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Research interests

Economic evaluation of agricultural and environmental policy

Economics of natural capital and ecosystem services

Non-market valuation and cost-benefit analysis

Natural capital modelling using Bayesian Networks

Interdisciplinary research of agriculture and the environment

Projects

Current projects

Scottish Government Strategic Research Programme (2022-27): Modelling The Socio-economic, Greenhouse Gas And Natural Capital Impacts Of Land Use Policy And Opportunities – principal investigator

Horizon Europe (2023-2028):

Linking Soil Biodiversity and Ecosystem Functions and Services in Different Land Use: From the Identification of Drivers, Pressures and Climate Change Resilience to their Economic Valuation - BIOservicES - work package lead

Land Use for Net Zero (LUNZ, 2024 - 2027): Grassland Resilience for Net Zero: Sustainable practices for shaping the future of UK land use - co-investigator

Recent projects

Scottish Government Strategic Research Programme (2022-27): Understanding The Value Of Scotland's Agricultural Soil Natural Capital – principal investigator

Scottish Government (2022-23): Supporting an evidence-based approach for Scottish Government engagement on the development of approaches to measure biodiversity- principal investigator

Joint Nature Conservation Committee (2021-22): Understanding the effects of land management scenarios on reef resilience in Montserrat – principal investigator

Joint Nature Conservation Committee (2021-22): Developing an inland flood/hydrological system and indicators to monitor and inform land management in Montserrat – principal investigator

Joint Nature Conservation Committee (2021): Developing a Decision Support Tool to Inform Land Management Scenarios in Montserrat – principal investigator

South Atlantic Environmental Research Institute (2018-19): Natural Capital Assessment of St Helena – principal investigator

Global Food Security Programme (2018-21): Sustainable Economic and Ecological Grazing Systems – Learning from Innovative Practitioners (SEEGSLIP) – co-investigator

Scottish Government Strategic Research Programme (2016-21): Natural Asset Register and Natural Capital Accounts – lead investigator

Scottish Government Strategic Research Programme (2016-21): Biodiversity management – offsetting and net gain – principal investigator

European Commission (2016): EU strategy on adaptation to climate change: knowledge assessments - Partner in DG Clima service contract

Scottish Natural Heritage (2015-16): A review of the social, economic and environmental benefits and constraints linked to wild land in Scotland – project manager

WWF (2014-15): The benefits to people of expanding Marine Protected Areas

Committee on Climate Change (2015): Provision of services to review and update the UK agriculture MACC and to assess abatement potential for the 5th carbon budget period and to 2050

European Commission (2013-15): Natural Water Retention Measures - Partner in DG Environment service contract

Adaptation Subcommittee (2012-13): Assessing the preparedness of England's natural resources for a changing climate

Valuing Nature Network (2011-12): Valuing the impacts of ecosystem service interactions for policy effectiveness – project leader

Scottish Government (2012-13): Evaluating the cost-effectiveness of biodiversity measures in Scotland – project manager

Scottish Government Strategic Research Programme (2011-16): Assessing the value of ecosystem services – work package leader

EU Framework 7 (2011-15): Sustainable farm Management Aimed at Reducing Threats to SOILs under climate change (SmartSOIL)

Activities

2018 - present: Scottish Forum on Natural Capital, member of Sustainable Land Management Working Group

2018 - present: Scottish Government, member of steering group Office for National Statistics Natural Capital Accounts for Scotland

2017 - 2020: Valuing Nature Programme, member Programme Advisory Group

2014 - present: Ecosystem Services Community Scotland (ESCom), member central committee

Research outputs

Reed, MSR, Glendinning, J, Glenk, K, McVittie, A, Millard, N, Cowap, C, Gearey, R, Brennand, JR, Carr, S & Mckay Fletcher, DMF 2026, *Delivering robust measurement pathways for a Scottish carbon land tax: an evidence review and feasibility study*. Scotland's Rural College (SRUC). <https://lunzhub.com/resources/delivering-robust-measurement-pathways-for-a-scottish-carbon-land-tax-an-evidence-review-and-feasibility-study/>

McVittie, A 2026, *Integrating land use and natural capital modelling using a spatial Bayesian Belief Network*. https://doi.org/10.58073/SRUC.34529130

McVittie, A & Glenk, K 2026, *Valuing the ecosystem service benefits of soil natural capital*. https://doi.org/10.58073/SRUC.34542564

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McVittie, A 2023, *Natural Capital Accounts for Scotland: Agriculture Sector Accounts*. SRUC. https://doi.org/10.58073/SRUC.24534763

McVittie, A & Glenk, K 2023, *Natural Capital Accounts for Scotland: Forest Sector Accounts*. SRUC. https://doi.org/10.58073/SRUC.24534799.

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McVittie, A 2023, *Agricultural soil data and indicators, farm types and natural capital logic chains*. Scotland's Rural College (SRUC). https://doi.org/10.58073/SRUC.24072618

McVittie, A 2023, *Galvanising Change via Natural Capital: Mapping international uses of innovative finance*. SRUC. https://doi.org/10.58073/SRUC.24072570

Yuniarti, I, Barnes, C, Glenk, K & McVittie, A 2023, Toward Sustainable Lake Ecosystem-Based Management: Lessons Learned from Interdisciplinary Research of Cage Aquaculture Management in Lake Maninjau. in *Environmental Governance in Indonesia*. Springer, pp. 107-131. https://doi.org/10.1007/978-3-031-15904-6_7

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Norton, L, Maskell, L, McVittie, A, Smith, L, Wagner, M, Waterton, C & Watson, CA 2022, 'Learning from innovative practitioners: Evidence for the sustainability and resilience of pasture fed livestock systems', *Frontiers in Sustainable Food Systems*, vol. 6, 1012691. https://doi.org/10.3389/fsufs.2022.1012691

Roberts, M, Glenk, K & McVittie, A 2022, 'Urban residents value multi-functional urban greenspaces', *Urban Forestry and Urban Greening*, vol. 74, 127681. https://doi.org/10.1016/j.ufug.2022.127681

Roberts, M, Irvine, KN & McVittie, A 2021, 'Associations between greenspace and mental health prescription rates in urban areas', *Urban Forestry and Urban Greening*, vol. 64, 127301. https://doi.org/10.1016/j.ufug.2021.127301

Yuniarti, I, Glenk, K, McVittie, A, Nomosatryo, S, Triwisesa, E, Suryono, T, Santoso, AB & Ridwansyah, I 2021, 'An application of Bayesian Belief Networks to assess management scenarios for aquaculture in a complex tropical lake system in Indonesia', *PLoS ONE*, vol. 16, no. 4, e0250365. https://doi.org/10.1371/journal.pone.0250365

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