Forestry Commission England

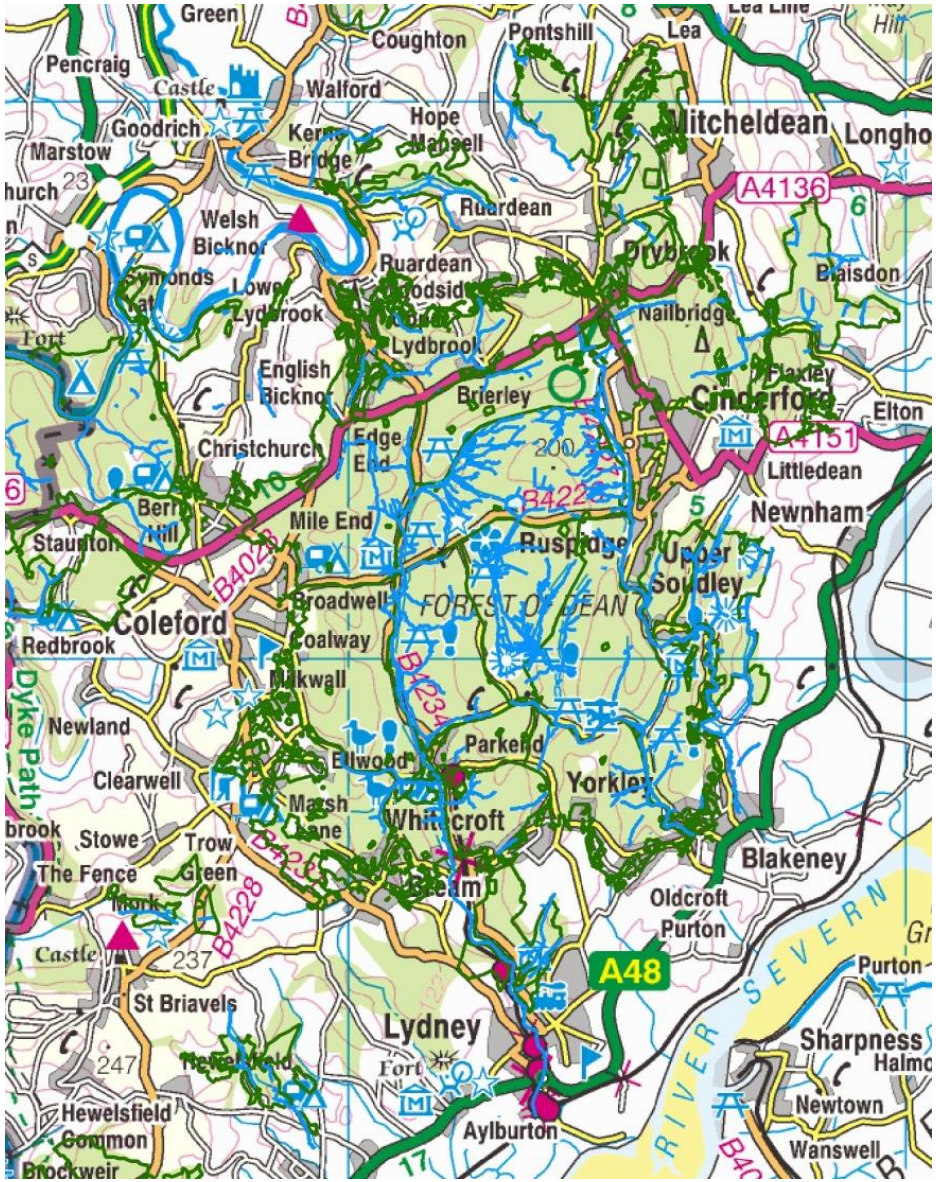
Beavers in the Greathough Brook, Forest of Dean, Gloucestershire

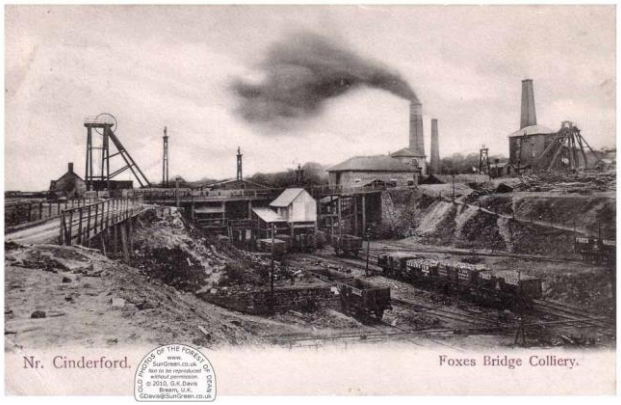
A nature based solution?

Rebecca Wilson
Forestry Commission England

October 16th 2018

Forest of Dean, Gloucestershire





Legacy

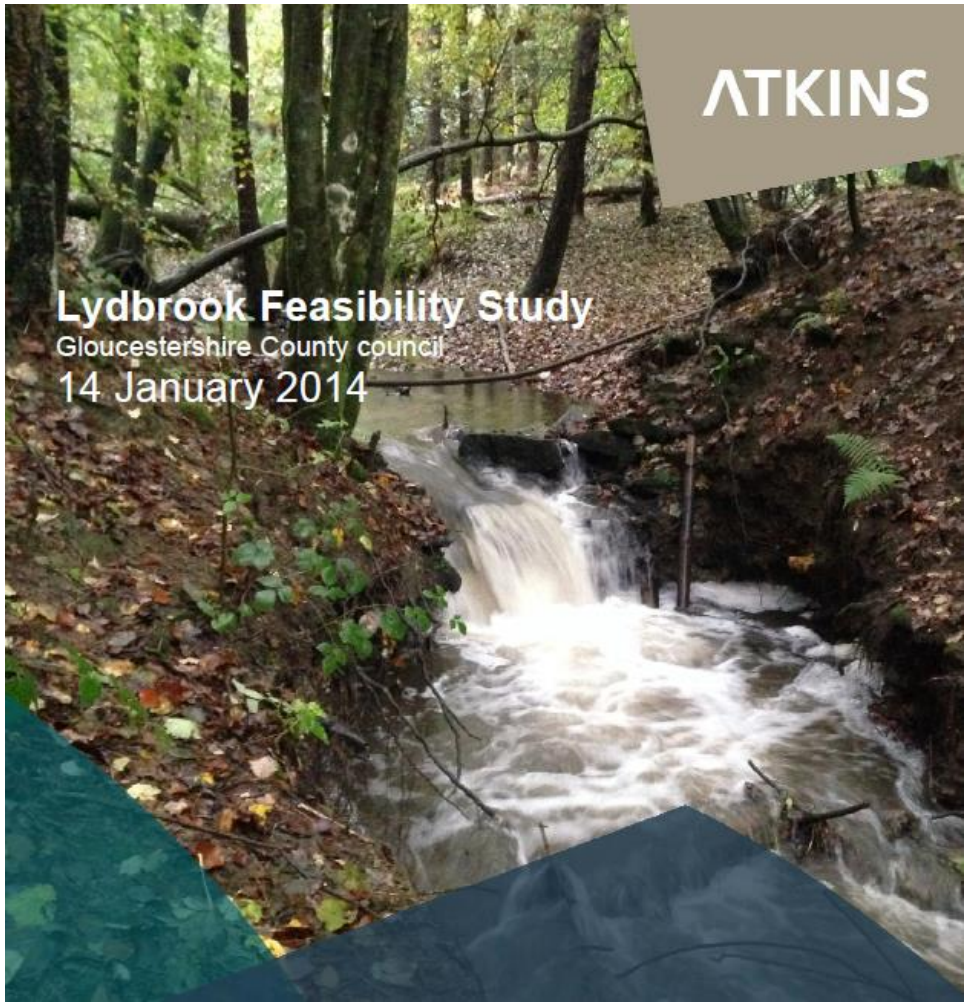
Lydbrook Floods – Nov 2012

Flooding currently occurs once every 10 years….

Greathough Brook has been identified as a key source of flooding

Lydbrook Feasibility Study 2014

Feasibility study to evaluate the opportunity to reduce flow entering the culvert system by holding water upstream

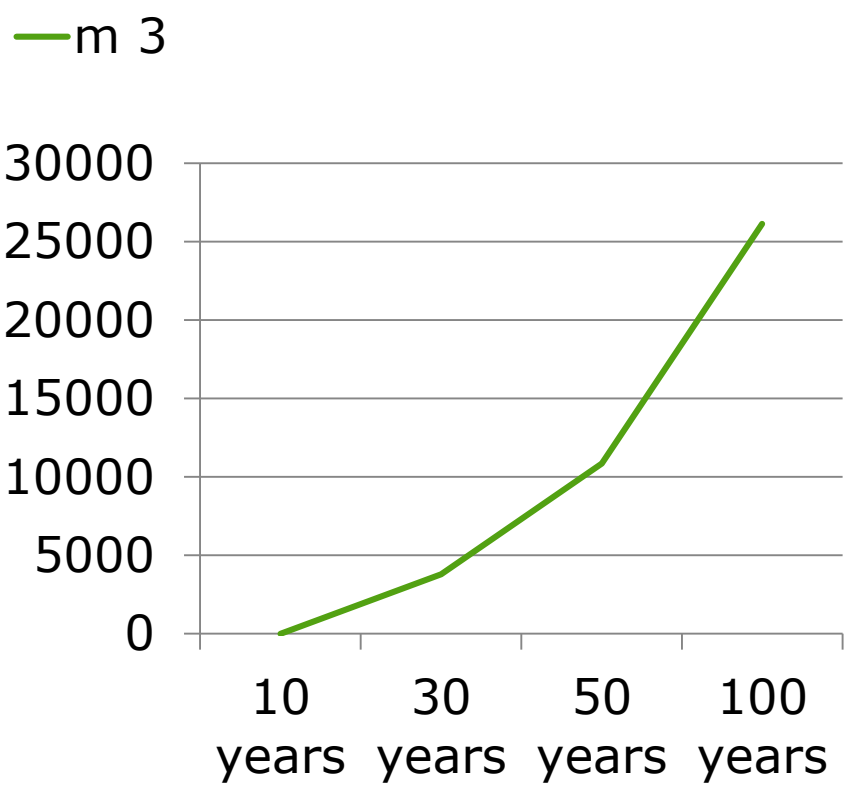


Lydbrook Culverts

- Culverts are often narrower than the watercourse and in a poor state of repair
- They are often blocked with debris and difficult to monitor
- 1 in 30, 1 in 50 and 1 in 100 year events all generate flows greater than 3.8m^3/s capacity

Engineering- Upstream Flood Storage

- Hard engineering
- 1 in 100 year flood attenuation not economically feasible



Woody debris dams - Upstream flood storage

Eurasian Beaver – nature based solution?

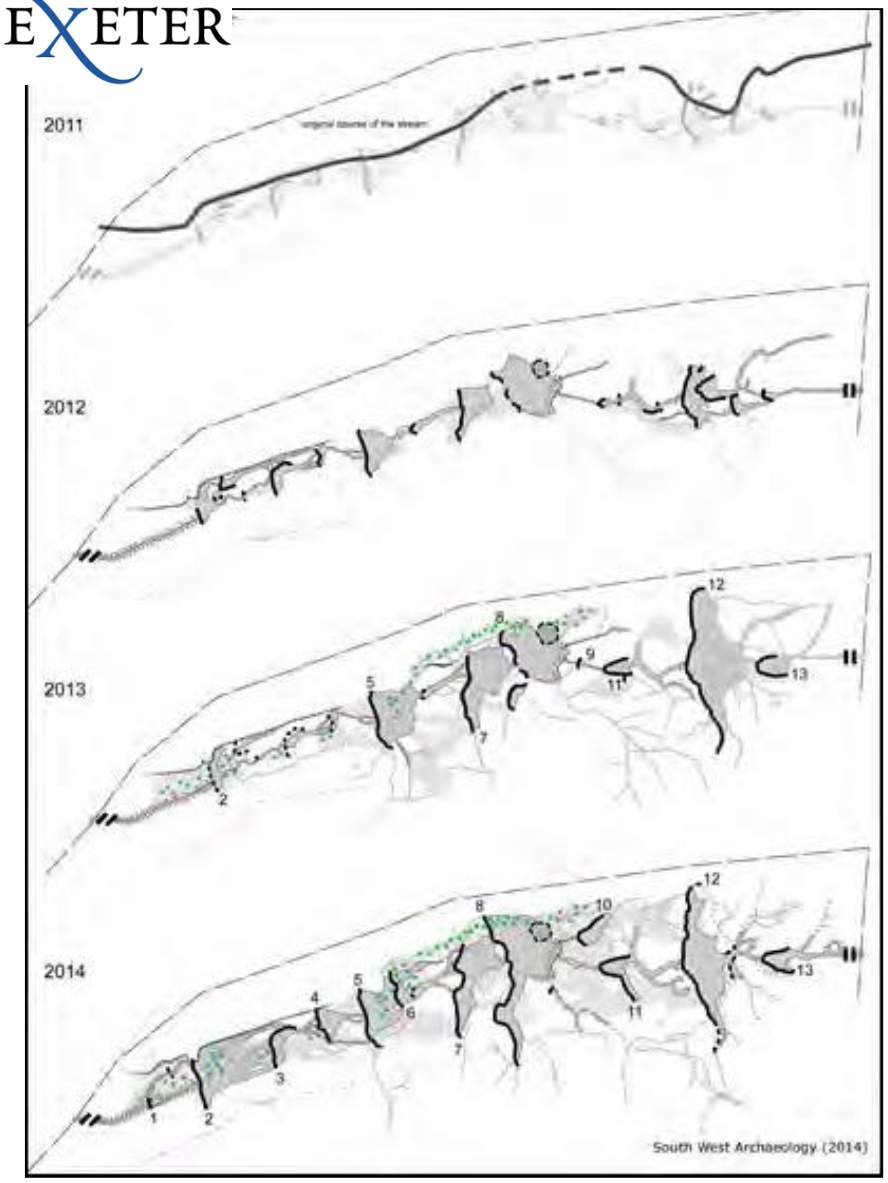
Beaver Ecology

- Order Rodentia
- Vegetarian
- Pair for life
- 2-4 kits per year
- Large family groups
- Highly territorial
- Habitat engineers

Photo: Chris Robbins

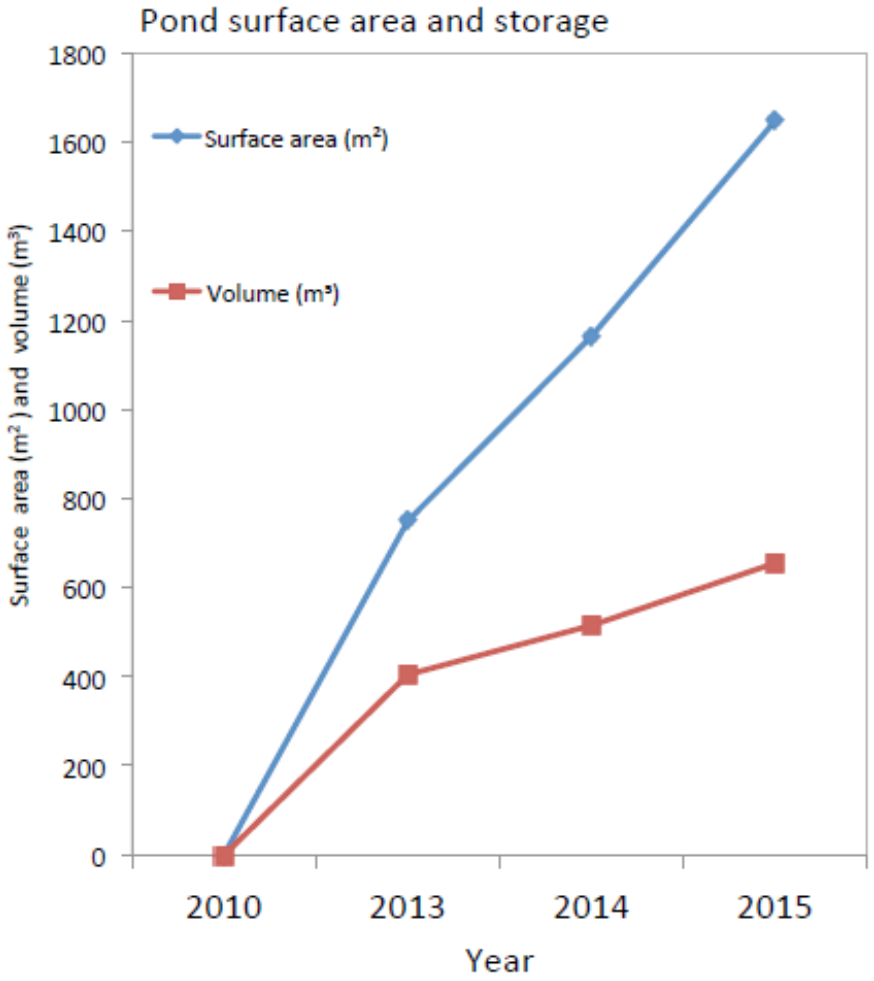
Keystone Species

Water Storage



- Between 2011 and 2015, 14 major dam systems were created
- Site changed from a narrow stream to a complex braided wetland

Water Storage



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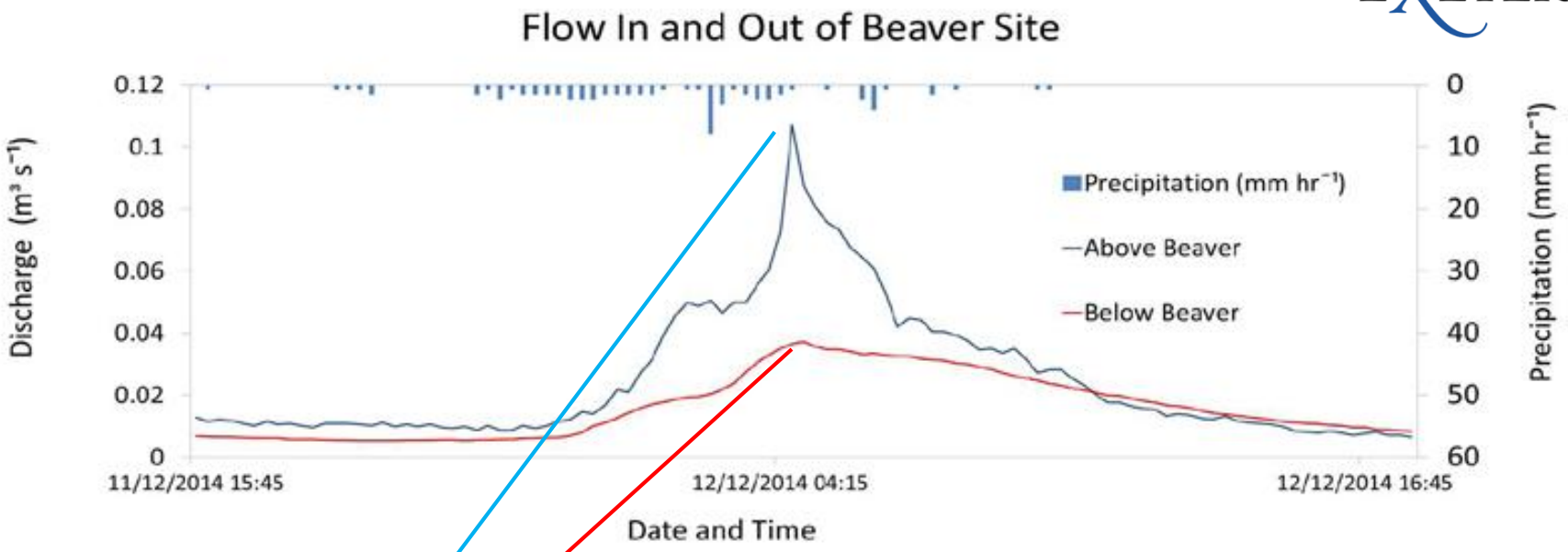
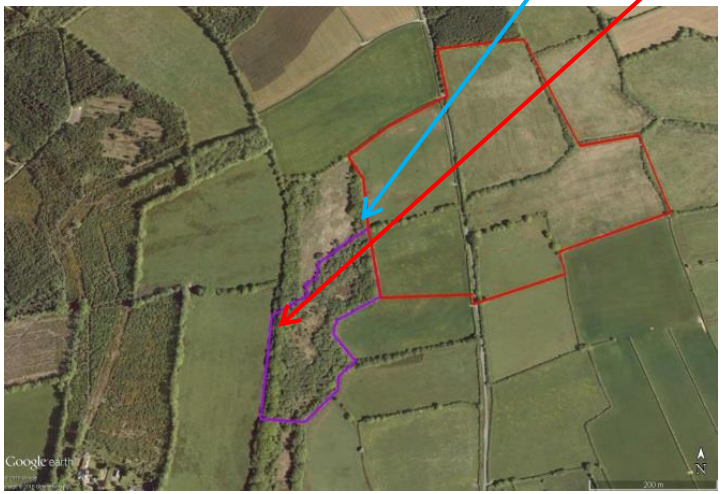
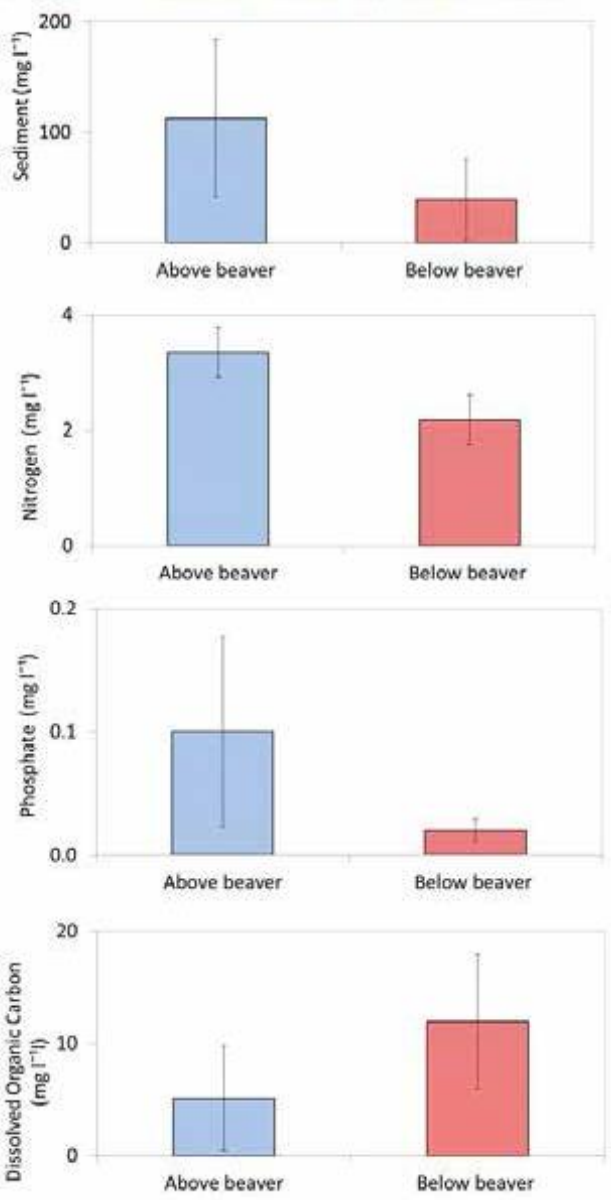
Flow Attenuation





- Dams hold water, push water sideways and release water slowly during storms
- During low flows they release water slowly

Water Quality



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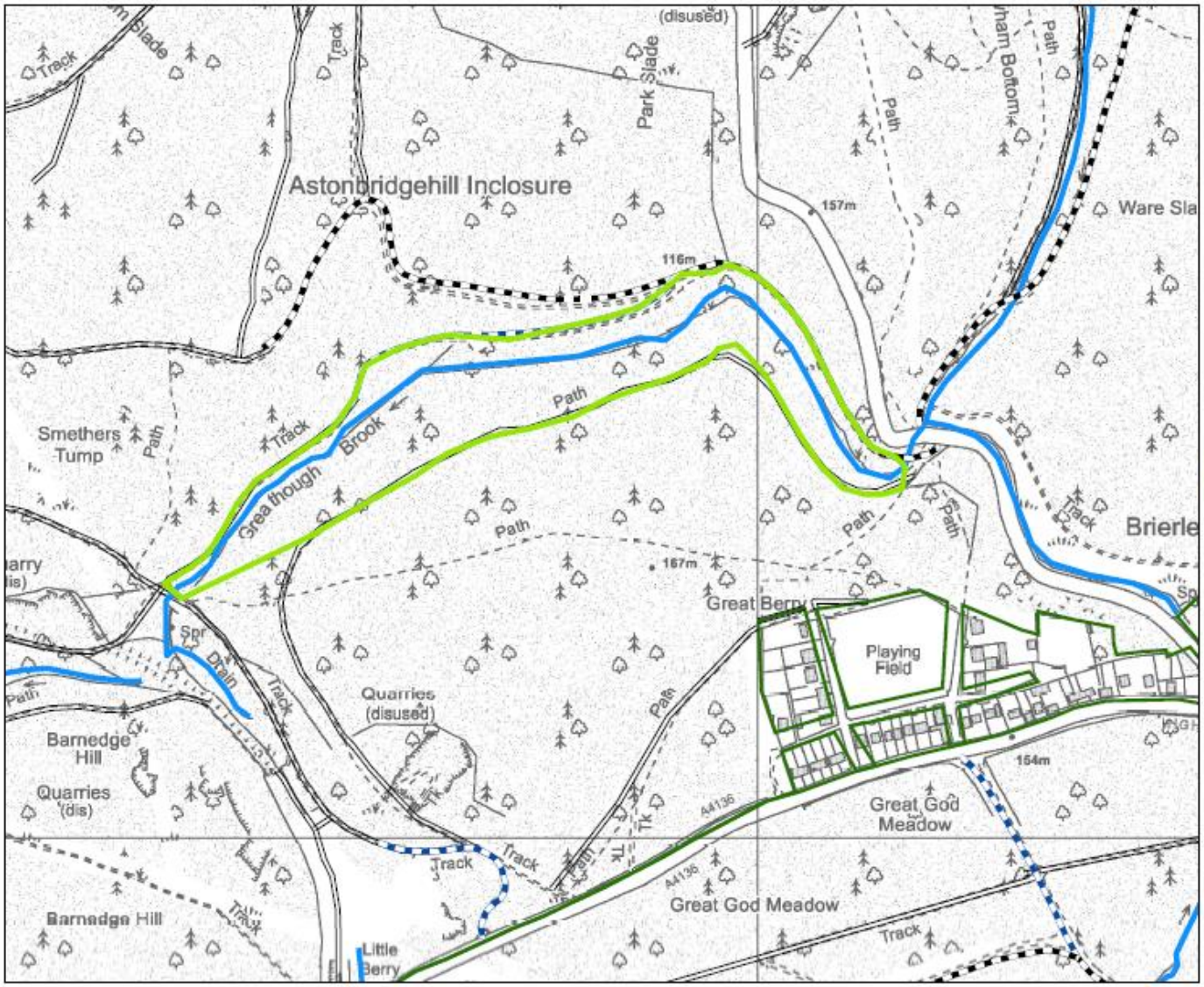
Greathough Beaver Trial



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Beaver Enclosure
Length: 1900 metres

Legend

- Beaver Enclosure
- Water Courses

Scale: 1:5,000

Date of map: 12/12/16

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Baseline Monitoring

Beaver Proof Culverts

Beaver Proof fencing

Beaver Introduction – July 2018

- Pair of Bavarian beavers
- Licences

Monitoring the Beavers

Dams


2018/09/05
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Thanks to

Forestry Commission
England