

The Addingham 4Becks Project

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Addingham Environment Group and
University College London

WTT Annual Meeting, Gargrave, 19th May 2018

Addingham Environment Group

- The Addingham Environment Group was set up in 2016 under the auspices of The **Addingham Civic Society**.
- It aims to raise awareness about **global** environmental concerns and to take practical measures **locally** within the village to address them
- Village projects on, for example:

- Wildflowers
- Trees and hedges
- Hedgehogs
- Birds and butterflies
- **Becks**



Visit from the Wild Trout Trust

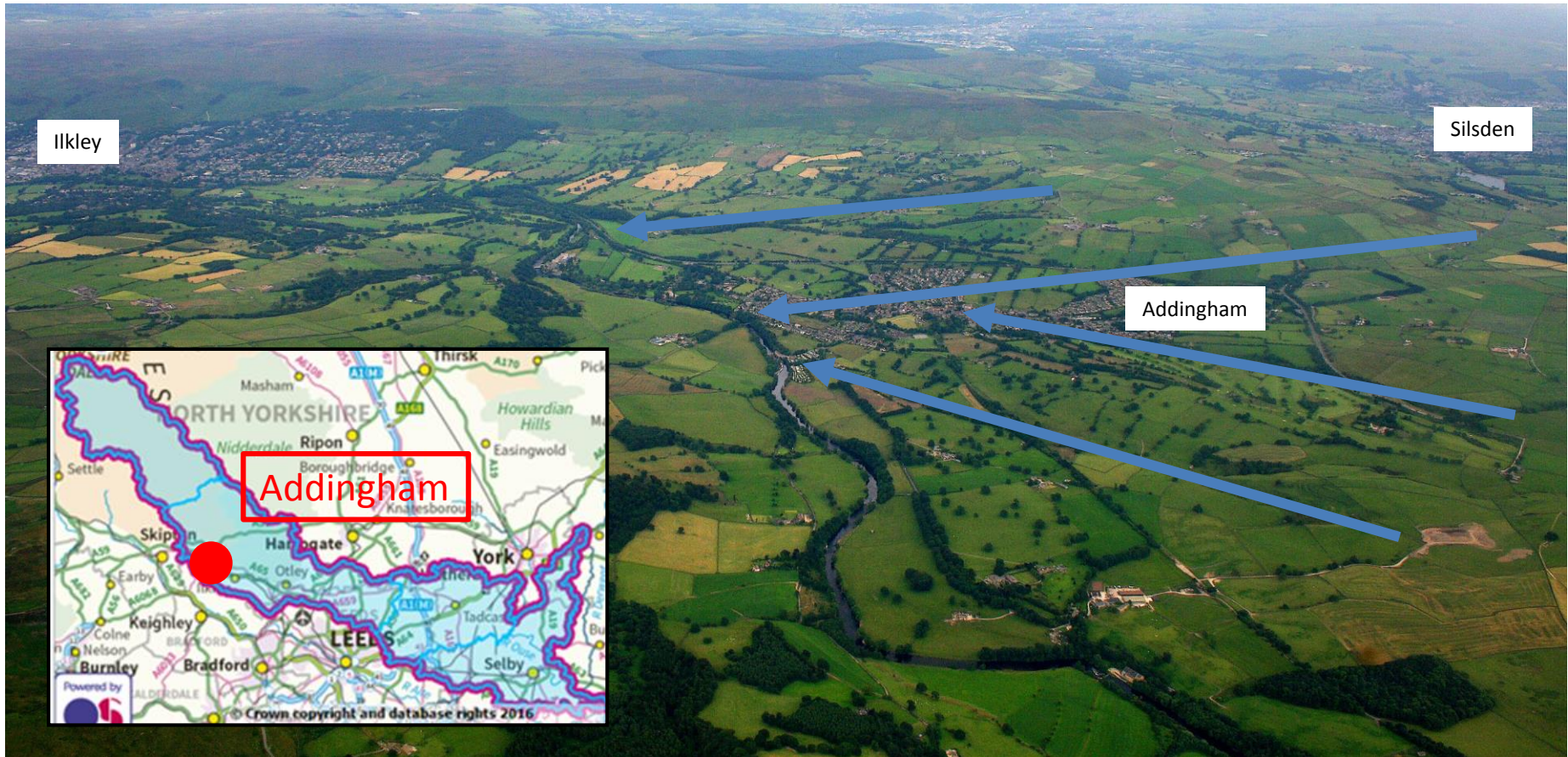


13th December 2016: Jon Grey (WTT), *Advisory Visit and Report Town Beck and Back Beck*
19th January 2017: Charlotte Simons (YDRT), *Wharfe Catchment Management Workshop, Otley*

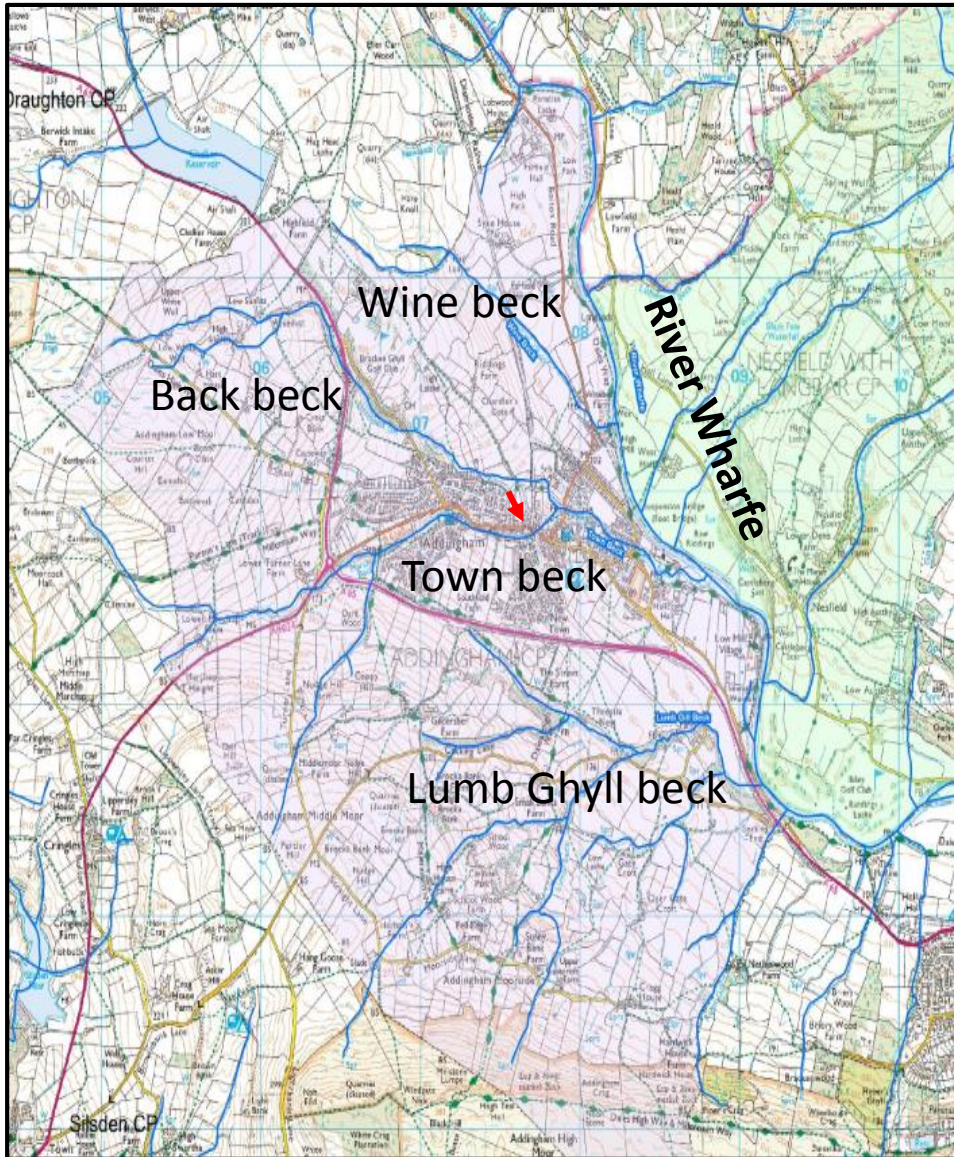
The Addingham 4Becks Project

(Town Beck, Back Beck, Wine Beck and Lumb Ghyll Beck)

Central aim **to raise awareness** about the beauty and value of the becks for people and wildlife by engaging with the whole village community



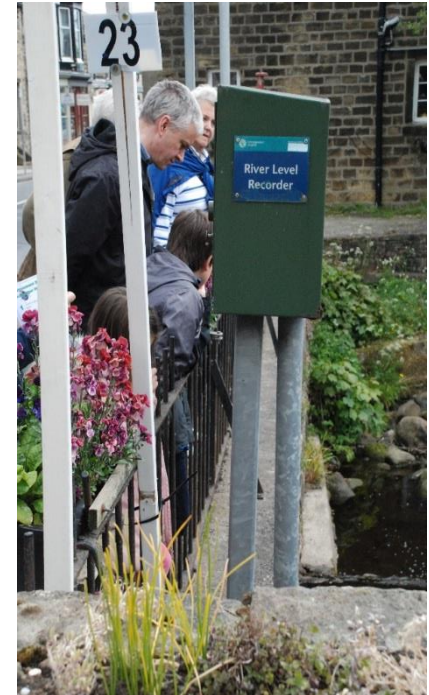
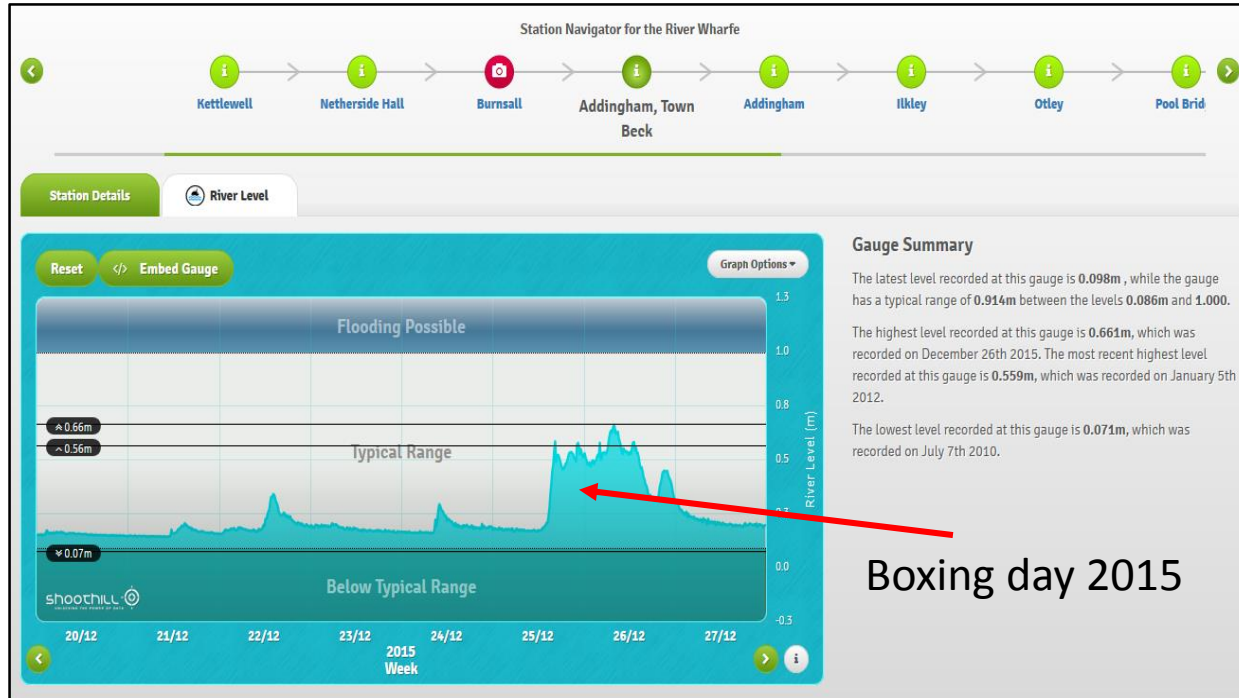
The 4Becks Project



- Steering Committee of residents and agency representatives
- **Meets monthly** in the Methodist Church
- Developing a **strategic plan** concerned with:
 - Reducing flood risk
 - Improving water quality
 - Restoring wildlife habitats
 - Enhancing biodiversity
- Local residents as **beck stewards** to monitor pollution, check flood risks, record wildlife etc.



Understanding Flood Risk: River Level Recording



Understanding Flood Risk: Boxing Day 2015

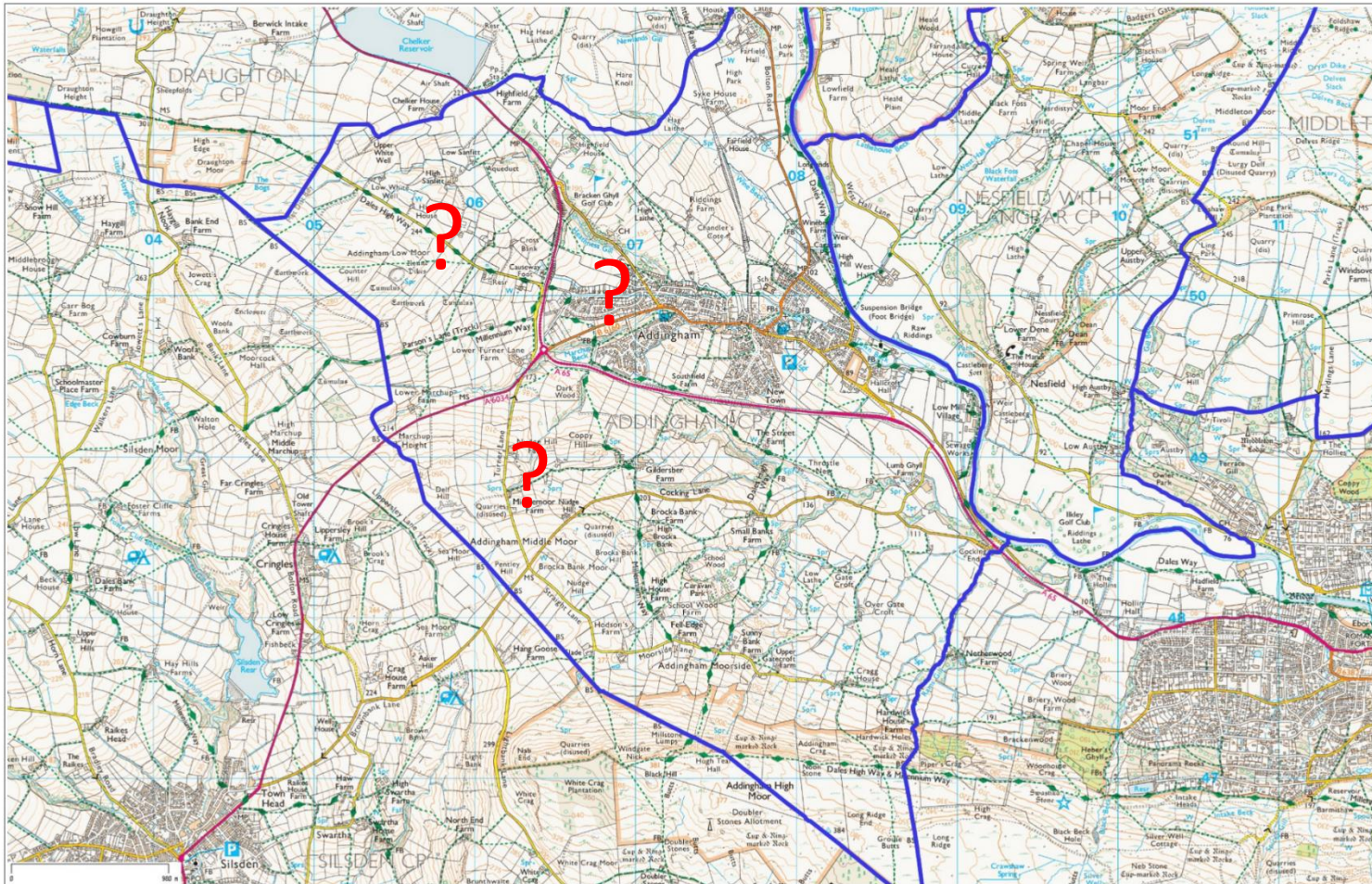


- conversations with residents on experiences and future plans
- inspecting and cleaning culverts
- understanding causes of flooding
- opportunities for retrofitting Sustainable Urban Drainage Systems (SUDS)
- opportunities for Natural Flood Management (NFM)

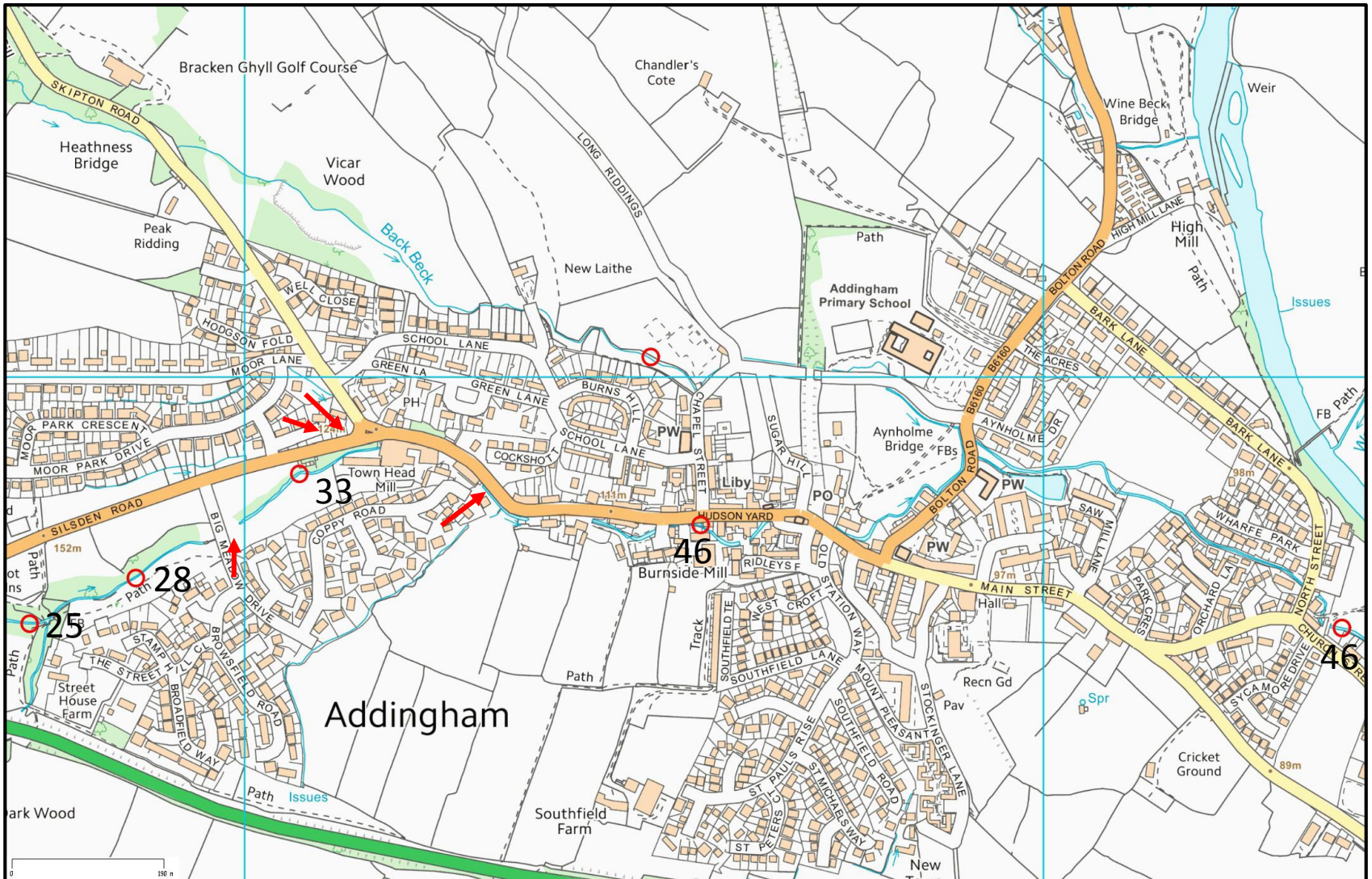


Improving water quality

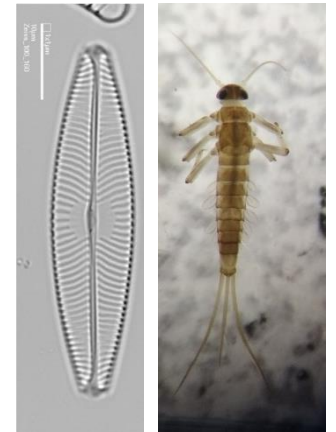
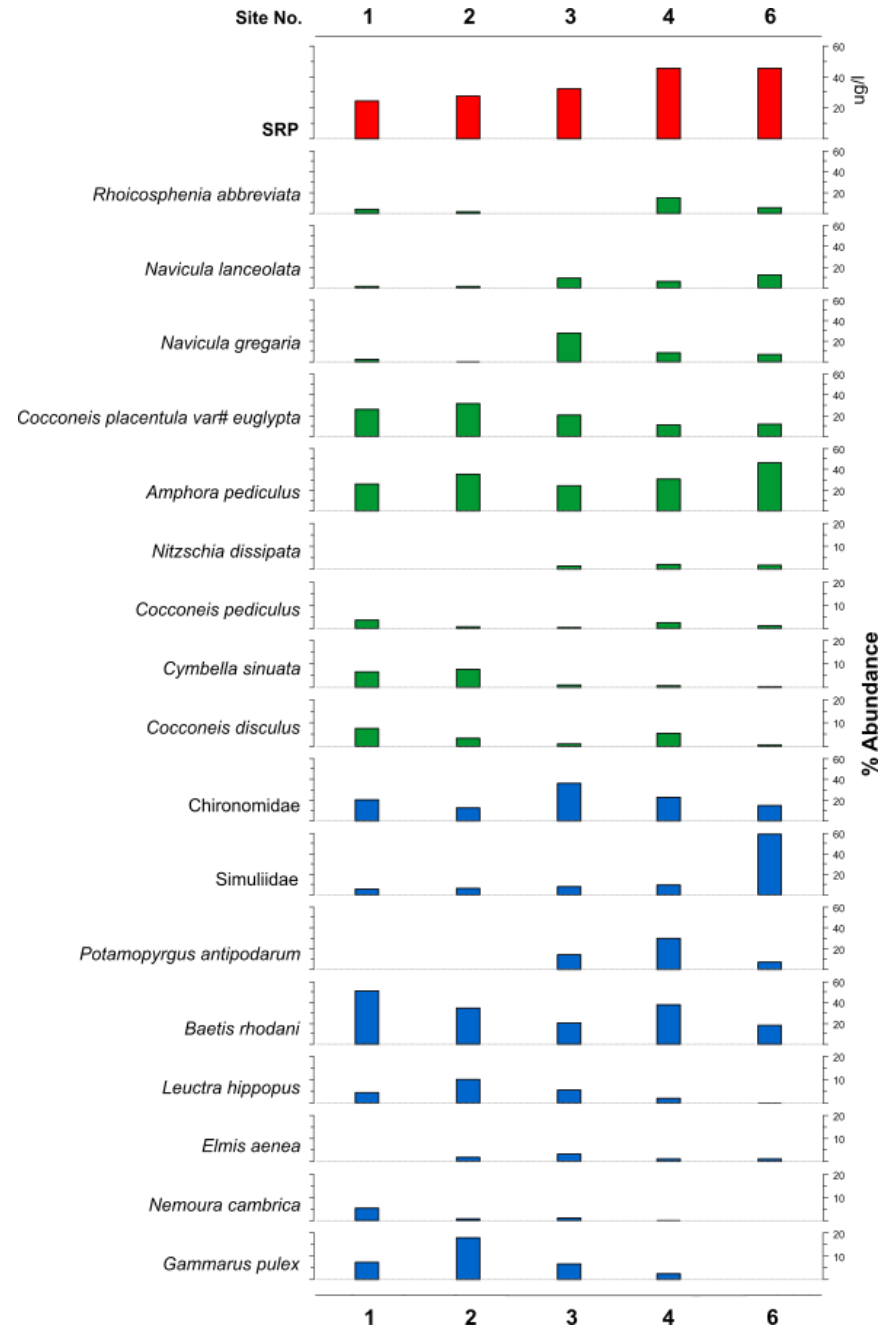
The ecological status of Town Beck is only “moderate”, almost certainly as a result of **diffuse nutrient pollution**, but we do not yet know how to apportion the sources between **agricultural land** and surfaces from within the **built-up area**



Soluble reactive phosphorus (SRP) ($\mu\text{g/l}$): Tuesday 19th December 2017



Water quality in Town Beck



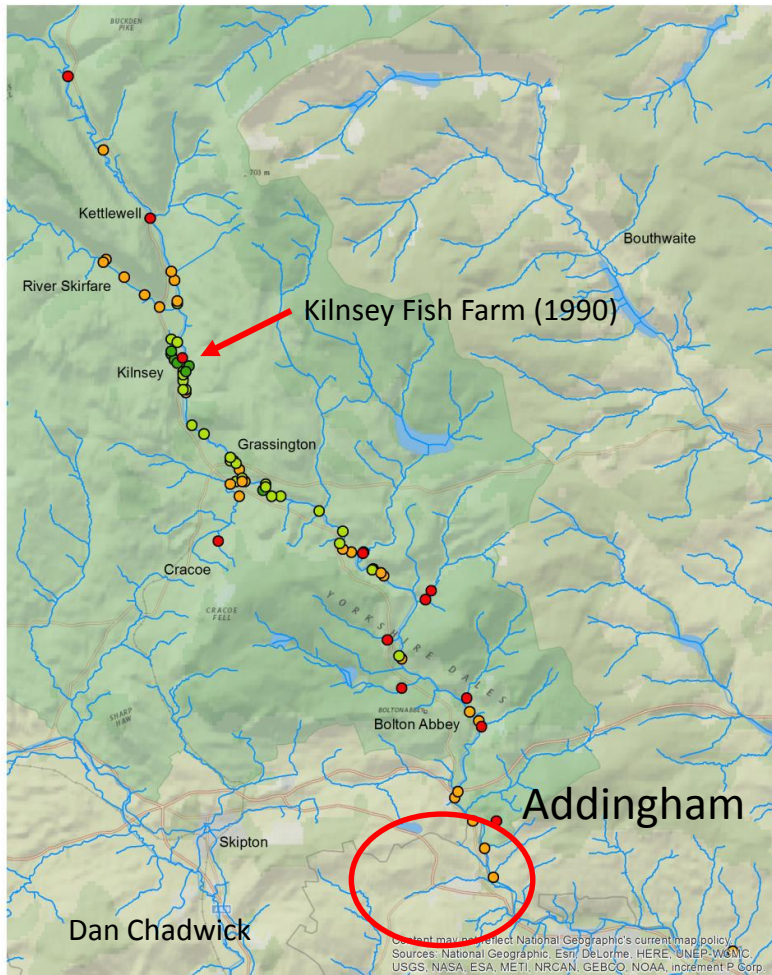
Protecting and restoring wildlife populations



Eliminating Himalayan balsam



Monitoring invasive crayfish populations



- Native white-clawed crayfish were abundant in Town Beck in the 1980s and 1990s
- They declined in the 1990s prior to the arrival of the signal crayfish
- The first signals were observed in 2007 and are now very abundant
- Now need to monitor their progress upstream and in other becks (eDNA?)



Signal Crayfish Presence

- 1990 - 1996
- 1997 - 2002
- 2003 - 2008
- 2009 - 2014

Improving riparian habitat



Improving fish passage



Understanding brown trout populations

From 1987 to 1996 the population showed a slight increase with crayfish moving into other areas of the beck. Also at this time at least 100 brown trout moved from the river wharfe into the beck each November to spawn. A resident pod of trout were always in attendance. When spawning had finished most of the river trout returned but a few always remained. Both types had different upper body colour and very different markings. Additionally we witnessed an annual run of lampreys and some common eels. There was also a resident population of stone loaches and minnows. At times the minnows were so prolific that a family of Kingfisher nested in the wall at the corner of the orchard.

From the mid 1990's the beck changed dramatically. Large amounts of rainwater were added to the natural water of the beck resulting in some huge floods which caused continuing devastation to the bed of the beck. Additionally, people built dams, altered the flow of water; made provision for the spawning fish impossible. This, together with changes in fish management of the main river changed things dramatically. I could say a lot about this but not here.



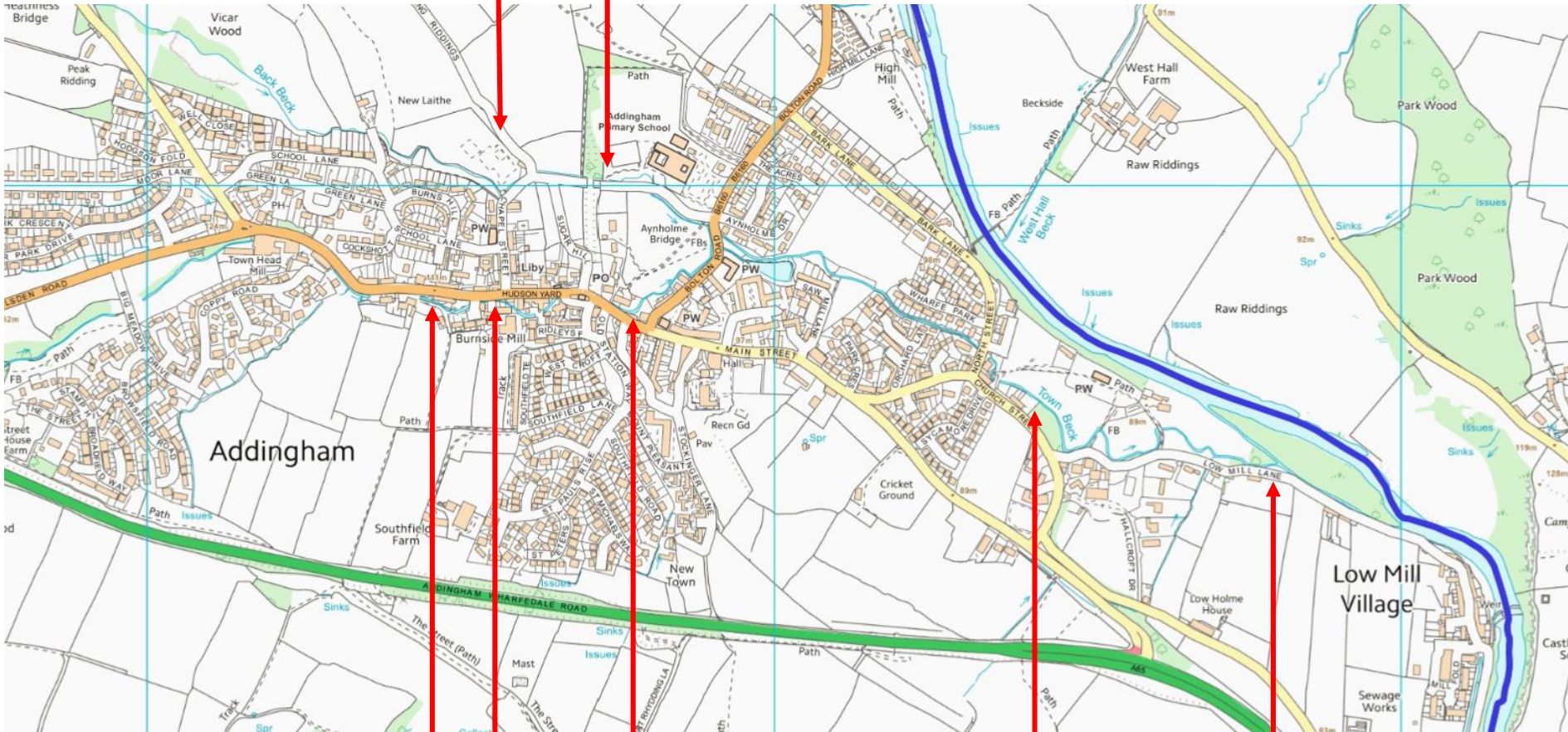
Derek Law

Until 1996 "...at least 100 brown trout moved from the River Wharfe into the beck Each November to spawn..."

4 cm trout, May 2018

Trout distribution

Trout pool, resident population?



Regular sightings in the past

Confluence

Highest sighting, May 2018

Derek Law, Church Field

Why are there so few trout now (post 1996)?

- Water quality – enriched but good (?) oxygen conditions
- Food availability – good especially downstream of North St
- Habitat for spawning – deteriorated but not out of the question?
- Habitat loss – higher flows and channel deepening following increased surface water runoff from housing estates?
- Barriers – some new ones, but older weirs and culverts more tricky?
- Main river – connection probably poorer but not bad
- Stocking policy in the main river - ???
- Predation – herons, otters.....?

The decline in trout numbers coincided with the decline in eels, lampreys and white-clawed crayfish, suggesting the explanation is related more to habitat problems rather than brown trout specific issues such as stocking policy

Discuss!

With thanks to everyone in the 4Becks Project, especially **Jon Grey** for his initial advisory visit and continuing support, **Dan Turner** for his report on riparian management at the caravan site, **Charlotte Simons** for co-ordinating the 4Becks project, **Ian Maxwell** for his help on our Environment Day (2017) and **Steve Cheetham** for his riverfly sampling in Church Field and work with our young people

And a special thankyou to our 20 or so beck stewards

Engaging with the next generation

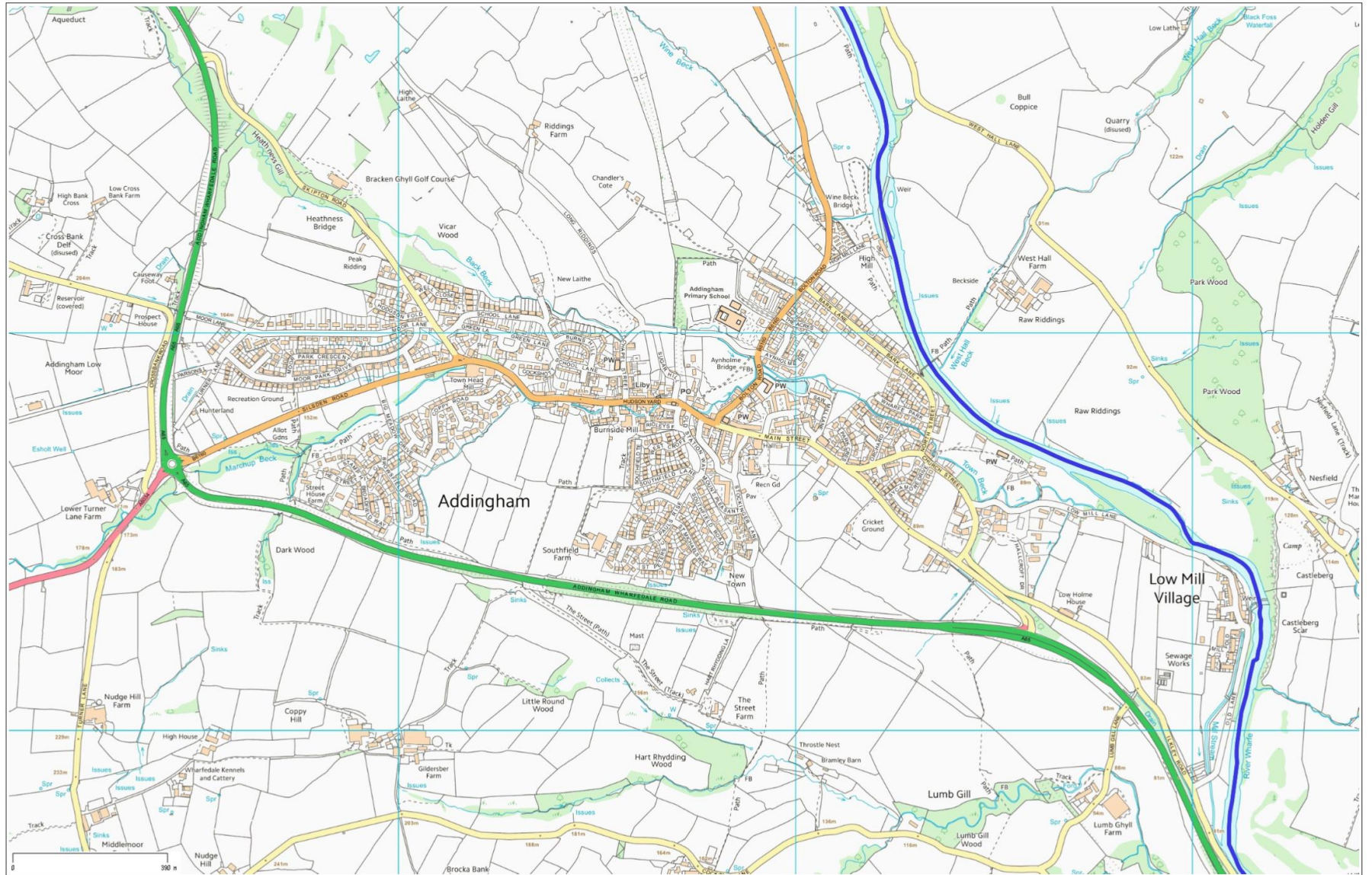


With thanks to everyone in the 4Becks Project, especially Jon Grey for his initial advisory visit and Charlotte Simons for putting the team together and driving the project forwards



Conclusions

- There are so many quite disparate organisations with differing responsibilities for flood risk, water quality, and wildlife, it's essential to bring these together under an umbrella such as the DVRN to create a coherent approach to catchment management at the local and regional scale
- The 4Becks project is very small in the big scheme of things but it provides a very good practical example of that approach
- It also highlights the importance of fully involving local communities who have a surprisingly strong interest in our waterways and are eager to learn about them as well as to help protect and restore them
- However in our 4Becks project it may be easier to implement change and good practice within the village population than in the surrounding countryside where farmers and landowners may require significant financial inducement to embrace fully environment-friendly practices





The project is co-ordinated by the Yorkshire Dales Rivers Trust, with a steering committee that includes representatives of Bradford Council, the Environment Agency, Yorkshire Water, the Wild Trout Trust alongside members of our local village community from the Addingham Anglers Association, the Parish Council and the Civic Society's Environment Group.

Central to the project are our volunteer Beck Stewards. Working in pairs our stewards will keep an eye on their own reaches and meet up with becksides residents to hear their stories about flooding experiences, wildlife sightings or any other observations they may have.

If you would like to know more or would like to take part in the project please contact:

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YDRT, BDMC, EA, WTT, YW, AAA, PC, ACS, AEG, 4Becks

4 Addingham Becks



Four Local Becks, rising on the moors above the village of Addingham





Our four local becks, rising on the moors above the village, help to define Addingham. Town Beck (that starts as Marchup Ghyll) and Back Beck (that starts as Heathness Ghyll) both flow through the village whereas Wine Beck and Lumb Ghyll Beck have almost entirely rural catchments. All flow into the River Wharfe.



Today we enjoy the becks simply for their presence and for the wildlife they contain. In the past Town Beck in particular was valued for the energy it provided to drive water wheels, allowing Addingham to become a successful, and indeed famous, centre for textile manufacture.



Now that function has gone and, despite their beauty, the becks have become neglected. Town Beck is very heavily modified by human activity and, along with all our other becks, suffers from pollution. We have lost our population of native white-clawed crayfish in the face of invasion from the non-native signal crayfish, and brown trout are now quite rare. Moreover, we worry about climate change and the prospect that the becks running through the village are increasingly unable to deal with severe storms without causing flood damage to properties.



White-clawed crayfish



Brown Trout

The 4 Becks Project aims to address these issues by:

ONE

Raising awareness about the value of Addingham's becks

TWO

Developing a plan to control flooding by slowing the flow of water upstream

THREE

Enhancing biodiversity by improving habitat for fish, birds and mammals

FOUR

Reducing nutrient pollution by improving land management



4 Addingham Becks

Timeline

Thursday 19th January 2017: Wharfe Catchment Management Workshop, Otley

Agreed that a study of a Mid-Wharfedale catchment centered on Addingham would usefully complement work upstream on the Upper Wharfedale SSSI and downstream on Collingham Beck

Wednesday 25th January 2017: Addingham Parish Council Meeting

Minuted support for an Addingham Becks project

Monday 3rd April 2017: Addingham Becks Planning Meeting with Charlotte Simons Dan Turner, Jon Grey, Rick Battarbee, Janet Hindle and Peter Miller

Established draft objectives and composition of the partnership

Tuesday 27th June 2017: First 4Becks Steering Committee Meeting

Up and running!

Composition of the 4Becks Steering Committee

Agencies

- Charlotte Simons (Chair) – Yorkshire Dales Rivers Trust and DVRN
- Kirsty Breaks – Bradford Metropolitan District Council
- Nicola Hoggart – Environment Agency
- (Kathy Stevenson – Environment Agency)
- (Keith Davie – Environment Agency)
- Andrew Walker – Yorkshire Water
- Jon Grey – Wild Trout Trust

Local Community

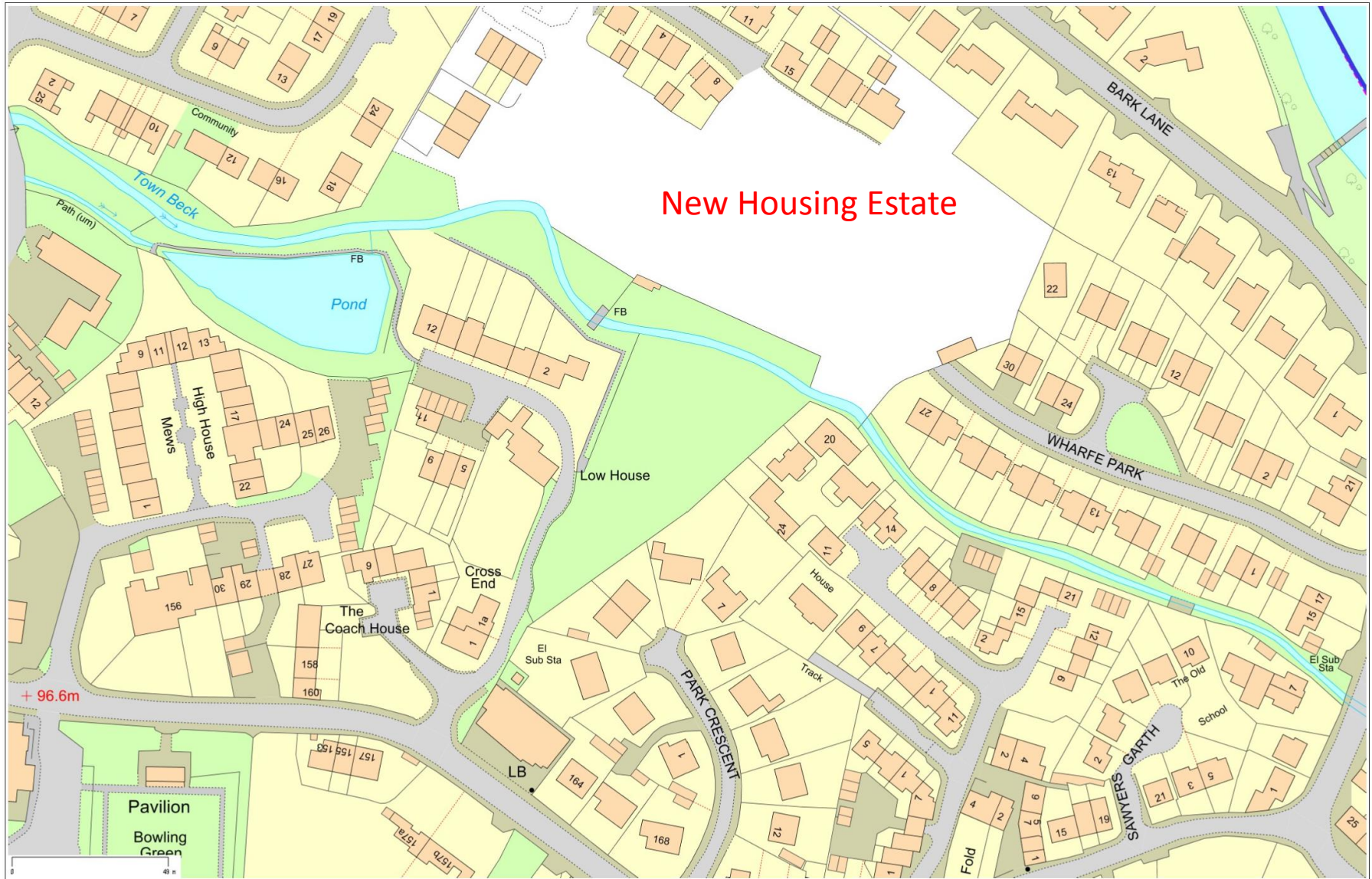
- Catherine Coates – Addingham Parish Council
- Tony Brady – Addingham Anglers Association
- Jessica Penrose – Addingham Environment Group
- Jan Hindle – Addingham Environment Group
- Peter Miller – Addingham Environment Group
- Rick Battarbee – Addingham Environment Group

Understanding Flood Risk: Partnership plans

- Beck stewards to hold conversations with riparian householders on their experience of flooding: extent, damage, measures taken etc. and complete spreadsheet (AEG, BMDC and EA)
- Stewards to inspect culverts routinely to identify potential blockages (AEG, BDMC and EA)
- River Table and SuDS house demonstrations at the 2018 village Environment Day on 30th June and other community actions under the Leeds Flood Appeal grant (YDRT)
- Committee to carry out catchment walkovers and identify opportunities for NFM (YDRT, EA)
- Explore installation of rain gardens and other water management schemes in the built-up area (BDMC, EA)
- Need as soon as possible for a greater understanding of catchment hydrology and for collaboration with modellers (EA)

Wildlife: 4Becks Partnership Plans

Creating new bankside habitats (with YDRT, WTT and residents)



Improving water quality: 4becks partnership plans

- More chemistry and biology (diatoms, inverts) throughout the catchment (different seasons, different flows) to identify nutrient sources (UCL and AEG)
- Engage with farmers, landowners and becksides householders (AEG and EA, Natural England?)
- Identify sites for creating or extending fenced buffer zones (YDRT)
- Examine alternative options to provide drinking water for livestock (YDRT)
- Identify plumbing misconceptions within the village (YW, EA)
- Create plans for best practice management of becksides back gardens (EA, BDMC)
- Develop catchment plan to minimise nutrient pollution (All)

