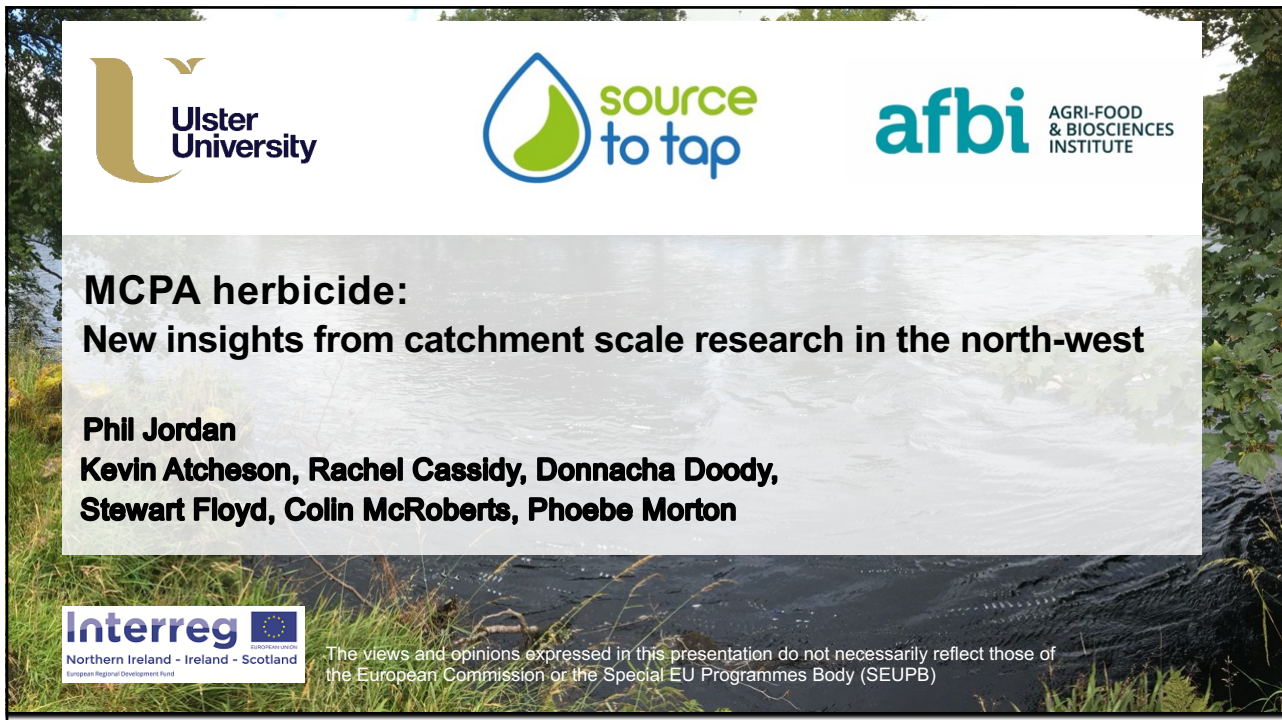










MCPA herbicide: New insights from catchment scale research in the north-west

Phil Jordan
Kevin Atcheson, Rachel Cassidy, Donnacha Doody,
Stewart Floyd, Colin McRoberts, Phoebe Morton



The views and opinions expressed in this presentation do not necessarily reflect those of the European Commission or the Special EU Programmes Body (SEUPB)

1

A project funded by







Project Partners





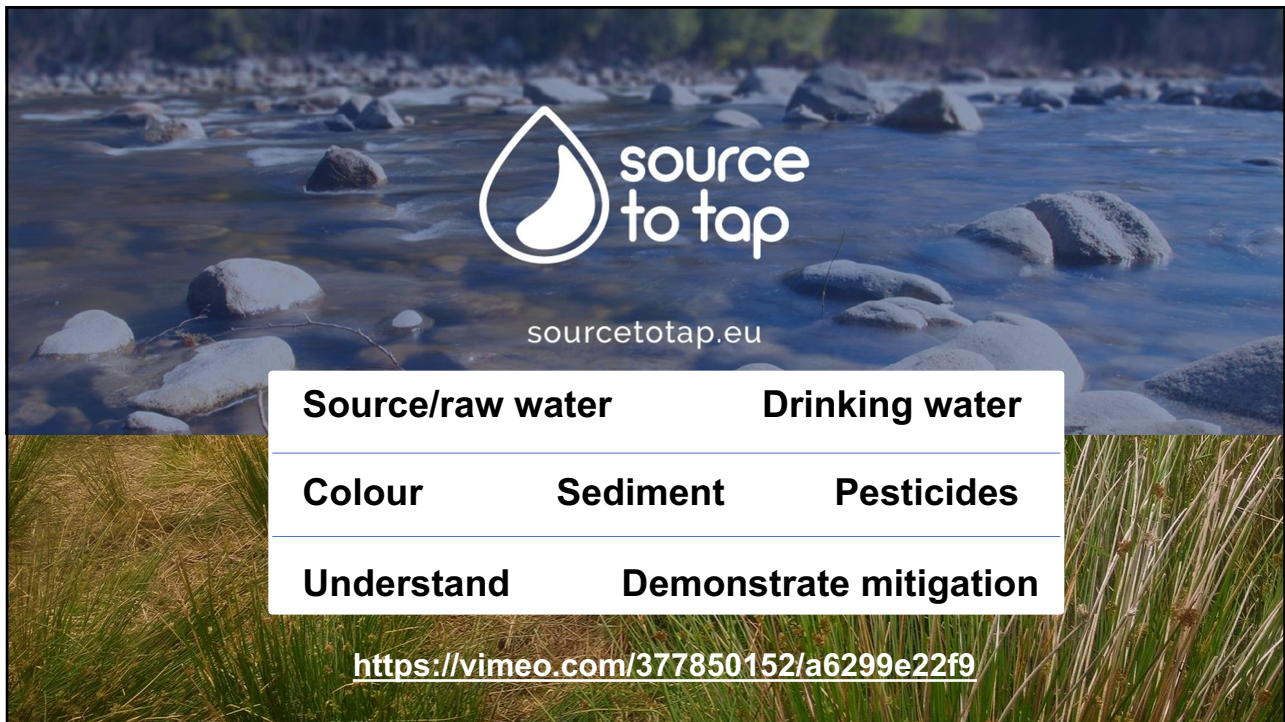








2




 sourcetotap.eu

Source/raw water		Drinking water
Colour	Sediment	Pesticides
Understand		Demonstrate mitigation

<https://vimeo.com/377850152/a6299e22f9>

3

MCPA herbicide
2- methyl- 4- chlorophenoxyacetic acid

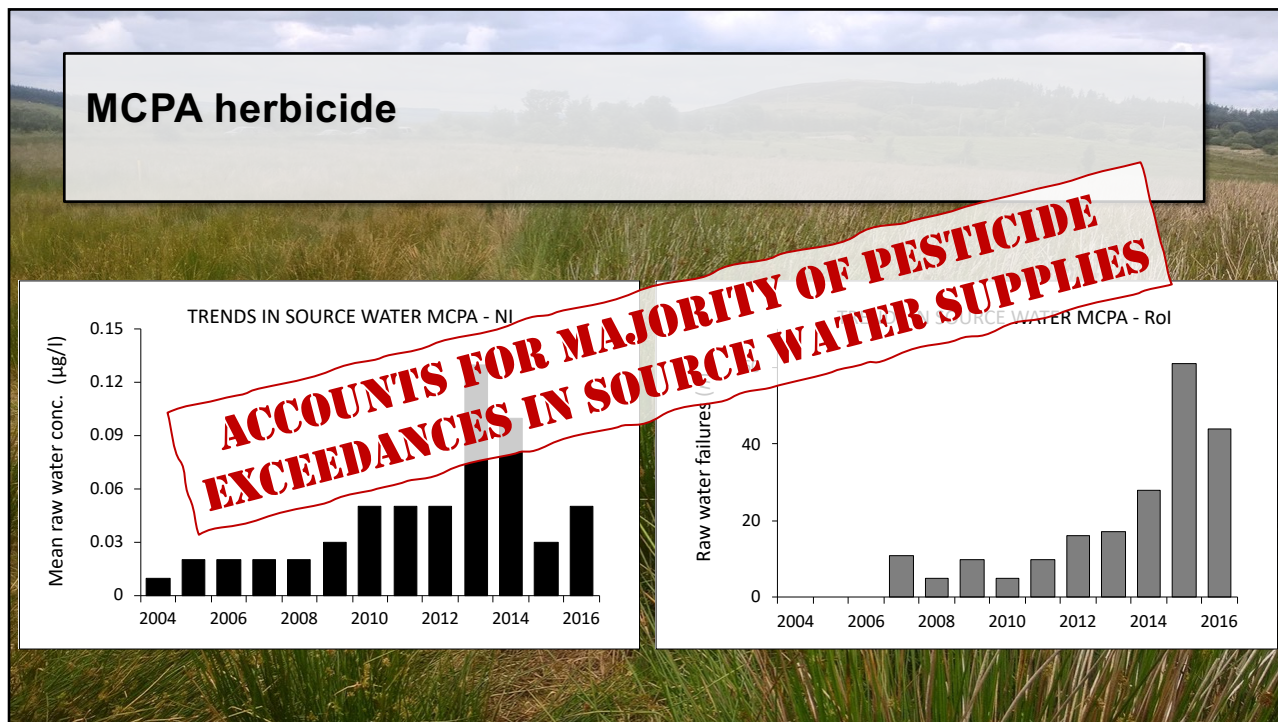


Selective control:

- Rush
- Dock
- Maintenance of improved grassland

Photo: Steven McDowell

4



5



6

MCPA herbicide

In treated drinking water, regulated standards are for
TINY AMOUNTS!

0.1 µg/L single pesticide

0.5 µg/L sum of all pesticides

7

MCPA herbicide



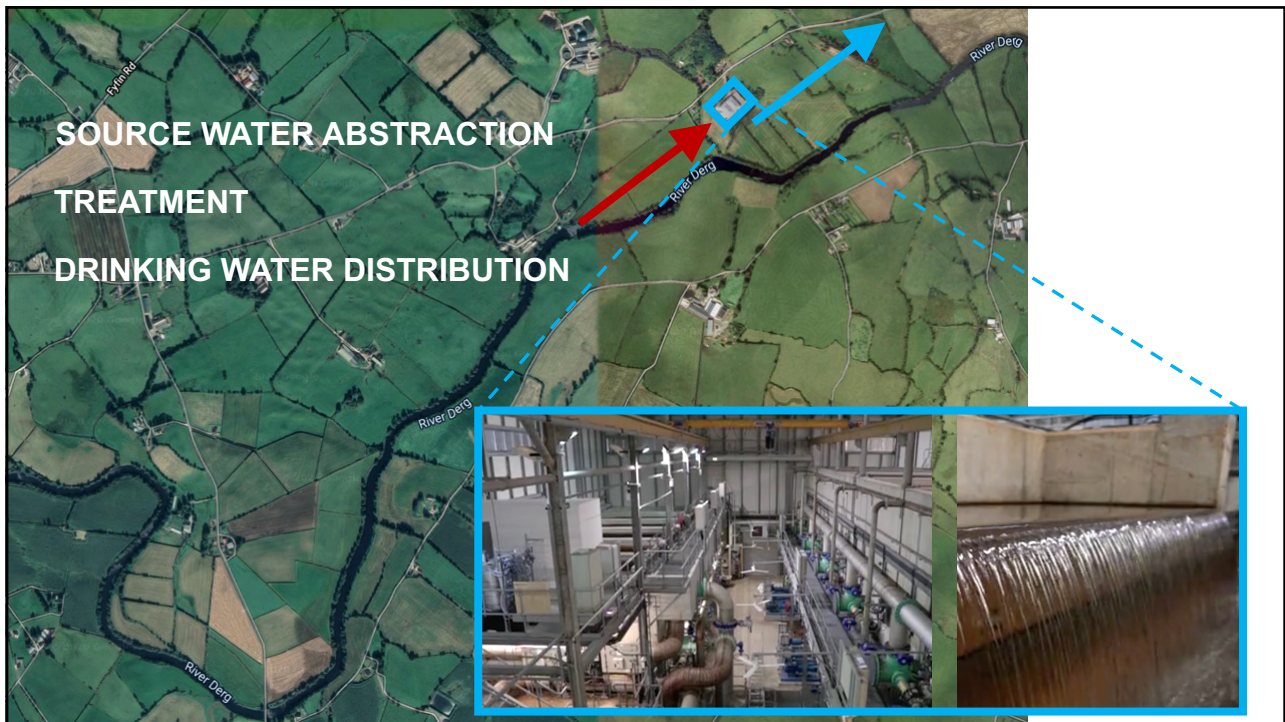


approx 0.03 grams of MCPA salt into 2,500,000 Litres of water



= 0.1 µg/L

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WHAT DO WE KNOW ABOUT MCPA?

NT

It doesn't hang around in the soil

- moderate to high 'Groundwater Ubiquity Score' (leaches)
- degrades in sunlight and oxygen rich environments
- susceptible to surface runoff (incidental losses)

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WHAT DO WE KNOW ABOUT MCPA?

N/T

<https://onlinelibrary.wiley.com/doi/full/10.1002/wat2.1402>

Received: 5 July 2019 | Revised: 15 October 2019 | Accepted: 30 October 2019
DOI: 10.1002/wat2.1402

ADVANCED REVIEW

A review of the pesticide MCPA in the land-water environment and emerging research needs

Phoebe A. Morton^{1,2}  | Chris Fennell³ | Rachel Cassidy² | Donnacha Doody² | Owen Fenton³ | Per-Erik Mellander³ | Phil Jordan¹

...and a science bulletin...

<https://www.advancedsciencenews.com/the-knowns-and-unknowns-of-the-herbicide-mcpa/>

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WHAT DO WE KNOW ABOUT MCPA?

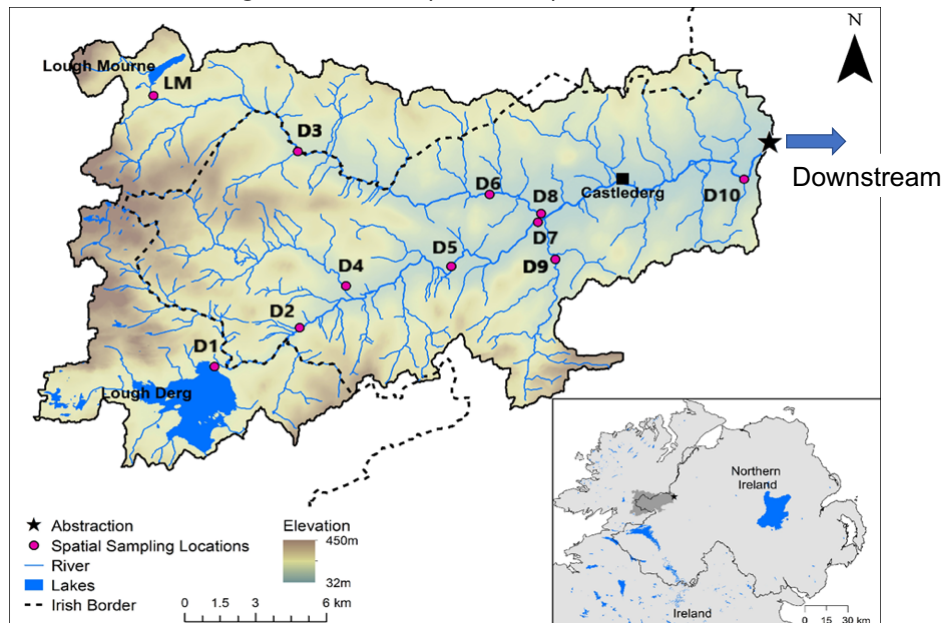
N/T

RESEARCH REQUIRED:

1. *Source* - alternative MCPA use
2. *Mobilisation* - land use controls
3. *Pathways* - persistence in different water pathways (surface, sub-surface)
4. *Delivery* - higher resolution data for risk assessments
5. *Impact* - (eco)toxicology and synergistic effects

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Land use controls – River Derg catchment (384 km²)

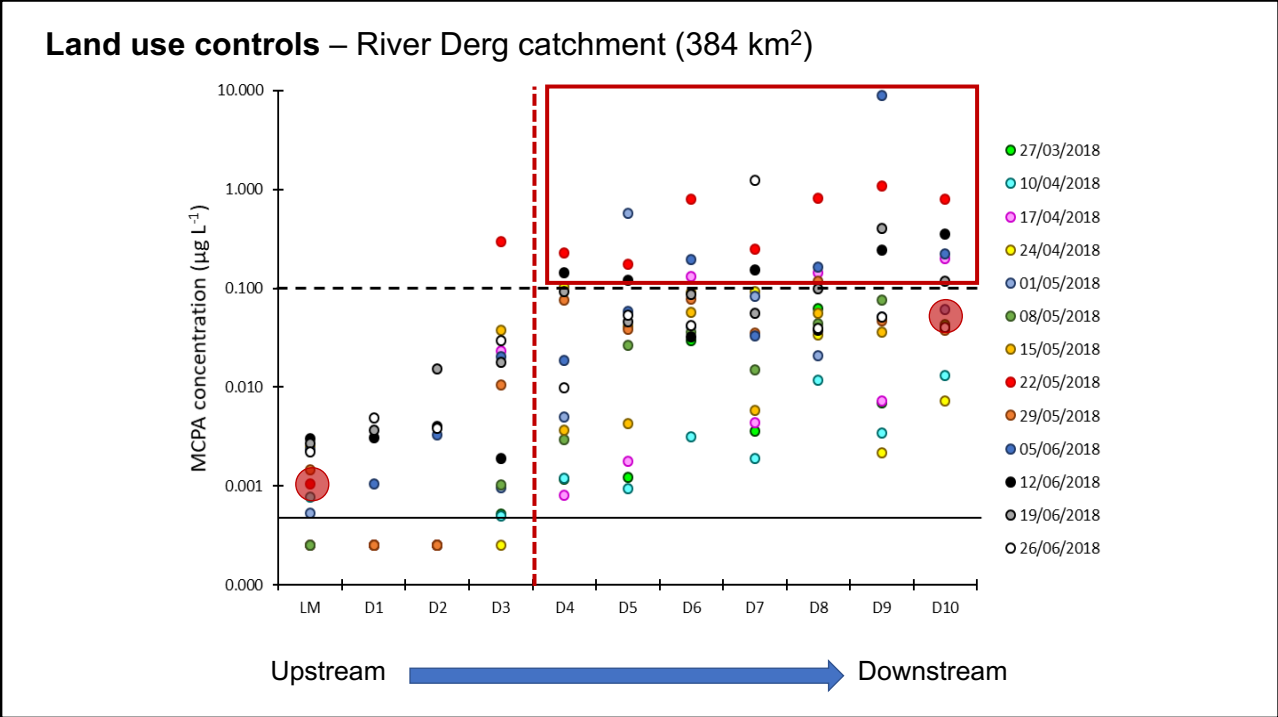


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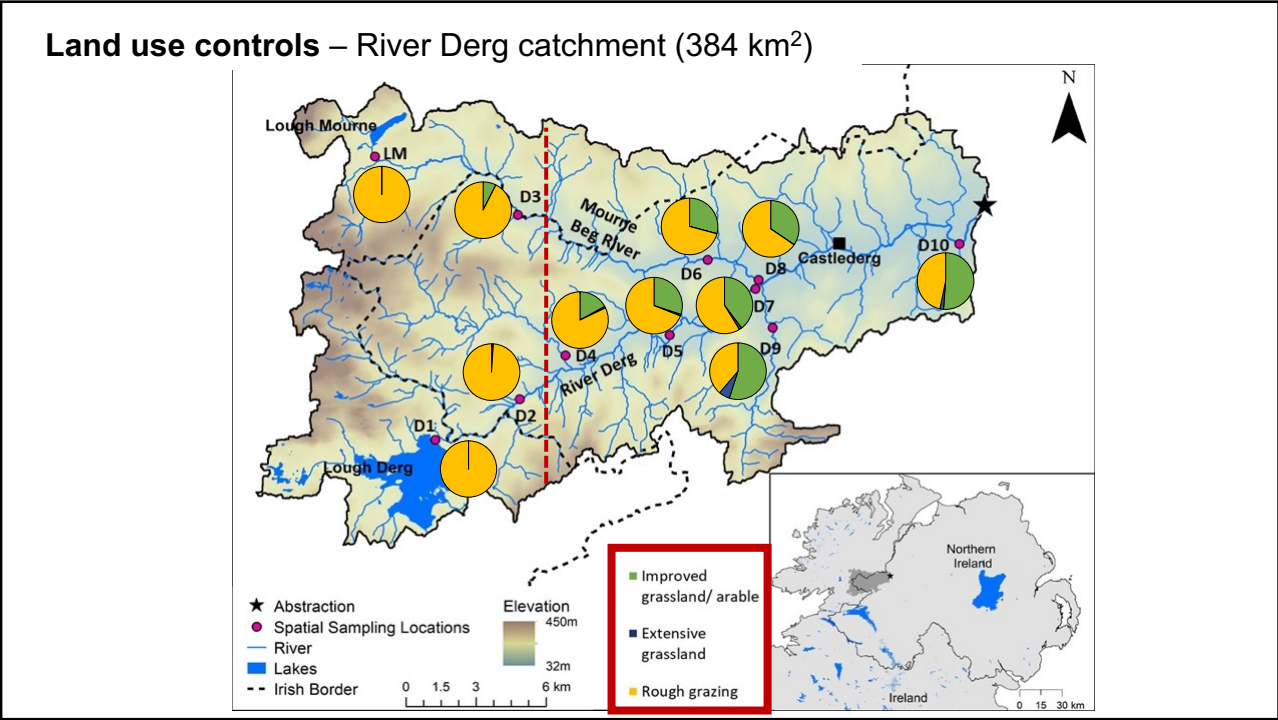
Land use controls – River Derg catchment (384 km²)



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16

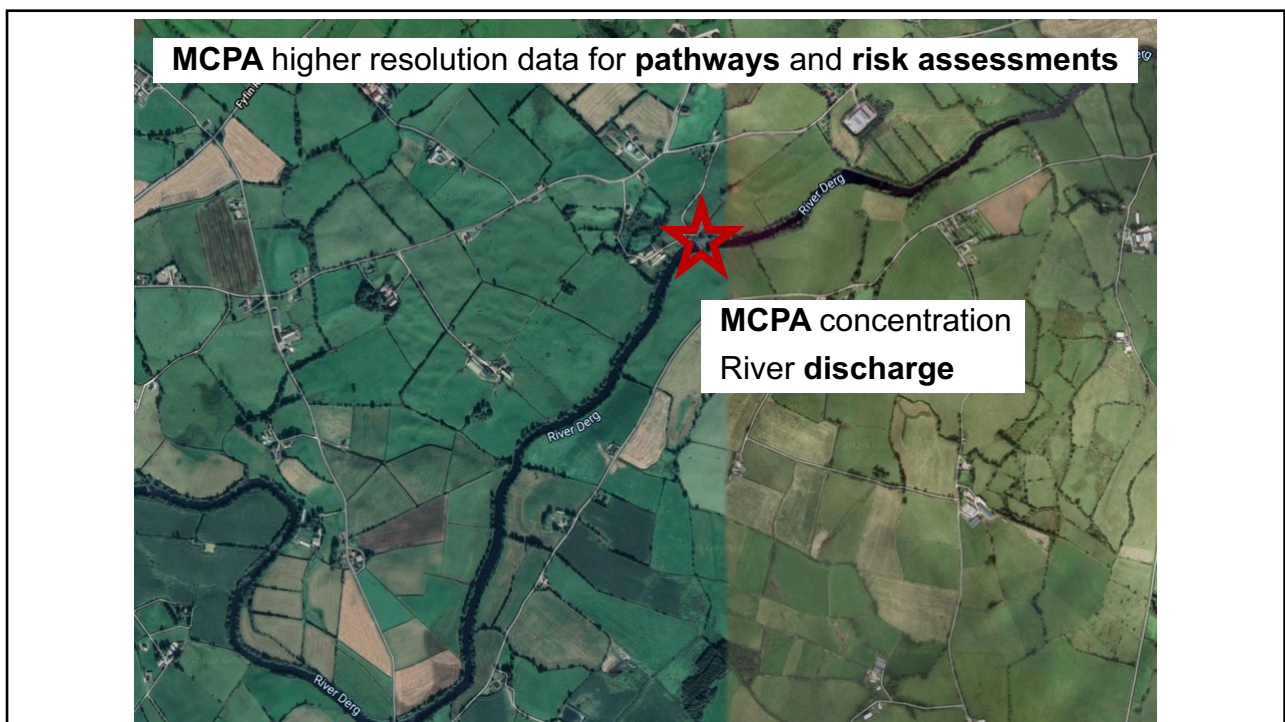
Land use controls – River Derg catchment (384 km²)

- More **Improved Grassland** in a sub-catchment, higher average MCPA concentration
- More **Rough Grazing** in a sub-catchment, lower average MCPA concentration

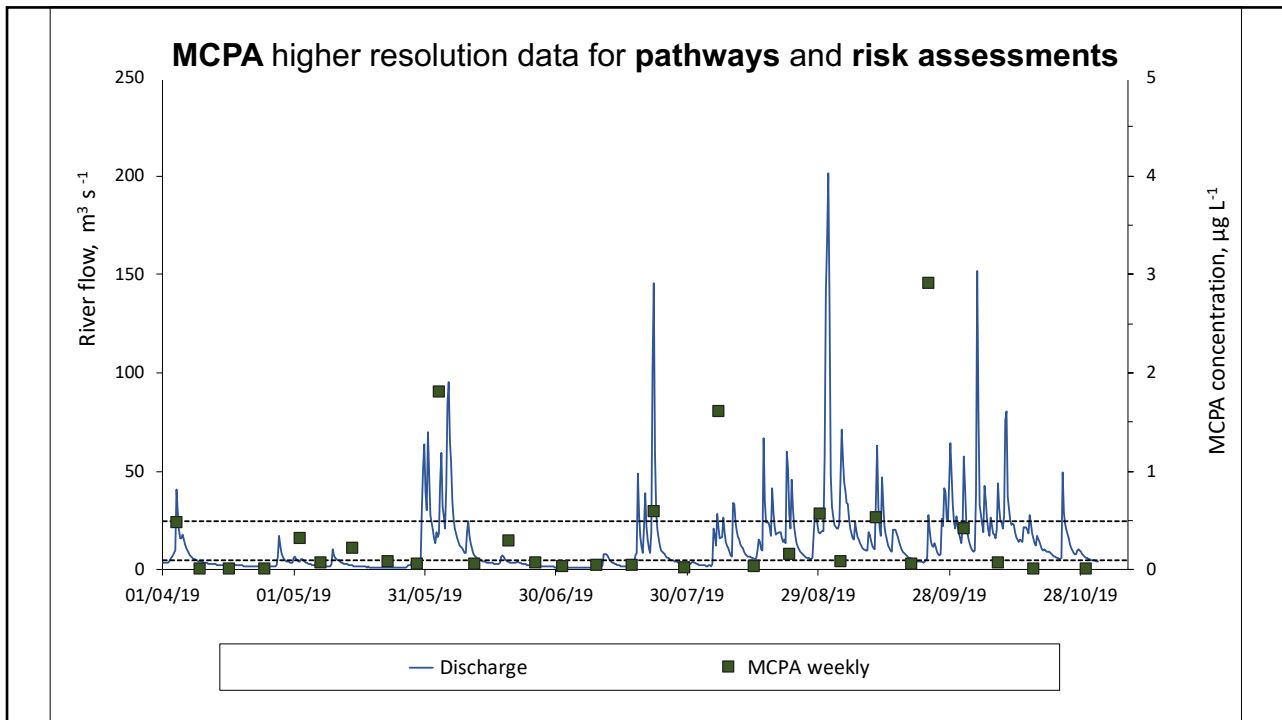
Morton et al., 2020

<https://www.sciencedirect.com/science/article/pii/S0048969720363567>

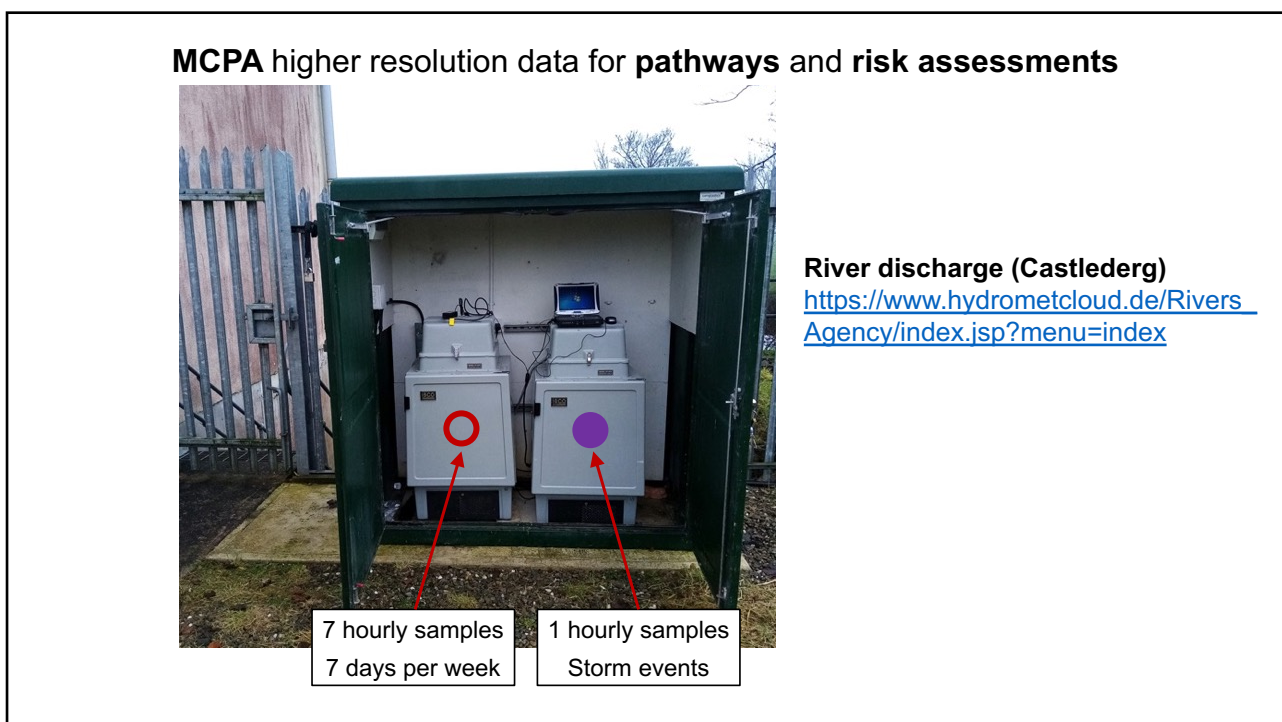
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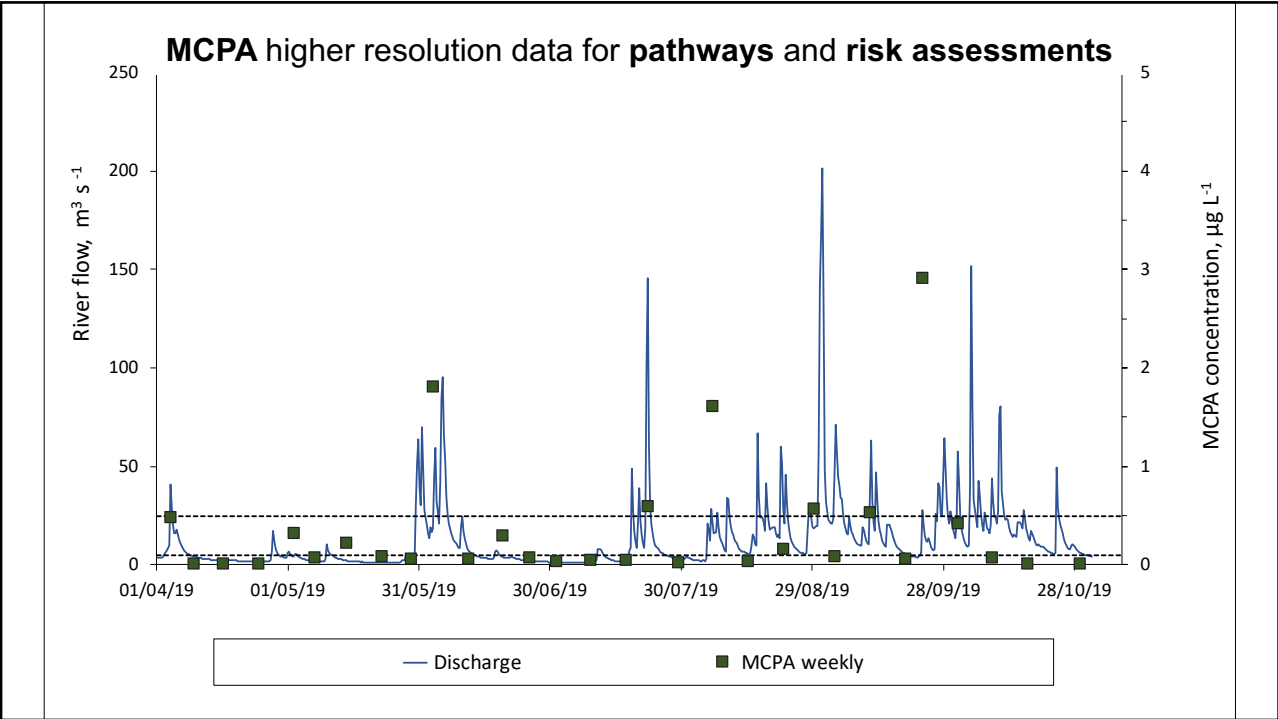
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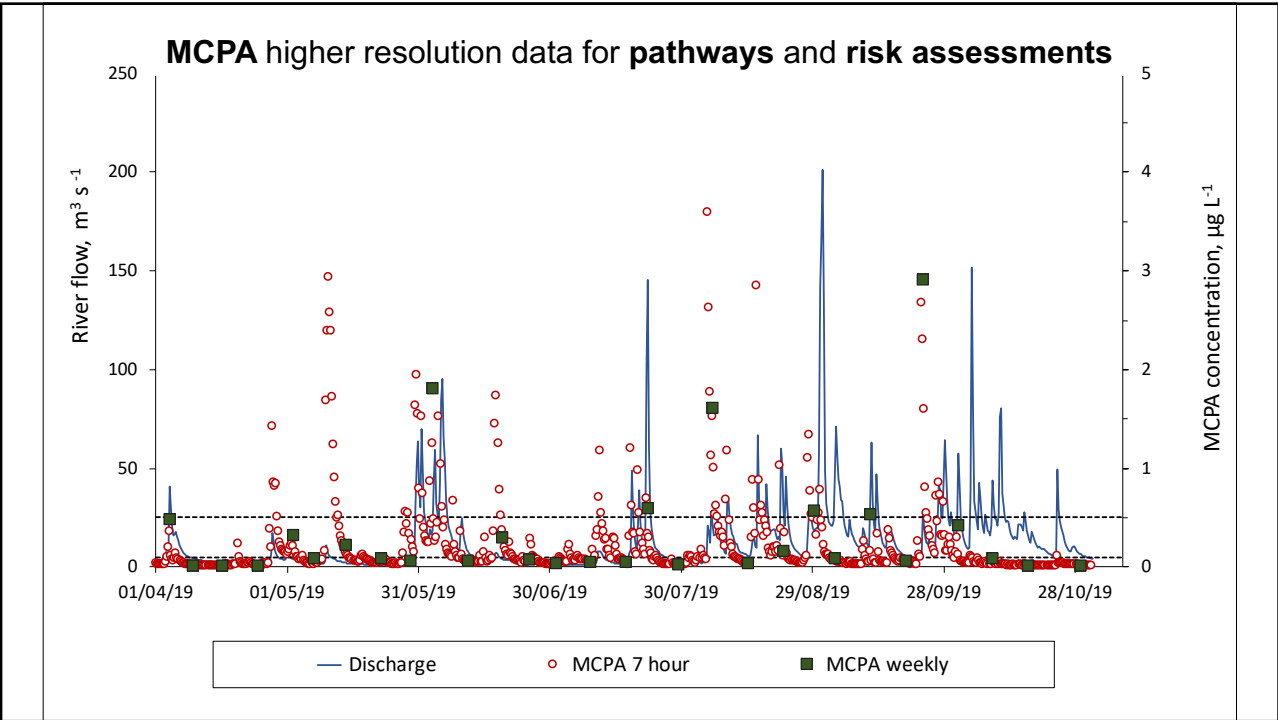
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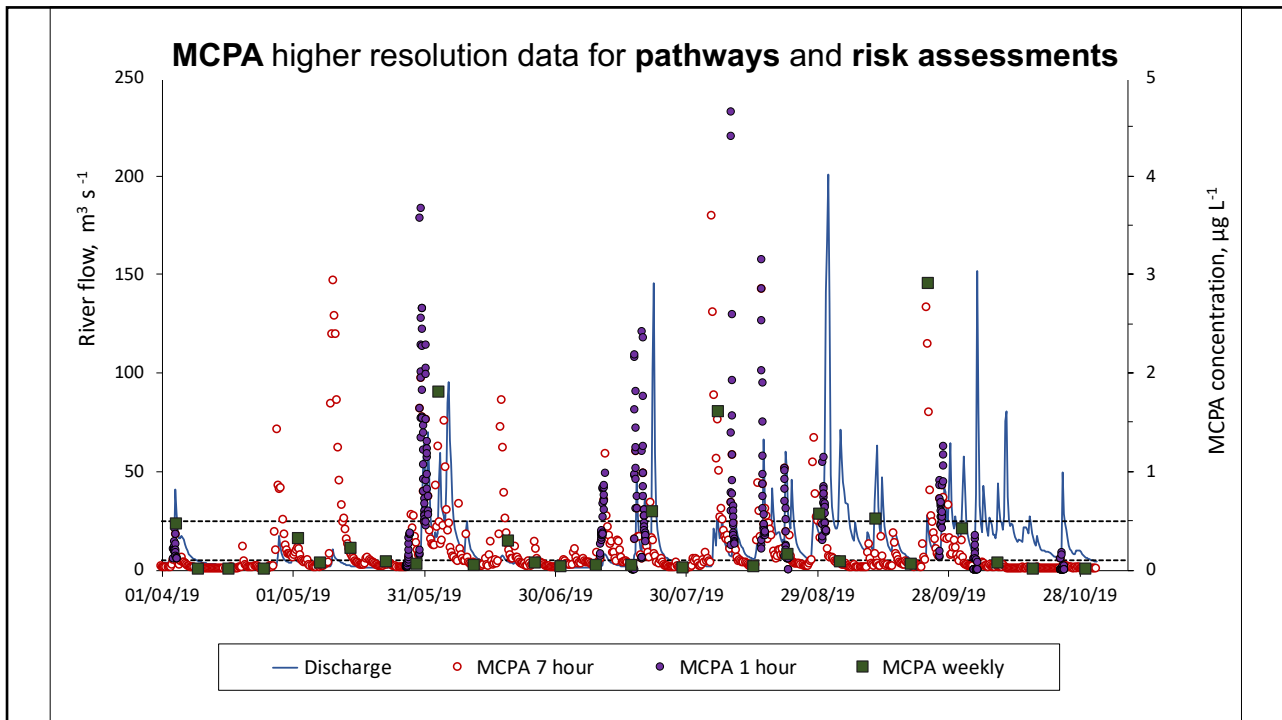
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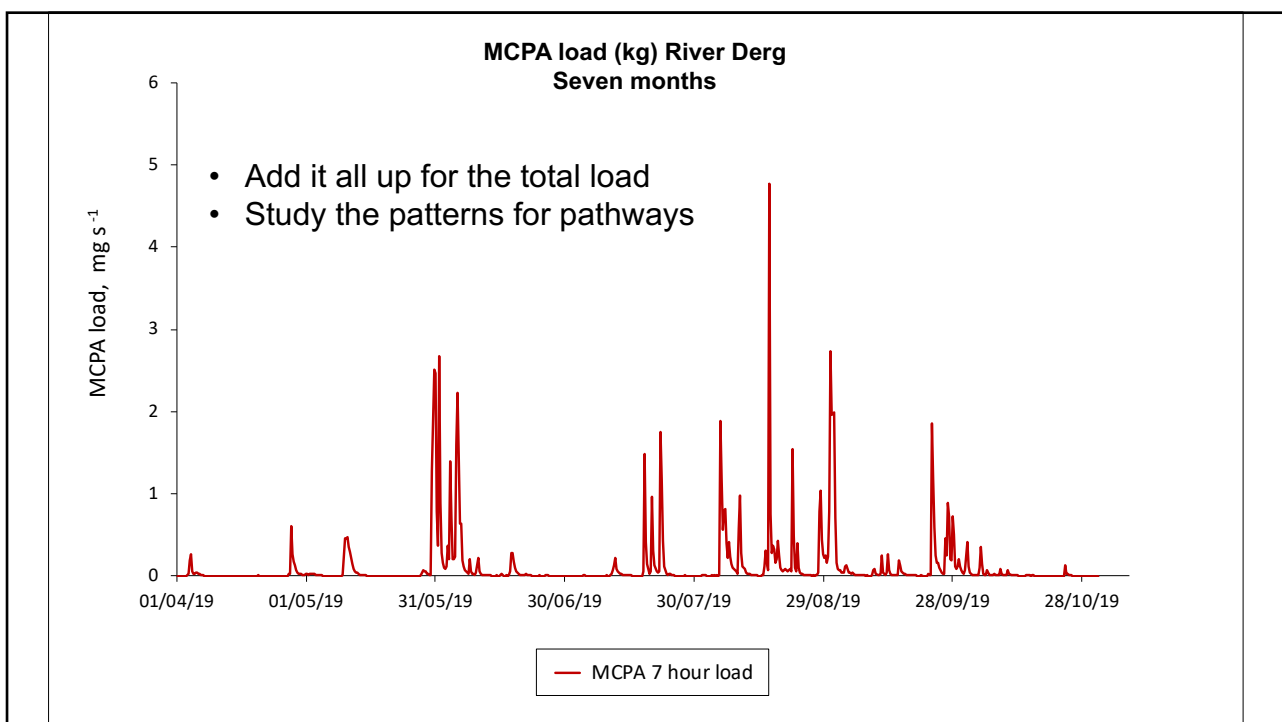
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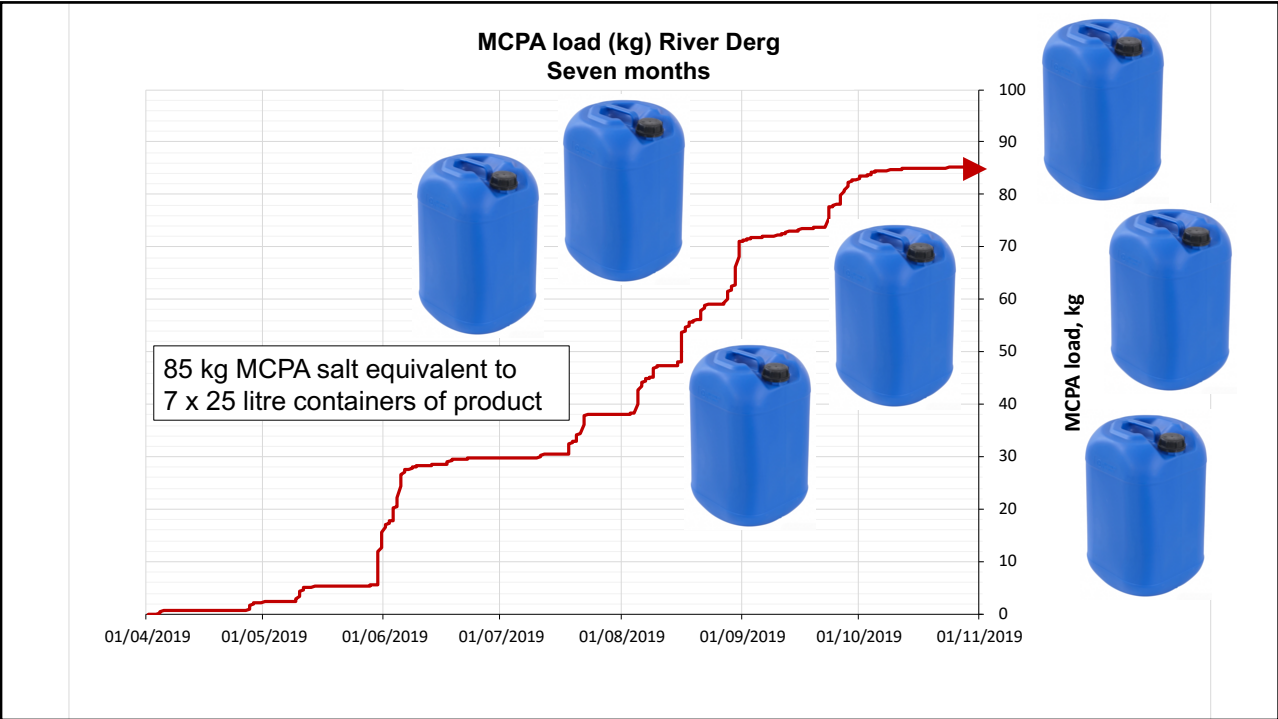
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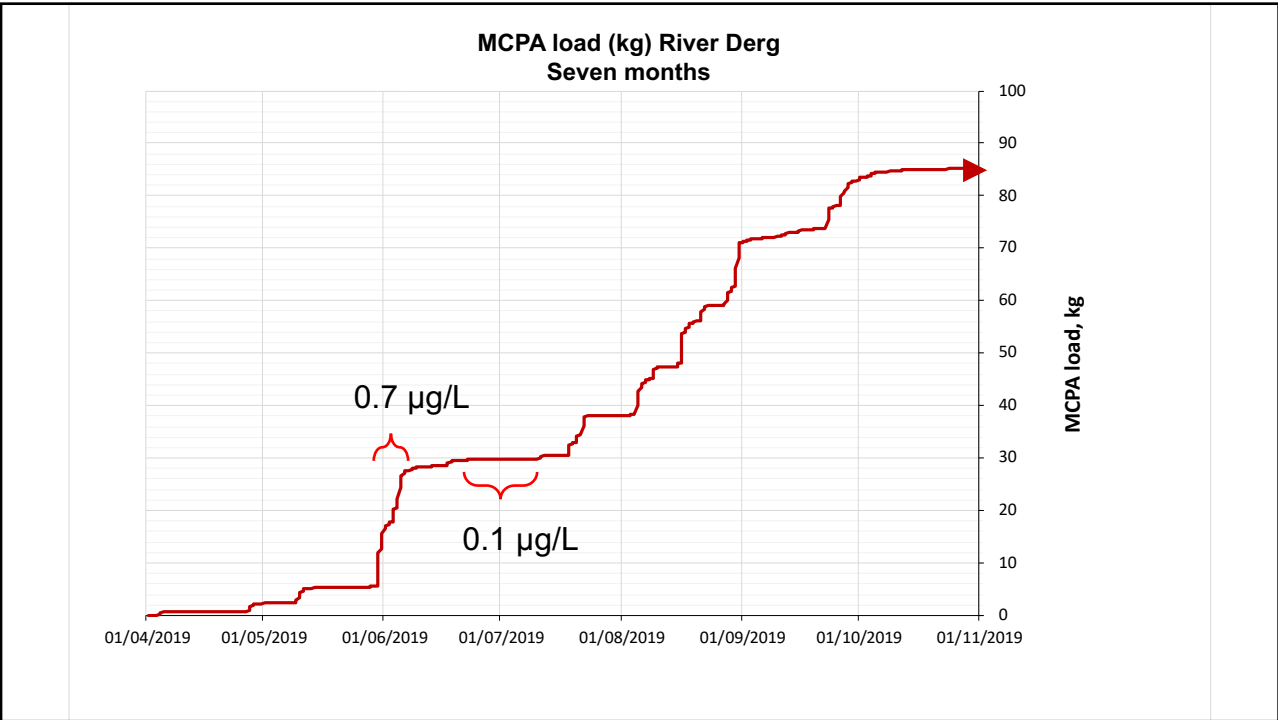
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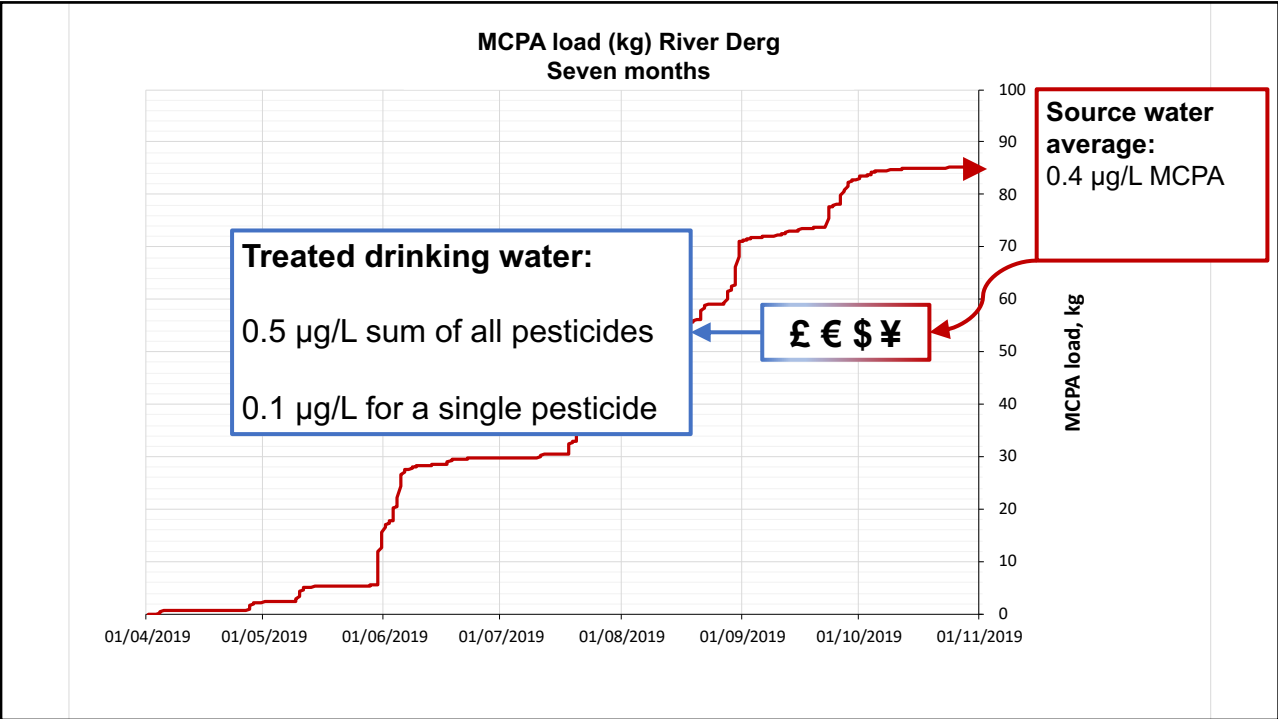
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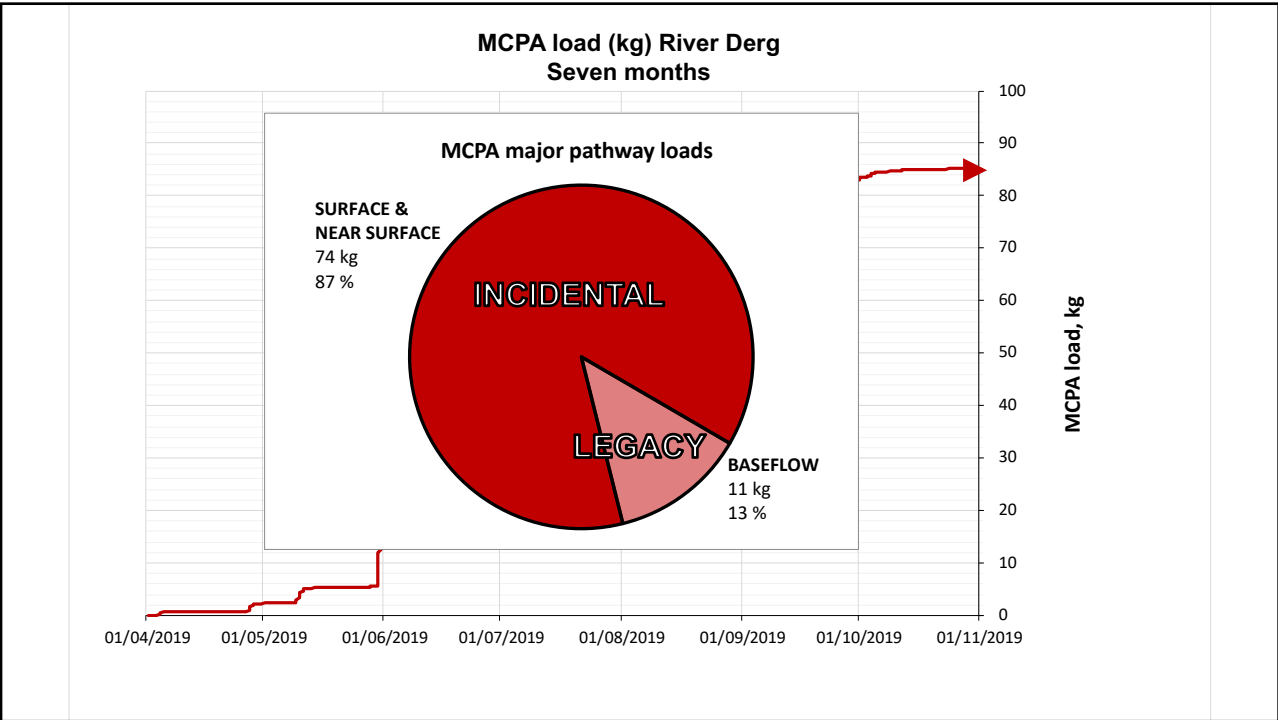
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