Haltwhistle Burn Catchment Restoration Fund (CRF) Project

Introduction to the PhD Study

3rd October 2013

PhD Student: Eleanor Starkey

Supervisors: Dr Geoff Parkin, Dr Paul Quinn & Dr Andy large

TRT CRF Project Manager: Dr Ceri Gibson

Newcastle University

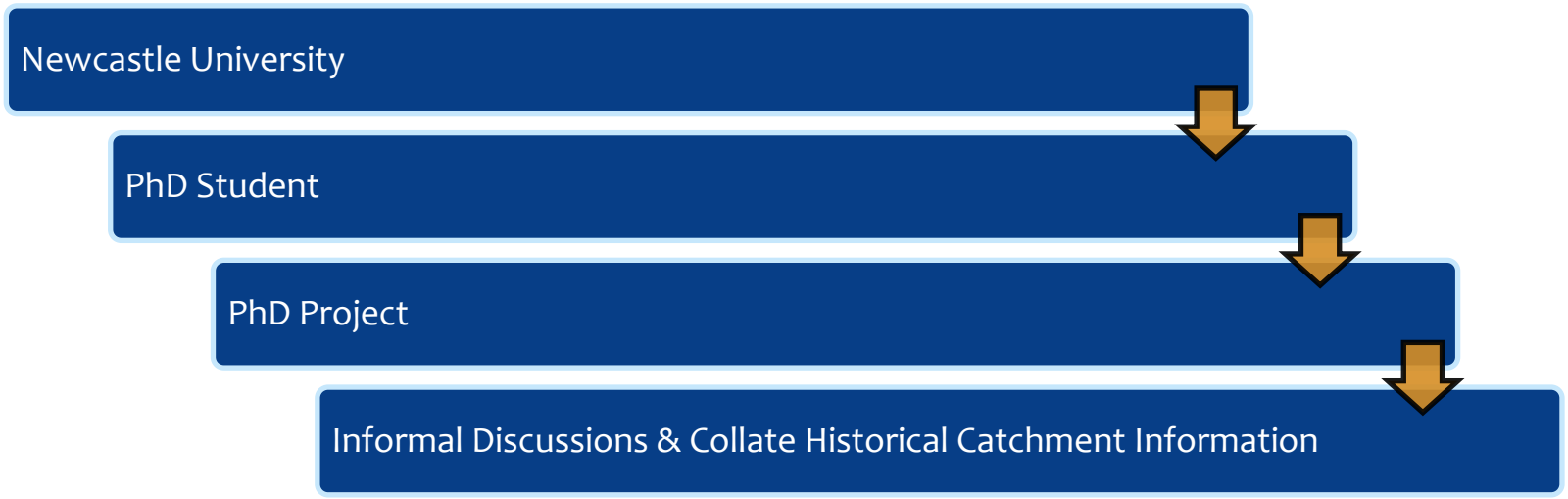
School of Civil Engineering & Geosciences

defra
Department for Environment Food and Rural Affairs

Tyne Rivers Trust

Welcome and Introduction

- Thank you all for attending..
- Purpose of the meeting:



- Finish ~8.30 to 9pm

Welcome and Introduction

- Who has attended tonight?
- Please leave your name and contact details with Eleanor before you leave
  - Sign data consent

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Welcome and Introduction

- Haltwhistle Burn Catchment Restoration Fund (CRF) Project
  - Improvement project - a 'total catchment approach'
  - Fish populations, water quality, hydromorphology and flood risk

- TRT and Newcastle University (School of CEG) working in partnership
  - PhD project funded by TRT and NERC
  - Study to focus on Haltwhistle Burn

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Newcastle University – Where Water Resources Fits In

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School of Civil Engineering & Geosciences

Water Resources

Water Resources – Key Research Themes

1. Catchment Hydrology and Sustainable Management
2. Flood Risk and Coastal Management
3. Climate Change, Impacts and Adaptation

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Research within the Tyne Catchment / North East

- Whittle Dene (Tyne Valley)

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Research within the Tyne Catchment / North East

- Belford (Northumberland)

http://research.ncl.ac.uk/proactive/belford/

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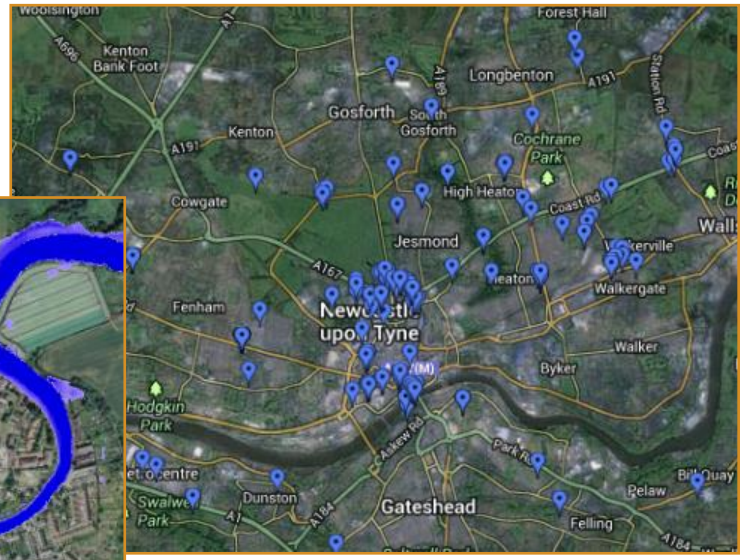
Research within the Tyne Catchment / North East

- Morpeth and 'Toon' Floods



http://ceg-morpethflood.ncl.ac.uk/

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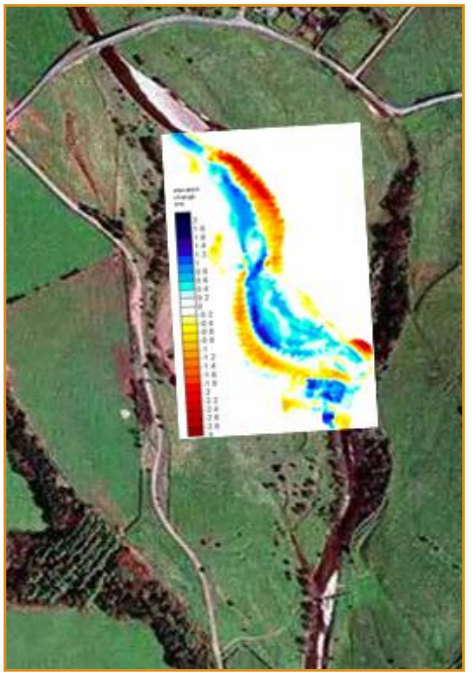
Research within the Tyne Catchment / North East

- Sharperton (Northumberland)



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Introducing the PhD Student

- Project awarded to Eleanor Starkey
  - BSc Physical Geography
  - MSc Hydrology & Climate Change
  - Relevant work experience
  - Graduate member of CIWEM

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Introducing the PhD Project – Plan of Study

"Community modelling and monitoring for catchment management and restoration"

- Year 1: Focus on Haltwhistle Burn Catchment and runoff management, with specific tasks requested by TRT

- Years 2 & 3: Evaluate Haltwhistle Burn study and transfer experience to other catchments within the Tyne, North East and possibly others in the UK

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PhD Project – Identifying the Problems

- Multiple catchment issues e.g. Haltwhistle
- Challenges – climate change, extreme events, human activities
- Limited funding available for small (sub-) catchments to overcome these issues and challenges

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PhD Project – Identifying the Problems

- Monitoring – costly, spatial converge is limited
- Modelling - inaccuracies, data required, assumptions
- Evidence is difficult and expensive to obtain
- Lack of community engagement and knowledge transfer
  - Essential for community based Catchment Management Plan

PhD literature review will further identify any other problems / a research gap.

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Haltwhistle Catchment – Identifying the Problems

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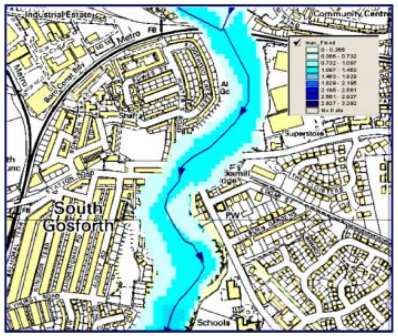
PhD Project - Approach

Monitoring

Modelling

Community engagement



Runoff management features

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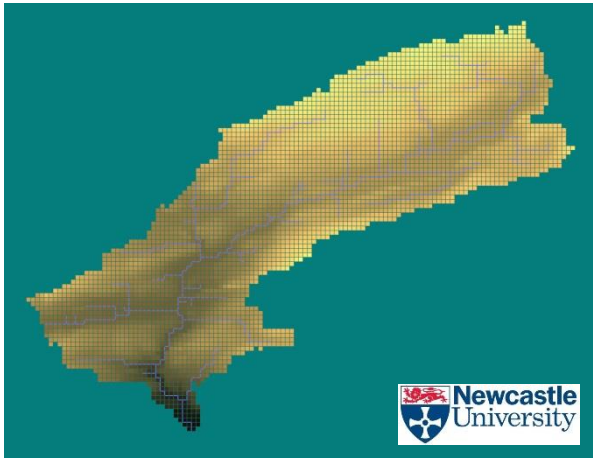
PhD Project - Approach

River Watch Group

Modelling - SHETRAN



Monitoring

Already in place / available..

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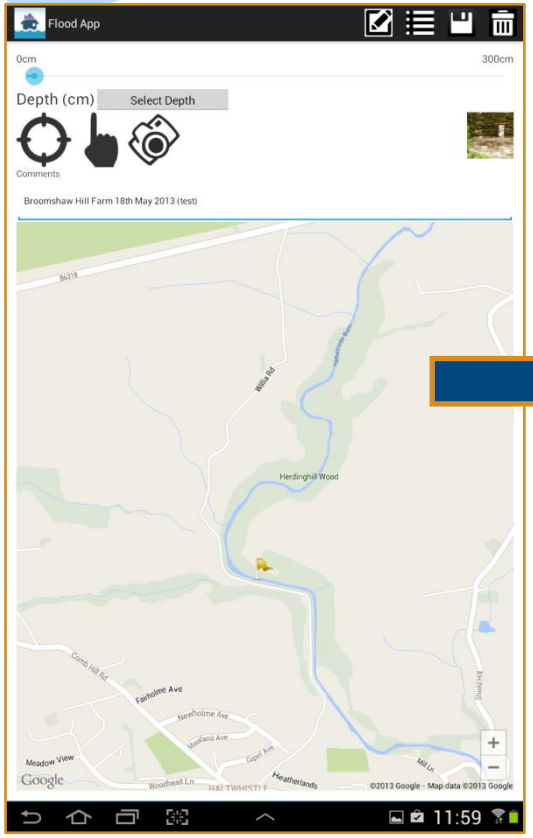
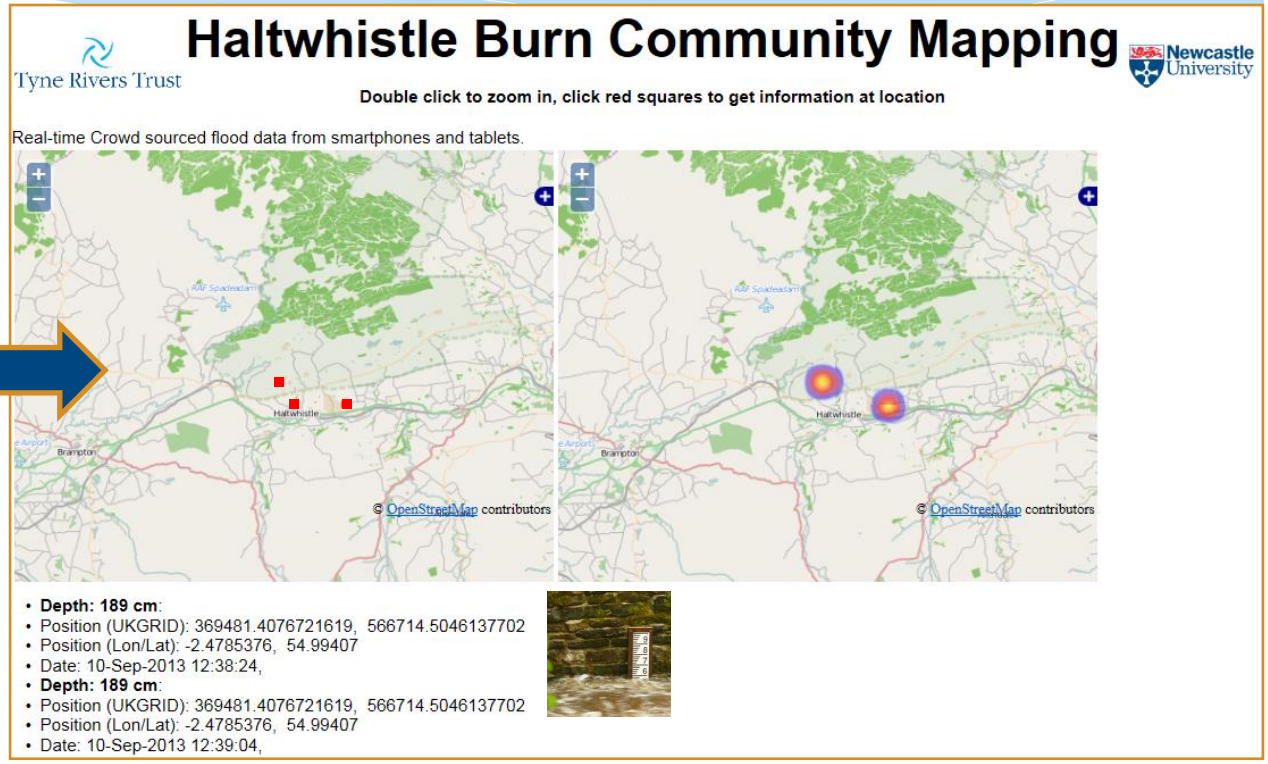
PhD Project – Approach





(http://ceg-sense.ncl.ac.uk/cloudsense/sinatra/trtmap.html)

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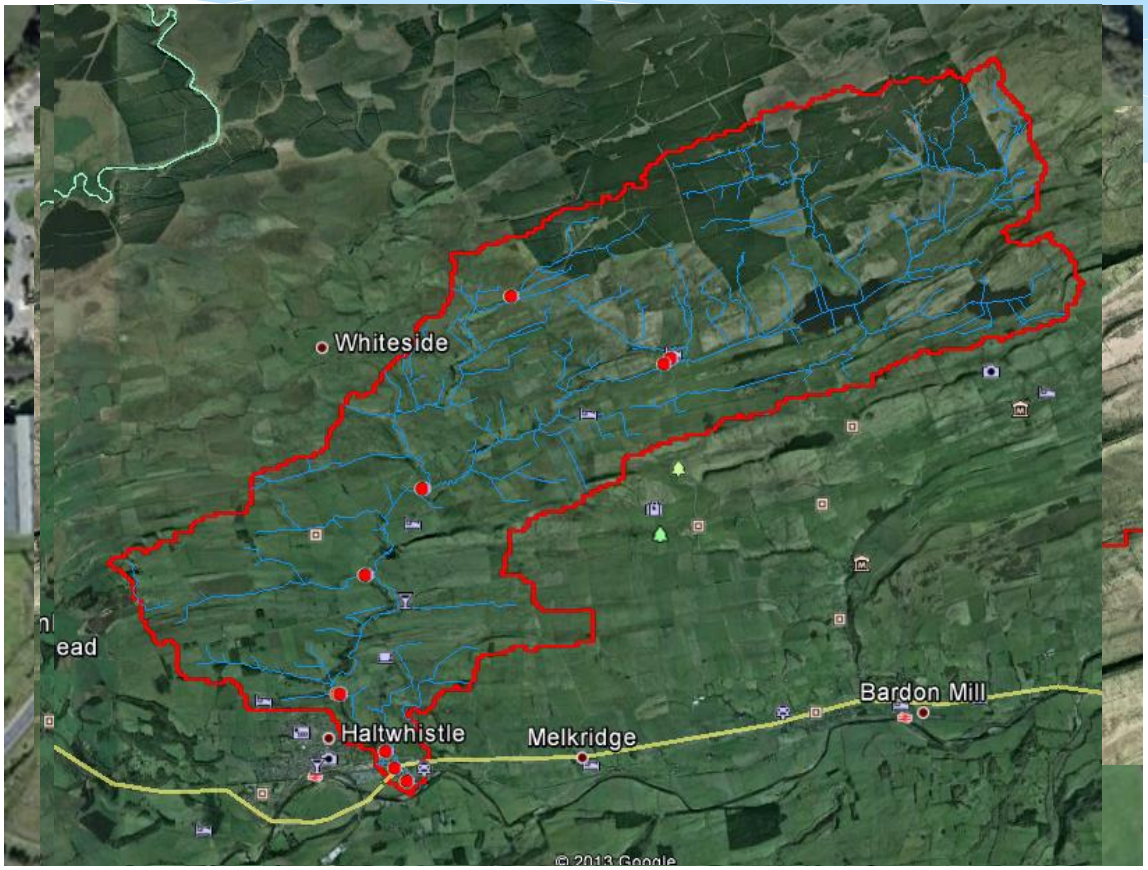
PhD Project - Approach



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PhD Project – Potential Runoff Management Solutions

- Examples of intervention techniques

Crossed timbers

Online pond

Willow in-ditch barriers

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Informal Discussions – Share Your Knowledge

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Wrap up and Summary

- What will we do with all this historical information / data?
  - Create a database of historical flood events & catchment issues
  - Characterise Haltwhistle Burn Catchment
  - Identify the priority areas – monitoring and interventions
  - Input data into models
  - Improve the knowledge of those directly connected to the catchment
  - Support development of Catchment Management Plan

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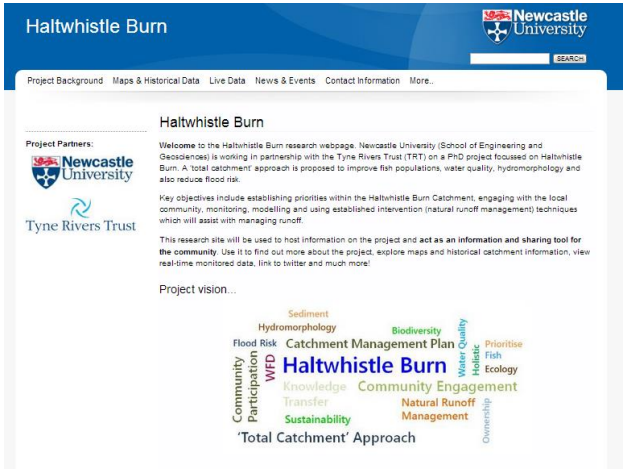
Wrap up and Summary

- Haltwhistle Burn research webpage
  - Project background
  - Host all your historic data
  - Host live data
  - Met Office weather warnings
  - Provide project updates
  - Links to further information and this presentation



- Visit http://research.ncl.ac.uk/haltwhistleburn

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Wrap up and Summary

- Introduced you to Newcastle University, Eleanor and the PhD project
- Informally discussed catchment activities and issues at Haltwhistle
- Engaged as a community
- You can continue to send historical information via Dropoff (http://dropoff.ncl.ac.uk) or email (eleanor.starkey@ncl.ac.uk)

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Another meeting to be scheduled in ~3 months - details to follow

Thank you for attending this evening

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