

Team 04 Presentation 3

Presentation 3: Results of 2nd Week



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Ouseburn Catchment - Introduction



Ecological impacts



Public parks



Economic decline



Week 2 Ouseburn Catchment



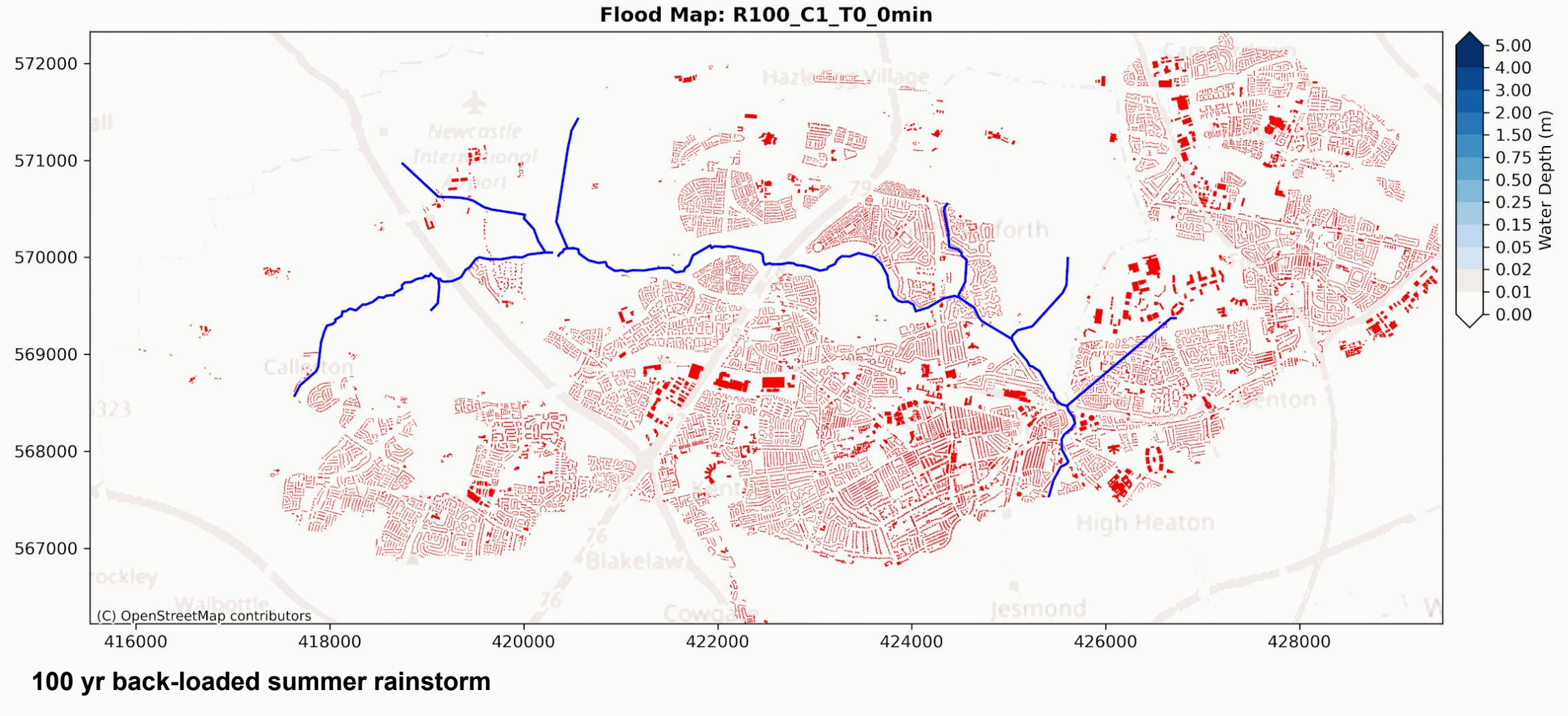
Health risks

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NC 2



Baseline Flooding



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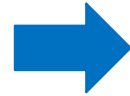


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Floods Mitigation Measures

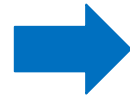
Pavements permeable



Increasing Green areas
surface

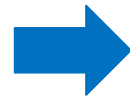


Infiltration garden



Infiltration coefficient
modifications

Flood plains



DEM modifications
(ponds)



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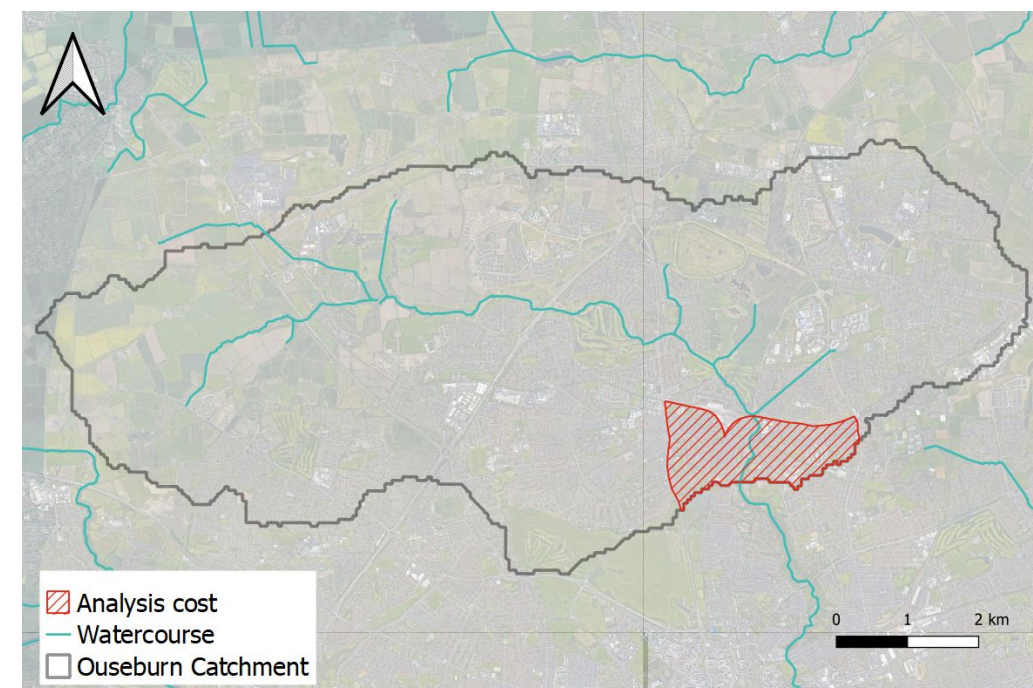
Mitigations & Cost analysis

Tangible and direct damages analysis

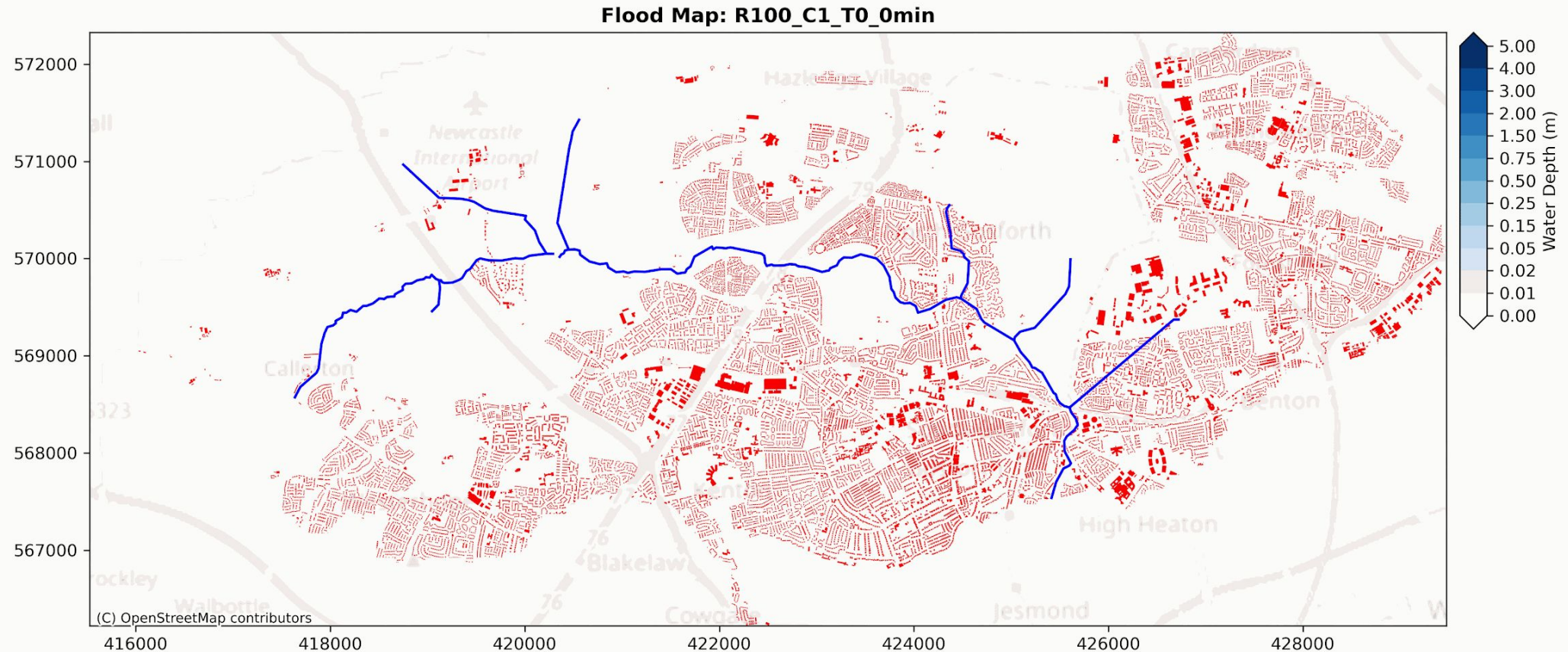
Baseline scenario damage cost : £75,000,000.00

Damage Reduction :

- Pavements permeable ➡ 25.4%
- Infiltration garden ➡ 1.9%
- Flood plains ➡ 0.3%



Permeable Pavements Benefits



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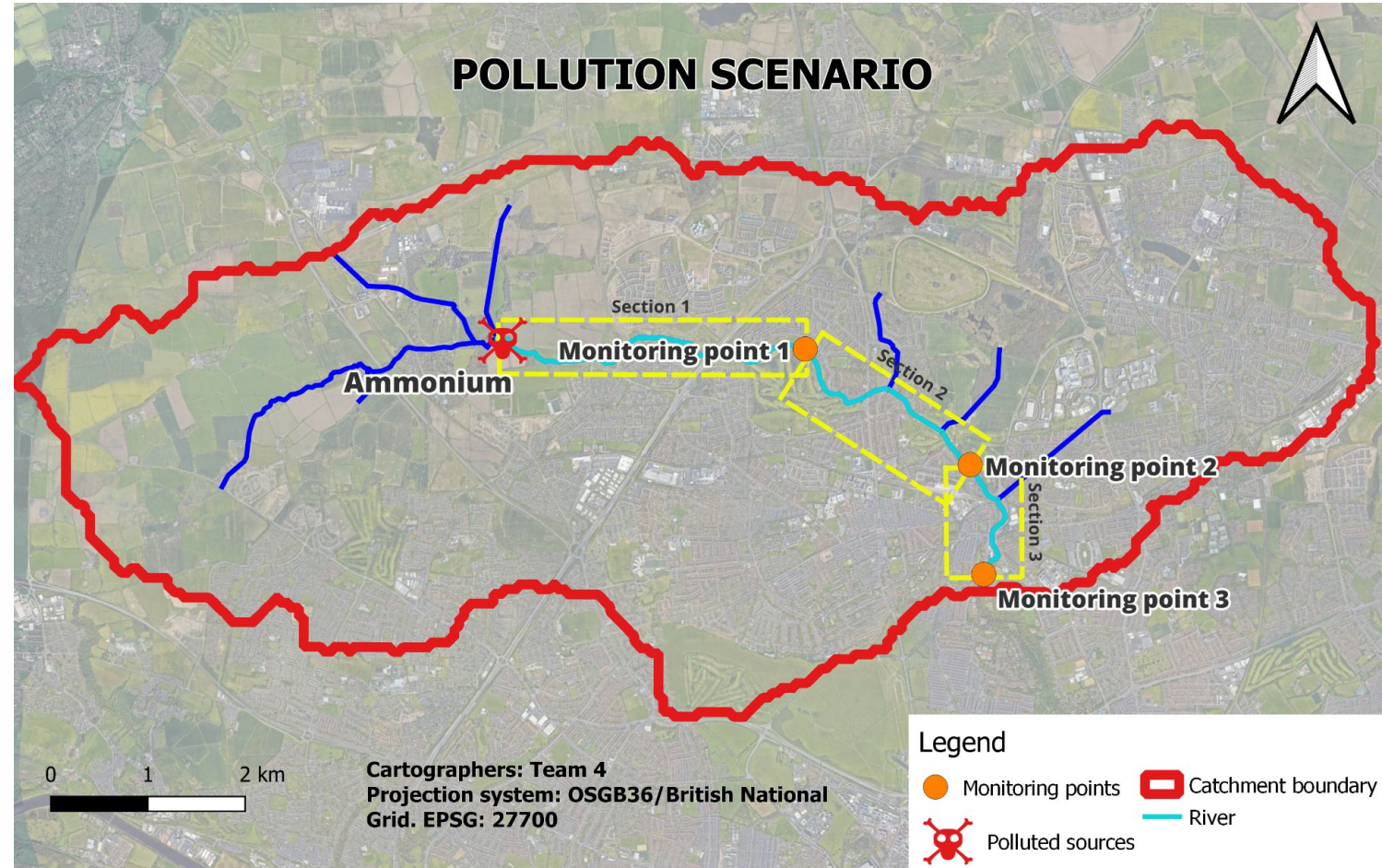
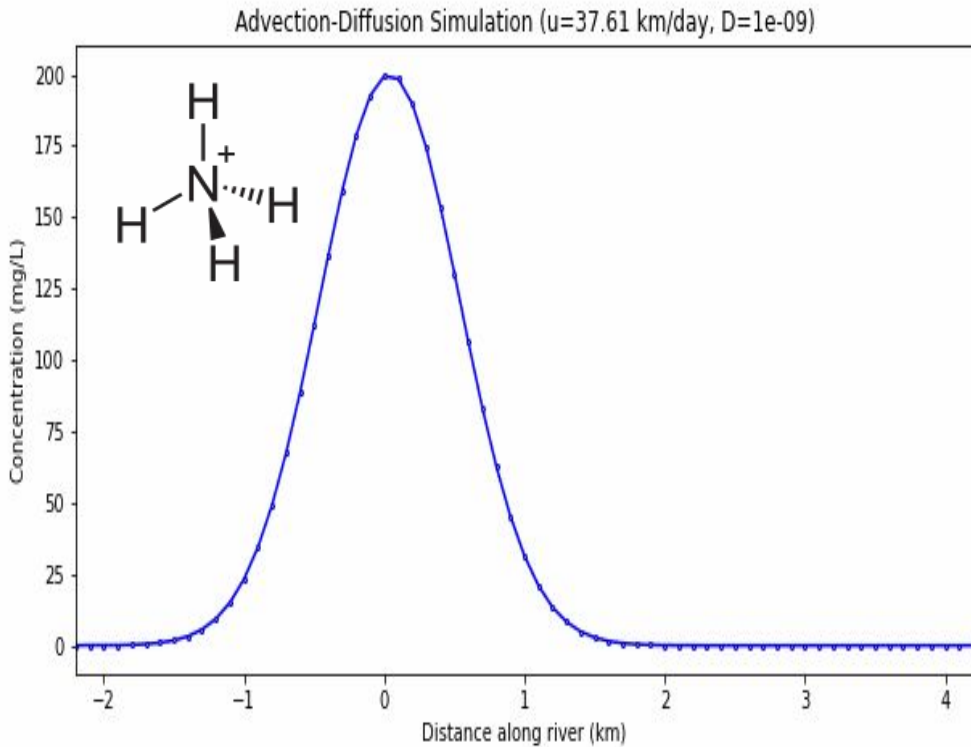
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Agricultural Pollution : Ammonium Transport

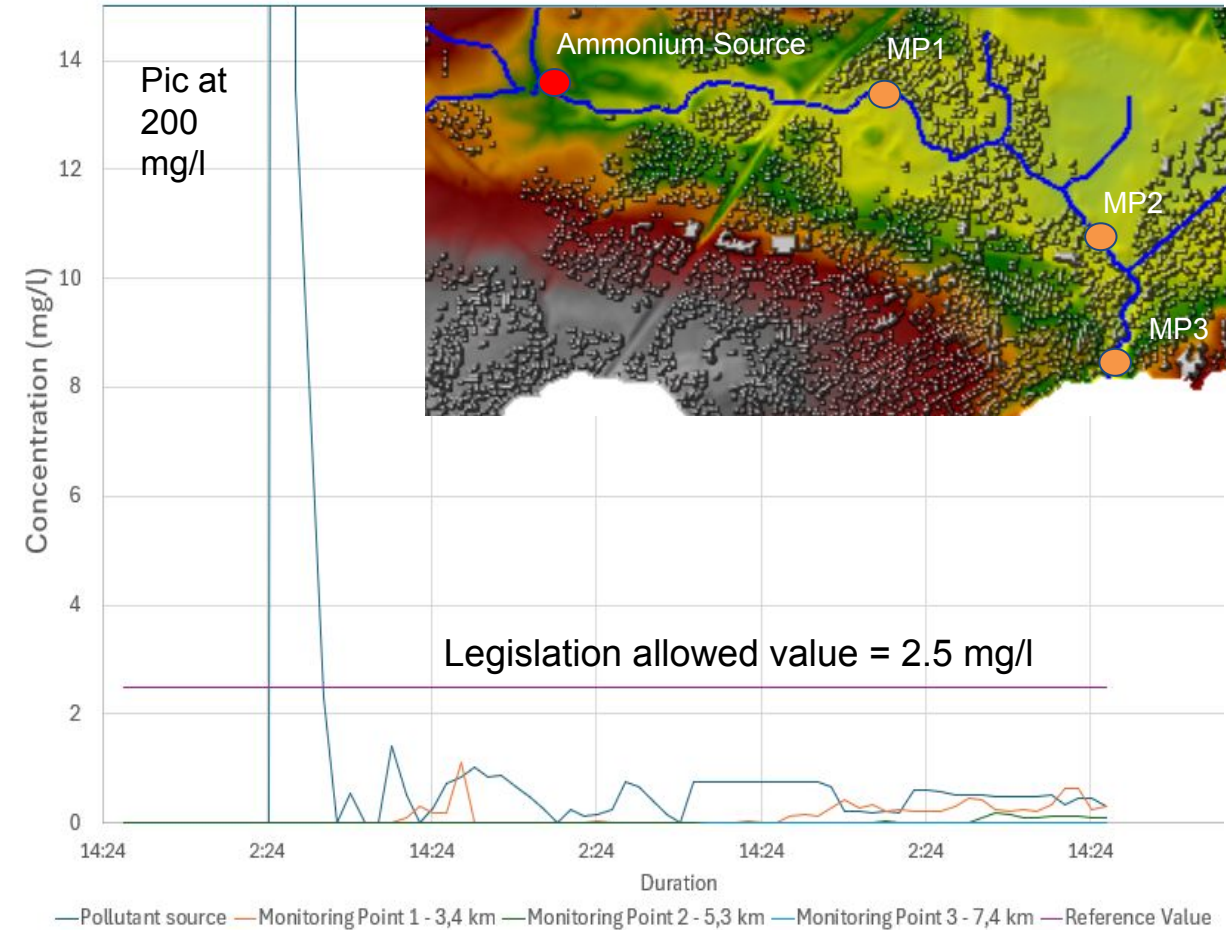
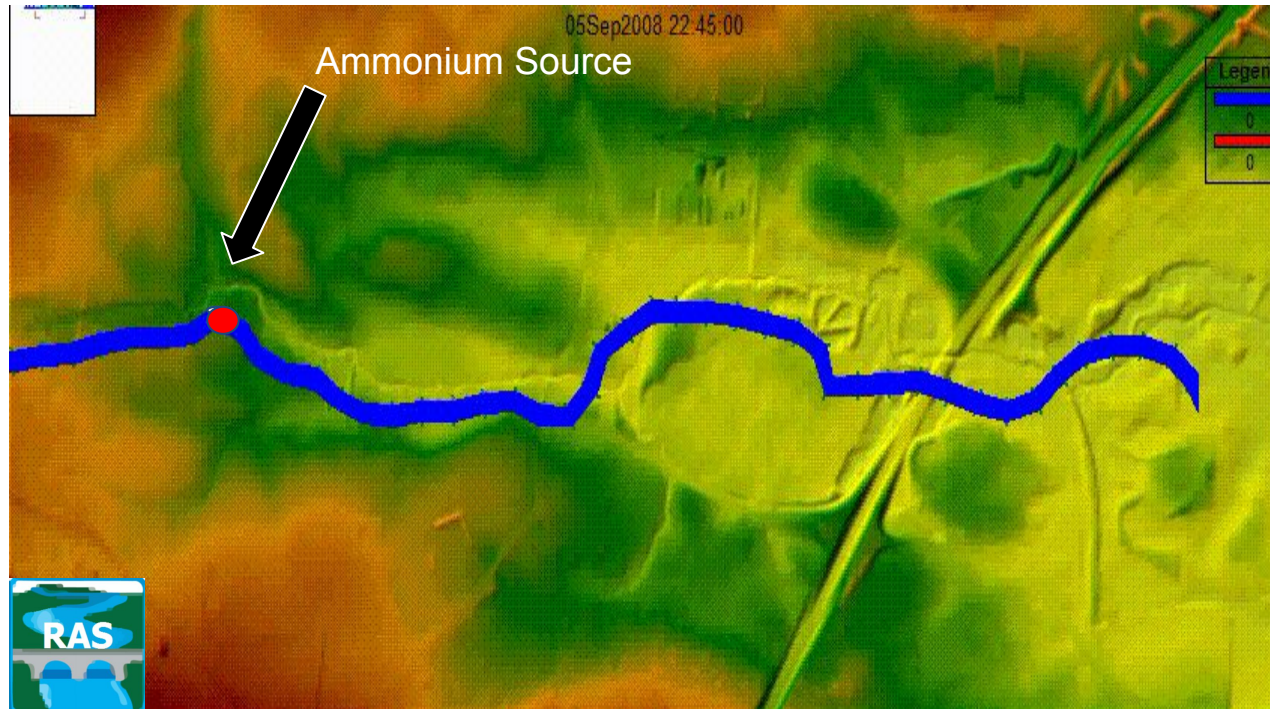


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Agricultural Pollution : Ammonium Transport

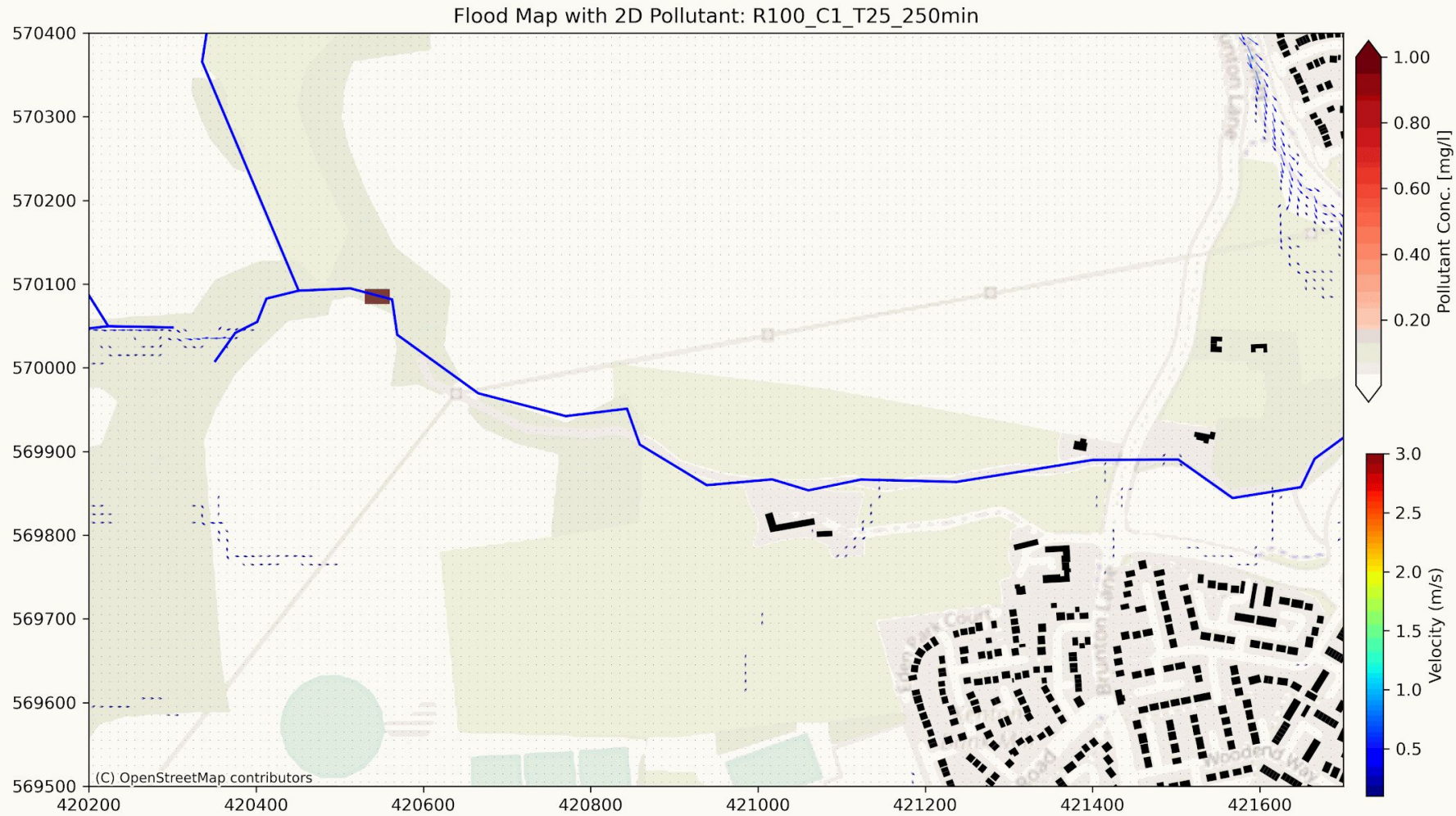


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Ouseburn Catchment - Team 4 Presentation



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Gracias - Merci - Dziękuję - Thank You - Danke

Do you have any questions?

How has this been achieved?



CityCat Modelling
HEC-RAS Modelling
Pollutant Tracking - Quickest

CityCAT



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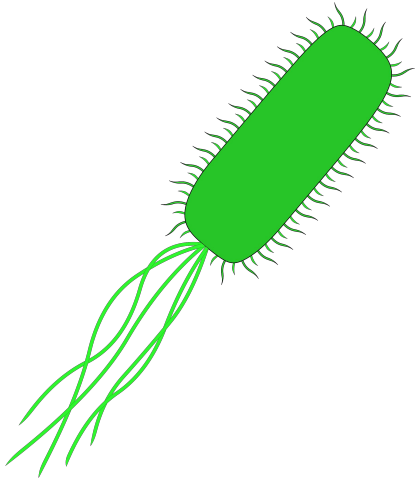
Ouseburn Catchment - Team 4 Presentation



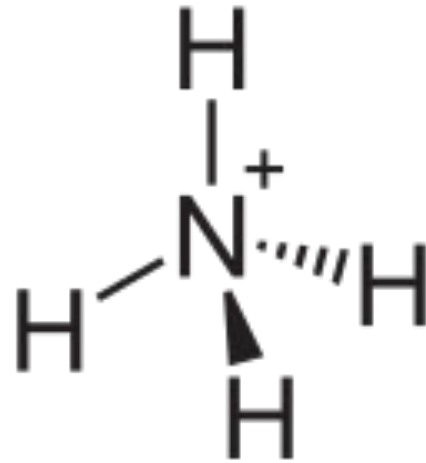
Point Source Pollution

Fecal coliforms

- CSO discharge



E.coli



Ammonium



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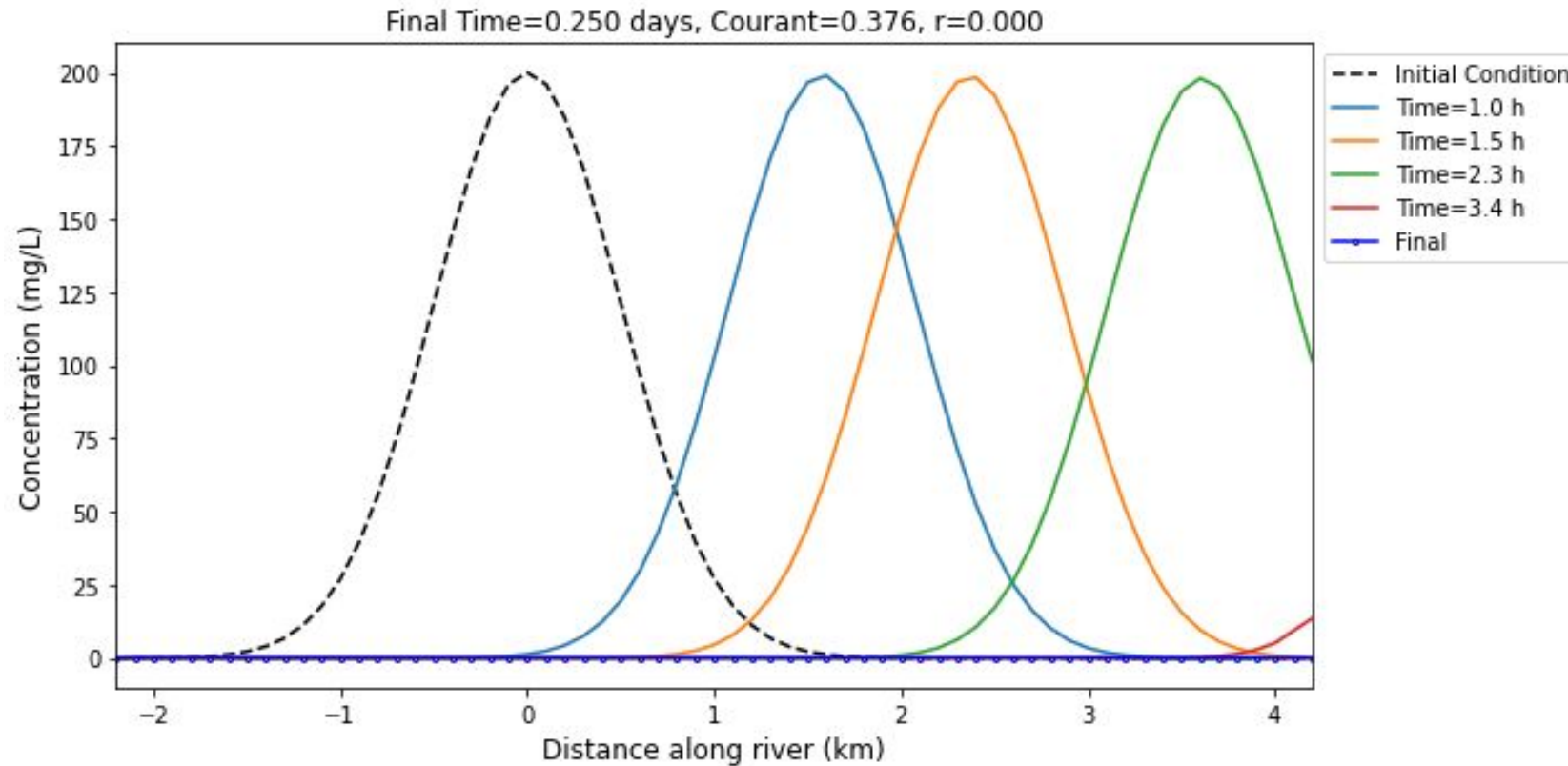
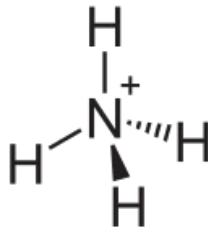
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Pollution Results - Ammonium

We modelled the transport of Ammonium along the Ouseburn



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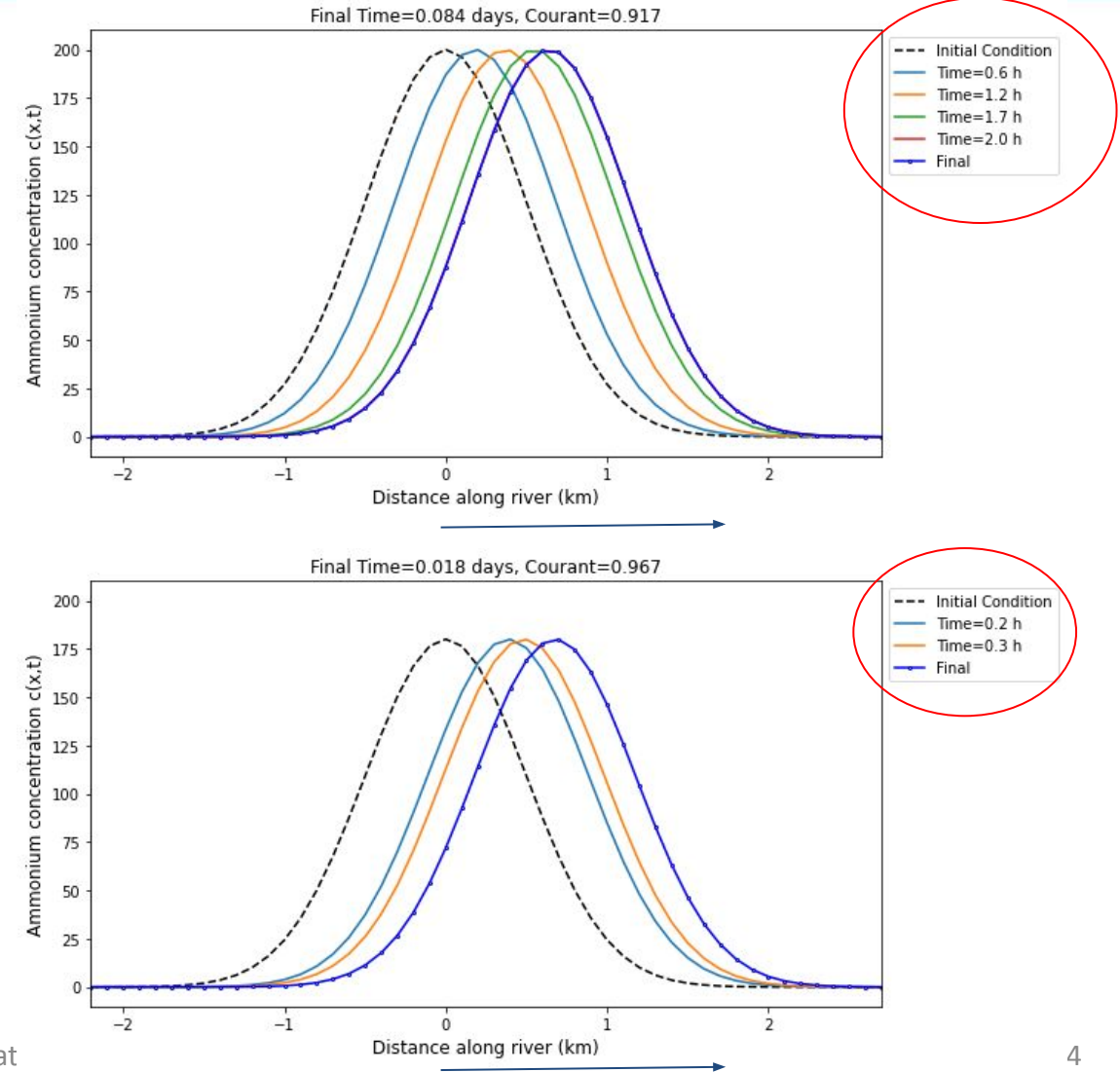
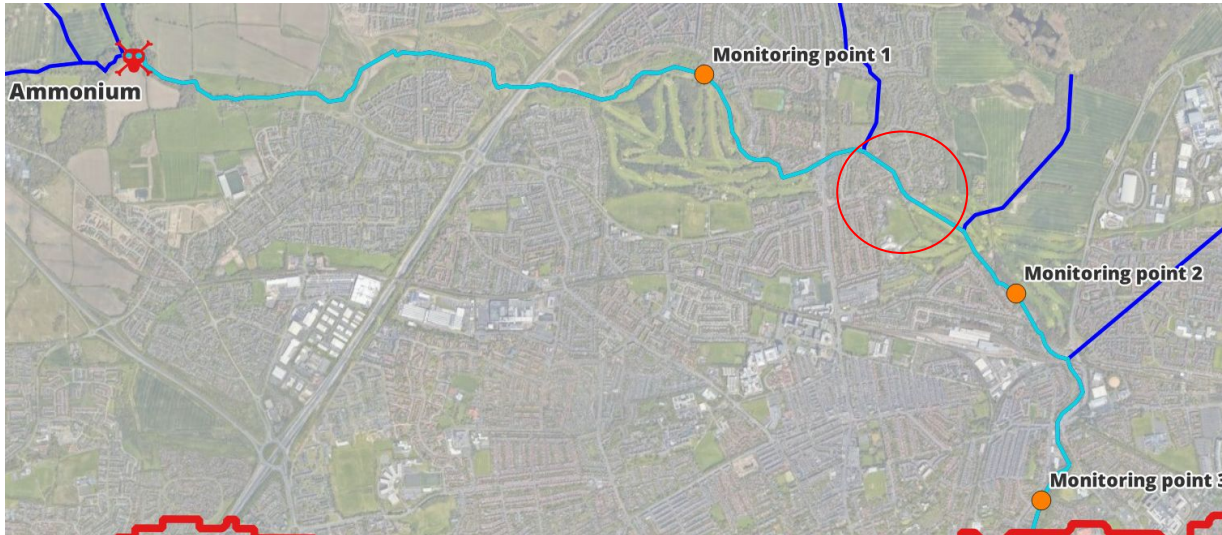


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Pollution Results - Ammonium

Ammonium along the Ouseburn

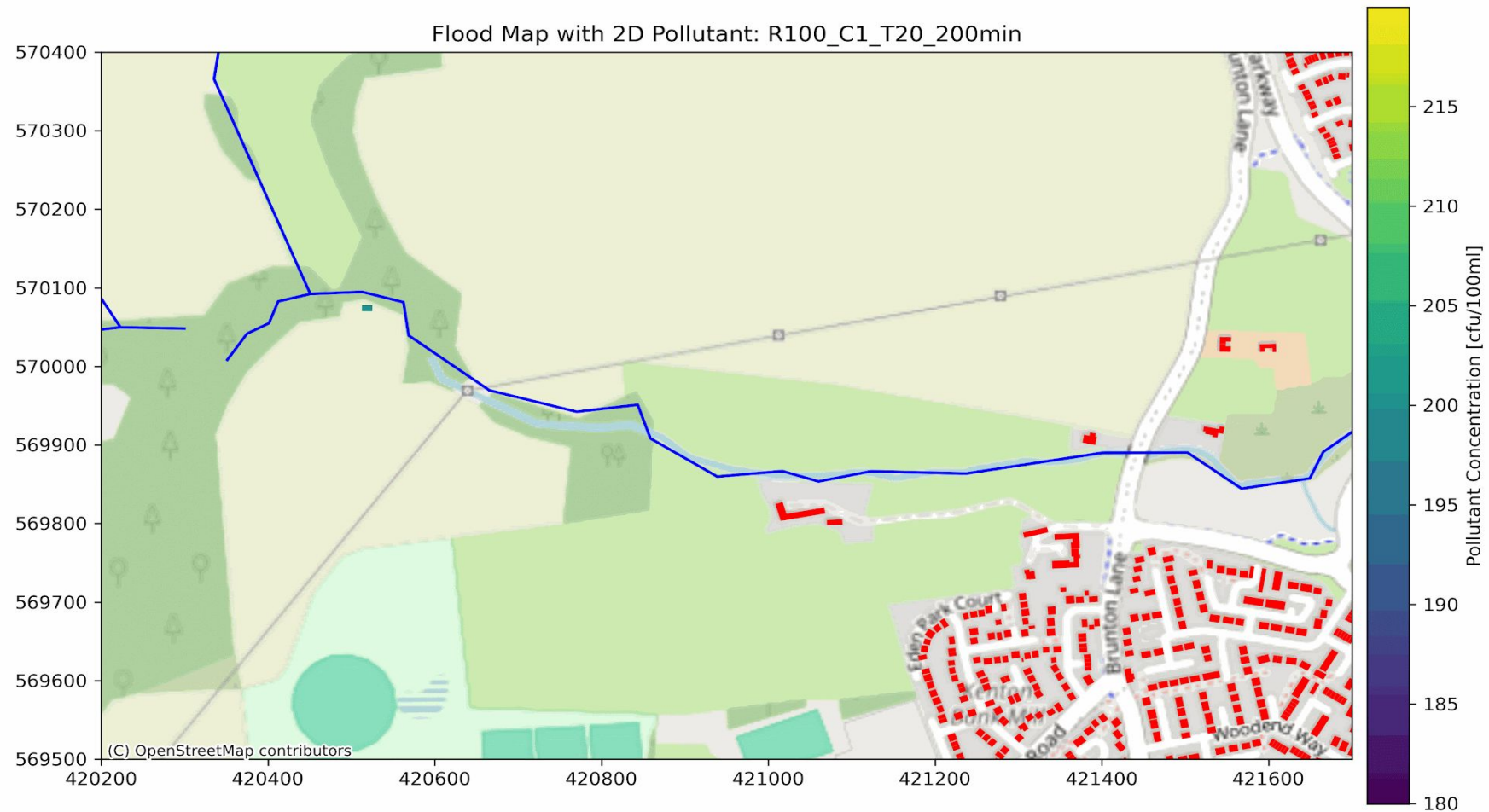


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Week 2 Ouseburn Cat

4

Ouseburn Catchment - Team 4 Presentation



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Modelling - Worst Case Scenario CITYCAT

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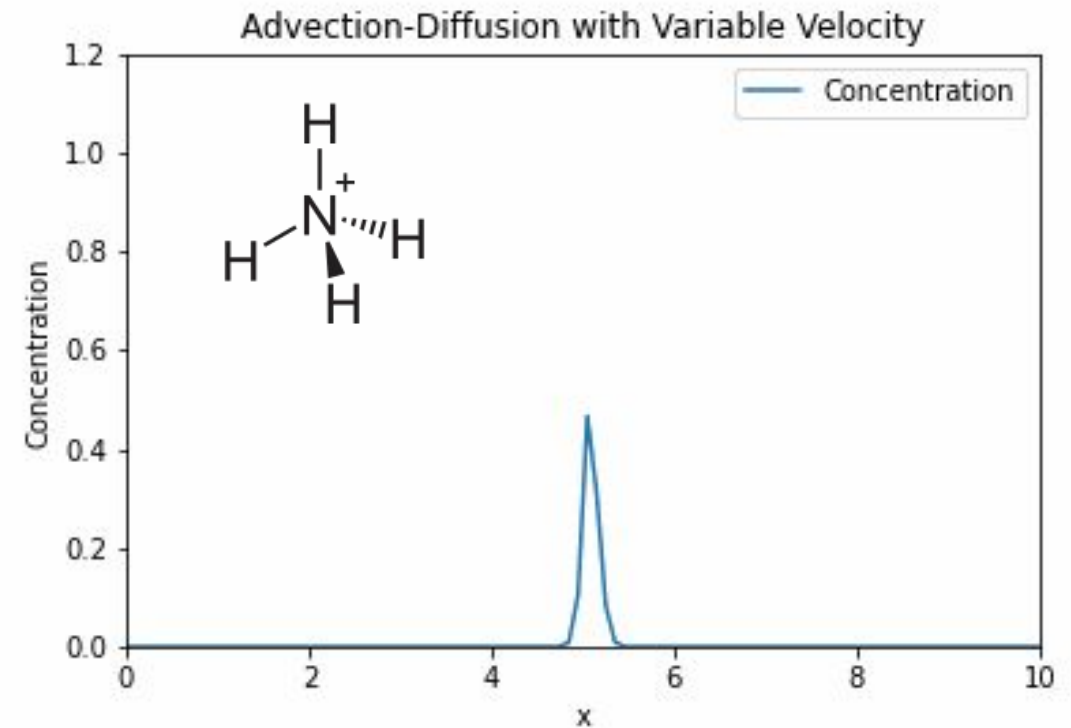
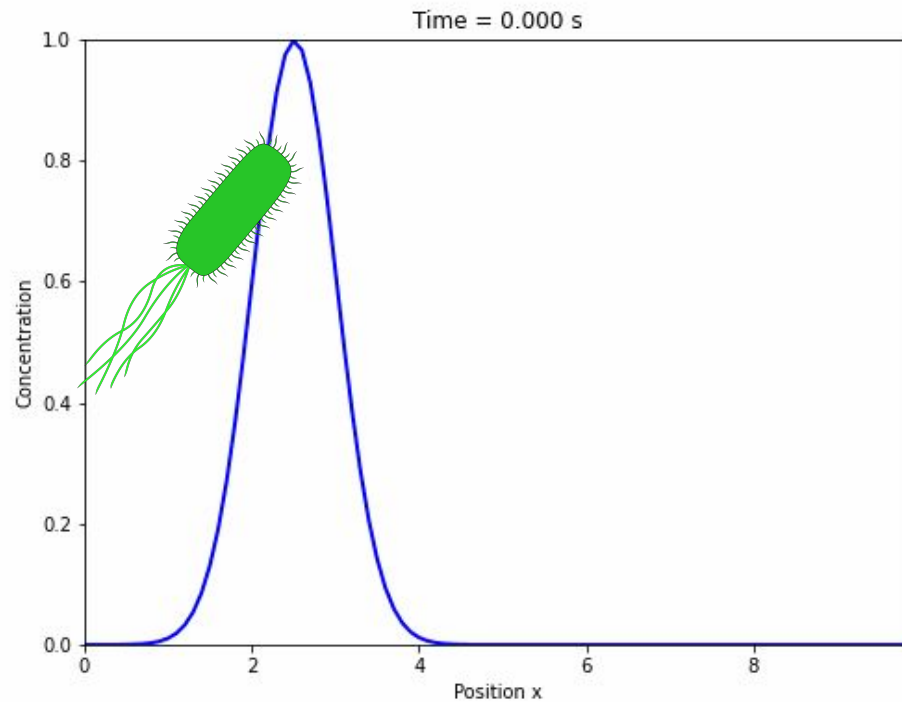
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Modelling Pollution Transport

E-coli and Ammonium transport in the ouseburn (gifs need updating)

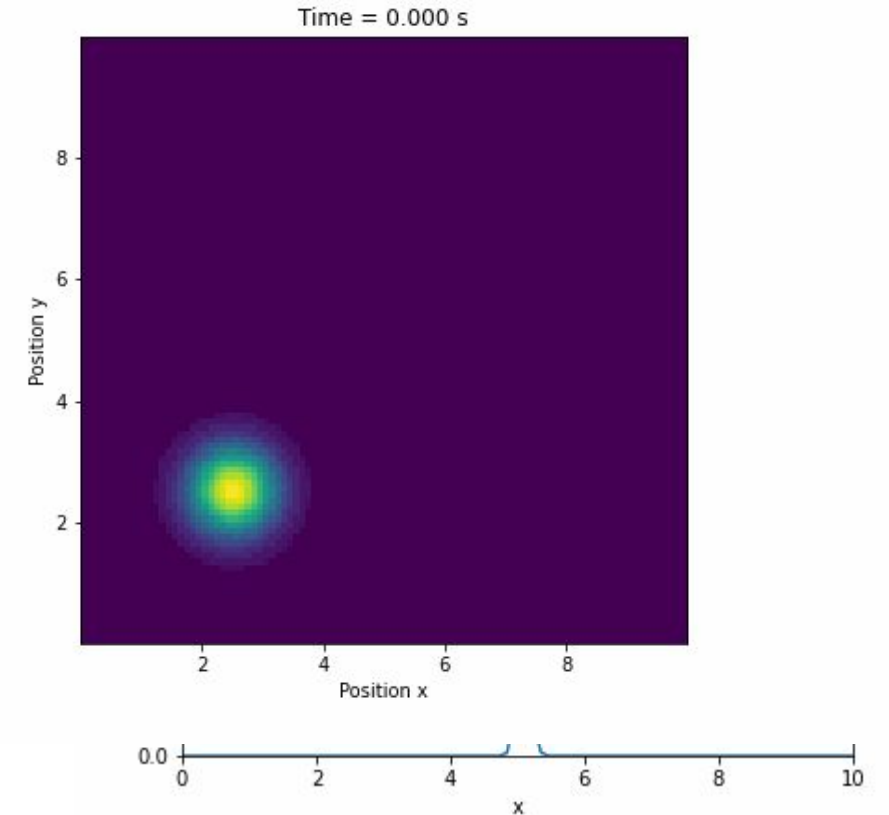
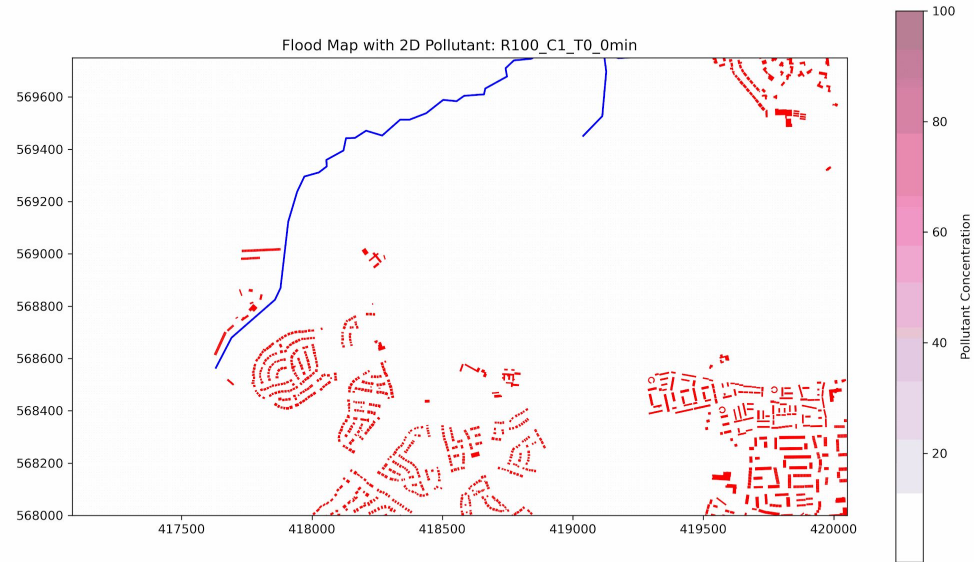


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Placeholder for Pollution Modelling



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Costs

Placeholder - exposure analysis

- Impacts on humans, infrastructure, environment etc,.



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Validation

Pre Processing

Post Processing

Initial DEM Analysis - ± 40 mm 2 Sigma

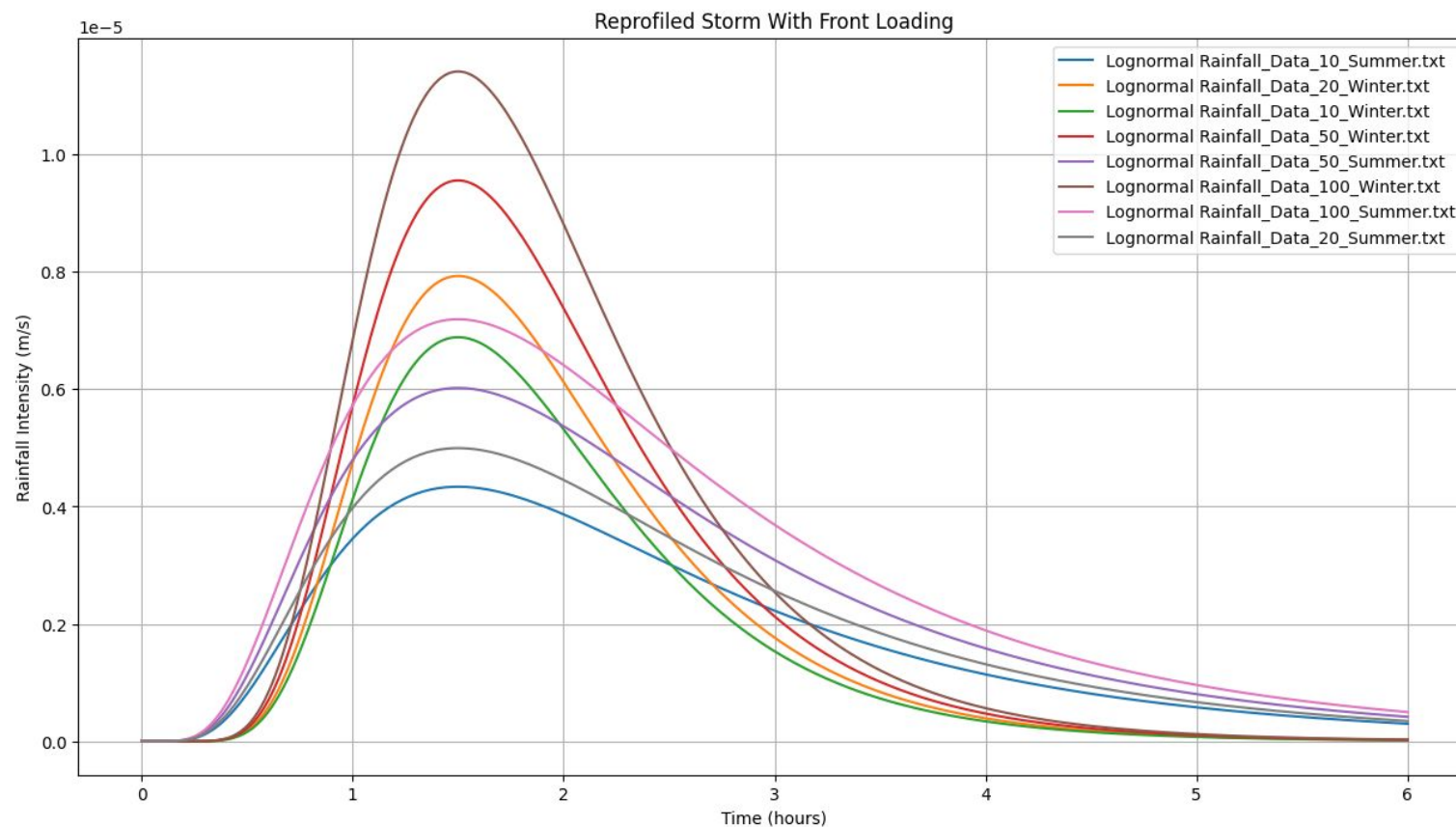
CityCAT - Glenis et al, 2018 & Cross Validation

Shetran Calibration



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Front Loaded Storm Profile



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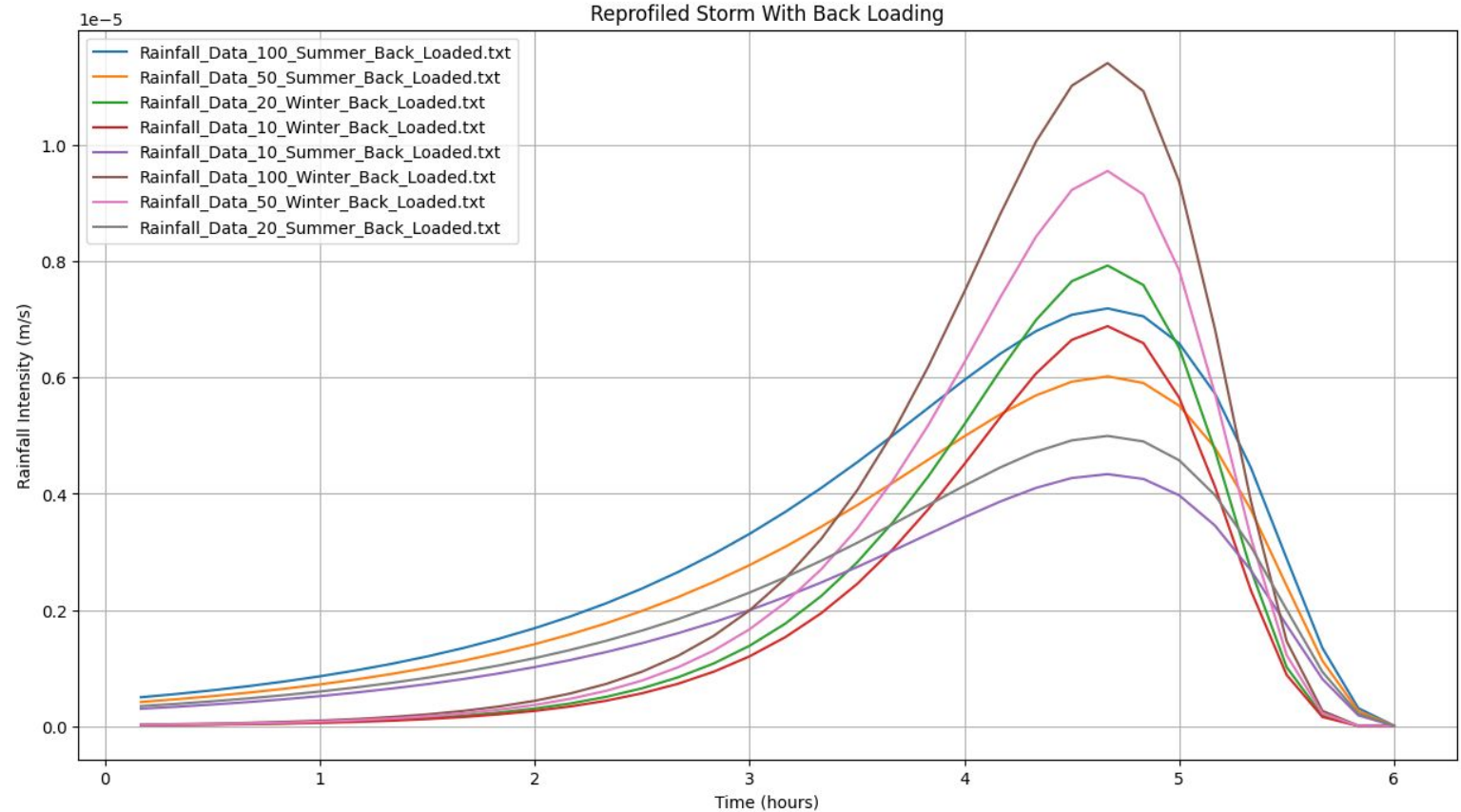
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Back Loaded Storm Profile



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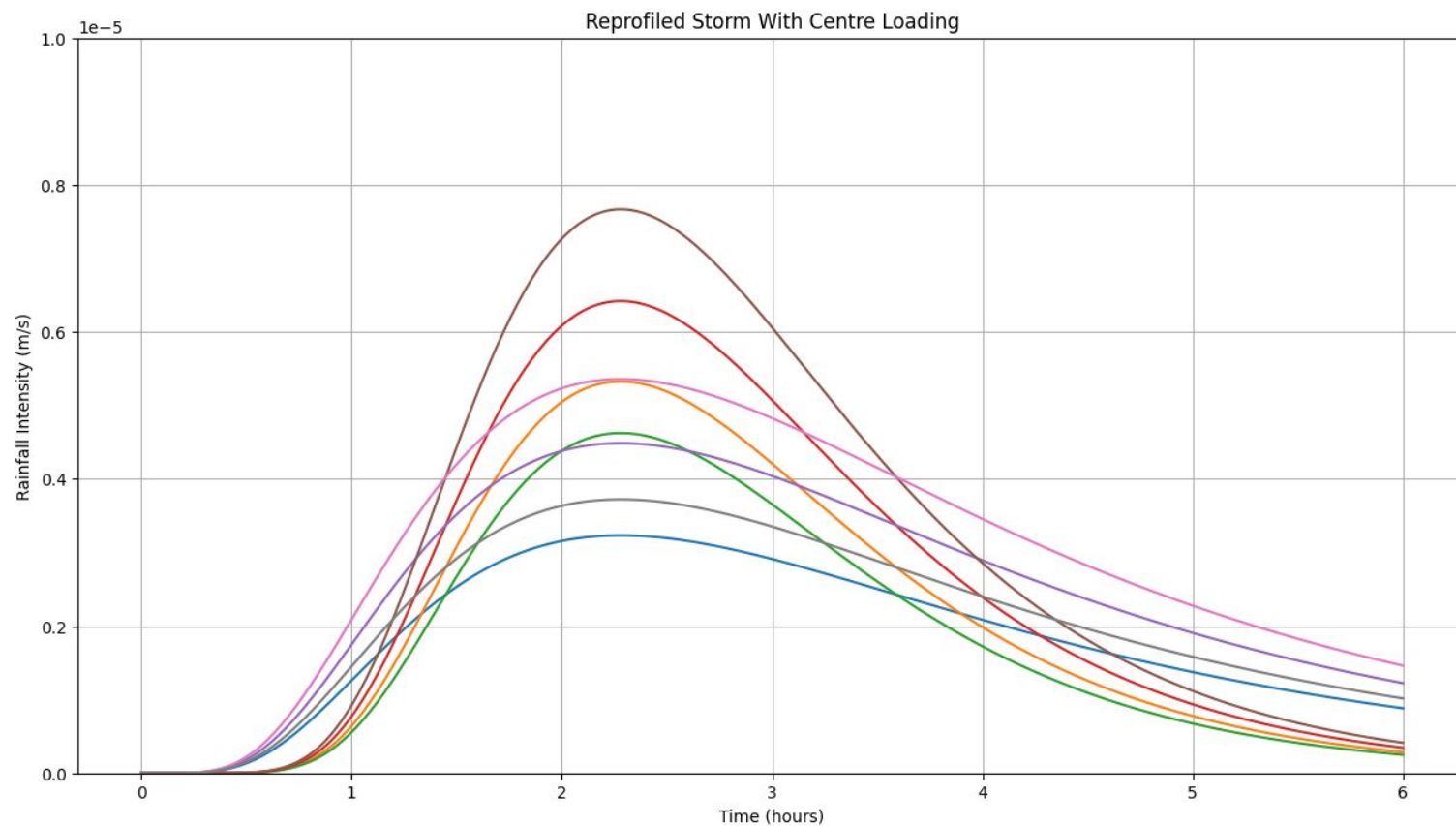
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Centre Loaded Storm Profile



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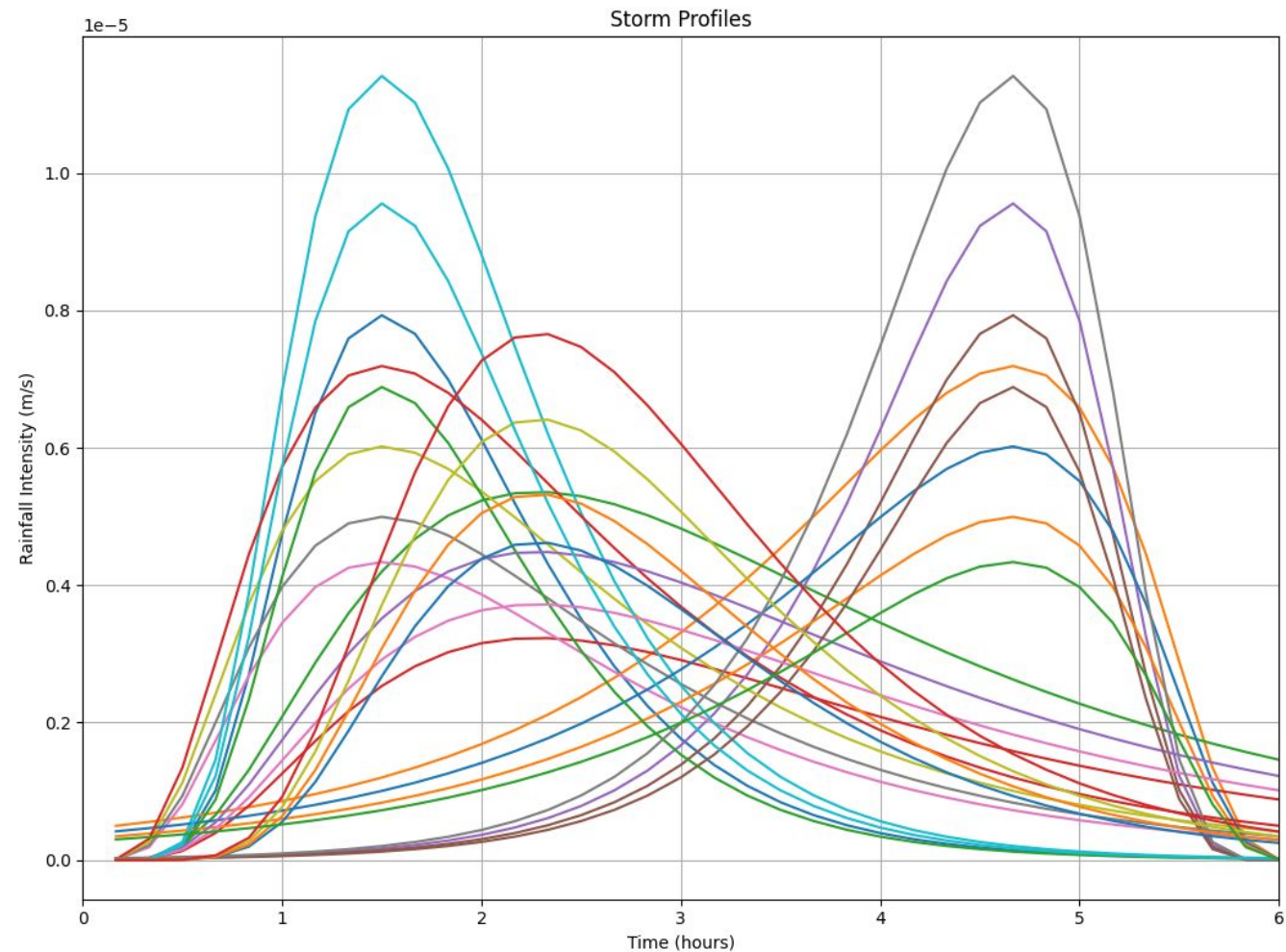
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Storm Profiles

- Rainfall_Data_20_Summer_Front_Loaded.txt
- Rainfall_Data_100_Winter_Back_Loaded.txt
- Rainfall_Data_100_Winter_Centre_Loaded.txt
- Rainfall_Data_10_Winter_Centre_Loaded.txt
- Rainfall_Data_50_Summer_Back_Loaded.txt
- Rainfall_Data_20_Summer_Back_Loaded.txt
- Rainfall_Data_10_Winter_Front_Loaded.txt
- Rainfall_Data_20_Winter_Front_Loaded.txt
- Rainfall_Data_50_Winter_Front_Loaded.txt
- Rainfall_Data_100_Summer_Front_Loaded.txt
- Rainfall_Data_50_Winter_Back_Loaded.txt
- Rainfall_Data_20_Winter_Back_Loaded.txt
- Rainfall_Data_10_Summer_Front_Loaded.txt
- Rainfall_Data_100_Winter_Front_Loaded.txt
- Rainfall_Data_50_Winter_Centre_Loaded.txt
- Rainfall_Data_10_Summer_Back_Loaded.txt
- Rainfall_Data_20_Winter_Centre_Loaded.txt
- Rainfall_Data_100_Summer_Back_Loaded.txt
- Rainfall_Data_50_Summer_Centre_Loaded.txt
- Rainfall_Data_50_Summer_Front_Loaded.txt
- Rainfall_Data_10_Summer_Centre_Loaded.txt
- Rainfall_Data_20_Summer_Centre_Loaded.txt
- Rainfall_Data_10_Winter_Back_Loaded.txt
- Rainfall_Data_100_Summer_Centre_Loaded.txt



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