



Gathering the evidence – Belford hydrometric network and data

Dr Mark Wilkinson, Newcastle University

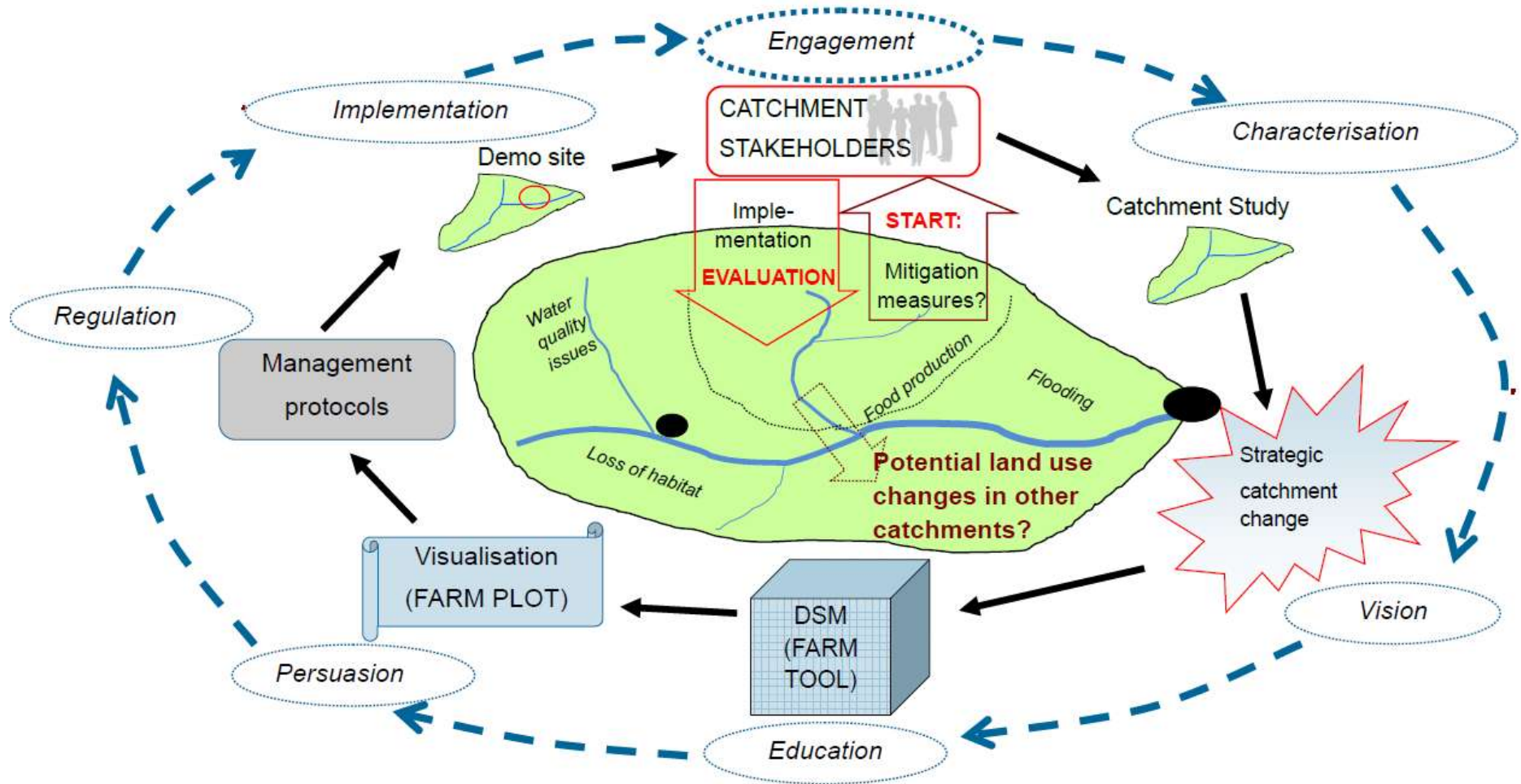


Introduction

There is great potential for agricultural management to become a major part of improved strategies for controlling runoff.



Belford – The catchment engineering toolkit

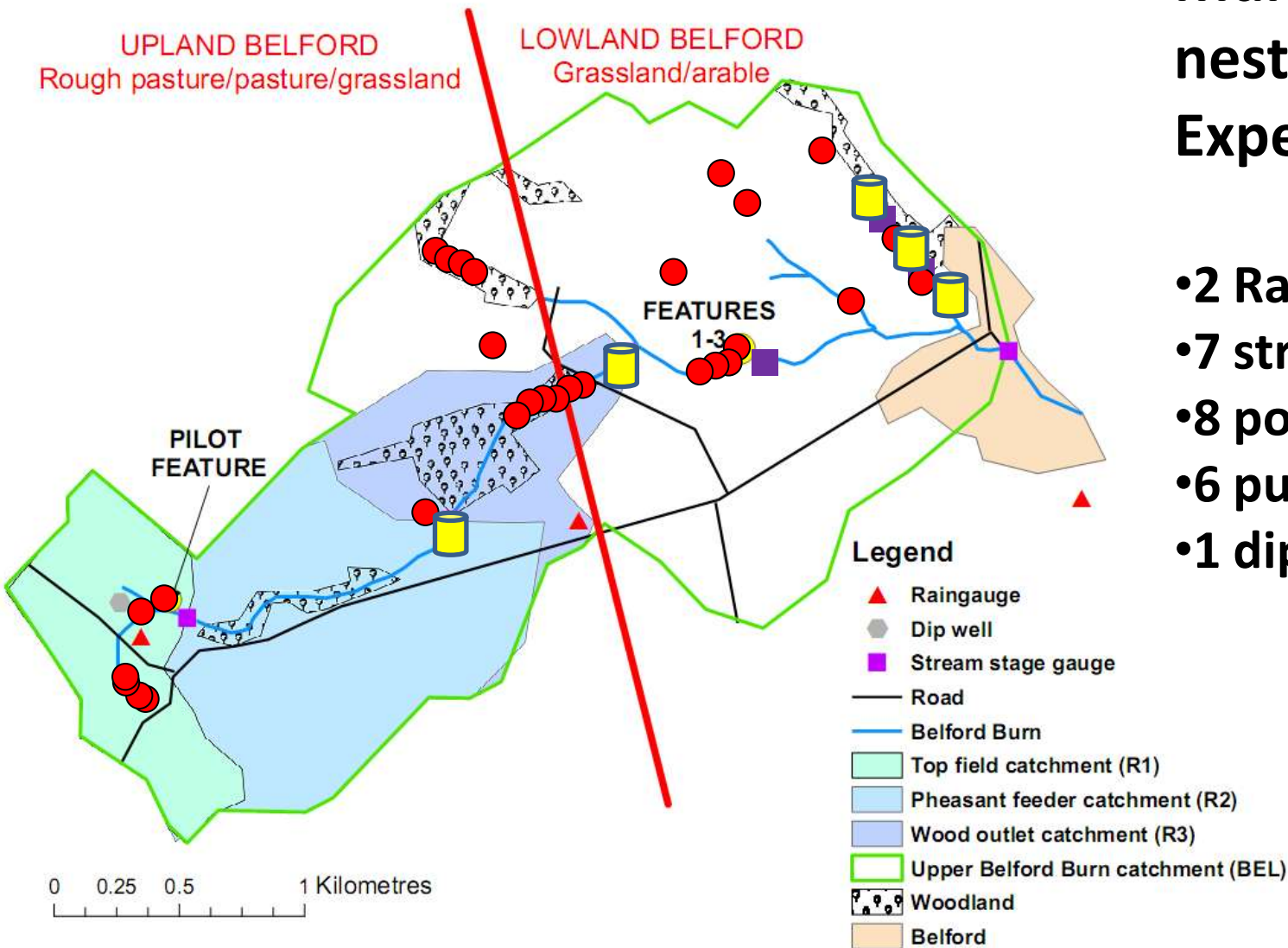


Monitoring network

The Belford Burn catchment is 5.7km² to the village

Multi-scale nested Experiment

- 2 Raingauges
- 7 stream gauges
- 8 pond level gauges
- 6 pump samplers
- 1 dipwell



Year 5 began last week!

- Last week was the 4th birthday of the monitoring network.
- Happy Birthday!

LEVEL RECORDER	R1
Date/time	Corrected stage (m)
16/11/2007 13:30	-0.80599064
16/11/2007 13:35	-0.7979463
16/11/2007 13:40	-0.80492413
16/11/2007 13:45	-0.80407932
16/11/2007 13:50	-0.80312366
16/11/2007 13:55	-0.80810149
16/11/2007 14:00	-0.804168
16/11/2007 14:05	-0.80610149
16/11/2007 14:10	-0.80099064
16/11/2007 14:15	-0.80100064

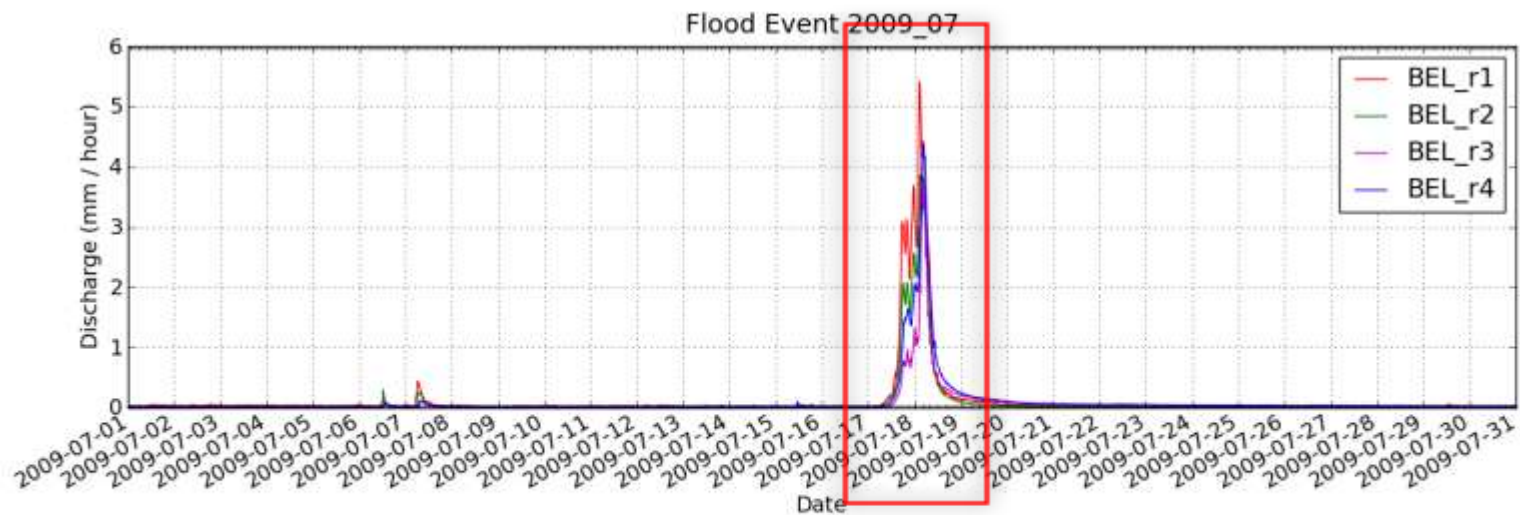
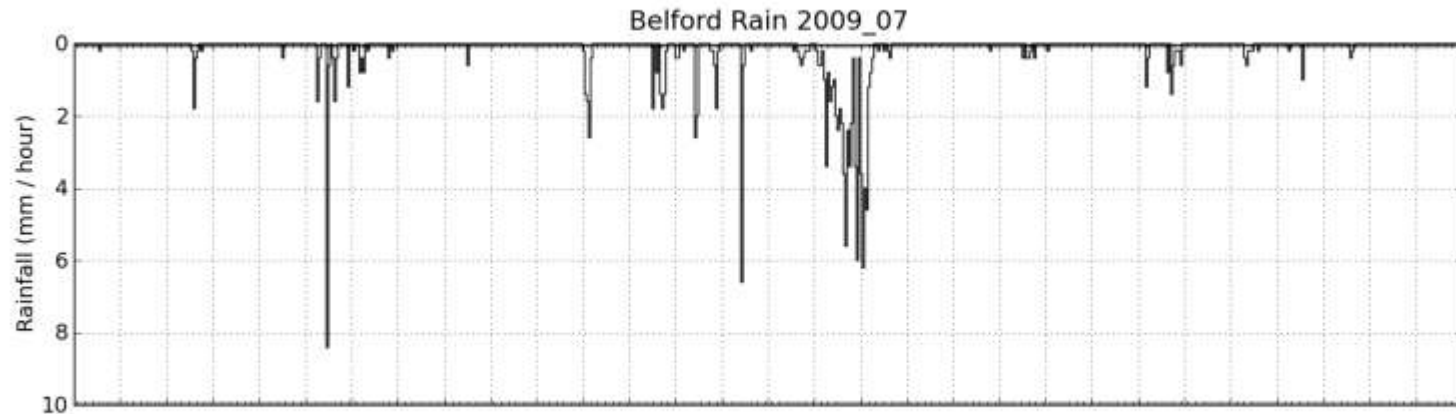
What has happened in 4 years?

Storm information

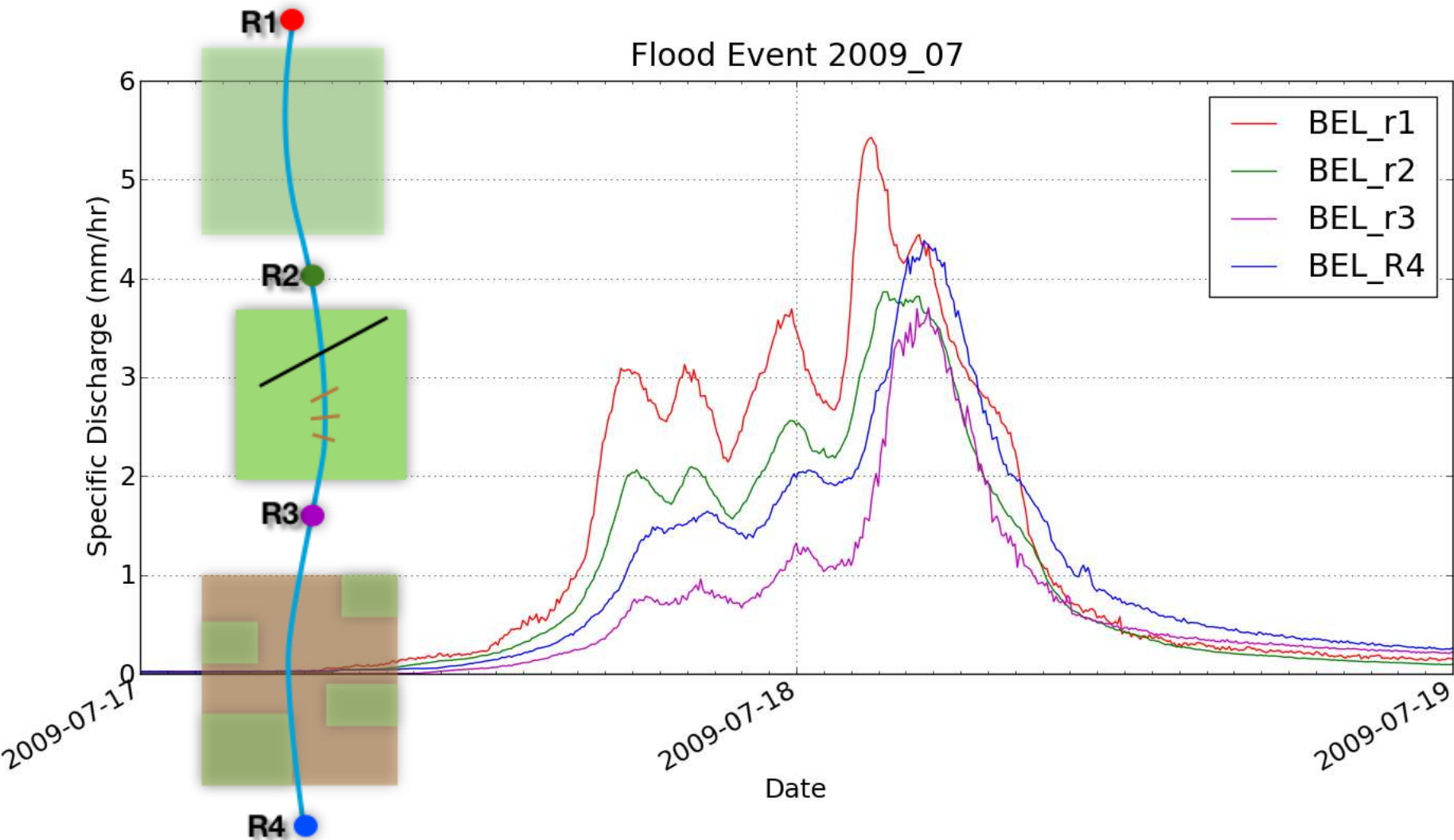
RANK	Name	Dates	Storm Duration	Rainfall (mm)	% of yearly average rainfall	BELFORD LEVEL
1st	Mar-10	29-30 Mar 2010	30	62.4	9	1.54
2nd	Jul-09	17th July 2009	43	102.6	15	1.431
3rd	Sep-08	5-7th Sept 2008	45	99.6	14	1.375
4th	Jan-10	16th Jan 2010	8	12.4	2	1.32
5th	Nov-09	1st Nov 2009	9.5	32	5	1.075
6th	Sep-09	2nd-4th Sept 2009	40	65	9	0.865
7th	Feb-09	3rd Feb 2009	17	29.8	4	0.869

We now find the use of return intervals inappropriate for this catchment

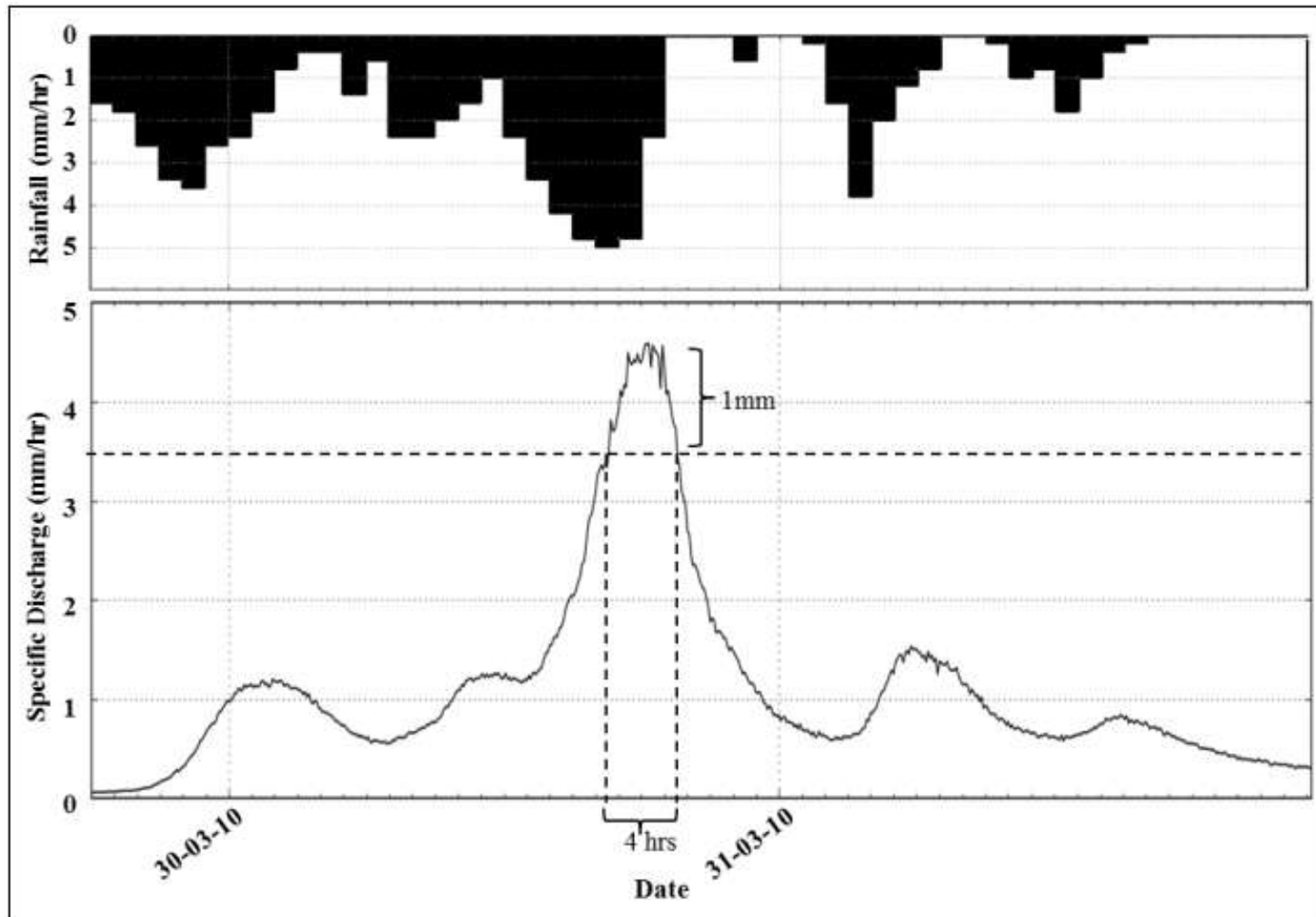
Data Analysis – July 09



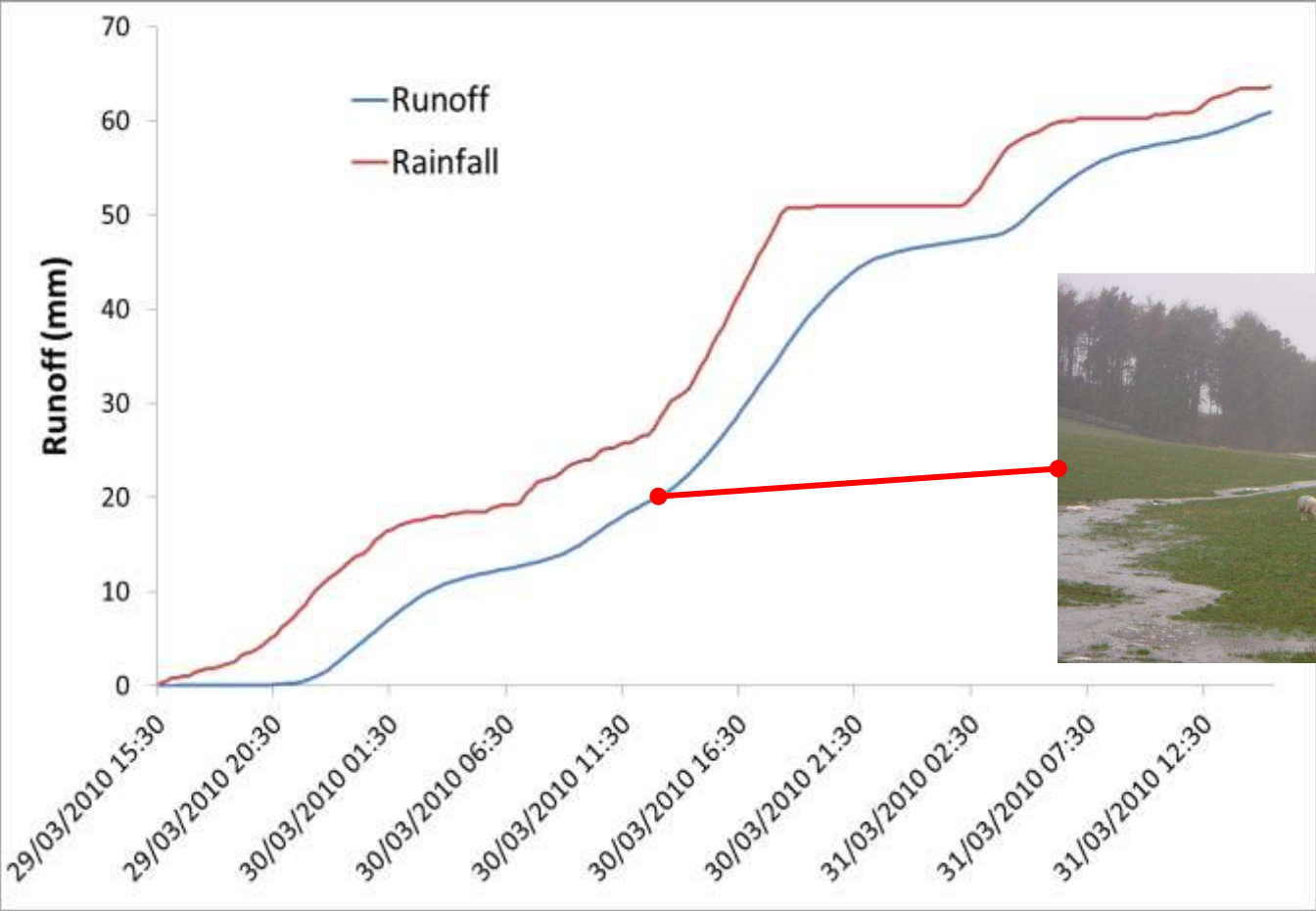
Data Analysis – July 09



Data Analysis – March 10



Data Analysis – March 10

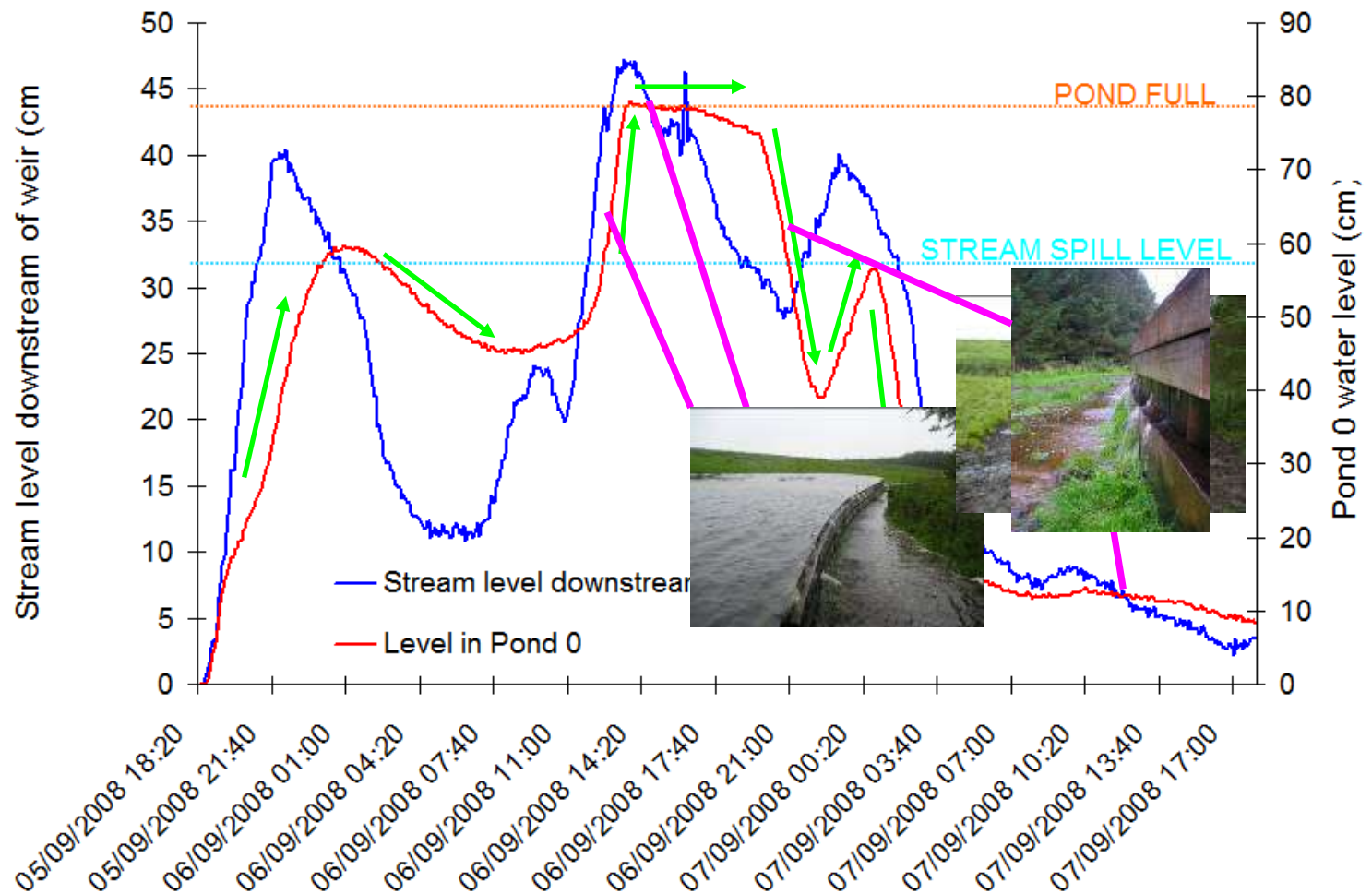


Total
~95% runoff

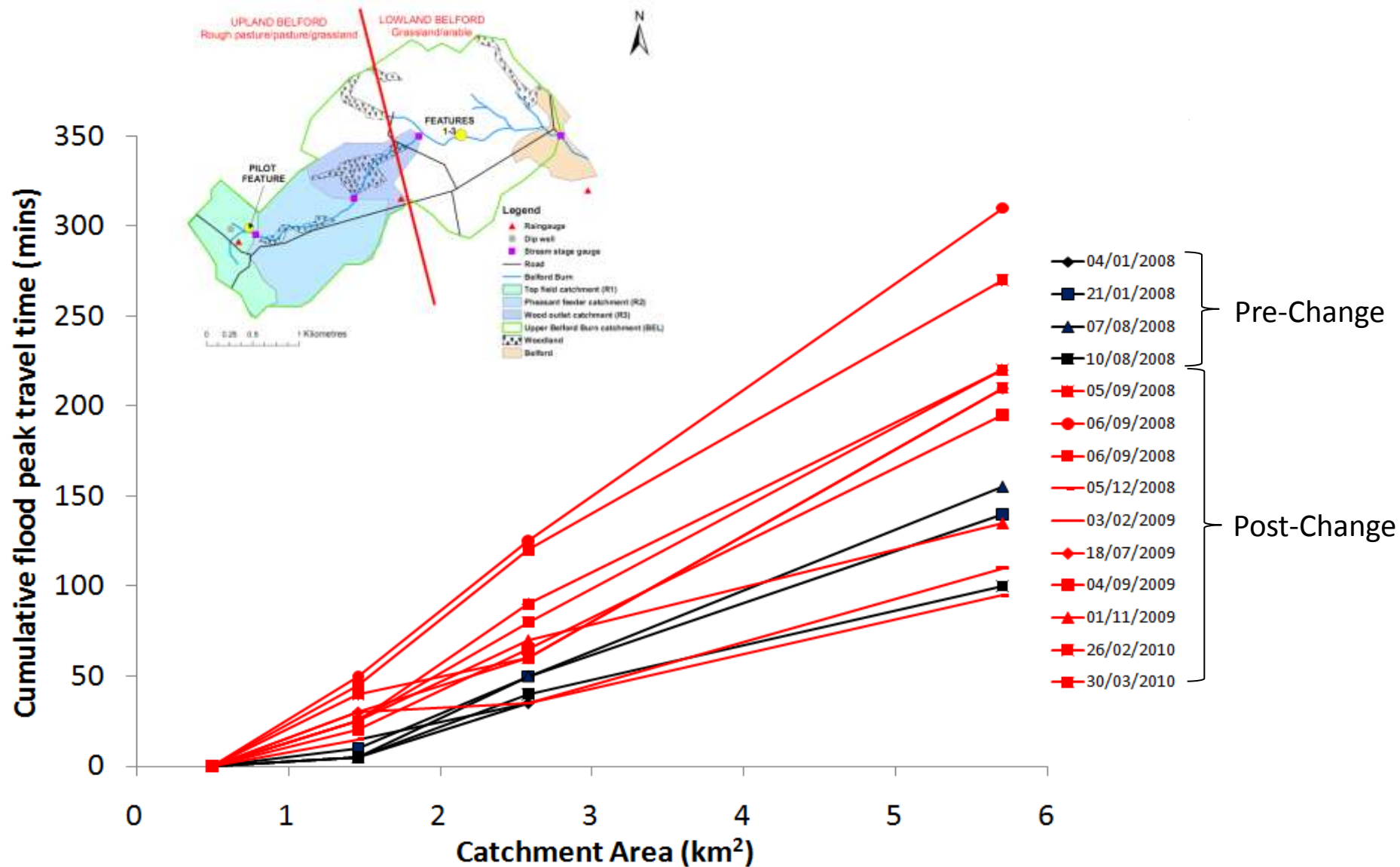


Pilot pond – Sept 2008

~800m³



Travel time of peak



The community feeling

After September 2008 floods – During construction

July 2007 – Before the project



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Councils

Belford flood scheme used as example

Posted by The Journal on Feb 1, 09 02:53 PM in Councils

Berwick MP Sir Alan Beith has met the Environment Agency to ask about improvements to flood defences in Northumberland.

He was hopeful that progress was being made. "The Agency is clearly very pleased with the work at Belford on catchment ponds and are now actively looking at developing similar schemes in other areas."

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