Selecting and targeting best management practices for multiple pollutants in a drinking water supply catchment using the CaRPoW modelling framework

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stream
The Industrial Doctorate Centre for the Water Sector

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Engineering and Physical Sciences Research Council

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LUWQ, 23/09/2015

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Water Industry Catchment Management?

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Why catchment management?

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Sustainable Land Management (SLM)

What is Known and Unknown?

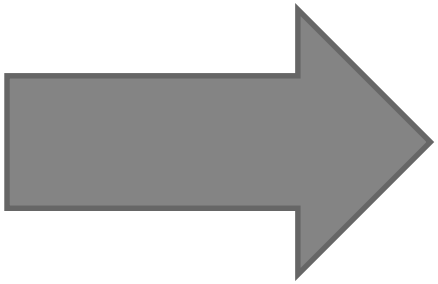
What ✓

When ✓

Where ✗

Why ✗

How ✗



Aim to create a methodology that:

- Can spatio-temporally differentiate pollutant risk in a catchment
- Simple to implement
- Has transparency in process represented
- Allows for pollutant comparison
- Can effectively select and target interventions

Defining a criteria

A criteria for a new framework was developed with input from…

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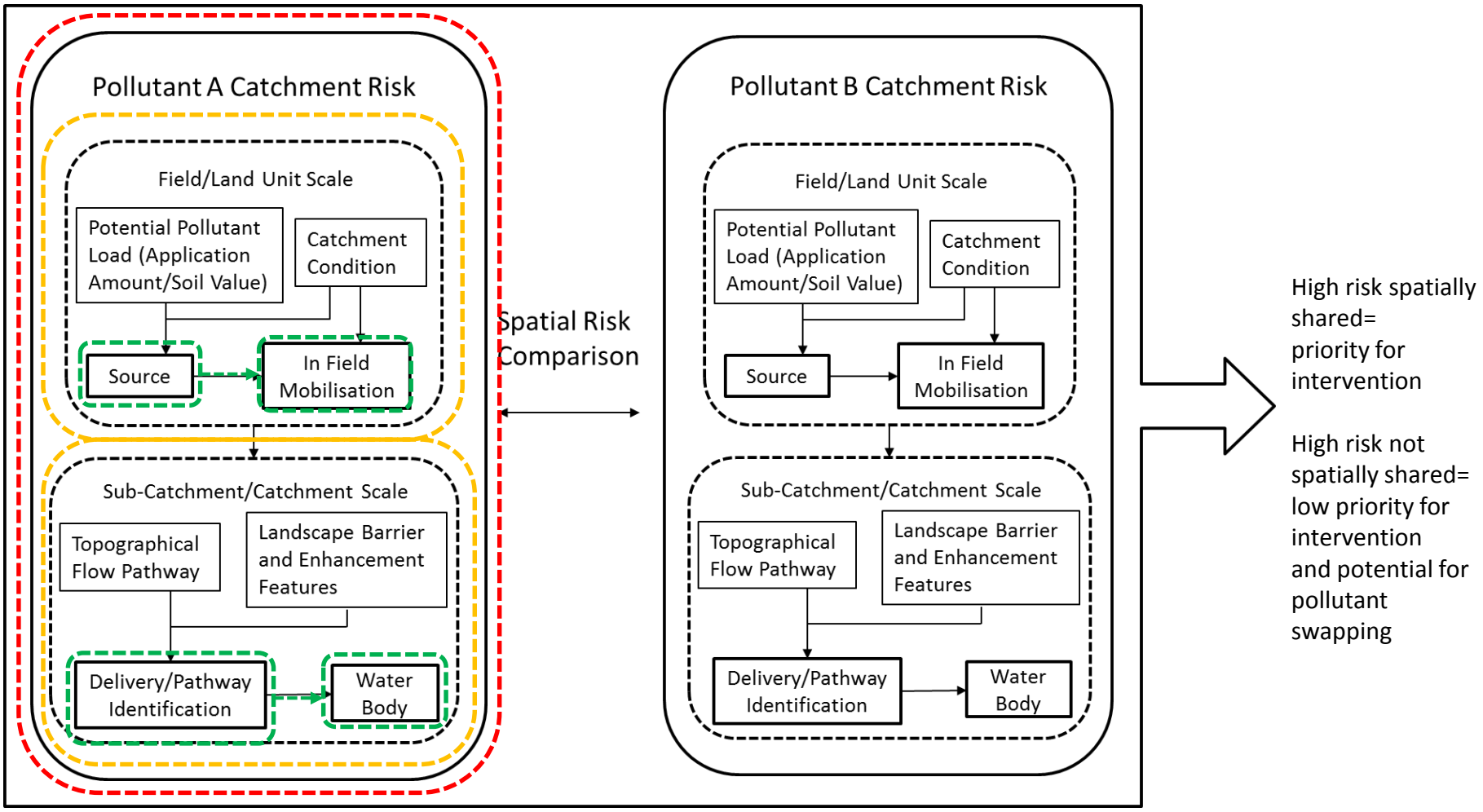
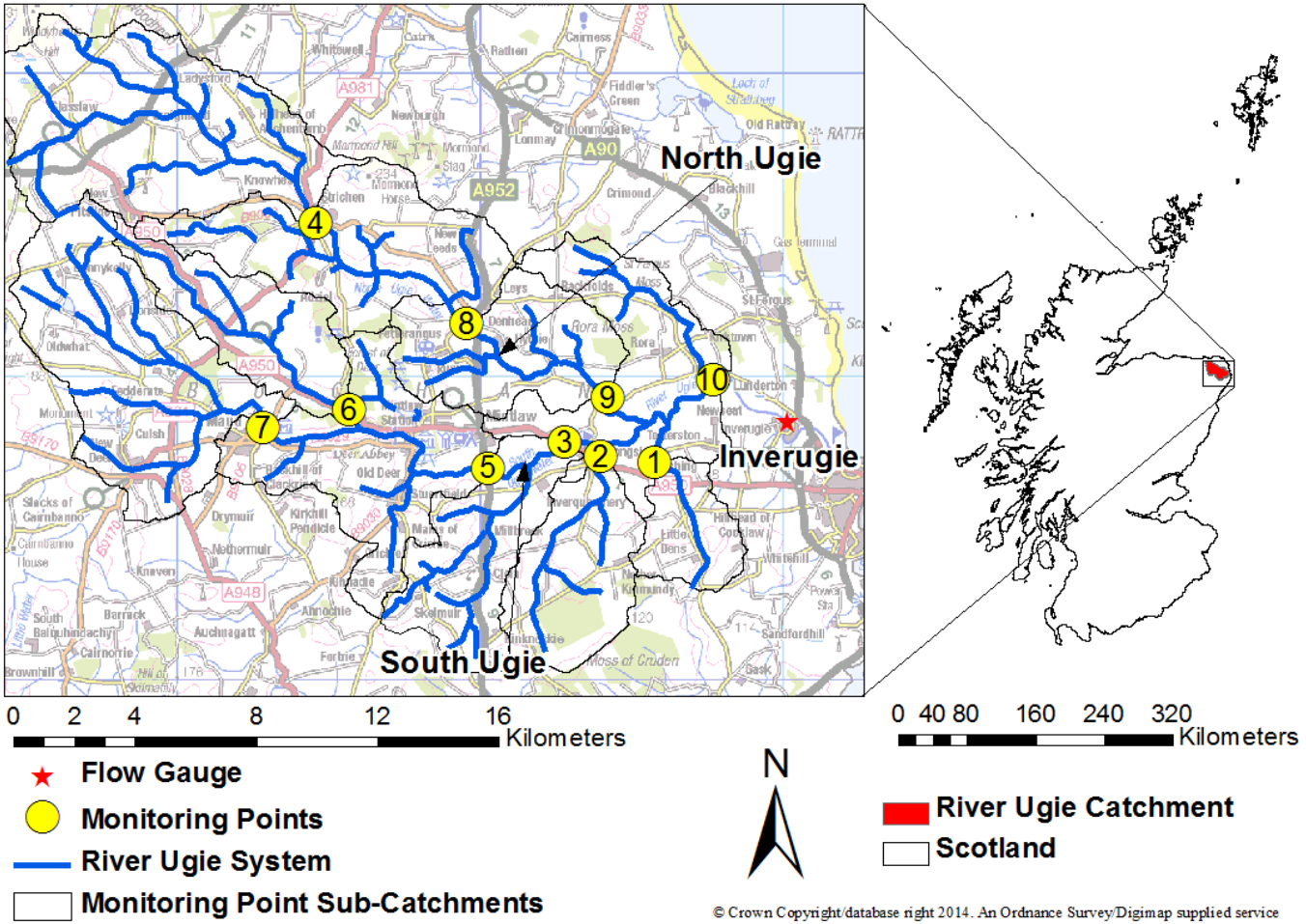
… to benchmark what the industry requires

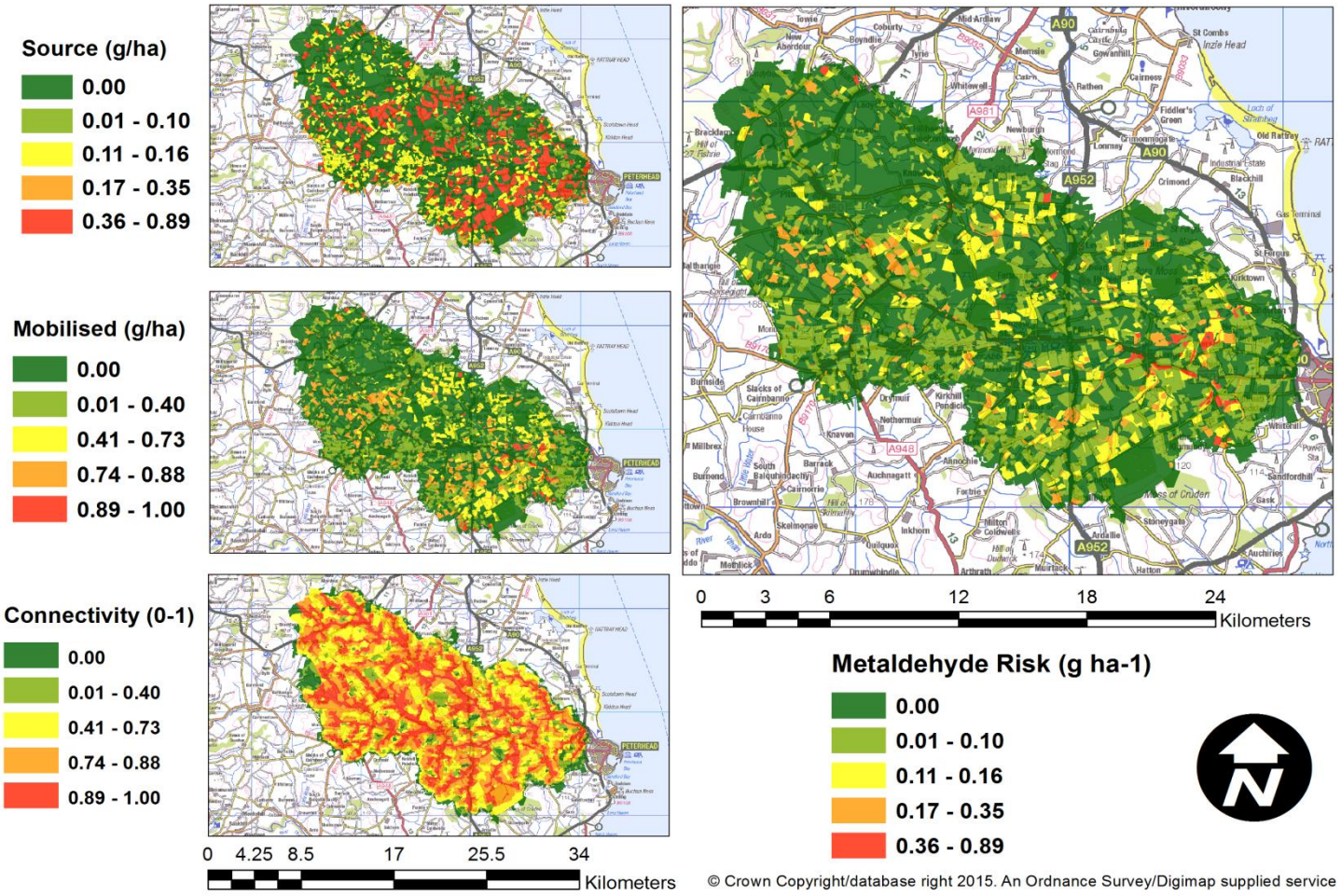
The CaRPoW (Catchment Risk to Potable Water) framework



The River Ugie

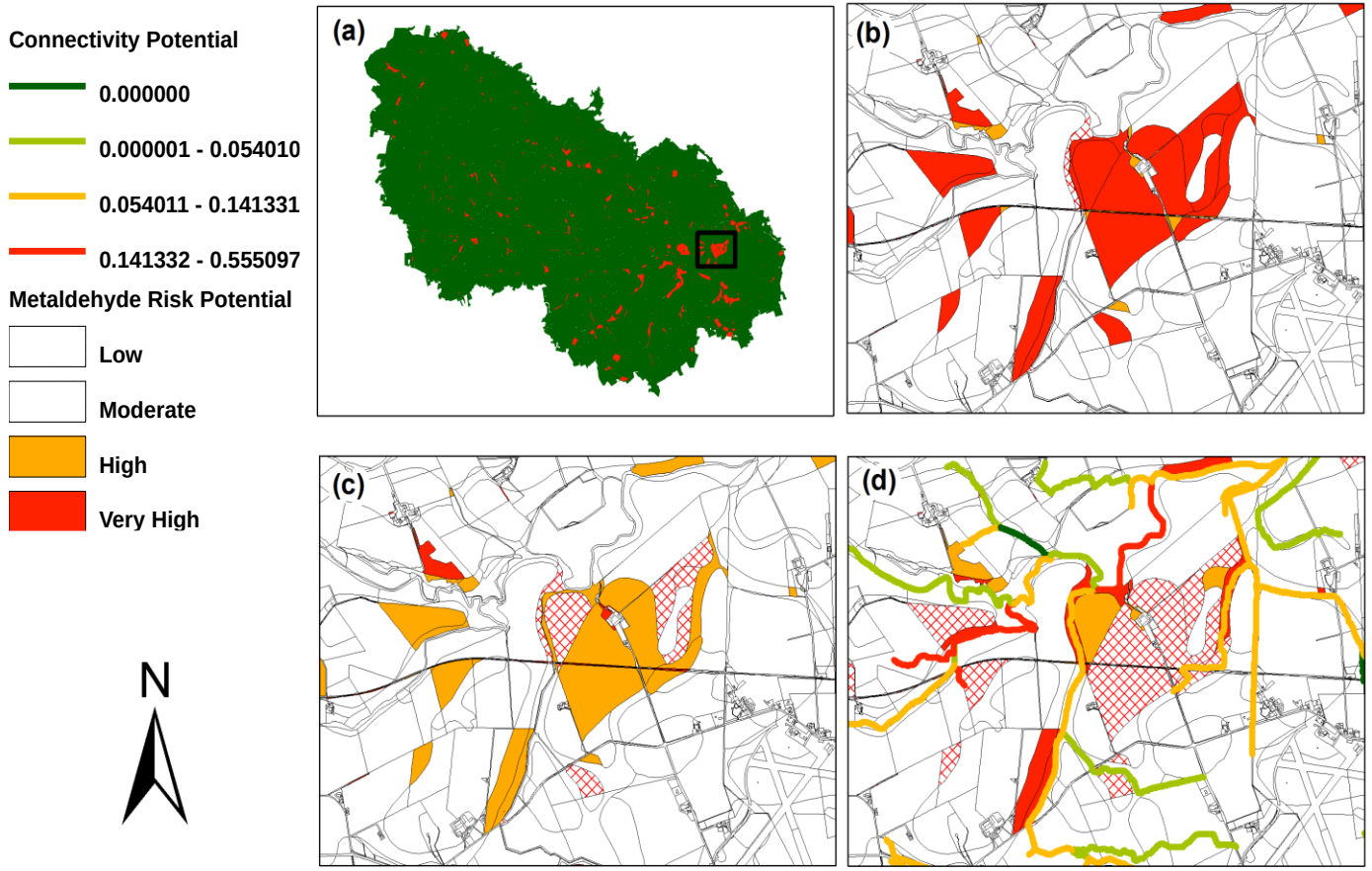


Example Output - Metaldehyde



Pollutant Comparison – Multiple Benefits or Pollutant Swapping?

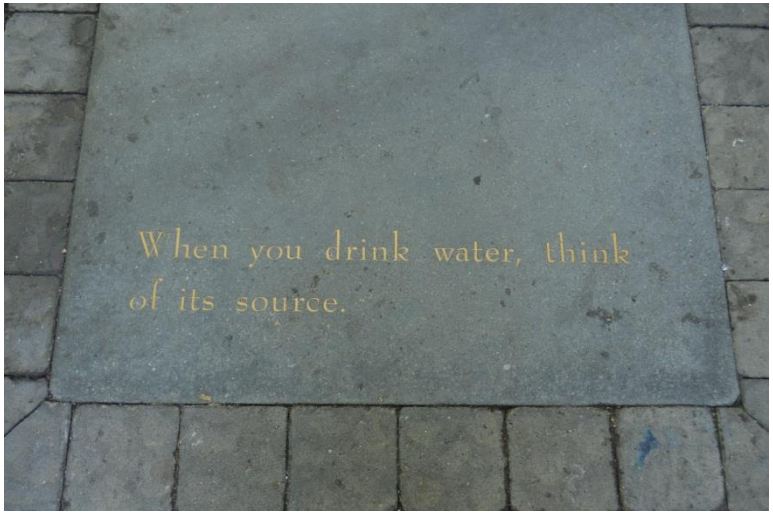
Measure Selection – Chlorotoluron and Metaldehyde



(a) Shared high risk areas, (b) Source potential, (c) Mobilisation potential and (d) Connectivity potential

Conclusions

- Increased uptake of catchment management
- Method to determine catchment risks required to select and target interventions.
- Modular CaRPoW framework developed in consultation with Scottish Water
- Pollutant comparison highlights multiple benefit potential
- Dominant risk component informs measure selection



Thank you!

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Bloodworth, J.W., Holman, I.P., Burgess, P.J., Gillman, S., Frogbrook, Z., Brown, P., 2015. Developing a multi-pollutant conceptual framework for the selection and targeting of interventions in water industry catchment management schemes. J. Environ. Manage. 161, 153–162.