

SPATIAL TARGETING OF MITIGATION STRATEGIES TO REDUCE NUTRIENT LEVELS IN WATERWAYS WHILE MINIMISING PRODUCTION LOSS

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This talk discusses recent adaptations to the Land Utilisation and Capability Indicator (LUCI) spatial framework that enhance its ability to predict water quality outcomes, and to quickly target where management interventions could improve water quality while minimising productivity loss. LUCI is an integrated framework considering how land use and management impact a range of landscape provisions including flood mitigation, water supply, greenhouse gas emissions, biodiversity, erosion, sediment and nutrient delivery to waterways, and agricultural production. Past versions of LUCI inferred nutrient loads from simple export coefficients, generally based on nationally available land cover categorisations. New methods that also account for soil type, slope, management, and climate among other factors have now been developed, trained off a combination of data and other models, most notably Overseer. This new and more nuanced approach is demonstrated, and “validated” against data. A new automated method to identify opportunities to both reduce nutrient load and to intercept nutrients enroute to waterways while minimizing productivity loss is presented, and demonstrated at both farm and catchment scale.

Editor’s Note: An extended manuscript has not been submitted for this presentation.