ALUMNI of Soil Ecosystems Laboratory

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Paul Mudge (2008) and **Dirk Wallace** (2009) conducted MSc studies into how physical impacts (cultivation and pugging) alter the carbon balance of intensively-grazed pasture. They are using a combination of chamber and eddy co-variance techniques at the Scott research farm managed by Dairy NZ. The project received funding from DairyNZ and Landcare Research and the University of Waikato.

- Mudge, et al (2011). Agricultural Ecosystems and Environment. 144: 271-280.

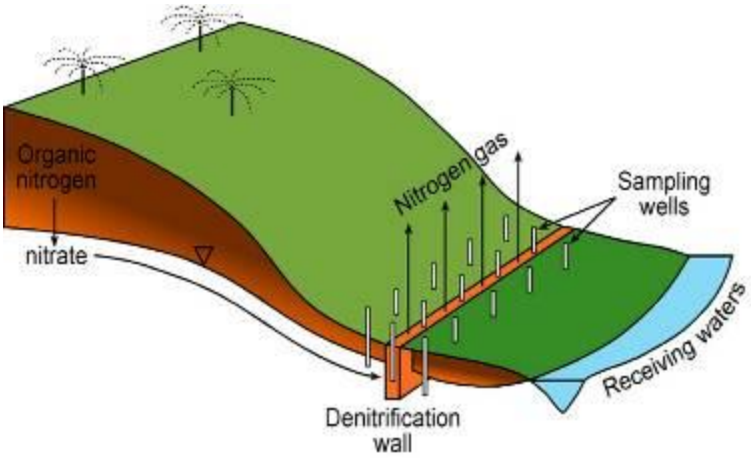
Stewart Cameron (GNS Science) completed a PhD study on the flow of effluent through denitrification beds. Stewart used a combination of field and large scale barrel trials to determine the nitrate removal and hydraulic flows in a range of carbon substrates and will model the importance of bed design. Funded by GNS Science and University of Waikato.

- Cameron S.G.; Schipper L.A. (2010) Nitrate removal and hydraulic performance of carbon substrates for potential use in denitrification beds. Ecological Engineering. 36 (11): 1588-1595.
- Cameron S.G. Schipper L.A. (2011) Evaluation of passive solar heating and alternative flow regimes on nitrate removal in denitrification beds. Ecological Engineering. 37: 1195-1204.

Soeren Warneke completed a PhD on the microbial ecology of denitrification beds. He determined the environmental factors that control denitrification and nitrous oxide emissions. He developed rapid approach for assessing nitrate removal and demonstrated that denitrification was the main mechanism for nitrate removal.

- Warneke et al. (2011) Nitrate removal, communities of denitrifiers and adverse effects in different carbon substrates for use in denitrification beds. Water Research 45: 5463-5475.
- Warneke et al. (2011) A comparison of different approaches for measuring denitrification rates in a nitrate removing bioreactor. Water Research. 45: 4141-4151.
- Warneke et al (2011) Rates, controls and potential adverse effects of nitrate removal in a denitrification bed. Ecological Engineering. 37: 511-522.

Soeren was funded by WaikatoLink.



Lauren Long (MPhil 2011) demonstrated that a denitrification wall is still removing nitrate from groundwater 14 years after it was construction.

- Long, L.; Schipper L.A.; Bruesewitz D.A. (2011) Long-term nitrate removal in a denitrification wall. Agricultural Ecosystems and Environment. 140: 514–520.

Lauren was funded through by a Fulbright scholarship and the University of Waikato.

Natalie Watkins completed an MSc in 2007 looking at whether the application of the nitrification inhibitor DCD would alter other aspects of the nitrogen cycle. She specifically measured changes in denitrification rates at Scott farm. Funding from Technology Industry Fellowship scheme, University of Waikato, DairyNZ and Landcare Research.