Slow the Flow Finchingfield

#EssexBeavers
spainshallestate.co.uk
/nfm_beavers
6.00pm - Welcome – (Archie Ruggles-Brise, Spains Hall Estate)

6.20pm - Natural Flood Management
(Jane Herbert, Essex and Suffolk Rivers Trust & Matt Butcher, Environment Agency)

6.40pm - Beavers, Wildlife and Catchment Approach (Darren Tansley – Essex Wildlife Trust)

7.00pm - Beavers on Film (Russell Savory)

7.20pm - Question and Answer session

8.00pm - Close
Project Aims

- Reduce Flood Risk
- Improve habitat for wildlife
- Improve local rivers
- Showcase low cost, sustainable solutions
- Compare man-made with beaver-made
- Reintroduce an extinct species
- Boost tourism

#EssexBeavers
What and where?

- Spains Hall Estate sits right at the headwaters of the Blackwater River Catchment
- Ideally suited to small-scale, low cost flood reduction approaches
- Water flows through major local towns
- Holding water on the Estate will allow other floodwaters to flow through, lowering the flood level
- Main impact is likely to be in Finchingfield
The inspiration

- Devon beaver enclosure and trial
- Cornwall Beaver project
- Rivers Trust and others work with Natural Flood Management
- A first for East Anglia!
The story so far...
Background information gathering
Background information gathering
Open access real-time data & timelapse images

www.telemetry-data.com/open?profile=SpainsHall
BioHack

- Bio hack day (May 2018)
- Gathered biological information
- Designed NFM features
- 30+ expert volunteers

https://atkinsgeospatial.maps.arcgis.com/apps/MapJournal/index.html?appid=1ca05311a8f0401c92b7b630af2c55fd#
Flood modelling

- Experts assessed flood risk
- Crops data
- Slope
- Flood maps
- Specialist hydrological models
Surveys
Spains Hall BioHack

Designing NFM measures

A number of suitable NFM designs were identified in the BioHack. Please click on each figure to enlarge it and click on legend to find out more.

*Leaky dams* are woody features that sit low in the channel to help slow the flood and store water within the channel. These features are appropriate for highly incised channels e.g. Reach 1

Example engineered log jam feature implemented on the River Boll (Source: Atkins)

Example woody diverter feature set above normal water levels (Source: Atkins)
Ecological monitoring in the Beaver Enclosure

Beavers were once a common sight in Britain. They transform the landscape by felling trees to create wetlands which can store flood water and have numerous other benefits (e.g. water quality treatment). During 2018, a family of beavers will be released into a four hectare enclosure in the area known as the Moors so that they may engineer the landscape to reduce flood peaks.

A team of volunteers spent the day collecting data on the current state of the beaver enclosure so that we may monitor how successful the beavers are at shaping the landscape.
The botanical survey conducted during the BioHack indicates that the woodland habitat currently found in the beaver enclosure is most likely W1 *Salix cinerea-Galium palustre* woodland, a community typically found on wet mineral soils, in hollows and on the margins of standing water or slow moving water.

Graph A shows the richness of botanical species recorded during survey. Richness is similar across both transects.

Graph B shows the mean environmental conditions of each quadrat based on the conditions preferred by each botanical species. The quadrat in the stream is lighter and less fertile than the terrestrial quadrats.

Graph C shows the presence of botanical species in each quadrat. The transects are quite similar in species composition and Dog's Mercury and Nettle were the most widespread and abundant species. After beaver introduction we expect greater species richness and an increase in species indicating light and moisture as trees are felled.
Graph shows the abundance of bird species recorded during the BioHack in each quadrat. Abundance and range of bird species is low.
What and Where

- Timber leaky dams
- Beavers in fenced enclosure
- Instruments to record water quality
Timber Leaky Dams

Cross Section of Leaky Dams/Natural Flow Obstacles

Overflow onto adjacent floodplain (arable fields, grassland or woodland depending on location)

Legs to be used for leaky dams.
Flow is still able to flow underneath 30 cm gap under legs.
Legs dug into the bank to form stable barrier.
Beaver enclosure - inspiration

Beaver Lodge
The money

Estimated £89,000 over 3 years
- £45,000 cash
- £49,000 in kind

Regional Flood and Coastal Committee (via Essex and Suffolk Rivers Trust)
- £35,000 (split over 2 years)

Norfolk Rivers Trust (WWF-UK & Coca-cola)
- £5,000

Spains Hall Estate
- £5,000

In Kind contributions
- Essex and Suffolk Rivers Trust
- Essex Wildlife Trust
- Environment Agency
- Copper Productions
- Russell Savory
- Sam Butcher
- Atkins UK
- Meteor Ltd
- Van Walt
- Spains Hall Estate
Beavers returning to Essex for first time in 400 years

#EssexBeavers
Press coverage

#EssexBeavers
Over to the experts!

Natural Flood Management
Jane Herbert, Essex and Suffolk Rivers Trust
Matt Butcher, Environment Agency

Beavers, Wildlife and Catchment Approach
Darren Tansley – Essex Wildlife Trust

Beavers on Film
Russell Savory
Cornwall Wildlife Trust
Living with Beavers film

http://www.cornwallwildlife.org.uk/beaverproject
Enclosed Beaver Project

www.devonwildlifetrust.org/what-we-do/our-projects/enclosed-beaver-project