

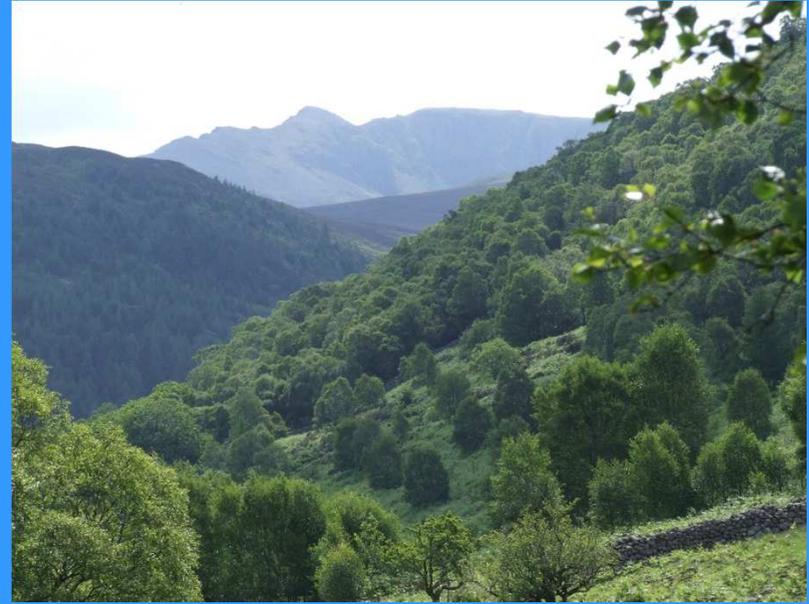
# Rewilding and Natural Flood Management

**Presentation to Kent Flood Risk Management Committee**

**Prof Alastair Driver**

**Director - England and Wales, Rewilding Britain**

# What is rewilding?



## Ennerdale, West Cumbria



# What is rewilding?



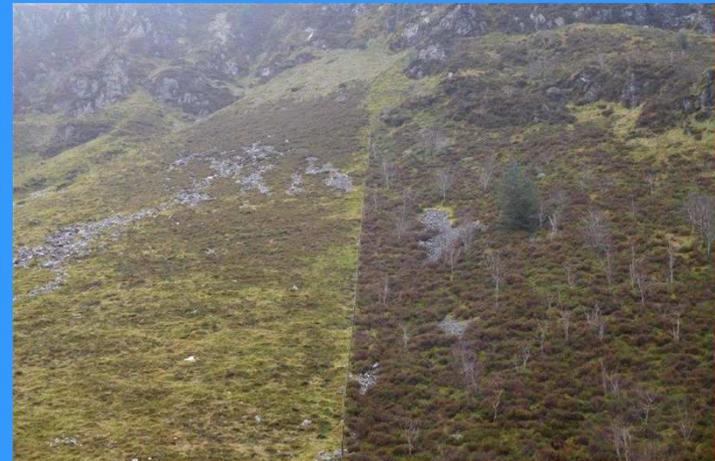
**Great Fen after 2 years**



**Sutcliffe Park FSA after 15 years**



**Welsh hillside after 20 years**



**Welsh mountainside after 30 years**

# NFM - upland restoration



**Bare and restored peat on Kinder Scout**



**Evidence from Moors for the Future:** Restoration by re-vegetation and gully blocking on Kinder Scout has reduced peak flows from the restored areas by up to 37% and increased storm flow lag times by up to 267%

August 2016: Newsletter Issue 9

Exmoor  
mires  
Partnership



"On the Bog" in a sea of cotton grass at Bogtastic, July 2016

## A SUMMER OF OUTREACH

### BOGTASTIC DAY 2016

On Tuesday the 26<sup>th</sup> of July Simonsbath became a hub of activity as 450 people visited Bogtastic Day! Held during National Park's week this event co-hosted by the Exmoor Mires Partnership and Exmoor National Park Authority aims to raise awareness and enjoyment of bogs, wildlife and heritage on Exmoor. The day was a huge success and feedback has been unanimously good! One family who had been previously even said they planned their holiday to Exmoor specifically to coincide with Bogtastic Day!

There were many different activities on the bog:

- The infamous Bogstacle Course and Bogtastic Challenge;
- Bog pool dipping with the Environment Agency where they found lots of young newt lava and an abundance of dragonfly nymphs, including one massive Common Hawker specimen;
- The archaeology tent where they were doing peat coring and pollen analysis, making clay coil pots in the style of bronze age beakers and pin your birthday to the tree ring;

Other activities included the bog plant treasure hunt, bog bouncing and having a go at practical conservation by building a peat block.



In the shelter of the meadow at Simonsbath there was a lovely fete atmosphere. The activities were equally diverse: bats, meadows, face painting, stream dipping and crafts. Catering was provided on site by Exford Community Youth Club who did a fantastic BBQ!

The event was sponsored by South West Water and we were kindly given a grant from the Exmoor Trust to go towards travel bursaries for community groups from Exeter and Barnstaple.



Many many thanks to the land manager for allowing Bogtastic to take place and being so helpful in the preparation. Thanks also to the minibus drivers and all the volunteers who gave up their time to ensure the success of the day. We couldn't do it without you all!

## Exmoor Mires community events

# NFM — pond creation

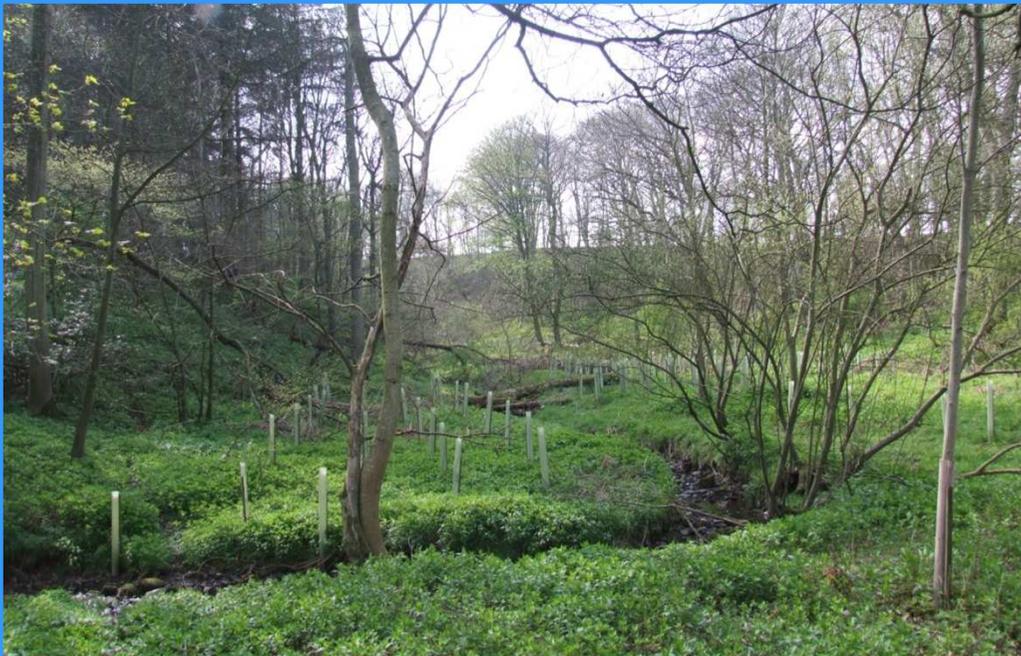


**Belford Burn, Northumberland**



**Evidence from Belford Burn:** a “leaky” pond holding 800 m<sup>3</sup> of water takes roughly 8-12 hrs to drain completely and delays the peak flow 1 km downstream by app. 15 mins

# NFM — tree planting



## Woodland planting on the Belford Burn

**Evidence from Pont Bren:** infiltration rates are up to 60x higher under young native woodland shelterbelts compared to adjacent heavily grazed pasture



## Woodland shelterbelt at Pont Bren

# NFM – woody debris



High flow woody debris dam,  
Slad Valley, Glos



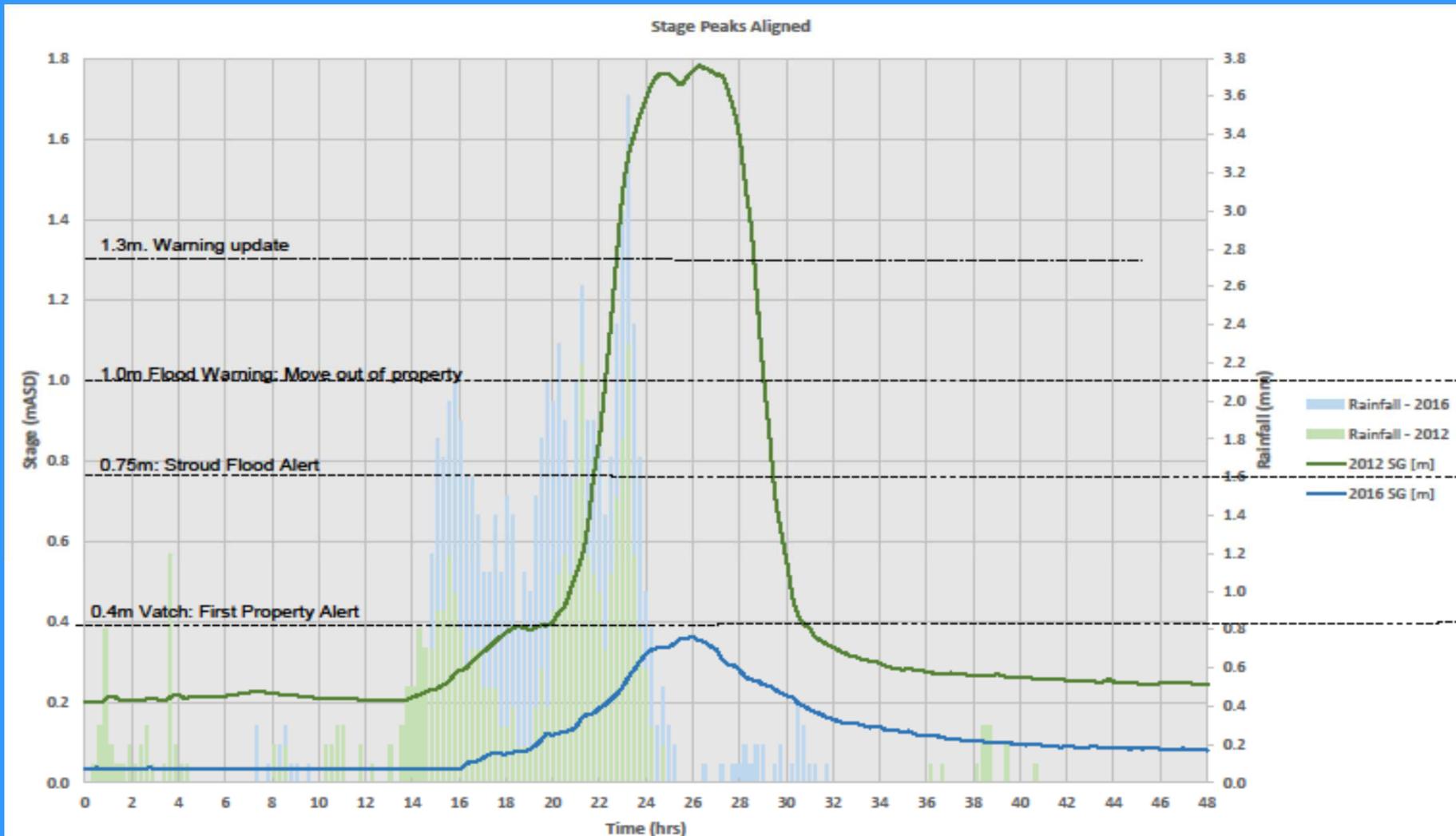
Leaving woody debris in situ at Holnicote



Hebden Bridge volunteers learning from Stroud

**Evidence from Belford Burn, Northumberland:** Installation of 6 large woody debris structures in a headstream near Belford, more than doubled the travel time for the peak of the flood 1 km downstream

# NFM – woody debris



**Evidence from Stroud Rural SuDS project:** Similar rainfall events in Nov 2012 (before NFM) and Mar 2016 (after NFM) had strongly contrasting impacts. Before NFM the flood peak was app. 1.8M at the Slad Rd flow gauge and after NFM it was 0.4M

# NFM – beavers



Beaver reintroduction on the R. Otter in Devon



Monitoring equipment at Boldventure



Beaver canal at Boldventure



Beaver pond at Boldventure

**Evidence from Boldventure beaver enclosure, Devon:** In 5 years, the beaver family have constructed 13 dams holding up to 1M litres of water in ponds on the site, reducing peak flows by 30% and increasing lag times by 1 hr app. 200 metres downstream

# NFM – river restoration



Hammer Stream, Kent



R.Adur, Knepp, Sussex



R.Cole, Oxon/Wilts



Whit Beck, Cumbria

**Evidence from a range of projects:** A 21% increase in channel length combined with a 142% increase in the frequency of large woody debris across a range of river restoration projects, resulted in a 21% reduction in flood peak magnitude on average