Essex Biodiversity Project

...working for a better quality of life

THE wildlife TRUSTS

ESSEX Wildlife Trust

Essex Healthy Headwaters River Restoration Project

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Who we are

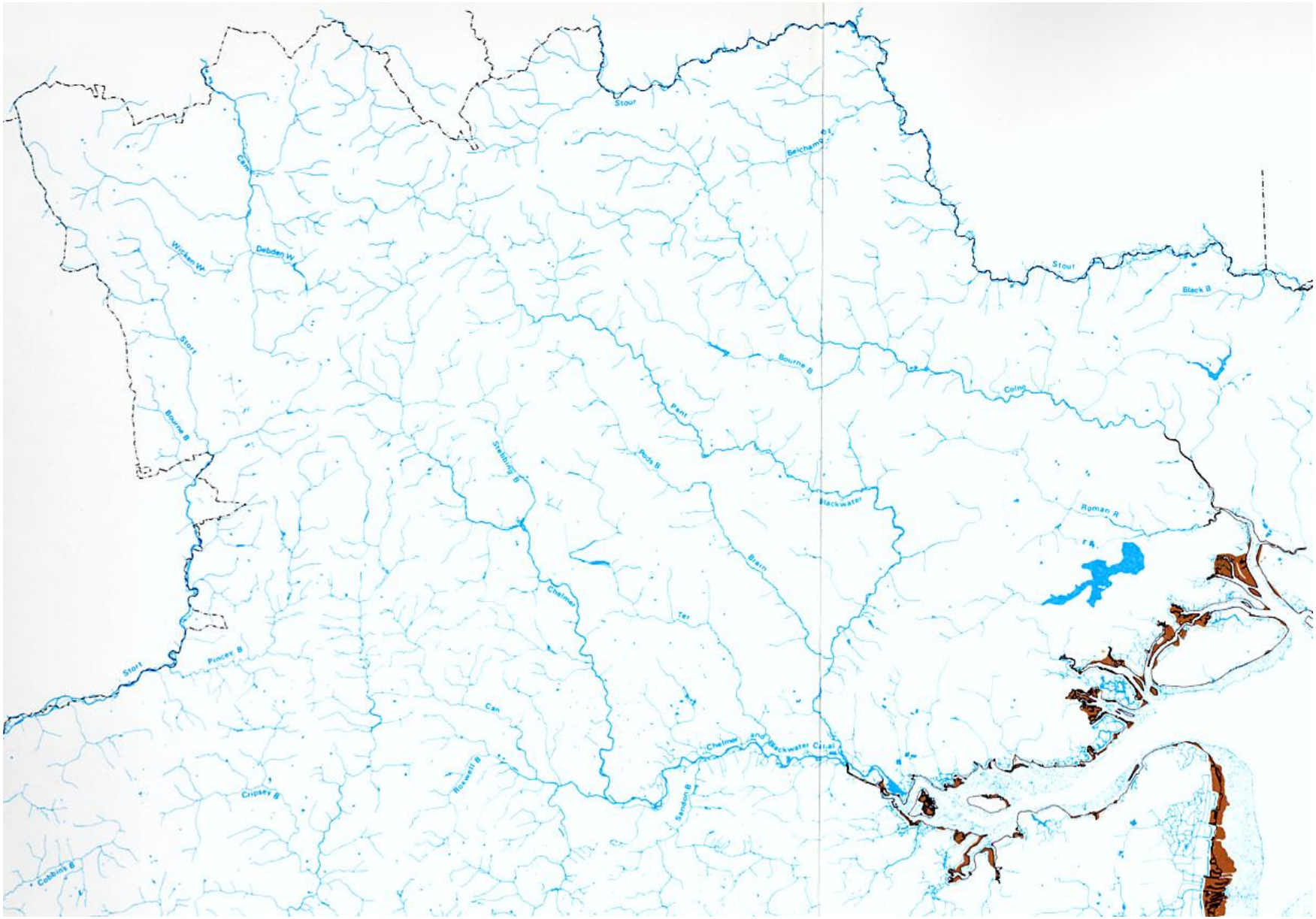
Conservation team within EWT / Essex Biodiversity Project

- **Rebecca Banks** Biodiversity Project Officer
- **Darren Tansley** Water for Wildlife Officer
- **Mark Iley** Biodiversity Coordinator
- Supported by **Lorna Shaw** Biological Records Officer and GIS digitising/mapping on ArcGIS 10
- **Deb Howard** administration and landowner liaison
- **Jane Herbert** (lead) temporary survey staff and volunteers
- **John More** Local Wildlife Sites Officer

North West Essex area

- One of the driest areas in England (17.7ins/449.9mm per annum)
- The source of a number of major rivers - the Cam, Stort (Lee) Pant (Blackwater), Ter, Chelmer (Can).
- Most land is in intensive arable production (mainly grade 2) heavy brown soils over boulder or chalky boulder clay - mixed farms with grazing animals are scarce.
- Increased field sizes, loss of hedgerows and inputs of agrochemicals with ploughing close to water courses (although E S has ameliorated this).
- River corridors and riparian habitats tend to be neglected either heavily shaded or denuded of trees and the loss of areas of wet woodland and meadow.
- Low flows and abstraction means that headwater streams are dry for significant periods of the year (47% of E&SW supply comes from Essex rivers)
- extensively modified drainage patterns and loss of in-channel features leads to ‘flashy’ streams with increased sediment, agrochemicals load and poor water holding within the wider landscape.

NW Essex area




NW Essex area
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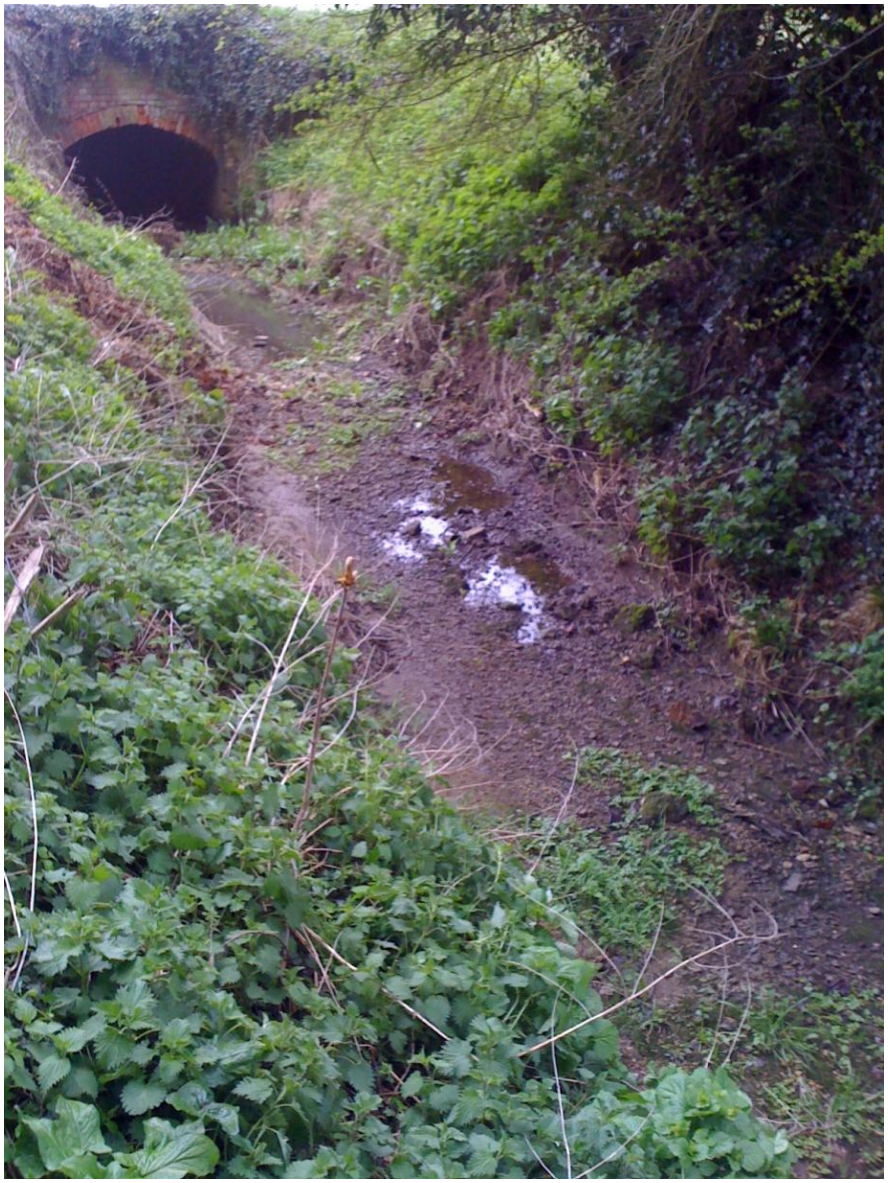
NW Essex area



The starting point was January 2012 when a group decision was made to plan and apply to the CRF

Our relationships with EA and E&SW critical

- **EWT** - meets our aspirations for 'Living Landscapes' work, our general objectives re wildlife and People, partnership work and significant funding opportunity.

  CRF only available to Charitable bodies
- **EA** - need to meet WFD objectives – new staff in post and keen to show outputs
- **E&SW** need to reduce agro-chemicals particularly metaldehyde in catchment, working with farmers
- **FWAG** – knowledge base, longstanding and trusted relationship with farmers and landowners and significant funding opportunity

Catchment walkover survey

Partners agreed that -

Overwhelming need for information

Critical need to identify what was out there – current state and potential project sites

EA agreed to fund ‘Walkover surveys’ of the NW Essex area (75km river corridor)

Catchment walkover survey

- 75km of river corridor in 500m stretches of rivers - Upper Chelmer, Pant and Ter headwaters
- Landowners contacted by letter in advance. We stressed it was not ‘spying’ or compliance visit – generated positive interest via calls and emails.
- Paper maps produced for each 500m stretch using ArcGIS 10
- We used existing EA survey form which we modified
- Team tested survey form and methodology to standardise
- Fieldwork was undertaken Feb – April 2012. (Fieldwork not to be attempted during summer/autumn)
- A two person team could do a maximum of 4 x 500m stretches per day

Catchment Walkover survey

Identifying landowners is difficult, we used

EA database of landowners (incomplete)

HLS landowners details available on web (incomplete)

Local knowledge and ‘word of mouth’

We wrote to 134 farmers/landowners -

Yes 76 No 3 No reply 55

Contact has enabled a number of conversations with landowners and opportunity for an initial dialogue and discussion of water resource issues and the WFD process.

Signed consent and data sharing form

Essex River Walkover Survey 2012

P J & J AYLETT

Chelmer

Name: PETER J.AYLETT

Essex Wildlife Trust Member

Address: GRACES FRUIT FARM,CAUSEWAY END,THAXTED ROAD, WIMBISH,SAFFRON WALDEN.ESSEX.CB10 2XP

Contact Number: M-07752 040 805 Farm:- 01371 830306

Email address: peter @ aylett.fsworld.co.uk

Please state any access arrangements:

From Yardley Hall Lane
Through farmyard at Graces Farm Shop
From B184 just past reservoir(you will see wood bins filled with rubble at entrance)

☑ *I give consent to access my land

Please inform me by phone when on site or call in at farm shop.Thanks

☐ *I **do not** give consent to access my land

*Please tick the relevant box.

Mink seen this week on reservoir bank
Reservoir stocked with trout.Mink caught from 5 years ago.

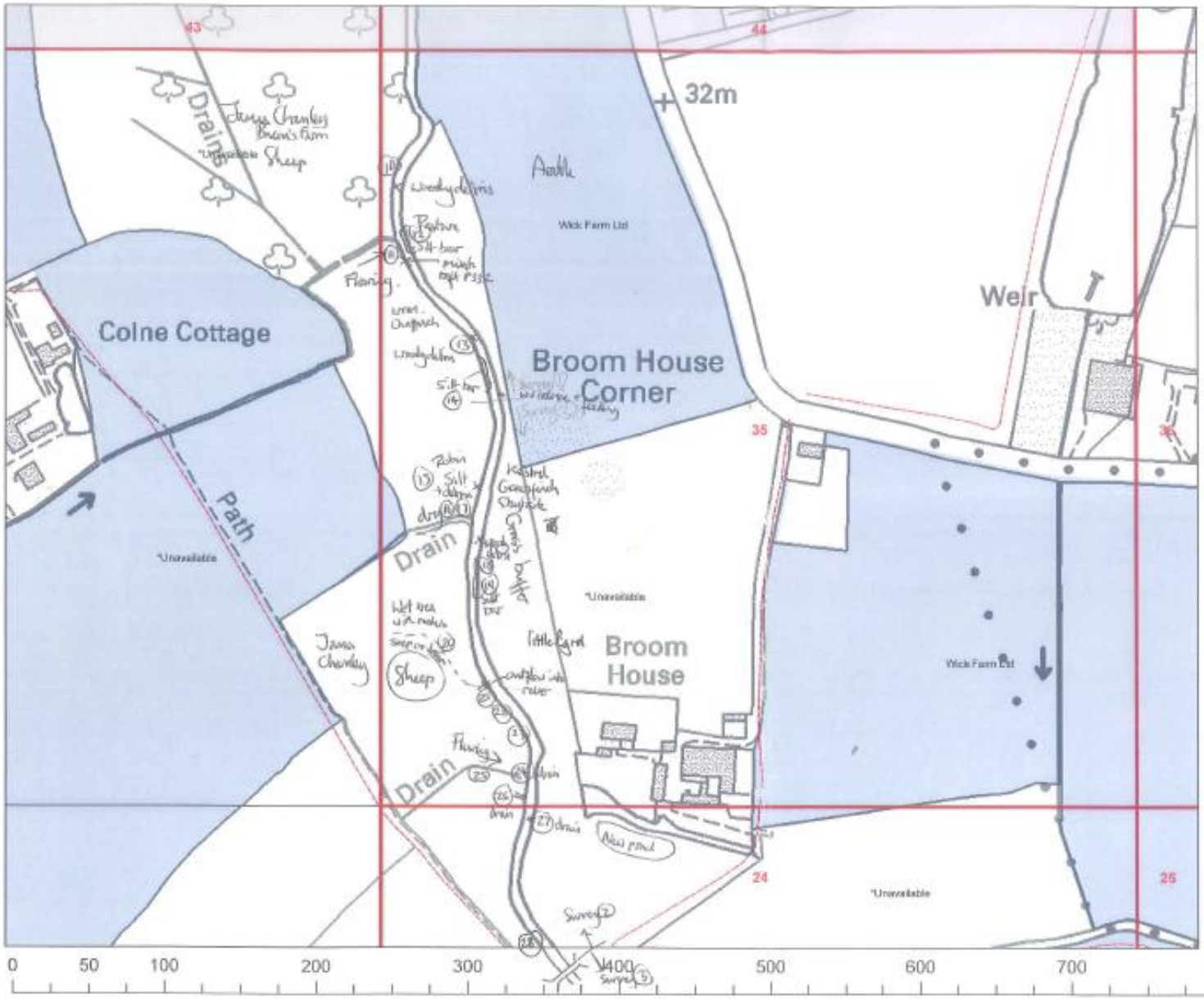
I give consent for records gathered from this survey to be entered into the Essex Wildlife Trust database. I understand that the Essex Wildlife Trust is currently supporting the development of the Essex Biological Records Centre and data held by the trust is intended for shared use in support of this project.

Signature: 

Date: 31st March 2012

Catchment Walkover survey

WFD River Colne



500m survey areas
River Colne Upper from Colchester to Steeple Bumpstead

Legend

- SSSI
- Ancient Woodland
- LNR
- SAC
- Ramsar
- ESA
- ESSEX_LoWS

Stewardship

SCHEME

- Entry Level
- Entry Level plus HL
- Higher Level
- Organic Entry Level
- Organic Entry Level plus HL
- LPAs

Date: 21/03/2012

Created By
Kate Hayward
Biological
Mapping Officer

ESSEX Wildlife Trust

Fragment of Walkover paper survey form

Ecology & Physio-chemical Information

Dominant land-use: Arable crop/ tilled land Yes/No Some
Grazing pasture Yes/No
Suburban/ urban Yes/No
Other (give details).....

Invasive species: Himalayan balsam Yes/No
Giant hogweed Yes/No
Floating pennywort Yes/No

Dominant substrate: Gravel/pebble Yes/No
Sand Yes/No
Silt Yes/No

Riffles present? (Photo & Grid ref. required – see recording sheet) Yes/No

In-channel plants - more than 30% Yes/No

In-channel algae (blanket weed/ cott) – more than 30% Yes/No

Shading of channel (by trees to south) - more than 30% Yes/No

Are there buffer strips? Yes/No

Distance of undisturbed ground from centre of water course / ditch 10...m (Upstream section 0m)

Distance of undisturbed ground from bank / ditch edge 6...m 0m

Shore / Bank	Tick as appropriate	Whole	Upper	Lower	other
Stones					
Gravel					
Sand					
Silt - light					
Silt - medium		✓			
Silt - heavy					
Chalk/limestone					
Clay		✓			
Earth		✓			
Rock cliffs					
Earth Cliffs		✓			
Canalized (i.e. straightened channel, no meander)					
Poached			✓		
Reinforced (Man-made)					

Fragment of Walkover paper survey form

WFD Waterbody ID: ..... River name: River Colne Bacon's Farm + Wick Farm (3)
Date: 30/9/17 ..... Surveyor: DC + JH

Feature/ sediment source (inc. score)	Grid Ref (6 fig. at least, ideally 8 fig. from GPS)	Comments (inc. photo ref number / name)
Bank slumping typical of river + pipe	TL 90150 27381	29
Outfall	TL90176 27384	30 Completely overgrown & undermined
Land drain	TL 90183 27372	31 Pipe impossible to see, overgrown but flowing water
Reinforced bank	TL90196 27366	32 Used by sheep to access water
Sheep drink + land drain	TL90206 27361	33 Pipe & area of poached bank
Outfall	— 11 —	34 Completely blocked by vegetation
Drain on field boundary	TL90316 27361	35
Woody debris	TL90360 27368	36
Gauge Woody debris	TL90408 27365	37
Tree in channel & pool	TL90400 27386	38
Poaching	TL90399 27407	39
Stream side channel	TL90480 27425	40
Drainage ditch (flowing	TL90542 27405	41
















Catchment Walkover survey

70km of 75km river corridor surveyed

2932 natural/manmade features recorded

c.20 features per 500m stretch (2000+ features photographed)

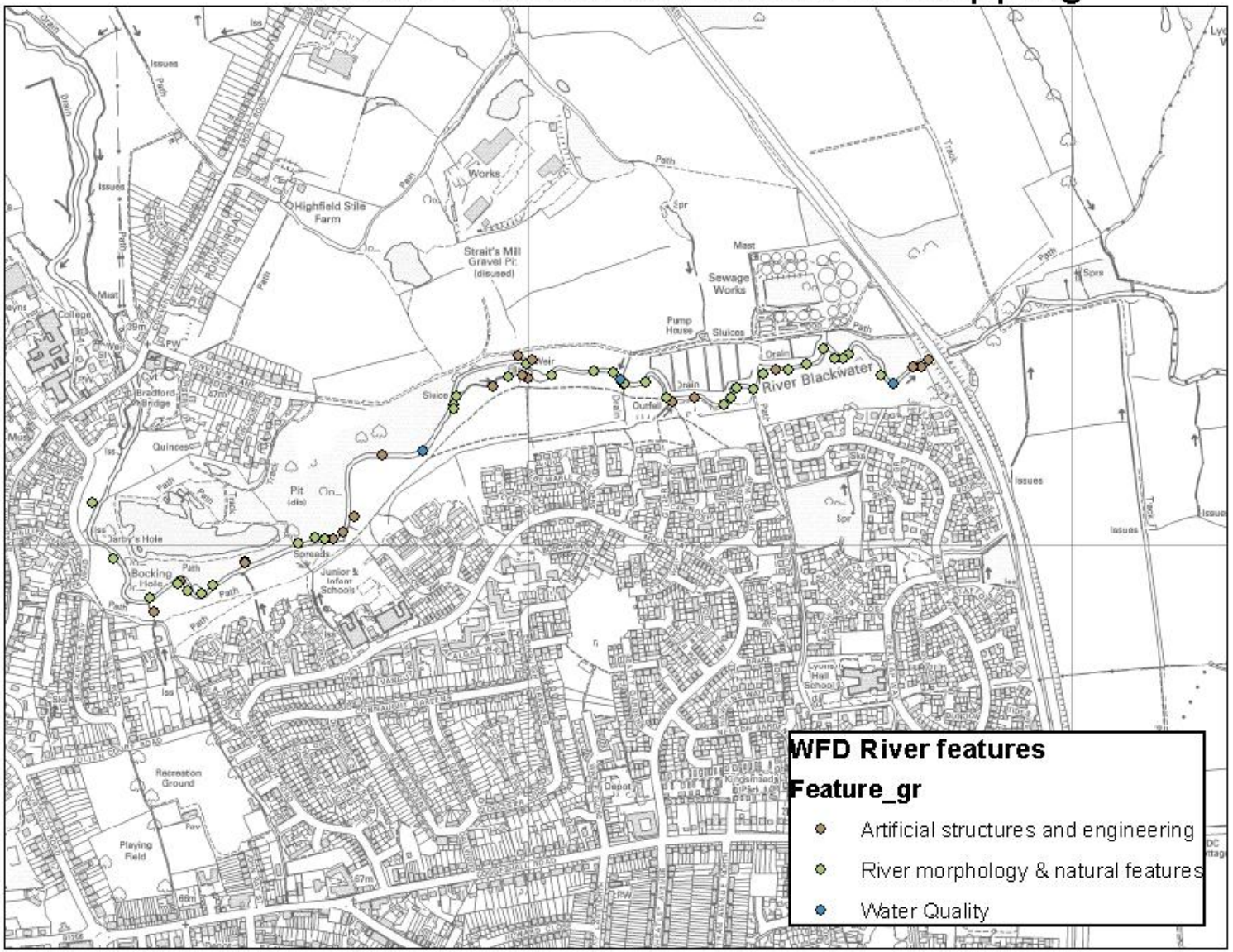
Every feature GPS'd and given a standard description

Surrounding land use recorded

60 projects/enhancement sites identified

All digitised onto ArcMap 10 and shared with EA (and eventually adapted for public)

Water Framework Directive Mapping



BRIE
BIOLOGICAL RECORDS IN ESSEX

0 100 200 400 600 800 Meters

Created By Biological Records In Essex

Date: 12/07/2012

CRF Bid

The ‘walkovers’ were the key

- Provided the foundation/knowledge base
- Provided an initial engagement with landowners/farmers
- Identified key sites and potential projects

Limited time following walkover fieldwork and analysis with the CRF submitted on 18th May 2012

CRF bid ‘vision’

The Healthy Headwaters project envisages changes to more sympathetic and coordinated management not only of river corridors themselves but adjacent arable land and other habitats. This is to be achieved through -

- The restoration, recreation and linkage of characteristic ecological, hydrological and landscape features to integrate watercourses with the floodplain

- Enhance and enlarge key biodiversity sites in the catchment.

- To increase awareness and understanding of the water resource and biodiversity of the catchment and to activate participation in its conservation in all sectors.

CRF bid - Essex Healthy Headwaters Project

Based on the walkover work

27 project sites identified all designed to addresses specific WFD failures of morphology and phosphorous.

9 core areas where targeted conservation action can achieve the most significant gains in terms of WFD delivery and safeguarding biodiversity and improving ecological status for the catchment as a whole. Address morphological failures through the restoration, creation or enhancement of wetland features including back channels, scrapes and offline ponds.

CRF bid - Essex Healthy Headwaters Project

A series of **18 smaller 'stepping stone'** areas of high priority have also been identified where further wetland restoration or enhancement including wet woodland creation, woody debris installation and fencing to prevent poaching and sedimentation of riparian corridors will address diffuse pollution where these issues have been identified.

In total, 21 km (of 74km) of the River Pant and Chelmer corridor and 5 Local Wildlife Sites [LoWS] covering 48 hectares will be enhanced.

Essex Healthy Headwaters Project outputs

Changes to agricultural land management including arable reversion to extensively managed permanent grassland and broadleaved woodland

- Wet woodland restored 6.3ha
- Wet woodland created 4.7ha
- Hedgerows created 1500m
- Buffer strips created 950m
- Stock fencing installed 1000m

Creating new wetland habitats through temporary flood storage & water retention areas on farmland

- Scrapes created 3
- Offline ponds created 7
- Offline ponds restored 5
- Fen restored 2.5ha
- Grassland restored 9.3ha

Essex Healthy Headwaters Project outputs

Enhancing and maintaining river channels

- Bank reprofiled 1000m
- Banks opened out 300m
- Back channel created 200m
- Woody debris installed 32 cubic m
- Coir Rolls installed 65m

Upgrading channels and ditches

- Ditches restored 2750m
- Ditches created 100m
- Back channel reinstated 2250m
- Board walk installed 6m

Appendix 2. Healthy Headwaters Project Outcomes

Catchment	Core Projects	Stepping Stone Projects	Project extent km	Total catchment Km
Chelmer	4	37		44
Pant	5	15	14	30
Total	**9**	**18**	**21**	**74**

Designations	5 LoWs	48.7 ha

Project Outcomes		Unit Cost (£)	Cost (£)	Total Cost (£) +VAT
Wet woodland restored (ha)	6.3	500/day	4500	5400
Wet woodland created (ha)	4.7	3300 / ha	15510	18612
Ditches restored (m)	2750	6/m	16500	19800
Ditches created (m)	100	6/m	600	720
Back channel reinstated (m)	2250	40/m	90000	108000
Scrapes created	3	2500	7500	9000
Offline ponds created	7	7500	52500	63000
Offline ponds restored	5	7500	37500	45000
Fen restored (ha)	2.5	500/day	2500	3000
Bank reprofiled (m)	1000	10/m	10000	12000
Banks opened out (m)	300	250 / day	1000	1200
Back channel created (m)	200	45/m	9000	10800
Woody debris installed (m3)	32	500/day	8000	9600
Hedgerows created (m)	1500	5/m	7500	9000
Buffer strips created (m)	950	1/m	950	1140
Grassland restored (ha)	9.3	569 / ha	5291.7	6350.04
Board walk installed (m)	6	600	3600	4320
Stock fencing installed (m)	1000	7/m	7000	8400
Coir Rolls installed (m)	65	27.50/m	1787.5	2145
Total			**281239.2**	**337487.04**

Essex Healthy Headwaters Project outputs

Improvements to agricultural soil management

- Functioning ‘one stop shop’ advice service
- 30 agronomist farm visits over three years

Awareness raising for communities

- Functioning River warden scheme pilot
- 15 school visits over three years
- Water resource information to communities
- Walk and talks programme of 12 walks
- Awareness raising / promotion to farmers landowners
- Updating 10 community websites with relevant information and news

Essex Healthy Headwaters Project outputs

Monitoring to demonstrate positive change

- Ecological monitoring on 27 sites
- Water quality monitoring at 27 sites (in addition to existing WFD and CSF monitoring points)

Reporting and disseminating best practice

- Production of reports
- Forum and sharing of best practice

Essex Healthy Headwaters Project

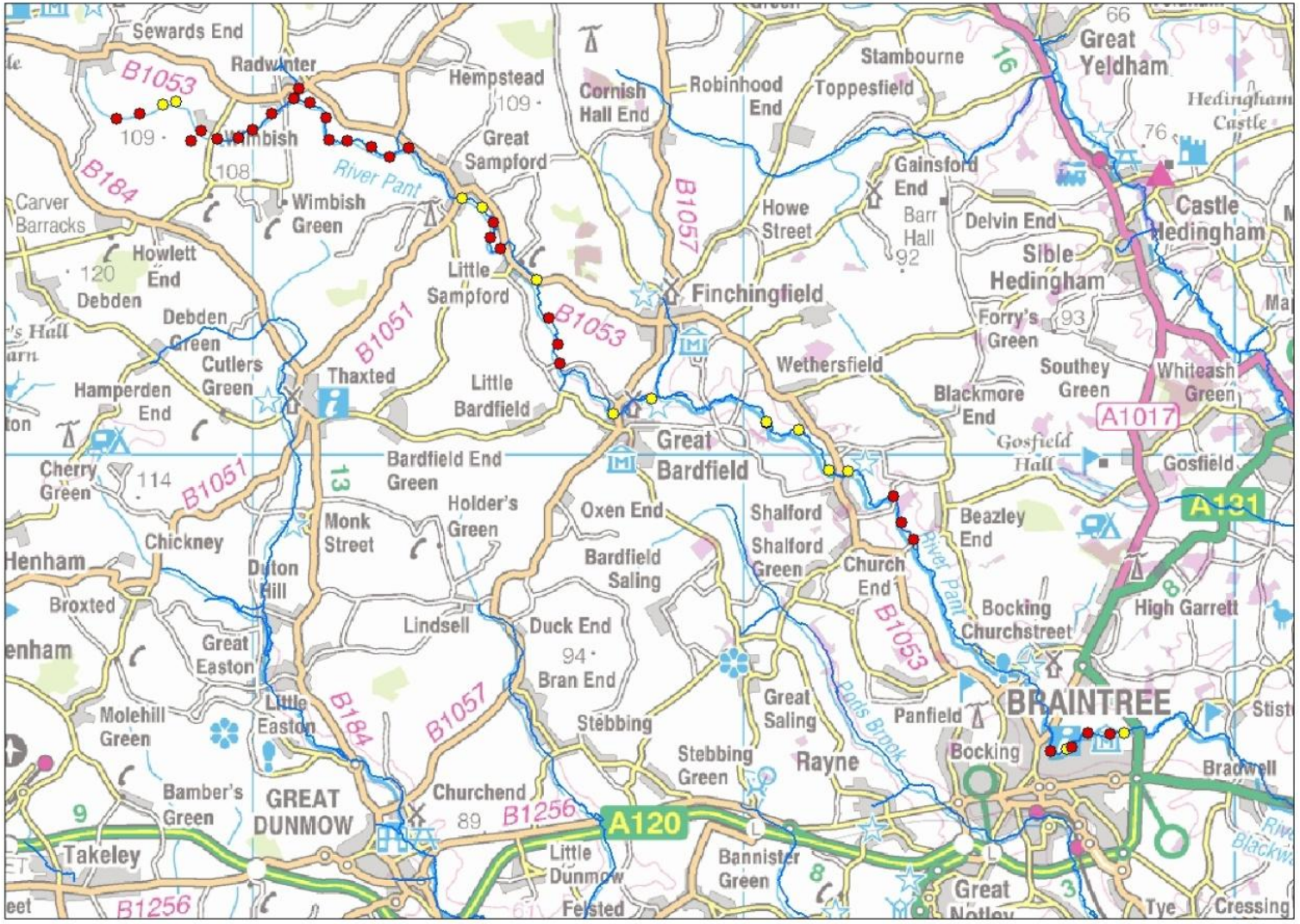
Meeting WFD failures

Water body ID	Element	Current Status	Post-project Outcome
Chelmer GB105037033950 Gt Easton-Chelmsford Town Centre	Phosphorus Morphology Dissolved Oxygen	Poor Moderate Moderate	**Moderate** **Good** **Good**
Chelmer (Upper) GB105037041200 Chickney (Cherry Gn - Gt Easton)	Phosphorus Morphology	Moderate Moderate	**Good** **Good**
Chelmer (Upper) GB105037041220	Dissolved Oxygen Phosphorus	Moderate Moderate	**Good** **Good**
Pant GB105037041180 Wimbish – Gt Bardfield	Phosphorus Morphology Dissolved Oxygen Diatoms Invertebrates	Poor Moderate Bad Moderate Moderate	**Moderate/Good** **Moderate** **Good** **Good**
Blackwater (Pant) GB105037041160 Shalford	Phosphorus Diatoms	Poor Poor	**Moderate** **Moderate**

Essex Healthy Headwaters Project

Type	2012/13 (£)	2013/14 (£)	2014/15 (£)	Total Estimated Cost (£)
Direct Cost:	65,043	90,603	87,036	242,682
External Expertise	38,757	102,167	96,380	237,304
Indirect Costs:	0	0	0	0
Others :	150	350	800	1,300
Total	103,950	193,120	184,216	481,286
Other Contributions	-7,880	-7,880	-7,880	-23,640
Approved Sum	96,070	185,240	176,336	**457,646**

CRF Healthy Headwaters projects
Pant / Blackwater catchment



WFD project shortlist

Catchment

- Pant / Blackwater

WFD Project ideas

Catchment

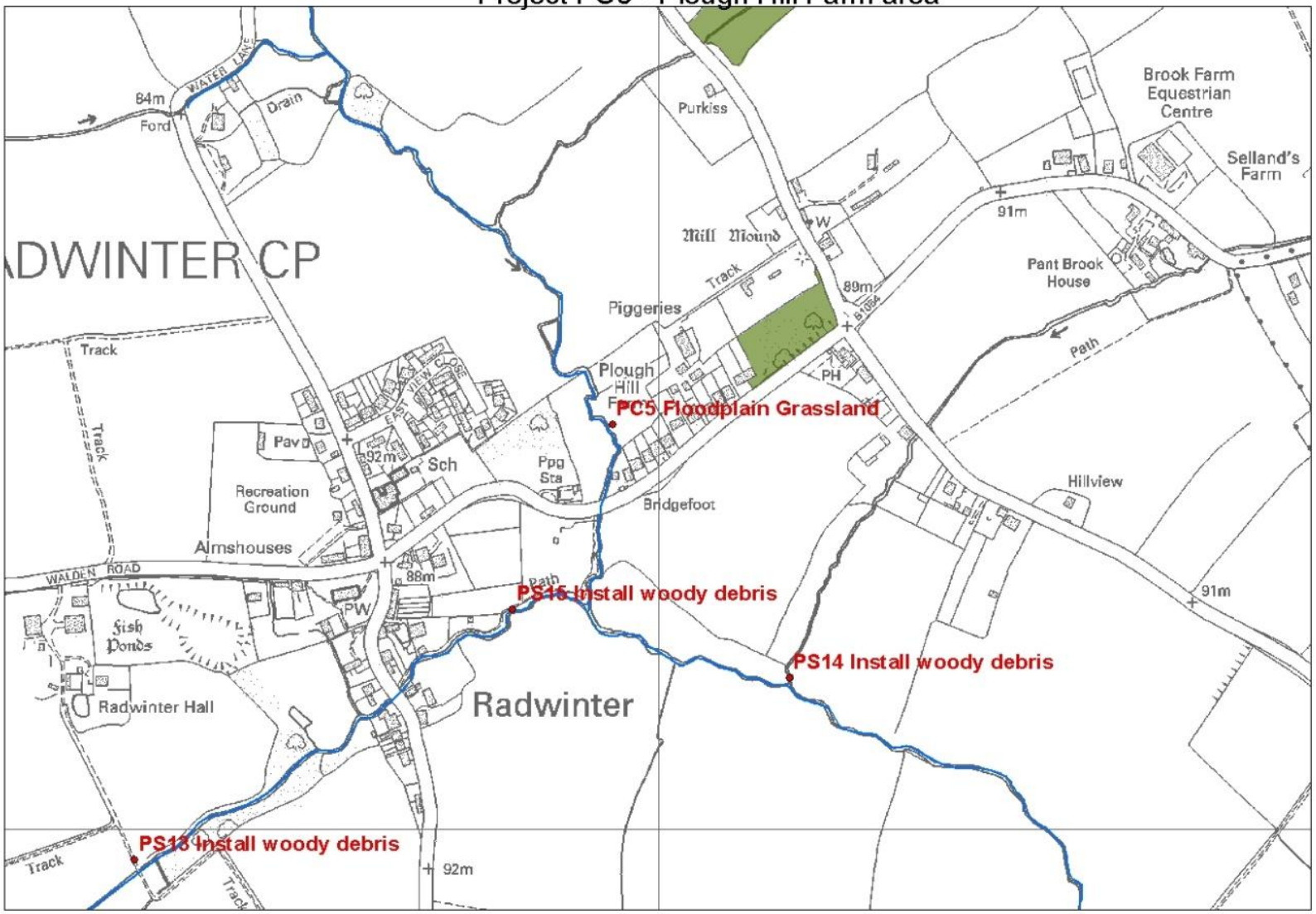
- Blackwater
- Pant

0 1,350 2,700 5,400 8,100 10,800 Meters

Created By Dr Lorna Shaw

Date: 18/05/2012

CRF Healthy Headwaters
Project PC5 - Plough Hill Farm area



0 75 150 300 450 600 Meters

Created By Dr Lorna Shaw

Date: 18/05/2012

Photograph of each potential project site

Essex Healthy Headwaters Project
What could go wrong?

- Landowner/farmer uptake
- Responsibility for on-going management
- Disinterest and inertia from Parish Councils/communities/volunteers
- Governance and administration – we have revised our standard contracts and are reviewing our procedures.
- Relationship within partnership

Thank you and any questions…?

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