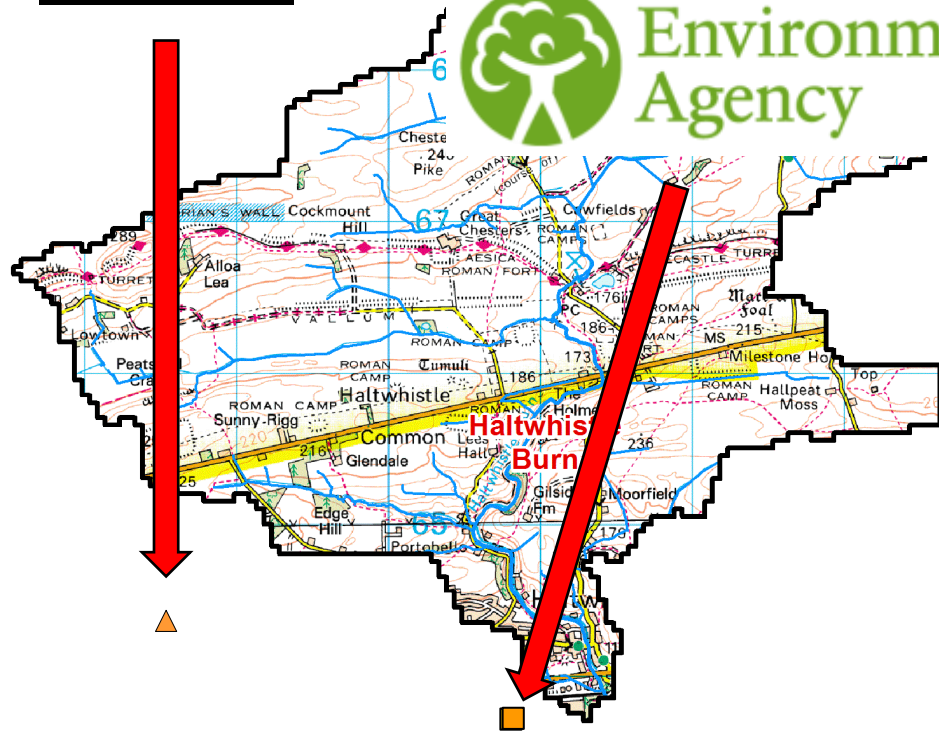
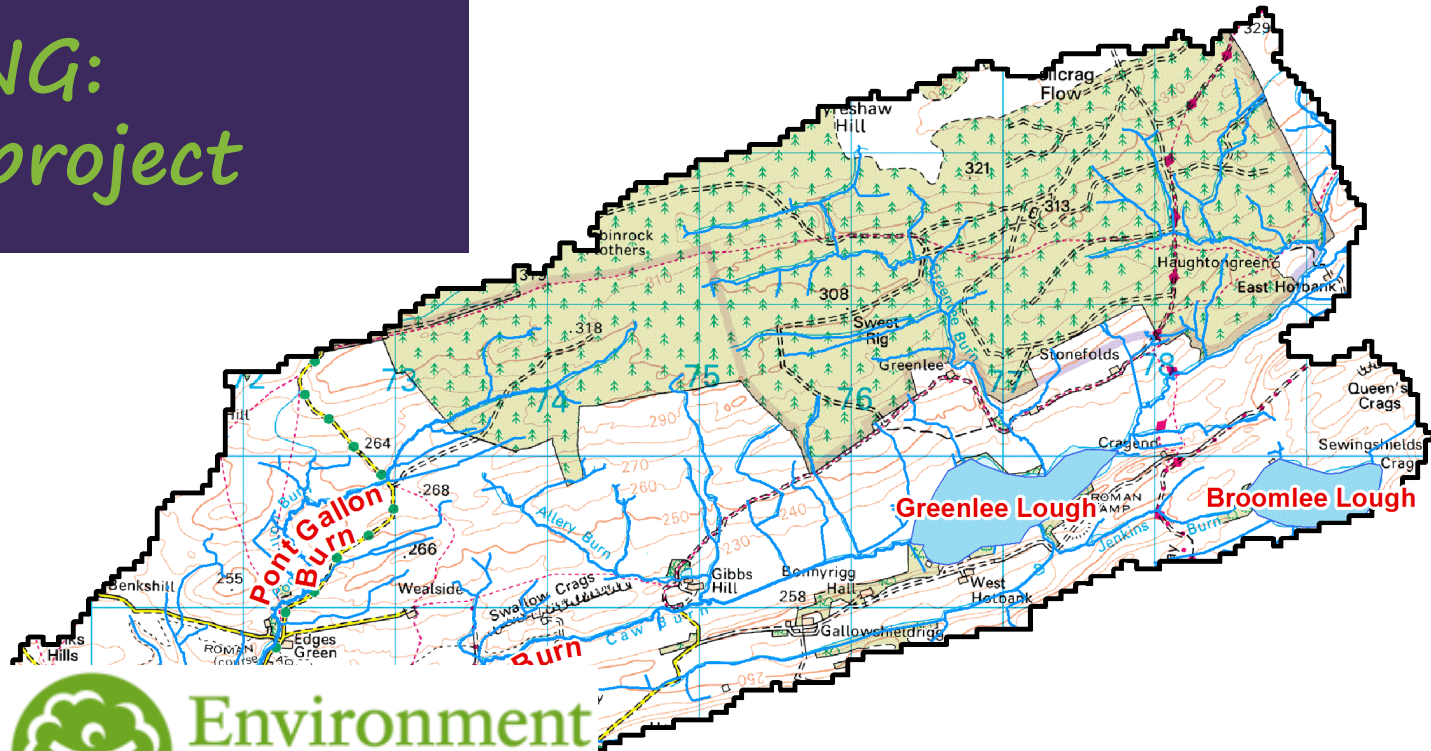


# Haltwhistle Burn PhD project

- PhD project – Quick Update
- Monitoring – What & Where?
- Monitoring – April & May 2014 floods
- Next steps & monitoring discussions

# MONITORING: Before HB project



Catchment boundary (42km sq)

Traditional monitoring sites

Rain gauge

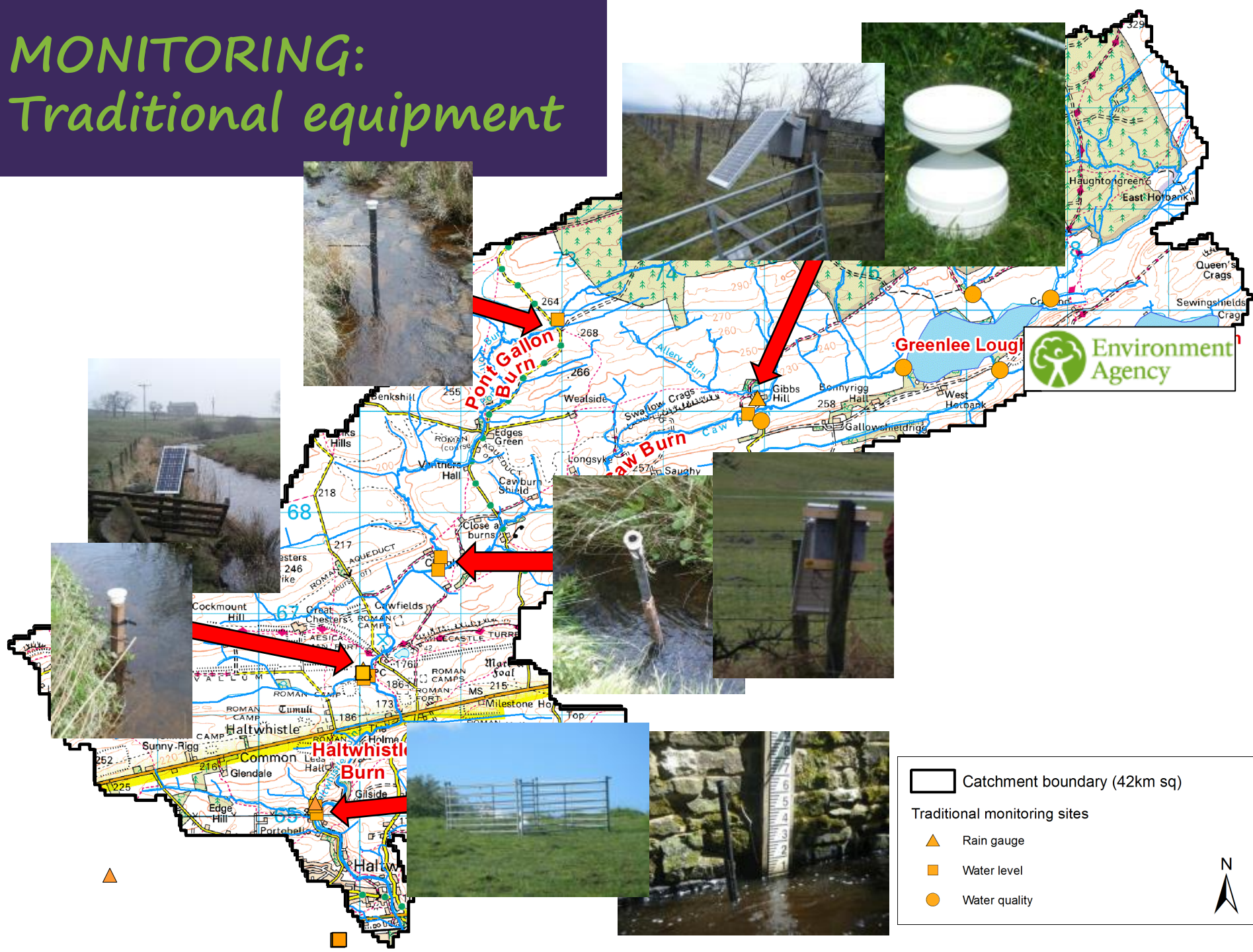
Water level



0 0.5 1 2 3 Km

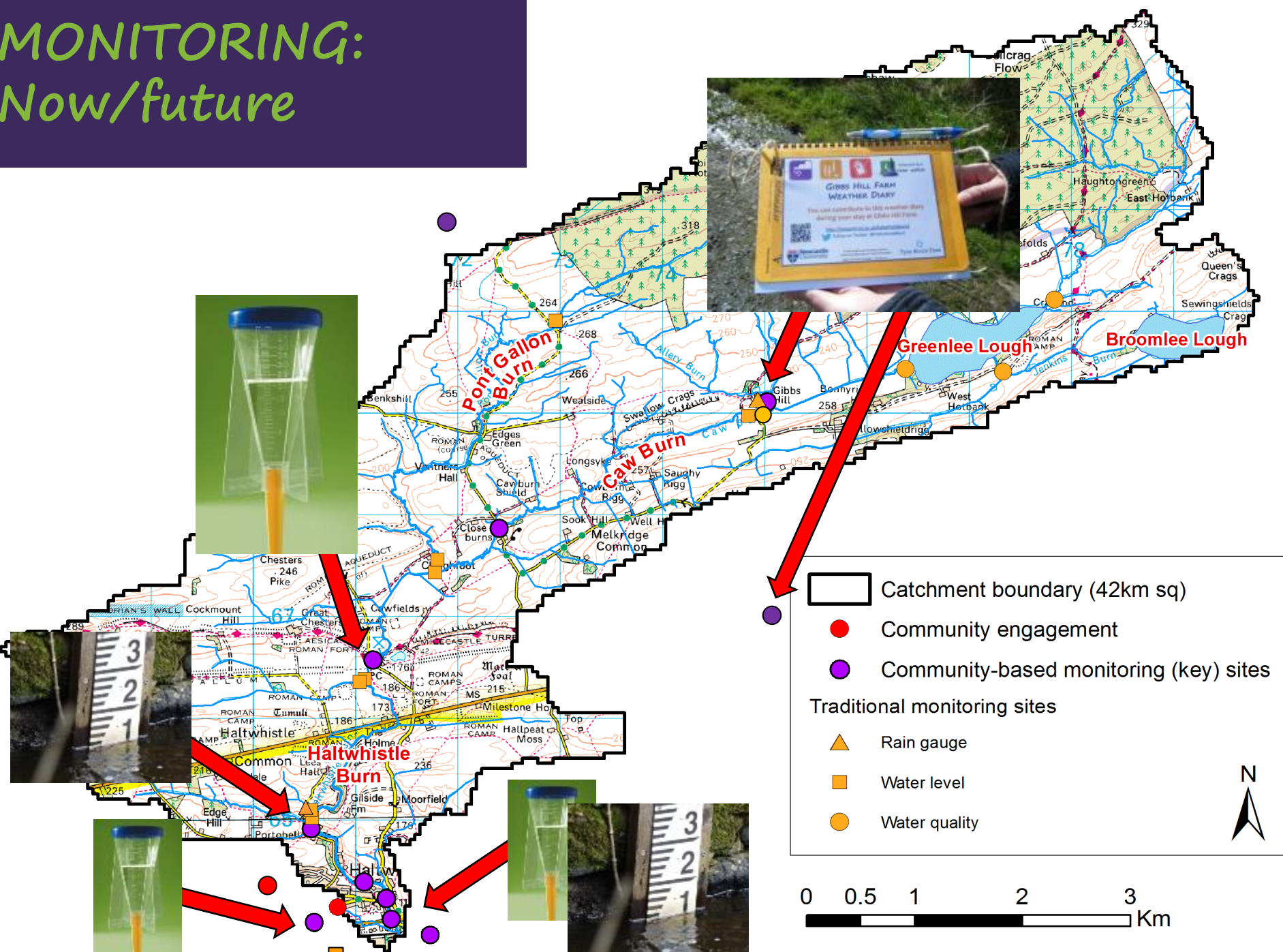
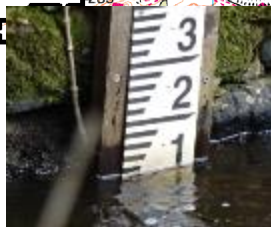


# MONITORING: Traditional equipment

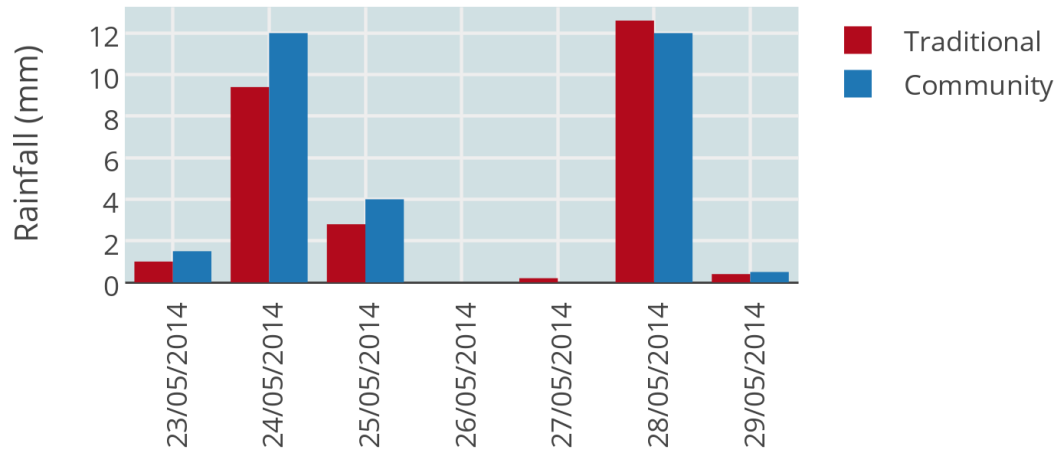




# MONITORING: Now/future

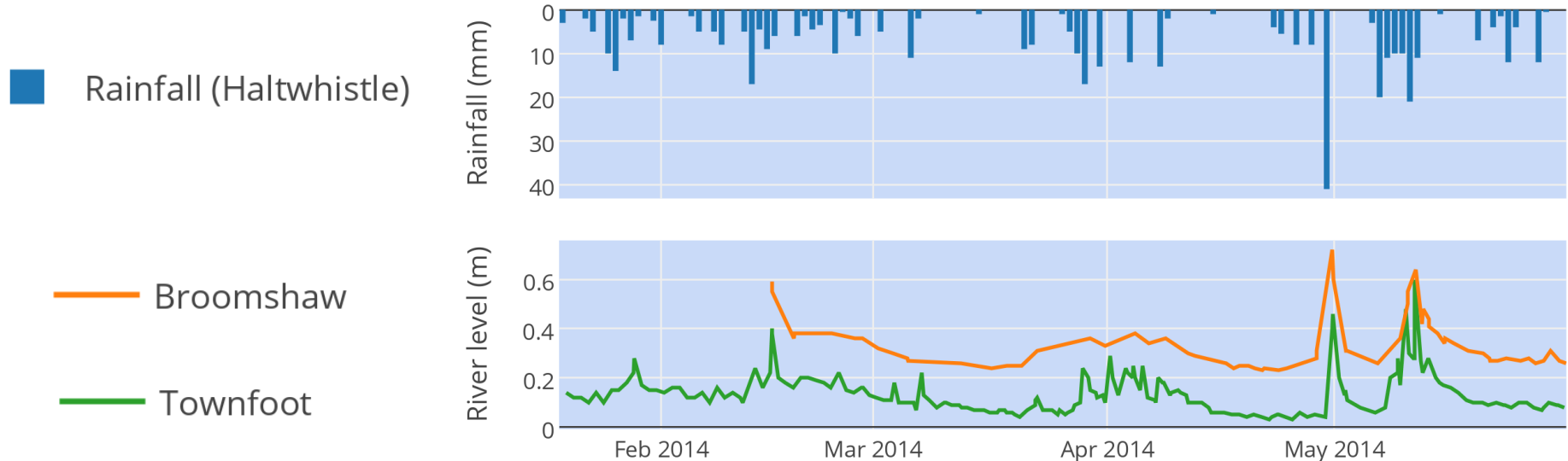


# COMMUNITY MONITORING



Rainfall – how does it compare with traditional equipment?

## Rainfall and river level





# *Haltwhistle Burn Catchment*

## **Flash Flood Events**

**Wednesday 30<sup>th</sup> April  
& Sunday 11<sup>th</sup> May 2014**

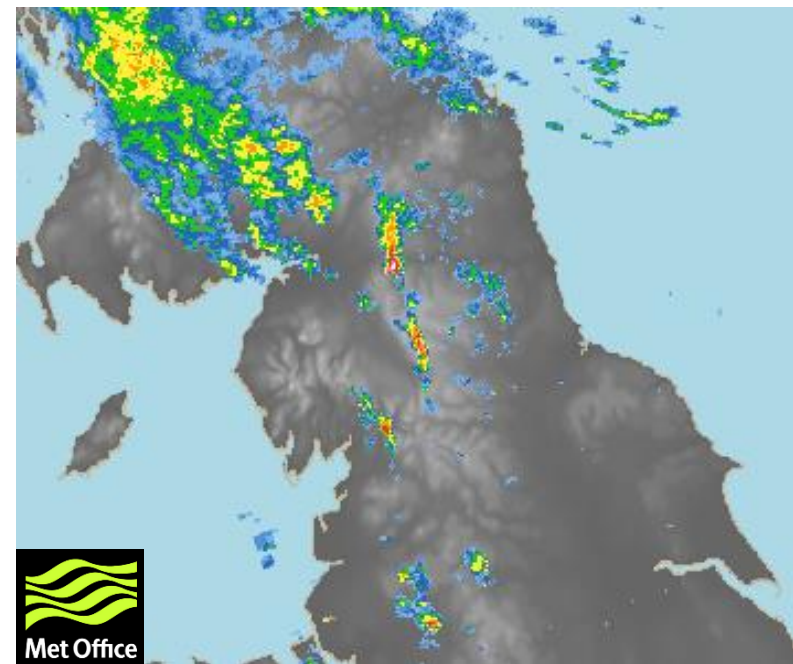
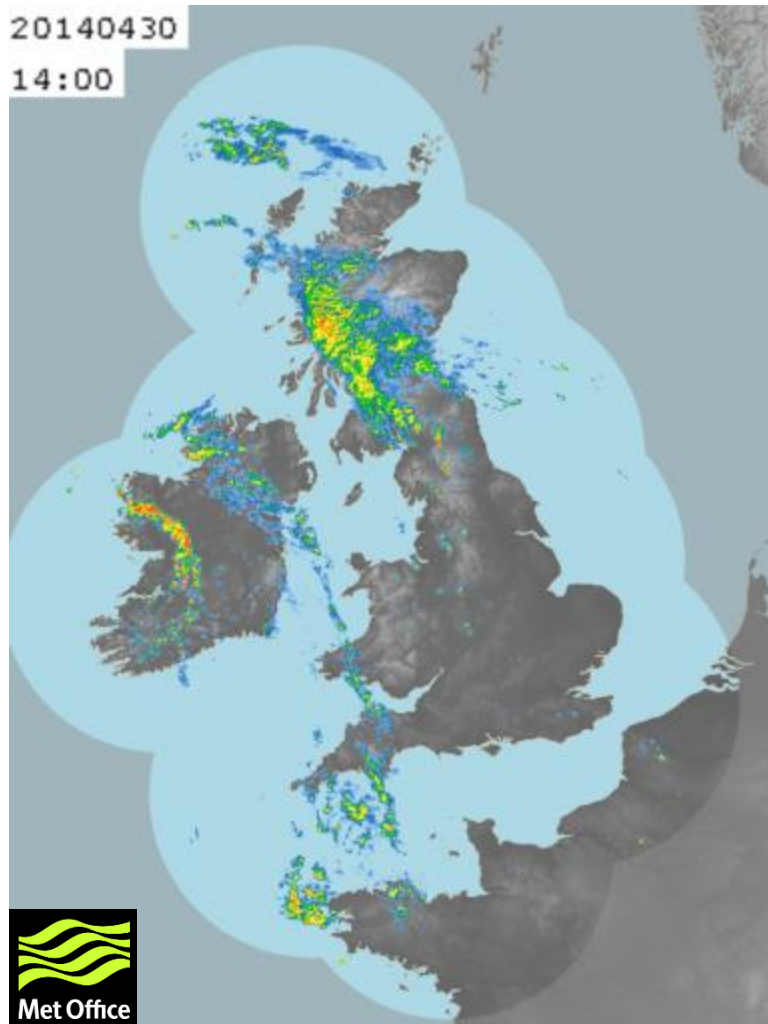


# DATA SOURCES

- Haltwhistle Burn River Watch - Community Monitoring
- Newcastle University – Traditional Monitoring
- Met Office rainfall radar
- SINATRA FloAT – ‘Storm Chasers’



# WEDNESDAY 30<sup>TH</sup> APRIL



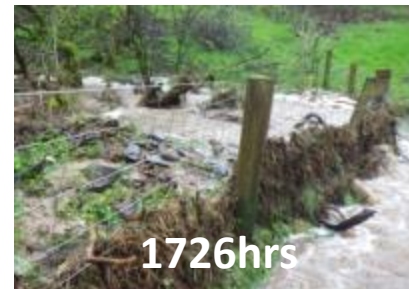
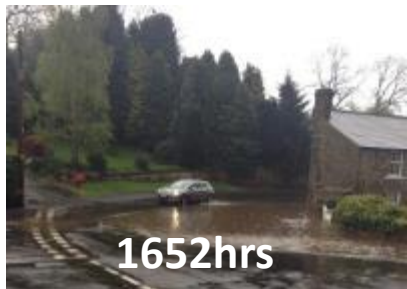
0.1 – 0.25    0.25 – 0.5    0.5 – 1    1 – 2  
2 – 4    4 – 8    8 – 16    16 – 32  
32+ mm/hr

1500hrs BST



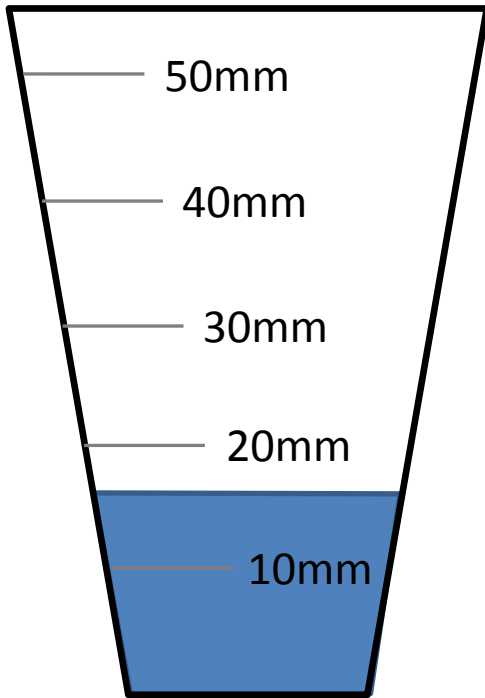
# WEDNESDAY 30<sup>TH</sup> APRIL

"Heavy rain started about 3.20pm.. The rain was so Heavy. The Burn peaked around 4pm"  
Local resident, 30/04/2014



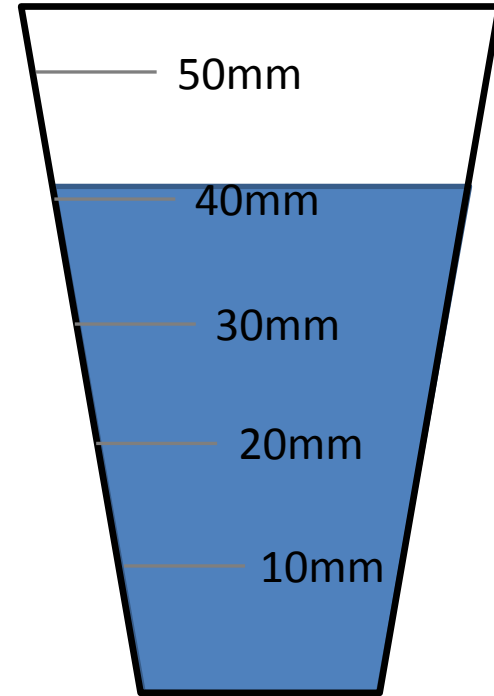
WEDNESDAY 30<sup>TH</sup> APRIL

*Gibbs Hill*



16:00 – 18:00+

*Townfoot*



15:20 – 16:00

24hr rainfall totals



# SATURDAY 10<sup>TH</sup> MAY



@HadriansWall

1000hrs

Gilsland is wet, very wet!

“Rain woke me up through the night!”  
10<sup>th</sup> May

Cawfields Quarry, Northumberland

4:55:14 PM

1655hrs



Cawfields Quarry



1659hrs



10  
@HaltwhistleBurn #haltwhistleburn #riverlevel Townfoot 10/5/14 20.58  
[pic.twitter.com/z129wHlnYE](https://pic.twitter.com/z129wHlnYE)

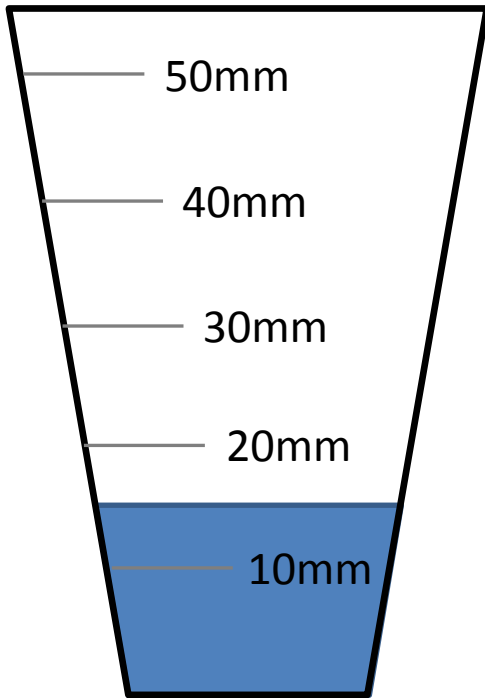


2058hrs

Video footage - 10<sup>th</sup> May 1740hrs Broomshaw

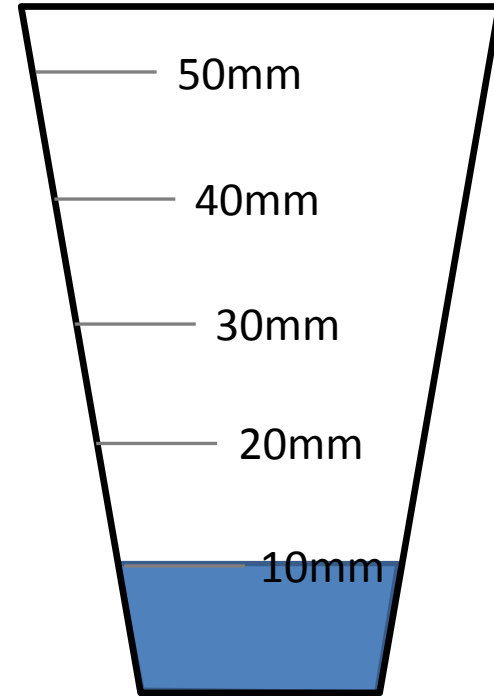
SATURDAY 10<sup>TH</sup> MAY

Gibbs Hill



15:30 – 17:00

Townfoot

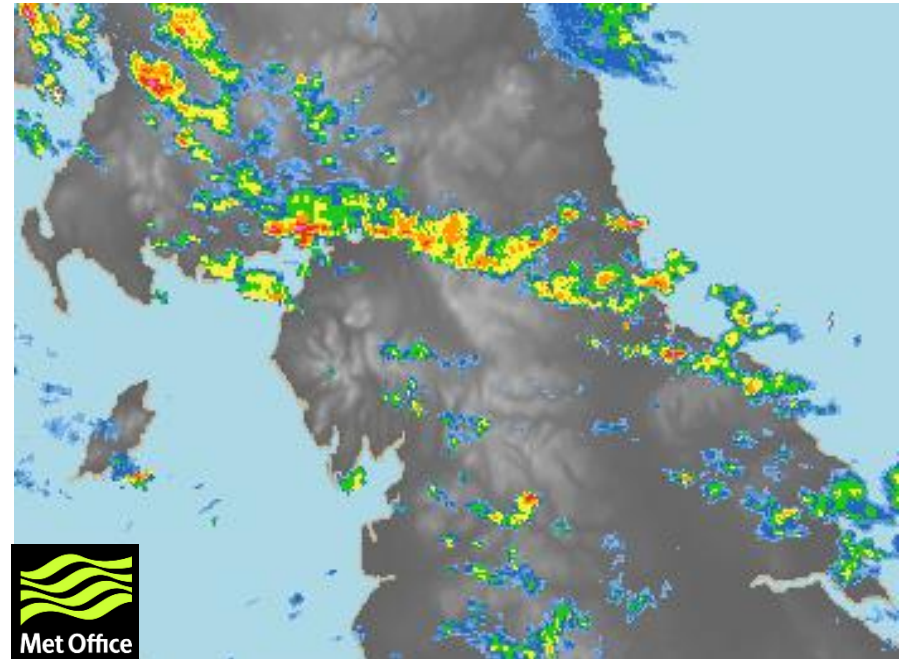
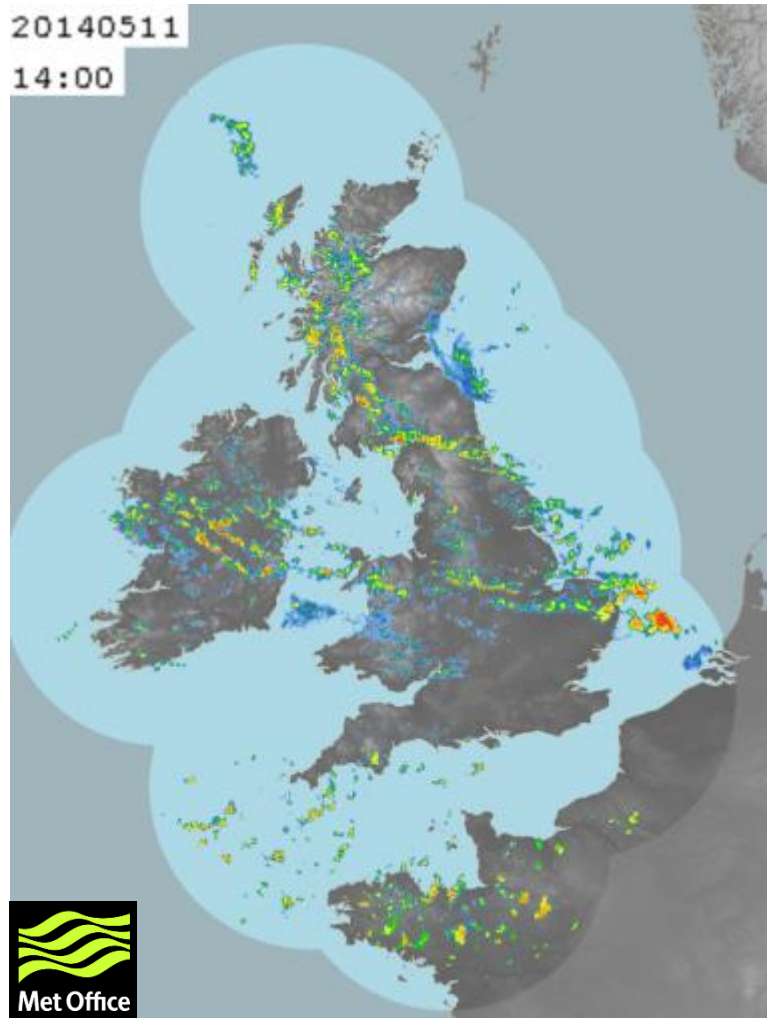


?

24hr rainfall totals



# SUNDAY 11<sup>TH</sup> MAY



0.1 – 0.25    0.25 – 0.5    0.5 – 1    1 – 2  
2 – 4    4 – 8    8 – 16    16 – 32  
32+ mm/hr

1500hrs BST

# SUNDAY 11<sup>TH</sup> MAY

"Showers then localised heavy rain 14:20 to 14:55 which included 2 or 3 minutes of small hailstones"

Newholme Avenue resident. 11/05/2014



1001hrs



Brampton

Approx 1400hrs



1451hrs



1515hrs



1543hrs



1643hrs



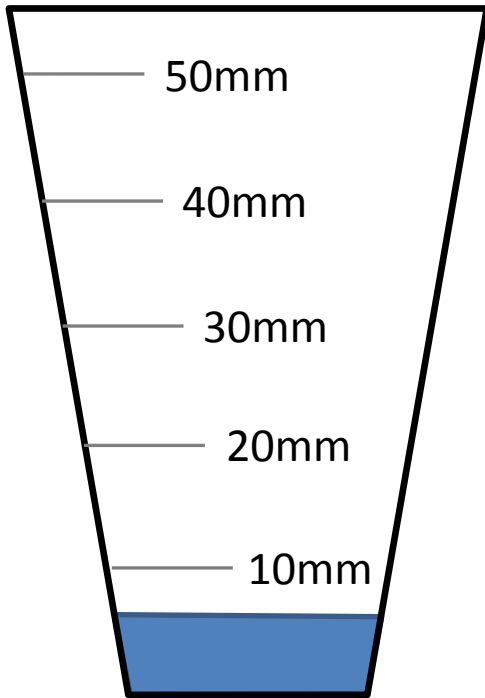
1923hrs

Video footage - 10<sup>th</sup> May 1526hrs Haltwhistle Burn at Townfoot



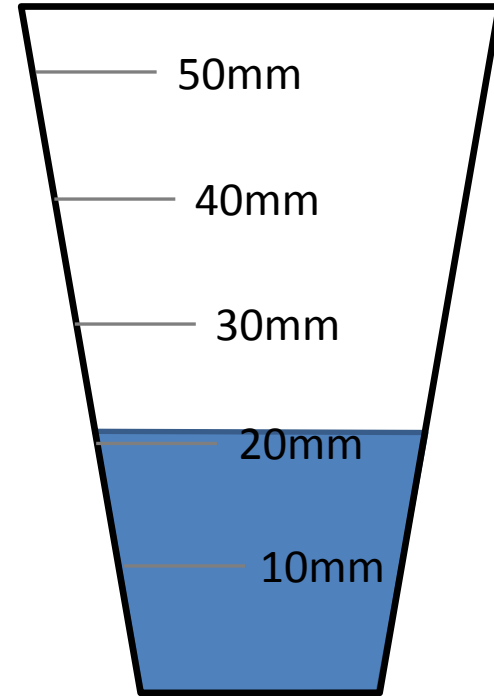
SUNDAY 11<sup>TH</sup> MAY

*Gibbs Hill*



Patchy ~13:00+

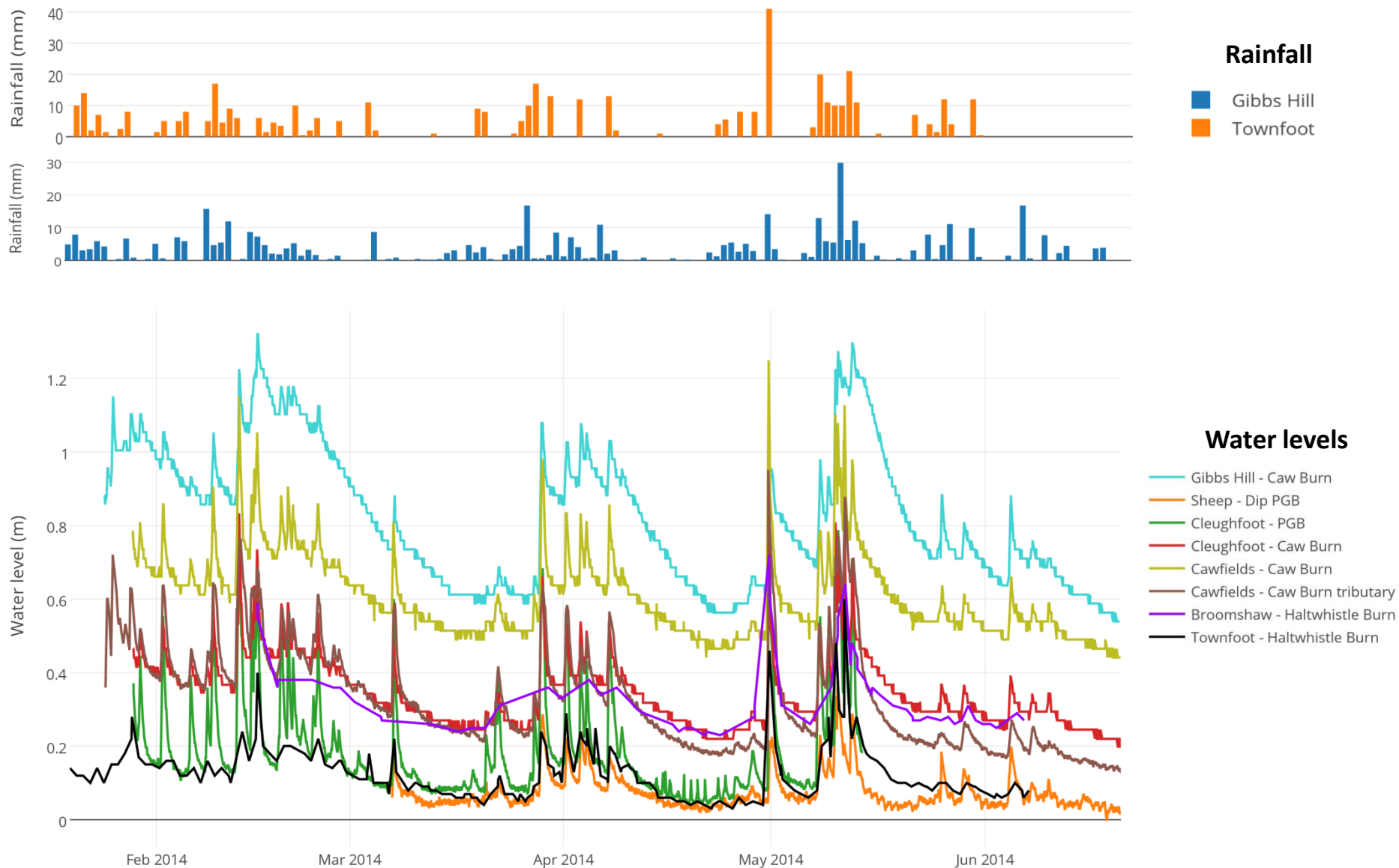
*Townfoot*



14:20 – 14:55

24hr rainfall totals

# WATER LEVELS & RAINFALL JAN-JUNE 2014





# NEXT STEPS

- Expand community monitoring
- Training cards
- Research days
- Use your data - modelling