**Postgraduate Details**

**Name:** Réamonn Fealy

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**(PhD) Research working title:**

*Spatial analysis techniques in agri-environmental policy making; limits and opportunities.* (working title)

**Supervisor(s):**

Prof. Chris Brunsdon

Martin Charlton

**Research interests (please include a paragraph summarizing your PhD project**

Réamonn’s doctoral project is focusing on the often complex interface between agriculture and the environment and the particular role of spatial analysis in the development of policy, assessment of risk and legislative aspects that arise in this domain.

Reamonn is a Senior Research Officer at the Spatial Analysis Unit in Teagasc. He has responsibility for the strategic management of all technical aspects of Geographic Information Systems (GIS) work carried out in Teagasc and for guiding the broader development and application of GIS across the organisation. His role involves the contribution of scientific and technical consultation to a broad range of internal and external research and development initiatives.

He currently manages a diverse research project portfolio ranging from local and regional level through to the provision of assistance to the Department of Agriculture, Food and the Marine in policy review and assessment at European level. He is a member of the management team on the large scale, Teagasc-EPA co-funded, national project, ‘SIS’, a research and development effort which has built a soils information system for Ireland with a publically accessible front end based on web mapping servies. He has participated on a number of internal working groups reporting to Teagasc at Director level including the Nitrates Directive Derogation Working Group and the Agricultural Catchments Working Group and is currently a member of the Water Framework Directive and Greenhouse Gas working groups. He was recently appointed to the governing board of the ERA-NET *ICT-AGRI*

Specialties: *International and national policy and risk assessment, spatial analysis and modelling, GIS, GPS survey, Smart Agriculture, soils and environmental resource mapping, climate change and its impacts*

**Publications:**

Valujeva, K., O'Sullivan, L., Gutzler, C., Fealy, R. and Schulte, R. P. O. (2016) 'The challenge of managing soil functions at multiple scales: An optimisation study of the synergistic and antagonistic trade-offs between soil functions in Ireland', *Land Use Policy,* 58, pp. 335--347.

O’Donoghue, C., McKinstry, A., Green, S., Fealy, R., Heanue, K., Ryan, M., Connolly, K., Desplat, J., Horan, B. and Crosson, P. (2016) 'A Blueprint for a Big Data Analytical Solution to Low Farmer Engagement with Financial Management', *International Food and Agribusiness Management Review,* 19(A), pp. 24.

Zimmermann, J., Fealy, R. M., Lydon, K., Mockler, E. M., O'Brien, P., Packham, I., Smith, G. and Green, S. (2016) 'The Irish Land-Parcels Identification System (LPIS) Experiences in on-going and recent environmental research and land cover mapping', *Biology and Environment: Proceedings of the Royal Irish Academy,* 116B(1)

Roberts, W. M., Fealy, R. M., Doody, D. G., Jordan, P. and Daly, K. (2016) 'Estimating the effects of land use at different scales on high ecological status in Irish rivers', *Science of The Total Environment*.

Schulte, R. P. O., Bampa, F., Bardy, M., Coyle, C., Creamer, R. E., Fealy, R., Gardi, C., Ghaley, B. B., Jordan, P., Laudon, H., O'Donoghue, C., Ó'hUallacháin, D., O'Sullivan, L., Rutgers, M., Six, J., Toth, G. L. and Vrebos, D. (2015) 'Making the Most of Our Land: Managing Soil Functions from Local to Continental Scale', *Frontiers in Environmental Science,* 3(81).

O'Sullivan, L., Creamer, R., Fealy, R., Lanigan, G., Simo, I., Fenton, O., Carfrae, J. and Schulte, R. (2015) 'Functional Land Management for managing soil functions: A case-study of the trade-off between primary productivity and carbon storage in response to the intervention of drainage systems in Ireland', *Land Use Policy,* 47, pp. 42-54

Schulte, R. P. O., Creamer, R. E., Donnellan, T., Farrelly, N., Fealy, R., O'Donoghue, C. and Ó’hUallacháin, D. (2014) 'Functional land management: A framework for managing soil-based ecosystem services for the sustainable intensification of agriculture', *Environmental Science & Policy,* 38, pp. 45-58.

Simo, I., Corstanje, R., Fealy, R. M., Hallett, S., Hannam, J., Holden, N., Jahns, G., Jones, B., Massey, P., Mayr, T., McDonald, E., Reidy, B., Schulte, R. P. O., Sills, P., Spaargaren, O., Zawadka, J. (2014). Mapping Soils in Ireland. In: Arrouays, D., McKenzie, N., Hempel, J., Richer de Forges, A. C., McBratney, A. B. *GlobalSoilMap: Basis of the global spatial soil information system*. London: CRC Press. 478

McDonald, R., Pierce, K., Fealy, R. and Horan, B. (2013) 'Characteristics, intentions and expectations of new entrant dairy farmers entering the Irish dairy industry through the New Entrant Scheme', *International Journal of Agricultural Management,* 2(4), pp. 189-198.

Cavazzi, S., Corstanje, R., Mayr, T., Hannam, J. and Fealy, R. (2013) 'Are fine resolution digital elevation models always the best choice in digital soil mapping?', *Geoderma,* 195, pp. 111-121.

Ibrahim, T. G., Fenton, O., Richards, K. G., Fealy, R. M. and Healy, M. G. (2013) 'Spatial and temporal variations of nutrient loads in overland flow and subsurface drainage from a marginal land site in south-east Ireland', *Biology and Environment-Proceedings of the Royal Irish Academy,* 113B(2), pp. 169-186.

Schulte, R. P. O., Fealy, R., Creamer, R. E., Towers, W., Harty, T. and Jones, R. J. A. (2012) 'A review of the role of excess soil moisture conditions in constraining farm practices under Atlantic conditions', *Soil Use and Management,* 28(4), pp. 580-589.

Murray, T. E., Fitzpatrick, U., Byrne, A., Fealy, R., Brown, M. J. F. and Paxton, R. J. (2012) 'Local-scale factors structure wild bee communities in protected areas', *Journal of Applied Ecology,* 49(5), pp. 998-1008.

Buckley, C. and Fealy, R. (2012) 'Intra-national importation of pig and poultry manure: acceptability under EU Nitrates Directive constraints', *International Journal of Agricultural Management,* 1(4), pp. 41-47.

Tricault, Y., Fealy, R., Colbach, N. and Mullins, E. (2011) 'Towards an optimal management regime to facilitate the coexistence of GM herbicide tolerant and non-GM oilseed rape', *European Journal of Agronomy,* 34(1), pp. 26-34.

Fealy, R. M., Buckley, C., Mechan, S., Melland, A., Mellander, P. E., Shortle, G., Wall, D. and Jordan, P. (2010) 'The Irish Agricultural Catchments Programme: catchment selection using spatial multi-criteria decision analysis', *Soil Use and Management,* 26(3), pp. 225-236.

Farrelly, N., Fealy, R. M. and Radford, T. (2009) 'The use of site factors and site classification methods for the assessment of site quality and forest productivity in Ireland', *Irish Forestry,* 64, pp. 21-38.

Fealy, R. and Fealy, R. M. (2008) 'The spatial variation in degree days derived from locational attributes for the 1961 to 1990 period', *Irish Journal of Agricultural and Food Research,* 47(1), pp. 1-11.

Loftus, M., Bulfin, M., Farrelly, N., Fealy, R., Green, S., Meehan, R. and Radford, T. (2002) 'The Irish Forest Soils Project and its potential contribution to the assessment of biodiversity', *Biology and Environment,* 102B(3), pp. 151-164.

**Conference/Workshop Presentations**

Vangeyte, J., Mertens, K., Thysen, I., Lötscher, M., Holpp, M., Kelly, R., Fealy, R. M., Didelot, D., Erpenbach, J., Latsch, A., Beck, B. (2014). ICT-AGRI: main achievements and future perspectives. In Proceedings International Conference of Agricultural Engineering, Zurich

Fealy R. (2013) "Addressing Soils Data Gaps" EPA Soils & Land Use Research Planning Workshop. September 2013. Dublin

Fealy, R. (2011)"Towards 2014: Planned ISIS Outputs". Invited presentation to Soil Science Society of Ireland Spring Meeting. March 2011. Dublin.

Duffy C., Fealy R. M. and Fealy R. M .(2010). Pests, diseases and climate change: A spatio-temporal analysis of the potential impacts on Irish agricultural productivity. In Proceedings A Climate for Change Conference. Dublin 24-25 June.

Lanigan, Gary, Finnan, J., Fealy R. M. and Jones, M. (2010). Growing returns: the role of land-use change in influencing GHG emissions. In Proc. A Climate for Change Conference. Dublin 24-25 June.

Fealy R. M, Shortle, G., Melland A.R., Mellander, P-E., Mechan, S., C. Buckley, C., Wall, D. & Jordan, P. (2009). A catchment approach to evaluate the nitrates directive national action programme in Ireland. In: C. Grignani, M. Acutis, L. Zavattaro, L. Bechini, C. Bertora, P. Marino Gallina, D. Sacco (Eds). Proceedings of the 16th Nitrogen Workshop: Connecting different scales of nitrogen use in agriculture. Turin, Italy

Mellander, P. E., Melland, A. R., Shortle, G., Wall, D., Mechan, S., Buckley, C., Fealy, R. and Jordan, P. (2009) 'Patterns and processes of nutrient transfers from land to water: a catchment approach to evaluate Good Agricultural Practice in Ireland'. Geophysical Research Abstracts, Vol. 11, EGU2009-10647, EGU General Assembly. Vienna, Austria.

Mullins, E., Tricault, Y., Fealy R. M . and Colbach, N. (2009)." Towards an optimal management regime for the coexistence of GM and non-GM oilseed rape in Ireland". Co-Extra Conference, Paris, France.

O'Rourke, E., Fealy R., Sweeney, J. and Fealy R. M. (2008) "Modelling the effect of climate on the incidence of pests and diseases: a spatial analysis of the potential impacts on Irish agricultural productivity". European conference on applied climatology. European Meteorological Society. Amsterdam, The Netherlands.

Shortle, G., Fealy R. M ., Jordan, P. , Melland, A. , Mellander, PE , Mechan, S. , Buckley, C. and Wall, D. (2008). Using a mini-catchment approach to evaluate nutrient loss reduction measures on Irish farms. EU Water Framework Directive conference. Wexford

Fealy, R. and Schroder, J. J. (2008) *Assessment of manure transport distances and their impact on economic and energy costs.* York: International Fertiliser Society.

Shortle, G., Fealy R. M ., Jordan, P. (2007). Using a mini-catchment approach to evaluate nutrient loss reduction measures on Irish farms [Soil and Water Protection Through Integrated Catchment Management Conference. Society of Chemical Industry. London.](http://www.teagasc.ie/agcatchments/publications/2009/Poster_Oct2007.pdf)

Farrelly, N., Fealy R. M . M., Radford, T. (2008) "The role of site classification in site productivity and management" COFORD Tullamore

Fealy R. M. (2007) "Soil data in Ireland: status and prospects". Invited paper to the Institute of Ecology and Environmental Management annual conference. Dublin.

Fealy R. M. (2006) "The EPA Soil and Subsoil Mapping Project-A Final Overview". Invited lecture to the EPA Soils Workshop 2006. Tullamore.

Fealy R. M. (2005) "The EPA Soil and Subsoil Mapping Project". Invited lecture to International Association of Hydrogeologists, Dublin

Fealy R. M. (2005) " The EPA Soil and Subsoil Mapping Project". Invited field presentation to Soil Science Society of Ireland, Dublin

Fay, D., Daly, K., Fealy R. M., Carton, C., Coulter, B. S. and McDonald, E. (2005) "Irish soils and research needs". ERTDI Workshop Climate change research requirements 2007-2013 and beyond. Dublin

Fealy R. M. (2003) "Soil Monitoring Networks in an Irish Spatial Data Infrastructure context ". Invited lecture to 2nd Soils Workshop on the EPA Discussion document-"Towards setting environmental quality objectives for soil – Developing a soil protection strategy for Ireland". UCD.

Loftus, M., Bulfin, M., Farrelly, N., Fealy R. M ., Green., S., Meehan, R., and Radford, T, (2000). Irish Forest Soils; biodiversity aspects. Biodiversity Workshop of the Environmental Sciences Association of Ireland (ESAI). Geological Survey of Ireland, Dublin.

Fealy R. M. (2000) “FIPS-IFS: An integrated remote sensing and GIS approach to predictive soil modelling in Ireland”. Invited presentation to special symposium on GIS and Remote Sensing, International Geosphere-Biosphere Programme, NUI, Maynooth.

Bulfin, M., Doyle., M, Fealy R. M., Green, S., Loftus, M., and Meehan, R., (1999). Mapping Irish Soils for Forestry Productivity. 9th Irish Environmental Researchers Colloquium. Teagasc, Johnstown Castle, Wexford.

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* €3.7 million from EPA STRIVE. Development of the Soils Information System of Ireland (Proposal coordinator and Primary author)
* €1.5 million from Dept of Environment. IFS-National Indicative Soils Mapping project (Proposal coordinator and Primary author)
* €8 million Dept of Agriculture. Establishment of National AgriCatchments project (Proposal coauthor)
* €365,000 Dept of Agriculture. The effects of Climate Change on willow beetle and associated industry impacts (Proposal coauthor & team member)
* €500,000 Dept of Agriculture. Efficient and Reliable Utilisation of Nutrients in Animal Manures(Proposal coauthor & team member)
* €65,000 EPA. Feasibility, design and scoping of Soil Information System for Ireland (Proposal coauthor)