van Der Kraak, G.J. 2005. Short-term exposures of immature rainbow trout (*Oncorhynchus mykiss*) to sulphite and kraft pulp mill effluents: effects on oxidative stress and circulating sex steroids, *Environmental Toxicology and Chemistry*, 24,1451-1461.

Parker, K., Stuthridge, T. R. and Mansfield, S.D. 2006. Colour remediation of pulp mill effluent using purified fungal cellobiose dehydrogenase: Reaction optimisation and mechanism of degradation, *Biotechnology and Bioengineering*, 90 (1) 95-106.

Quintern, M., Joergensen, R. and Lein, M. 2006. Changes in soil biological quality indices after long-term addition of shredded shrubs and biogenic waste compost to an arable soil, *Journal of Plant Nutrition and Soil Science*, 169, 488-493.

Sarmah, A.K., Northcott, G.L., Leusch, F.D.L, and Tremblay, L.A. 2006. A survey of endocrine disrupting chemicals (EDCs) in municipal sewage and animal waste effluents in the Waikato region of New Zealand. *Science of the Total Environment*. 355:135-144.

Su, J., Wang, H., Kimberley, M.O., Beecroft, K., Magesan, G.N., Hu, C. 2008. Distribution of heavy metals in a sandy forest soil amended with biosolids. *Australian Journal of Soil Research* (in press).

Su, J., Wang, H., Kimberley, M.O., Beecroft, K., Magesan, G.N., Hu, C. 2007. Fractionation and mobility of phosphorus in a sandy forest soil amended with biosolids, *Environmental Science and Pollution Research* 14, 529–535.

Tan, B.L.L., Hawker, D.W., Müller, J.F., Tremblay, L.A. and Chapman, H.F. 2008. Stir bar sorptive extraction and trace analysis of selected endocrine disruptors in water, biosolids and sludge samples by thermal desorption with gas chromatography-mass spectrometry, *Water Research*, 42, 404-412.

- Tan, B.L.L., Hawker, D.W., Müller, J.F., Leusch, F.D.L., Tremblay, L.A., Chapman, H.F. 2007. Comprehensive study of endocrine disrupting compounds using grab and passive sampling at selected wastewater treatment plants in South East Queensland, Australia, *Environment International*, 33, 654-669.
- Tan, B.L.L., Hawker, D.W., Müller, J.F., Leusch, F.D.L., Tremblay, L.A. and Chapman, H.F. 2007. Modelling of the fate of selected endocrine disruptors in a municipal wastewater treatment plant in South East Queensland, Australia. *Chemosphere*, 69:644-654.
- Tozer, W., Wilkins, K.J., Wang, H., van den Heuvel, M., Charleson, T. and Silvester, W.B. 2005. Using ¹⁵N to determine a budget for effluent-derived nitrogen applied to forest, *Isotopes in Environmental and Health Studies* 41, 13-30.
- Tremblay, L.A., Fisher, P. and Leusch, F.D.L. (In Press). Evaluation of the potential of sodium monofluoroacetate (1080) and fluorocitrate to bind to estrogen receptor, *The Australasian Journal of Ecotoxicology*, 11, 155-162.
- Tremblay, L.A., Tremblay, C.J. and Van den Heuvel, M.R. The use of complementary in-situ exposure and wild fish monitoring techniques for measurement of pollution impacts in two New Zealand rivers, *Ecotoxicology* (Submitted).
- van den Heuvel, M.R., Landman, M.J., West, D.W. and Finley, M. 2008. The effects of reduced energy intake in combination with pulp and paper effluent exposure on the physiology of rainbow trout, *Ecotoxicology and Environmental Safety*, 69, 187-198.
- van den Heuvel, M.R., Michel, C., Stevens, M.I., Clarke, A.C., Stölting, K.N., Hicks, B.J. and Tremblay LA. 2007. Monitoring the effects of pulp and paper effluent is restricted in genetically distinct populations of common bully (*Gobiomorphus cotidianus*), *Environmental Science & Technology*, 41:2602-2608.
- van den Heuvel, M.R., Ellis, R.J., Tremblay, L. and Stuthridge, T.R. 2006. Exposure of reproductively maturing rainbow trout to a New Zealand pulp and paper mill effluent, *Ecotoxicology and Environmental Safety* 51, 65-75.
- van den Heuvel, M.R., Landman, M.J. and Tremblay, L.A. 2006. Responses of shortfin eel (*Anguilla australis*) exposed in-situ to pulp and paper effluent, *Journal of Toxicology and Environmental Health Part A*, 69, 1763-1779.
- Vogeler, I. 2008. Effect of Long-Term Wastewater Application on Physical Soil Properties, *Water, Air and Soil Pollution*, accepted.
- Vogeler, I., Vachey, A., Deurer, M., and Bolan, N. 2008. Impact of plants on the microbial activity in soils with high and low levels of copper, *European Journal of Soil Biology*, 44, 92-100.
- Vogeler, I., Green, S.R., Mills, T., and Clothier, B.E., 2006. Modelling bromide and nitrate leaching from sewage sludge, *Soil and Tillage Research*, 89, 177-184.

Wang, H., Brown S.L., Magesan, G.N., Slade, A.H., Quintern, M., Clinton, P.W. and Payn, T.W. 2008. Technological options for the management of biosolids. *Environmental Science and Pollution Research*, 15, 308-317.

Wang, H., Kimberley, M.O., Magesan, G.N., McKinley, R.B. Lee, J.R., Lavery, J.M., Hodgkins, P.D.F., Payn, T.W., Wilks, P.J., Fisher, C.R. and McConchie, D.L. 2006. Mid-rotation effects of biosolids application on tree growth and wood properties in a *Pinus radiata* plantation. *Canadian Journal of Forest Research* 36, 1921-1930.

Wang, H., Magesan, G.N., Clinton, P.W. and Lavery, J.M. 2005. Using natural ^{15}N abundances to trace the fate of waste-derived nitrogen in forest ecosystems, New Zealand case studies, *Isotopes in Environmental and Health Studies* 41, 31-38.

Wang, H., Magesan, G.N., Clinton, P.W. and Lavery, J.M. 2005. Using natural ^{15}N abundances to trace the fate of waste-derived nitrogen in forest ecosystems: New Zealand case studies, *Isotopes in Environmental and Health Studies* 41, 31-38.

Wang, H., Magesan, G.N., Kimberley, M.O., Gielen, G.J.H. and Pearce, S.H. 2005. Chemical properties of two soils irrigated with thermo-mechanical pulp mill effluent, *Australian Journal of Soil Research* 43, 929-934.

Wang, H., Magesan, G.N., Kimberley, M.O., Payn, T.W., Wilks, P.J. and Fisher, C.R. 2004. Environmental and nutritional responses of a *Pinus radiata* plantation to biosolids application, *Plant and Soil* 267, 255-262.

Wang, H., Magesan, G.N., Bolan, N.S. 2004. An overview of the environmental effects of land application of farm effluents, *New Zealand Journal of Agricultural research* 47, 389-403.

Wang, H., Kimberley, M.O., Schlegelmilch, M. 2003. Biosolids-derived nitrogen mineralisation and transformation in forest soils, *Journal of Environmental Quality* 32: 1851-1856.

Wang, H., Magesan, G.N. 2003. Biosolids use increases pine production, *BioCycle*, 44 (6) 56.

West, D.W., Ling, N., Hicks, B.J., Tremblay, L.A., Kim, N.D. and van den Heuvel, M.R. 2008. Assessment of impacts of point-source discharges on shortfin eel (*Anguilla australis*) along a large river, *Journal of Toxicology and Environmental Health Part A*, 69, 1763-1779.

West, D.W., Ling, N., Hicks, B.J., Tremblay, L.A., Kim, N.D. and van den Heuvel, M.R. 2006. Cumulative impacts assessment along a large river, using brown bullhead catfish (*Ameiurus nebulosis*) populations, *Environmental Toxicology and Chemistry*, 25, 1868-1880.

Wingate, K.G., Stuthridge, T.R., Wright, L. J. Horwitz, C. and Collins, T. J. 2004. Application of TAML (R) catalysts to remove colour from pulp and paper mill effluents, *Water science and technology*, 49 (4) 255-260.

Refereed Conference Proceedings

Wang, H., Magesan, G.N., Kimberley, M.O, Payn, T. W, Wilks, P.J. and Fisher, C.R. 2005. Recycling biosolids-derived nitrogen in a pine plantation: a New Zealand case study. Pp. 367-370, in: 3rd International Nitrogen Conference: Contributed Paper, Nanjing, China, Oct., 12-16, 2004, Zhu, Z.L., Minami, K., Xing, G.X., (Eds.), Science Press USA Inc., N.Y. USA.

Wang, H., Magesan, G.N., Clinton, P.W. and Lavery, J.M. 2004. Using $\delta^{15}\text{N}$ to trace waste-derived nitrogen in ecosystems. Pp. 148-150. in: Proceedings of SoilRem 2004, the 2nd International Conference on Soil Pollution and Remediation. Luo, Y.M., McGrath, S.P., Japenga, J., Zhao, F.J., Edelman, T., Marshner, B., Newman, L., Vanek, T., (Eds), Nanjing, China. Nov. 9-12, 2004.

Non-refereed Publications

Hubert, A., Wang, H. and Magesan, G.N. 2006. Effect of available nitrogen on the N_2 -fixation by gorse (*Ulex europaeus* L.) and broom (*Cytisus scoparius* L.) WISPAS 95.

Magesan, G.N., Wang, H. and McIntosh, J. 2006. Nitrate leaching from gorse – A study from New Zealand, WISPAS 95.

Mueller, K., Begall, A. and Magesan, G.N. 2005. Sorption of atrazine to waste-amended soils, WISPAS, 91. July 2005.

Mueller, K., Begall, A. and Magesan, G.N. 2005. Waste application to soils and its impact on the fate of organic chemicals, WISPAS, 92. November 2005.

Su, J., Wang, H., Beecroft, K. and Magesan, G.N. 2005. Forms and distribution of phosphorus in a sandy forest soil receiving biosolids application. WISPAS 91.

Wang, H., Magesan, G. N. Mercer, E., and Pearce, S.H. 2003. Nitrate leaching: can we control it using pulp mill wastes? WISPAS 85.

Wang, H. and Magesan, G. N. 2003. Application of biosolids to pine plantation and its effect on tree growth, soil and groundwater quality. WISPAS 83.

International Conference Proceedings

Baker, V., Ahuriri-Driscoll, A., Langer E.R., Goven, J., Ataria, J. and Pauling, C. 2006. New Zealand Research: Community perspectives and involvement in decision making for sustainable reuse of biosolids, Australian Water Association Biosolids

Specialty Conference III, Conference Proceedings CD Rom, June 2006, Melbourne, Australia.

Fisher, P. and Tremblay, L. 2005. A practical bait marker for brushtail possums – whisker marking by rhodamine B. In: 13th Australasian Vertebrate Pest Conference: Te Papa, Wellington, 2-6 May 2005: Proceedings Manaaki Whenua - Landcare Research. Lincoln, pp. 63-68.

Gerty Gielen, Gabi Palmer, Peter W. Clinton, Laurie Greenfield, 2003. Initial assessment of the fate and environmental effects of selected Pharmaceuticals in New Zealand Land treatment systems. SETAC conference Christchurch, September 2003.

Gielen, G.J.H.P.; Greenfield, L.G.; Van den Heuvel, M.R.; Clinton, P.W. 2006. Soil Microbial adaption to pharmaceuticals following long-term sewage effluent exposure. 16th annual European SETAC conference, the Hague 7-11 May 2006.

Gielen, Gerty J.H.P., van den Heuvel, Michael R., Clinton, Peter W., Greenfield, Laurie G. 2007. Land application of sewage-derived pharmaceuticals as a treatment technology. 2nd Australian Symposium on Ecological Risk Assessment and Management of Endocrine Disrupting Chemicals, Pharmaceuticals and Personal Care Products in the Australasian Environment. 21-22 November 2007 Canberra.

Gielen, G. Landman M, Taylor S and Stuthridge T. (2008). Chemical and toxicological characterization of contaminants in historical pulp and paper mill wastewater treatment sediments. 5th SETAC World Congress, Sydney, Australia, 3-7 August (oral). Note: This Congress will occur in August 2008. Paper prepared.

Goven, J. and Langer, E.R. 2006. Community derived direction for biosolids management: Scenario Workshops in Christchurch, pp 206-215, in Wastewater and land treatment in challenging environments, Proceedings of a conference hosted by the New Zealand Land Treatment Collective in cooperation with the Small Wastewater and Natural Systems Special Interest Group of the New Zealand Water and Waste Association, 14-17 March, Nelson, New Zealand.

Goven, J. and Langer, E.R. 2005. The potential of social dialogue on biosolids research and policy in New Zealand, presented to the Joint Residuals and Biosolids Management Conference 2005, Advancing the State of Technology, Water Environment Federation, 17-20 April 2005, Nashville Tennessee, USA. Abstract in Joint Residuals and Biosolids Management Conference CD proceedings, April 2005.

Hubert, A., Wang, H. and Magesan, G.N. 2007. L'utilisation de la mesure de l'Activité Réductrice de l'Acétylène pour évaluer l'effet de l'azote disponible sur l'activité du N₂ dans les nodules de l'ajonc (*Ulex europaeus* L.) et du genêt (*Cytisus scoparius* L.) Acte des 9e Journées Nationales de l'Etude des Sols, Angers, 463. Pp 211-212.

Bucking, C., Landman, M.J. and Wood, C.M. 2008. The alkaline tide in freshwater teleost fish, 17th annual comparative physiology workshop, Rice Lake, Ontario, Canada, 9-10 February (poster).

Hack, L. A., Lowe, C. J. and Tremblay, L. A. 2006. Using biological methods to monitor New Zealand estuarine environmental health. The 3rd APEC workshop on the modern approaches to linking exposure to toxic compounds and biological effects held in Xiamen, China. 9-15 October 2006.

Hamilton, L.A., Tremblay, L., Northcott, G.L., Boake, M. and Lim, R. 2007. Assessment of the efficacy of an advanced tertiary treatment plant to remove endocrine active chemicals from sewage effluent using bioassays and chemical analysis, Presented at the Micropol & Ecohazard Conference, DECHEMA-House, Frankfurt, Germany, 17-20 June 2007.

Hamilton, L.A., Shiraishi, F., Horiguchi, T., Boake, M., Lovell, A.J., Tremblay, L.A. and Lim, R.P. 2008. Application of the two-hybrid yeast assay to assess the removal of endocrine disrupting compounds in an advanced tertiary STP, A talk presented at the 2nd IWA Australia national young water professionals conference, Brisbane, Australia 4-6. February 2008.

Langer, E.R. and Goven, J. 2005. Public dialogue: bringing community perspectives into sustainable forest management, Abstract in the *International Forestry Review*, Forests in the balance: linking tradition and technology. XXII IUFRO World Congress, Brisbane, August 2005, Edited by J.L. Innes, I.K. Edwards, and D.J. Wilford, Commonwealth Forestry Association.

Lavery, J.M., Gielen, G.J.H., Garrett, L.G., Pearce, S.H., Wang, H. and Magesan, G. N. 2004. Changes in the growth and nutrition of *Pinus radiata* in two soils and effluent additions of different qualities, Abstract, In: SuperSoil 2004: Proceedings of the 3rd Australian/New Zealand Soils Conference, 5-9 December 2004, Sydney, Australia.

Leusch, F.D.L., Chapman, H.F. Gooneratne, S.R., and Tremblay, L.A. 2004. Survey of the endocrine-disrupting potential of sewage water in Australia and New Zealand using solid-phase extraction and in-vitro bioassays, SETAC Europe 14th Annual Meeting "Environmental Science Solutions: A Pan-European Perspective", Prague, Czech Republic, 18-22 April 2004.

McBride, C., Hicks, B.J., van den Heuvel, M.R. 2004. Food Webs in the Rotorua Lakes: A Stable Isotope Study, The 4th International Conference on Applications of Stable Isotope Techniques to Ecological Studies, April 19-23, Wellington, New Zealand.

Magesan, G.N., Garrett, L.G., Gielen, G.J.H., Pearce, S.H., Hodgson, C.J., Wang, H. and Lavery, J. M. 2004. Wastewater irrigation in a forested ecosystem: nutrient leaching, In: SuperSoil 2004: Proceedings of the 3rd Australian/New Zealand Soils Conference, 5-9 December 2004, Sydney, Australia.

Magesan, G.N. and Wang, H. 2003. Innovations and issues in the beneficial utilization of municipal and industrial wastes, pp. 115-116, In: Abstracts of the Special International Symposium on Transitions in Agriculture for enhancing water productivity, 23-25 September 2003, Indian Society of Agricultural Resource Management, Tamil Nadu Agricultural University, Tamil Nadu, India.

- Milestone, C.B., Stuthridge, T.R. and Fulthorpe, R. 2006. Role of high molecular mass organics in colour formation during biological treatment of pulp and paper wastewater, In: Forest industry wastewaters VIII : selected papers of the 8th IWA International Symposium on Forest Industry Wastewaters, held in Vitoria, Espirito Santo, Brazil, on 9 - 12 April 2006.
- Müller, K., Duwig, C., Prado, B., Raymundo, E., Hidalgo, C., Etchevers, J and Siebe, C. 2007. Impact of wastewater irrigation on atrazine transport through soil, International Symposium on Soil and Plant Analysis, Budapest, Hungary, 11-15 June 2007 (poster).
- Scarsbrook, M., Fenwick, G. and Datry, T. 2007. Environmental variability in shallow groundwater habitats: biodiversity implications, 5th International Southern Connections Conference 21-25 January, 2007, Adelaide, South Australia.
- Tozer, W, Kate J. Wilkins, K.J., Wang, H., van den Heuvel, M., Charleson, T. and Silvester, W.B. 2004. Using stable nitrogen isotopes to identify losses of nitrogen from catchments with different land-use practices, The 4th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Wellington, New Zealand, April 19-23, 2004.
- van den Heuvel, M.R., Tremblay, L., Finley, M., West, D., Hicks, B. 2003. A fish health monitoring framework for New Zealand using the common bully (*Gobiomorphus cotidianus*), Society of Environmental Toxicology and Chemistry, 24th annual conference, Austin, Texas, USA. Nov. 9-13 2003.
- Wang, H., Magesan, G.N., Quintern, M., Clinton, P.W. and Payn, T.W. 2007. Technologies for sustainable management of biosolids, Abstracts and Programs of the "International Symposium on Green Technology and Ecosystem Health", 13-15 Oct. 2007, Hangzhou, China.
- Wang, H. and Magesan, G.N. 2004. Recycling nitrogen from biosolids to increase pine production: a New Zealand case study, pp. 137-138, in: Abstracts of the 3rd International Nitrogen Conference. Nanjing, China. Oct. 12-16, 2004.
- Wang, H., Magesan, G.N. and Clinton, P.W. 2004. Natural ¹⁵N abundance as a tracer in waste management studies, The 4th International Conference on Applications of Stable Isotope Techniques to Ecological Studies. Wellington, New Zealand, April 19-23, 2004.
- Wang, H. and Magesan, G.N., Clinton, P.W. and Lavery, J.M. 2004. Using ¹⁵N to trace waste-derived nitrogen in ecosystems, pp. 148-150, in: Proceedings of SoilRem 2004, the 2nd International Conference on Soil Pollution and Remediation, Luo, Y.M., McGrath, S.P., Japenga, J., Zhao, F.J., Edelman, T., Marshner, B., Newman, L., Vanek, T., (ed.), Nanjing, China. Nov. 9-12, 2004.

National Conference Proceedings

Adam, K., Clinton, P.W. and Greenfield, L.G. 2003. Consequences of substrate quality for decomposition of Christchurch municipal biosolids applied to dryland forests, balancing social, cultural, economic and technical issues in Land Treatment policy, Proceedings of the annual conference of the New Zealand land treatment collective, Wellington, 14-16 April 2003, pp 138-142.

Barnes, S. and Lavery, J. M. 2004. Rotorua wastewater and the Whakarewarewa forest land treatment system: new approaches to an old problem. Land Treatment Collective Conference Proceedings No 25, New Zealand Land Treatment Collective, Proceedings for the 2004 Annual Conference, 24-26 March 2004, Ashburton. Pp 45-51.

Bleackley, N., Landman, M.J. and Ling, N. 2007. Reproductive divergence of common bully (*Gobiomorphus cotidianus*) along rivers: possibilities for sympatric speciation. In: Abstracts of the New Zealand Freshwater Sciences Society conference, Queenstown, 2-7 December 2007

Clinton, P.W. and Leckie, A.C. 2006. Distribution of nutrients and impact on tree growth 4 years after application of biosolids. Proceedings of the New Zealand Land Treatment Collective Conference, 14-17 March, 2006, Nelson.

Denholm, P., Sands, R., Brockerhoff, E. and Clinton, P.W. 2003. Biodiversity, biosolids and bioindicators in radiata pine forests, Balancing social, cultural, economic and technical issues in land treatment policy, Proceedings of the annual conference of the New Zealand Land Treatment Collective, Wellington, 14-16 April 2003, pp 73-84.

Fraser, D.S., O'Halloran, K., van den Heuvel, M., Wang, H., Palmer, G.T. and Farrell, R.L. 2005. Toxicology of pulp and paper solid wastes - preliminary results, In: Land treatment of wastewater & stormwater in urban catchments, pp. 115-121, in: Proceedings of the 2005 New Zealand Land Treatment Collective annual conference, Wang, H., Lavery, J. (Eds.), 7-9 March, Auckland, New Zealand.

Fraser, D.S., Schipper, L.A. and Wang, H. 2006. Carbon losses from forest soil receiving pulp mill wastewater solids. In: Soils and Society. Programme and Abstracts, New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand.

Fraser, D.S., van den Heuvel, M., O'Halloran, K. and Wang, H. 2006. Fate and effects of pulp and paper waste water solid residuals in soil ecosystems. Pp. 142-149, in: Wastewater and land treatment in challenging environments. Proceedings of a conference hosted by the New Zealand Land Treatment Collective in cooperation with

the Small Wastewater and Natural Systems Special Interest Group of the New Zealand Water and Waste Association, 14-17 March, Nelson, New Zealand.

Gielen, G., van den Heuvel, M., Clinton, P. and Greenfield, L. 2008. Impact of land application design on removal of sewage derived pharmaceuticals, pp 97-102, Proceedings for the 2008 Annual Conference, New Zealand Land Treatment Collective, Queenstown, 16-18th April 2008.

Gielen, G., Clinton, P., van den Heuvel, M. and Greenfield, L. 2007 Pharmaceuticals in sewage effluent—how much is applied to land? Proceedings New Zealand Land Treatment Collective, Rotorua, March 13-15. Pp 82-88.

Gielen, G., Greenfield, L.G., van den Heuvel, M. and Clinton, P.W. 2006. Soil microbial adaptation to pharmaceuticals following sewage effluent exposure, Soils and Society, New Zealand Soil Society Conference, 27-30 November 2006, Rotorua.

Gielen, G.J.H.P. 2006. Rotorua Land Treatment System 15 years on, Field tour Land and Lakes Stop 3, New Zealand Soil Science Society conference, Rotorua. 28 November 2006, pp 35-39.

Gielen, G.J.H.P., Greenfield, L.G., van den Heuvel, M.R. and Clinton, P.W. 2006. Soil microbial adaptation to pharmaceuticals following sewage effluent exposure, In: Soils and Society, Programme and Abstracts. New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand, P 33.

Gielen, G., Greenfield, L.G., Clinton, P.W., Palmer, G. and van den Heuvel, M. 2005. The effect of long-term sewage effluent application to land on the ability of the soils to utilise and adapt to pharmaceuticals, Proceedings of the New Zealand Land Treatment Collective Annual Conference Auckland, March 7-9, 2005, pp 122-128.

Gielen, G.J.H.P., Palmer, G., Clinton, P.W. and Greenfield, L.G. 2004. Fate and environmental effects of selected pharmaceuticals in New Zealand land treatment systems, In: New Zealand Land Treatment Collective, Proceedings for the 2004 Annual Conference, 24-26 March, Ashburton.

Gielen, G.J.H.P. 2004. Fate and environmental effects of selected pharmaceuticals in New Zealand land treatment systems, Bright Futures Scholarships Seminar and Science Communicators Conference, 22-23 June 2004, Auckland.

Ghani, A., Luo, L., Wang, H. and Longhurst, B. 2008. Opportunities for sequestering carbon through application of organic waste to soils, pp183-189 in: Proceedings of the 2008 New Zealand Land Treatment Collective Annual Conference, Wang, H., Quintern, M. (Eds.), 16-18, Queenstown, New Zealand.

Goven, J. and Langer, E.R. 2004. Challenges of integrating social dialogue into biosolids reuse research and policy in New Zealand, pp 68-76, in Water, waste and land treatment for primary industry and rural areas, Proceedings of the NZ Land Treatment Collective Conference, Technical Session No. 25, March, Ashburton, New Zealand.

Govindaraj, T., Bolan, N.S., Wang, H., Magesan, G.N., Rowarth, J.S. 2003. Biosolids application and biological activity of forested soils, in: Golden Jubilee Conference: Back to the Future. Programme and Abstracts, New Zealand Society of Soil Science, Wellington, New Zealand.

Govindaraj, T., Bolan, N.S., Wang, H., Magesan, G.N. and Rowarth, J. 2003. Biosolids application and biological activity of forested soils, in: Environmental management using soil-plant systems. (Ed. L.D. Currie), Occasional report No. 16, Fertilizer and Lime Research Centre, Massey University, Palmerston North.

Govindaraj, T., Wang, H., Bolan, N.S., Rowarth, J.S. and Magesan, G.N. 2003. Biosolids application and biological activity of forested soils, pp 251-261, in: Environmental management using soil-plant systems. (Eds. Currie, L.D., Stewart, R.B., Anderson, C.W.N.), Occasional Report No. 16, Fertiliser and Lime Research Centre, Massey University, Palmerston North, New Zealand.

Green, S.R., Wilde, H., Deurer, M., Vogeler, I. and Magesan, G.N. 2007. Modelling nitrogen, phosphorus and bacteria transport in soils, pp. 15-23, In: Proceedings of the 2007 New Zealand Land Treatment Collective annual conference, Wang, H., Quintern, M. (Eds.), 14-16 March, Rotorua, New Zealand.

Green, S.R., Wilde, H., Deurer, M., Vogeler, I. and Magesan, G.N. 2006. Modelling nitrogen, phosphorus and bacteria transport in soils, in: Soils and Society, Programme and Abstracts, New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand.

Horswell, J., Ambrose, V., Clucas, L., Leckie, A.C., Clinton, P.W. and Speir, T. 2005. Survival of Microbiological Contaminants after Land Application of Sewage Sludge, New Zealand Microbiology Society Conference, November 2005.

Hu, H., Wang, H., Beecroft, K., Kimberley, M.O., Magesan, G.N. and Bolan, N.S. 2007. Movement of phosphorus in soil at the Rotorua land treatment system, pp. 74-81, in: Proceedings of the 2007 New Zealand Land Treatment Collective annual conference, Wang, H., Quintern, M. (Eds.), 14-16 March, Rotorua, New Zealand.

Hu, H., Wang, H., Beecroft, K., Kimberley, M.O., Magesan, G.N. and Bolan, N.S. 2006. Distribution and fractionation of phosphorus in a volcanic forest soil receiving long-term sewage effluent irrigation, in: Soils and Society, Programme and Abstracts, New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand.

Hu, H., Wang, H., Beecroft, K., Kimberley, M.O., Magesan, G.N. and Bolan, N.S. 2006. Distribution and fractionation of phosphorus in a volcanic forest soil receiving long term sewage effluent irrigation, In: *Soils and Society. Programme and Abstracts*, New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand.

Hubert, A., Wang, H. and Magesan, G.N. 2006. Effect of available nitrogen concentration on biological fixation of N₂ by gorse (*Ulex europaeus* L.) and broom (*Cytisus scoparius* L.), in: Soils and Society. Programme and Abstracts, New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand.

Landman, M.J. and Ling N. (2006). Assessing fish health during mineral restoration in Lake Okareka, New Zealand Freshwater Science Society Annual Conference, Rotorua, NZ.

Langer, L., Goven, J., Leckie, A.C., Ataria, J., Tremblay, L., Champeau, O. and Pauling, C. 2008. Community dialogue for water and sewage management in a peri-urban/peri rural community: research in progress, pp 93-96, Proceedings for the 2008 Annual Conference, New Zealand Land Treatment Collective, Queenstown, 16-18th April 2008.

Langer, E.R., Clinton, P.W., Tremblay, L., Ataria, J. and Leckie, A.C. 2003. Consideration of social and cultural beliefs and values to ensure sustainable application of municipal waste to land, Balancing social, cultural, economic and technical issues in Land Treatment policy, Proceedings of the annual conference of the New Zealand Land Treatment Collective, Wellington, 14-16 Aril 2003, pp 49-50.

Lavery, J.M. Wang, H., Magesan, G. N. Clinton, P.W. Langer, E R, Leckie, A C. 2004, Biosolids and forests: an overview of New Zealand trials, and the benefits and drawbacks in marrying two industries, in: WasteMINZ Conference Proceedings and CD, WasteMINZ Conference, 2-5 November 2004, Rotorua.

Leckie, A.C. and Clinton, P.W. 2008. Municipal biosolids application to central South Island *Pinus radiata* plantations, pp 30-40, Proceedings for the 2008 Annual Conference, New Zealand Land Treatment Collective, Queenstown, 16-18th April 2008.

Ling, N., Landman, M., Trolle, D., Brijs J and Hamilton D. 2008. Koura: bio-monitors of lake chemistry, NZ Trace Elements Group Conference, Hamilton, NZ, 13-15 February.

Lowe, A.T., Gielen, G.J.H., Bainbridge, A. and Jones, K. 2007. The Rotorua Land Treatment System after 16 years. New Zealand Land Treatment Collective: Proceedings for the 2007 Annual Conference, 14-16 March 2007, Rotorua, pp 66-73, New Zealand Land Treatment Collective Annual Conference.

Magesan, G.N., Wang, H. and McIntosh, J. 2008. Nitrate leaching from leguminous weed. pp. 25, NZSSS 2008 Conference, Palmerston North, 27-30 December **2008**.

Magesan, G.N., Wang, H. and McIntosh, J. 2008. Is gorse (leguminous weed) a water polluter, Rotorua Lakes 2008 Symposium: Nutrient Sensitive Zones – Lakes and Waterways, Rotorua, 12-13 August **2008**.

Magesan, G.N., Wang, H., and Quintern, M. 2008. Monitoring and sampling of soil solution in land based waste treatment systems, P103, in: Proceedings of the 2008 New Zealand Land Treatment Collective annual conference, Wang, H., Quintern, M. (Eds.), 16-18, Queenstown, New Zealand.

Magesan, G.N., Wang, H., Clinton, P., McIntosh, J., McLay, T. 2006. Nitrate leaching from gorse and broom stands in lake catchments, in: Soils and Society, Programme and Abstracts, New Zealand Society of Soil Science Conference 2006, 27-30 November, Rotorua, New Zealand.

Magesan, G.N., Garrett, L.G., Gielen, G.J.H, Pearce, S.H., Hodgson, C. J., Wang, H. and Lavery, J.M. 2004. Final results of nutrient leaching from large lysimeter research facility. Rotorua Lake Water Quality Symposium "Restoring Lake Health - Nutrient Targets and Cyanobacteria", Rotorua. 16-17 September 2004.

Magesan, G.N., Garrett, L., Gielen, G.J.H.P., Pearce, S., Anderson, C.J., Wang, H. and Lavery, J.M. 2004. Wastewater irrigation in a forested ecosystem: nutrient leaching, *Presented At*: Supersoil 2004: Third Australian/New Zealand Soils Conference, 5-9 December, Sydney, Australia.

Magesan, G.N. 2004. Drainage and reuse of effluents for agricultural management (DREAM). Land Treatment Collective Conference Proceedings No 25, New Zealand Land Treatment Collective, Proceedings for the 2004 Annual Conference, 24-26 March 2004, Ashburton, pp 52-57.

Magesan, G.N. 2004. Drainage and reuse of effluents for agricultural management (DREAM) - Basic concept, Proceedings of 2004 New Zealand Water and Wastewater Association Conference, October 2004, Christchurch.

Magesan, G.N. and van den Heuvel, M. 2003. Waste to Resource - our new directions in land treatment research, Joint NZ Land Treatment Collective and NZ water and Wastes Association conference, Wellington. April 14-16, 2003.

Magesan, G.N., Wang, H. 2003. Application of municipal wastewater and biosolids to New Zealand forests: two Case Studies, pp 242-249, in: Environmental management using soil-plant systems. (Eds. Currie, L.D., Stewart, R.B., Anderson, C.W.N.), Occasional Report No. 16. Fertiliser and Lime Research Centre, Massey University, Palmerston North, New Zealand.

Mueller, K., Begall, A. and Magesan, G.N. 2006. Waste application to soil and its impact on atrazine transport, NZ Land Treatment Collective, Proceedings for the 2006 Annual Conference, Nelson, 14-17 March 2006.

O'Halloran, K.; Booth, L. 2004. Ecotoxicity testing for the land application of biosolids, given as an oral presentation, in: Water, waste and land treatment for primary industry and rural areas: New Zealand Land Treatment Collective 2004 Annual Conference, Ashburton 24-26 March 2004, Technical Session 25 proceedings, pp. 4-10.

Quintern, M., Wang, H., Heaphy, M., Magesan, G.N. and Clinton, P.W. 2008. Vermicomposting of organic wastes in New Zealand - An overview, pp 3-7, in:

Proceedings of the 2008 New Zealand Land Treatment Collective annual conference, Wang, H., Quintern, M. (Eds.), 16-18, Queenstown, New Zealand.

Reid, N.M., Foote, S.M., Stuthridge, T.R. and Bowers, T. 2004. 16S rDNA and nifH gene clone library analysis of a nitrogen-fixing pulp and paper wastewater treatment system, Abstract presented at the New Zealand Microbiology Society (NZMS) 2004 annual conference, Palmerston North, New Zealand; 17-19th November 2004.

Su, J., Wang, H., Beecroft, K., Magesan, G.N., Hu, C., Kimberley, M.O. and Schruer, M. 2006. Movement and distribution of heavy metals in a sandy forest soil amended with biosolids, in: Soils and Society. Programme and Abstracts, New Zealand Society of Soil Science Conference 2006, Rotorua, New Zealand.

Su, J., Wang, H., Beecroft, J., Magesan, G.N., Hu, C., Kimberley, M.O. and Schruer, M. 2006. Fractionation and mobility of phosphorus in a sandy forest soil amended with biosolids, pp. 216-226, in: Wastewater and land treatment in challenging environments. Proceedings of a conference hosted by the New Zealand Land Treatment Collective in cooperation with the Small Wastewater and Natural Systems Special Interest Group of the New Zealand Water and Waste Association, 14-17 March, Nelson, New Zealand.

Tozer, W., Wilkins, K.J., Wang, H., van den Heuvel, M., Charleson, T. and Silvester, W.B. 2005. Using the stable isotope ^{15}N to determine a budget for effluent-derived nitrogen applied to forest, pp, 147-153, in: Land treatment of wastewater & stormwater in urban catchments, Proceedings of the 2005 New Zealand Land Treatment Collective Annual Conference, Wang, H., Lavery, J. (Eds.), 7-9 March, Auckland, New Zealand.

Tozer, W.C., Wilkins, K., Wang, H., van den Heuvel, M. R., Charleson, T.H. and Silvester, W.B. 2003. Using the stable isotope ^{15}N to derive a budget for effluent-derived nitrogen applied to forest. Pp. 164-176, in: Proceedings of the Rotorua Lakes 2003: practical management for good lake water quality, Jointly hosted by Lakes Water Quality Society Inc. and the Royal Society of New Zealand, 9-10 October 2003, Centra Hotel, Rotorua.

Vogeler, I., Green, S., Magesan, G.N. and Clothier, B.E. 2004. Modelling water and nitrate dynamics under effluent irrigated pine trees, *Presented At: Supersoil 2004* Joint conference of the Australian Society for Soil Science and the New Zealand Soil Science Society, December, Sydney, Australia.

Wang, H., Brown, S.L., Magesan, G.N., Slade, A.H., Quintern, M., Clinton, P.W. and Payn, T.W. 2008. A review of technological options for management of biosolids, pp 8-21, in: Proceedings of the 2008 New Zealand Land Treatment Collective Annual Conference, Wang, H., Quintern, M. (Eds.), 16-18, Queenstown, New Zealand.

Wang, H. and Quintern, M. (Eds.) 2008. Decentralised waste management, Proceedings of the 2008 New Zealand Land Treatment Collective Annual Conference, 16-18, Queenstown, New Zealand, p 243.

Wang, H. and Quintern, M. (ed.) 2007. Nutrient removal and water quality issues, Proceedings of the 2007 New Zealand Land Treatment Collective Annual Conference, 14-16 March, Rotorua, New Zealand, p 227.

Wang, H. and Lavery, J. (ed.) 2006. Wastewater and land treatment in challenging environments. Proceedings of a conference hosted by the New Zealand Land Treatment Collective in cooperation with the Small Wastewater and Natural Systems Special Interest Group of the New Zealand Water and Waste Association, 14-17 March, Nelson, New Zealand, p 296.

Wang, H., Kimberley, M.O., Magesan, G.N. and Wilks, P.W. 2006. Effect of repeated biosolids applications on tree growth, wood properties and soil chemistry, pp. 157-163, in: Wastewater and land treatment in challenging environments. Proceedings of a conference hosted by the New Zealand Land Treatment Collective in cooperation with the Small Wastewater and Natural Systems Special Interest Group of the New Zealand Water and Waste Association, 14-17 March, Nelson, New Zealand.

Wang, H., Magesan, G.N. and Bolan, N.S. 2005. An overview of the environmental effects of land application of farm effluents, p 108, in: Land treatment of wastewater & stormwater in urban catchments, Proceedings of the 2005 New Zealand Land Treatment Collective Annual Conference, Wang, H. and Lavery, J. (Eds.), 7-9 March, Auckland, New Zealand.

Wang, H. and Lavery, J. (Eds.) 2005. Land treatment of wastewater & stormwater in urban catchments, Proceedings of the 2005 New Zealand Land Treatment Collective Annual Conference, 7-9 March, Auckland, New Zealand, p 230.

Wang, H. and Lavery, J. (Eds.) 2004. Water, Waste and Land Treatment for Primary Industry and Rural Areas, Proceedings of the 2004 New Zealand Land Treatment Collective, Annual Conference, 24-26 March 2004, Ashburton, New Zealand, pp 114.

Wang, H. and Lavery, J. (Eds.) 2003. Balancing social, cultural, economic and technical issues in land treatment policy, Proceedings of the 2003 New Zealand Land Treatment Collective Annual Conference, 14-16 April, Wellington, New Zealand, p 190.

Wang, H., Magesan, G.N., Clinton, P.W. and Lavery, J.M. 2003. Natural ^{15}N abundance and its use in waste management studies, pp. 241-248, in: Tools for nutrient and pollutant management: Applications to agricultural and environmental quality, Occasional Report No. 17, Fertilizer and Lime Research Centre, Massey University, Palmerston North.

Wang, H., Mercer, E., Magesan, G. and Pearce, S. 2003. Can we control nitrate leaching using pulp mill primary sludge? NZ Water and Wastes Association Annual Conference & Expo 2003. 17 - 19 September, Auckland, New Zealand.

Wang, H., Magesan, G.N. Lavery, J., Garrett, L., Pearce, P., and Payn, T.W. 2003. Efficiency of land treatment in removing nitrogen and phosphorus from sewage effluent, pp. 318, in: Proceedings of the Rotorua Lakes 2003: practical management for good lake water quality, Jointly hosted by Lakes Water Quality Society Inc. and

the Royal Society of New Zealand, 9-10 October 2003, Centra Hotel, Rotorua, New Zealand.

Wang, H., Magesan, G.N., Kimberley, M.O., Wilks, P.J., Fisher, C.R., Harty, T., Schruer, M., James, A. and Thomas, J. 2003. Responses of a forest ecosystem to biosolids application, pp. 114-121 in: Balancing social, cultural, economic and technical issues in land treatment policy, Proceedings of the 2003 New Zealand Land Treatment Collective Annual Conference, Wang, H., Lavery, J. (Ed.), 14-16 April, Wellington, New Zealand.

Wilkins, K., Silvester, W.B., Balks, M., Miers, D., Magesan, G.N. and Pearce, S H; 2004. The use of ¹⁵N isotopes to determine the fate of sewage effluent in pine forests, in New Zealand Land Treatment Collective: 2002 Annual Conference Proceedings, p 100.

Wilks, P., Wang, H. and Kimberley, M.O. 2008. Response of tree growth and wood properties to repeated biosolids applications, pp 22-29, in: Proceedings of the 2008 New Zealand Land Treatment Collective Annual Conference, Wang, H., Quintern, M. (Eds.), 16-18, Queenstown, New Zealand.

End user presentations - Workshops

Clinton, P.W. 2004. A review of current biosolids research undertaken by the Waste to Resource Programme, Joint Australian New Zealand Biosolids research programme meeting, Sydney 8th December 2004.

Clinton, P.W. 2006. Waste to resource – update on progress and direction, Joint ESR Ensis – ESR Biosolids endusers meeting, 14th March 2006

Clinton, P.W. 2006. Waste to Resources – highlights and direction, presented to MfE 9th June 2006.

Lavery, J M; Wang, Hailong; Spence, H; Hock, B K; 2006. Feasibility of a regional biosolids management solution and identification of potential end-users.

Leckie, A.C. 2008 .Feedback Loop – a regular email update of information for End Users.

Stuthridge, T R; 2004. Eco-Smart Technologies - transforming waste production negatives into economic and environmental positives. Oral presentation at: WasteMINZ conference, 9-11 November 2004, Auckland

Poster:

Leckie, A., Goven, J., Langer, E.R. 2008. Water and wastewater in Little River. Poster. Little River A & P Show, Little River, 19 January 2008.

Pamphlet:

Leckie, A., Goven, J., Langer, E.R. 2008. Water and wastewater in Little River. Pamphlet mailed to Little River rural letter box holders, January 2008.

Technical Reports

Garrett, L. and Wang, H., 2006. Interim report on fate and mobility of the constituents of land-applied pulpmill solid residuals, Confidential report for Norske Skog Tasman Mill Ltd.

Goven, J. and Langer, E.R. 2008. Evaluation of the Scenario Workshop “Invitation to Design the Future”, Report to the Christchurch City Council.

Goven, J. and Langer, E.R. 2005. Invitation to design the future. Christchurch Scenario Workshop on biosolids management, Final report. University of Canterbury, Ensis, Landcare Research, Te Runanga o Ngai Tahu. November 2005.

Goven, J. Langer, E.R., Leckie, A., Bodger, F., Davidson, A. and Boer, den Rob. 2005. Invitation to design the future, Christchurch Biosolids scenario workshop Stage I report. September 2005.

Landman, M.J. and Ling, N. 2008. Lake Okaro and Rerewhakaaitu Fish Health Monitoring: Okaro Z2G1 Trial, Scion technical report prepared for EBOP, 1 April 2008.

Landman, M.J. 2007. Tasman Mill Final Effluent Toxicity Testing. Scion technical report prepared for Norske Skog Tasman Mill, 18 December 2007

Lavery, J., Wang, H., Spence, H. and Hock, B., 2006. Feasibility of a regional biosolids management solution and identification of potential end-users, confidential report for Rotorua District Council.

Lavery, J.M., Wang, H., Lee, J.R. and McKinley, R.B. 2005. The effects of Land application of biosolids on wood quality in Canterbury *Pinus radiata* plantations, Confidential report for Christchurch City Council.

Lavery, J.M., Magesan, G.N. and Wang, H. 2005. Subsurface drip irrigation in Whakarewarewa Forest – nutrient uptake and leaching, confidential report for Rotorua District Council.

Lavery, J.M., Clinton, P.W., Wang, H. and Magesan, G.N. 2005. Case studies of current forest-based land application systems in New Zealand and the feasibility of a national standard for forestry biosolids application, report for New Zealand Ministry for the Environment.

Lavery, J.M., Nicholas, I.D., Magesan, G.N. and Wang, H. 2005. Issues and options assessment for effluent disposal at Woodhill Forest, Riverhead Forest and pasture land in south Rodney District, confidential report for Rodney District Council.

Lavery, J.M., Green, S.R., Magesan, G.N. and Wang, H. 2004. Forest management and nutrient modelling for Glen Forest, Kawakawa Bay, confidential report for Manakau Water.

Lavery, J.M., Nicholas, I.D., Magesan, G.N. and Wang, H. 2004. Options for the land treatment of Masterton District Council effluent to forest plantations at the Homebush site, confidential report for Masterton District Council.

Lowe C.J. and Tremblay L.A. 2006. Acute Toxicity of Ammonia to Native Fish from the Avon-Heathcote Estuary, Landcare Research Contract Report LC0506/092 prepared for the Christchurch City Council, 20 p.

Magesan, G.N. and Wang, H., 2008. Nitrate leaching from gorse – Final Report, Environment Bay of Plenty.

Magesan, G.N., Wang, H. and Clinton, P.W. 2007. Nitrate leaching from gorse in New Zealand- A review, Confidential Contract report for Environment Bay of Plenty.

Sarmah, A.K., Northcott, G.L. and Tremblay, L.A. 2006. Dairy effluents and endocrine disrupting chemicals (EDCs) - a review with a New Zealand perspective, a Landcare Research Contract Report LC0506/038 prepared for Dairy InSight New Zealand, 23p.

Sarmah, A.K., Northcott, G.L. and Tremblay, L.A. 2005. A scoping report on endocrine disrupting chemicals (EDCs) and their relevance to New Zealand, Landcare Research Contract Report: LC0506/037 prepared for Environment Waikato, 67 p.

Tremblay, L.A. and Trought, K. 2007. Biological testing of waste water samples from wool scour, Landcare Research Contract Report LC0607/124 prepared for AgResearch Ltd. 7 p.

Tremblay, L.A. and Tremblay, C.J. 2007. Toxicity testing an environmentally-relevant concentration of Christchurch wastewater treatment plant effluent using two native estuarine fish species. Landcare Research Contract Report LC0607/125 prepared for the Christchurch City Council, 8 p.

Tremblay, L.A. and Tremblay, C.J. 2007. Follow-up Study of the Potential Risk Associated with Mercury Residues in Lake Benmore Fish. Landcare Research Contract Report LC0708/005 prepared for the New Zealand Treasury, 15 p.

Tremblay, L.A. and Lowe, C.J. 2006. Plasma sex steroid levels in shortfin eel and black flounder from Lake Waihora. Landcare Research Contract Report LC0506/133 prepared for Environment Canterbury, 10 p.

Tremblay, L.A., Van den Heuvel, M.R., West, D., and Moore S. 2005. Methods for determining the effects of pollution on fishes, A Landcare Research Report prepared

for the Sustainable Management Fund Project 5115 of the New Zealand Ministry for the Environment, 72 p.

Tremblay, L.A. and Ataria, J.M. 2005. Assessment of the Potential Risk Associated with Mercury Residues in Fish Sampled at Lake Benmore, report prepared for the New Zealand Treasury, 13 p.

Tremblay, L., Ataria, J. and Trought, K. 2005. Post-mortem analyses of eels sent by Horizons Regional Council, a Landcare Research Report prepared for Horizons Regional Council, 4 p., LC0405/094.

Tremblay, L., Ataria, J. and Trought, K. 2005. Post-mortem analyses of eels sent by Hawke's Bay Regional Council, a Landcare Research Report prepared for Hawke's Bay Regional Council, 7 p., LC0405/093.

Tremblay, L.A., FDL Leusch, and K Trought. 2004. Determination of oestrogenic activity in treated municipal sewage and dairy shed effluents in Canterbury, using biological methods, a Landcare Research Report prepared for Environmental Canterbury, 13 p.

Tremblay, L.A. 2004. Evaluation of the estrogenic and androgenic biological activities of a treated sewage effluent, a Landcare Research Report prepared for Earth Consult Limited.

Tremblay, L.A., Fisher, P., Leusch, F.D.L., van den Heuvel, M.R., Nicolas, J-C., Pillon, A. and Balaguer, P. 2004. Potential of sodium monofluoroacetate (1080) and fluorocitrate to interact with androgen and estrogen receptors, a Landcare Research Report prepared for the Deerstalkers Association of New Zealand.

Van den Heuvel, M.R. and Tremblay, L.A. 2005. Health and contaminant levels in shortfin eel from the Urupa and A8 Ponds, adjacent to the Tasman Mill solid waste disposal area, a Forest Research Report prepared for Norske Skog, Tasman Mill, Kawerau, 55 p.

Wang, H. and Kimberley, M.O. 2007. Annual report on the biosolids research trial at Rabbit Island, confidential report for PF Olsen Ltd.

Wang, H. 2007. Good management practices for land application of vegetable processing wastes, FRST Envirolink project report for Gisborne District Council.

Wang, H., Kimberley, M.O. and McKinley, R. 2006. Annual report on the biosolids research trial at Rabbit Island, confidential report for PF Olsen Ltd.

Wang, H. 2006. Potential accumulation of effluent constituents in soil on the proposed land treatment site at Riversdale, confidential report for Opus International Consultants Limited.

Wang, H. and Kimberley, M.O. 2005. Annual report on the biosolids research trial at Rabbit Island, confidential report for PF Olsen and Company Ltd.

Wang, H. and Kimberley, M.O. 2004. Annual report on the biosolids research trial at Rabbit Island, confidential report for PF Olsen and Company Ltd.

Wang, H., and Kimberley, M.O. 2003. Responses of Rabbit Island forest ecosystem to biosolids application, confidential report for PF Olsen and Company Ltd.

Student theses

Adam, K. 2003. The environmental and Health implications of the decomposition of biosolids, MSc Thesis, University of Canterbury.

Bandelj, M. 2004: Assessment of Androgenic Response Potential of Effluents Using In Vitro and In Vivo Methods, Ryerson University, Toronto, Canada.

Bleackley, N. 2008. Biology of common bully (*Gobiomorphus cotidianus*) populations in the Tarawera and Rangitaiki Rivers: Reproductive isolation by inland distance or effluent discharges? MSc Thesis, Waikato University, Hamilton, NZ.

Denholm, P. 2003. Biodiversity, Biosolids and Bioindicators in Pinus radiata D. Don planted forests”, PhD Thesis, University of Canterbury.

Fraser, D.S. 2007: Fate and effects of pulp mill effluent solids in the soil environment. PhD, University of Waikato, New Zealand.

Gadd, J, “Occurrence of Estrogens in Dairy Effluent and their Fate in the Environment”, University of Canterbury, FRST Enterprise Fellowship with Golder Associates.

Gielen, G. 2007. The fate and effects of pharmaceuticals in the terrestrial ecosystem. PhD Thesis, University of Canterbury.

Hack, L., 2008. “Development of bioindicators using meiofauna species to evaluate and monitor the health of estuarine environments”, Lincoln University, FRST TIF Fellowship with Boffa Miskell, Graduated 2008.

Hamilton, L. “Evaluation of an advanced tertiary sewage treatment plant to remove endocrine active chemicals”, University of Technology, Sydney, Australia, APAI Fellowship.

Hoger, B., 2004: Effects of Sewage Treatment Plant Effluent on the Immune System of Rainbow Trout, Konstanz University, Konstanz, Germany.

Hubert, A. 2007: Nitrogen cycle under woody Legume stands: fixation, mineralisation and leaching. Institut National Agronomique Paris-Grignon, France.

Leusch, F., 2004 “Estrogenic and androgenic potential of municipal sewage in Australia and New Zealand”, Lincoln University, FRST Enterprise Fellowship, graduated 2004.

Rawson, C., 2008: “The ecotoxicology of endocrine disrupting chemicals in Sydney Olympic Park”, University of Technology, Sydney, Australia, APAI Fellowship, submitted thesis June 2008.

Stringer, T., “Evaluation of the ecological impacts of pollution on New Zealand estuaries using molecular and bioassay approaches with the marine copepod *Robertsonia propinqua*”, School of Biological Sciences, Canterbury University. University supervisor Chris Glover; associate supervisor: Vaughan Keesing (Boffa Miskell), UC Doctoral Scholarship.

Strong, J.M., “Trace Organic Contaminants in Treated Wastewater discharges: Fate and assessment of risk to the receiving Environments in NZ”, Chemistry Department of Waikato University. University supervisor: Prof Alistair Wilkins; associate supervisor: Grant Northcott (HortResearch) University of Waikato Doctoral Scholarship and a HortResearch PhD fellowship.

Su, J. 2006: Fractionation and mobility of phosphorus and heavy metals in sandy forestry soils receiving repeated biosolids application, MSc Huazhong Agricultural University, China.

Tan, B., 2007. “Fate and effects of endocrine disruptors from sewage effluent in coastal estuarine environments”, Griffith University, Australia, graduated 2007.

Tozer, W. 2007. Using stable isotope techniques to identify losses of nitrogen from catchments with different land-use management practices, PhD, University of Waikato, New Zealand.