

# Joe Pecorelli

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# Biodiversity and Water Quality of the Crane River Corridors

Crane Conference, 18<sup>th</sup> October 2022



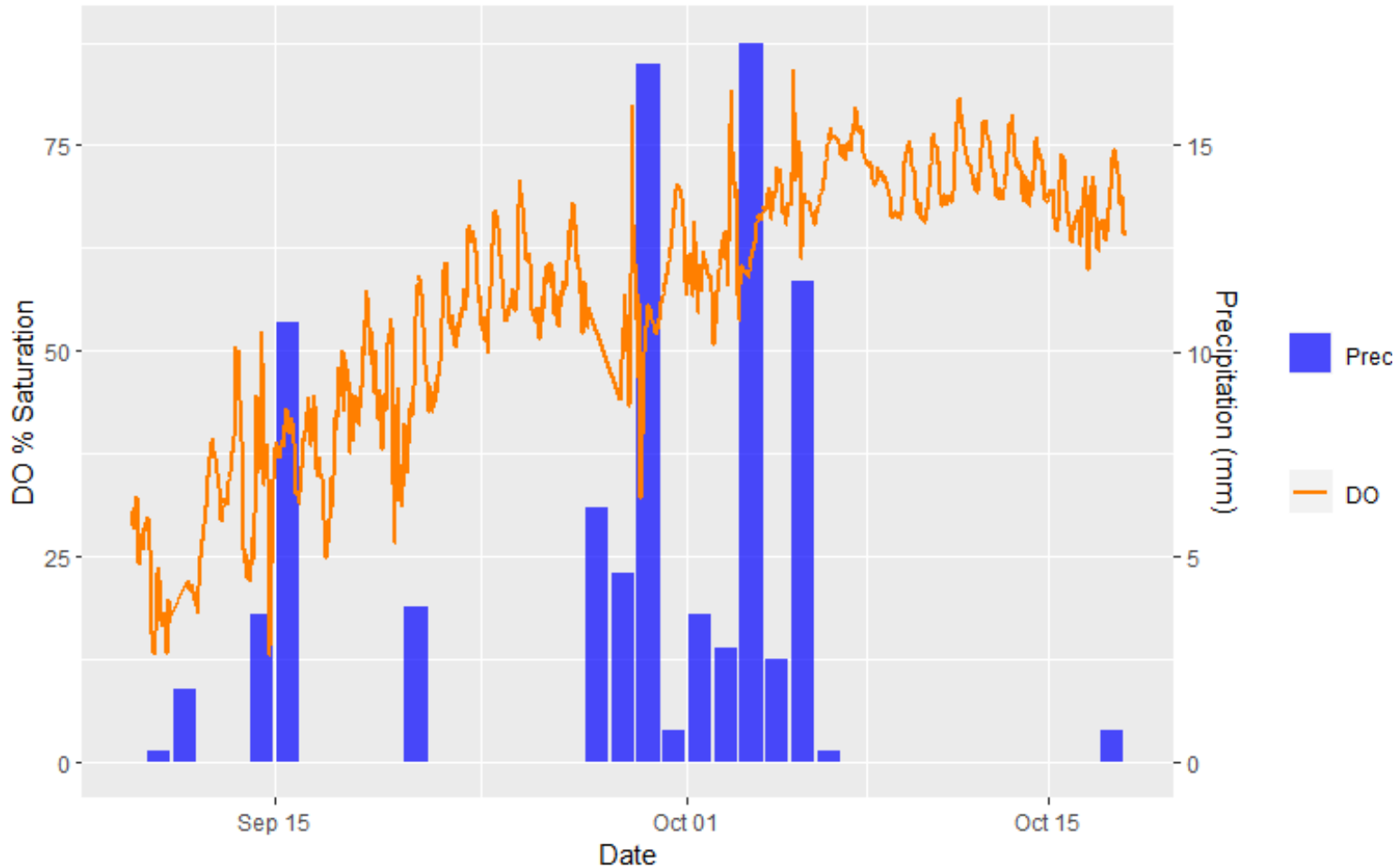
Joe Pecorelli, The Zoological Society of London

# Wildlife Highlights of the River Corridor

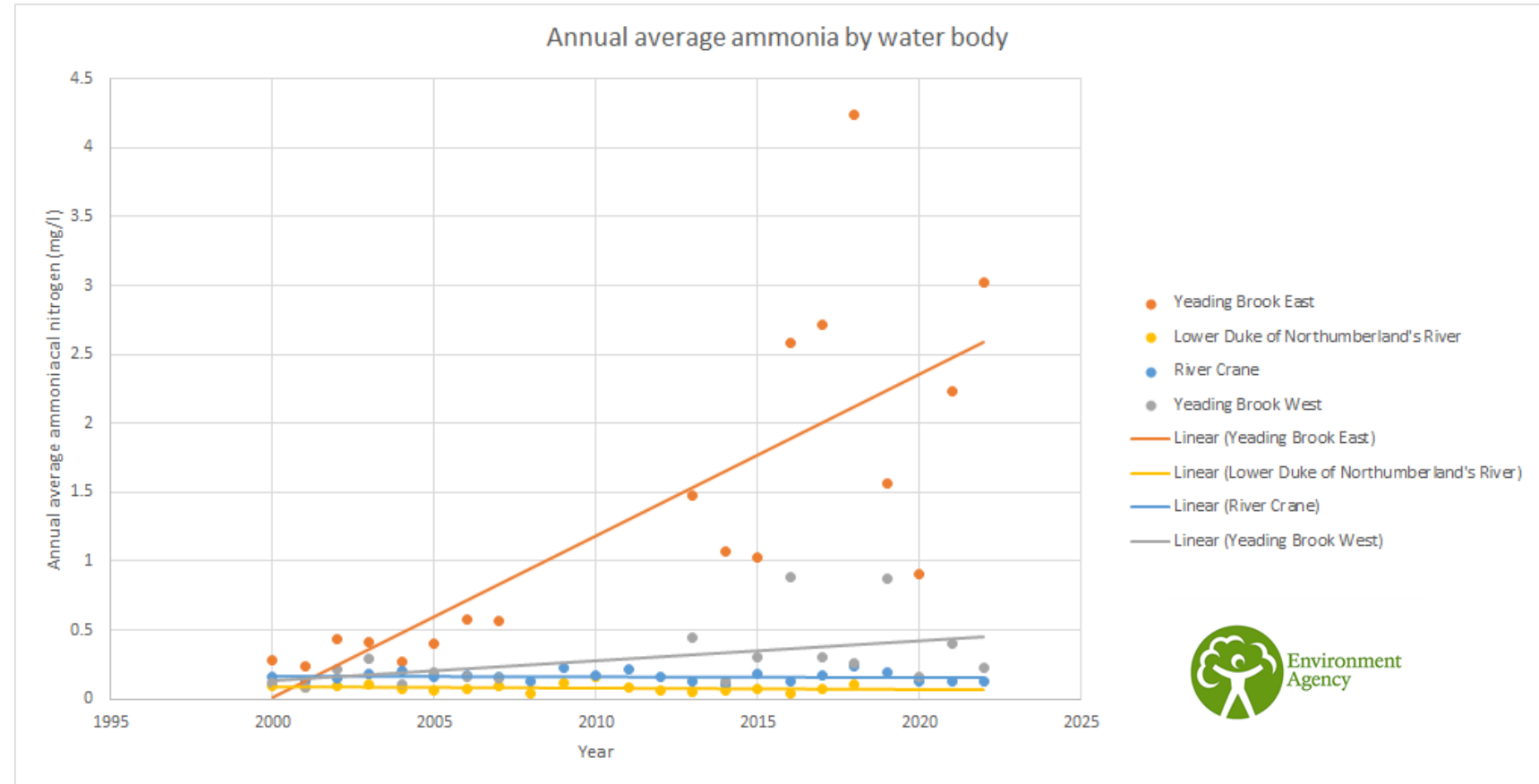
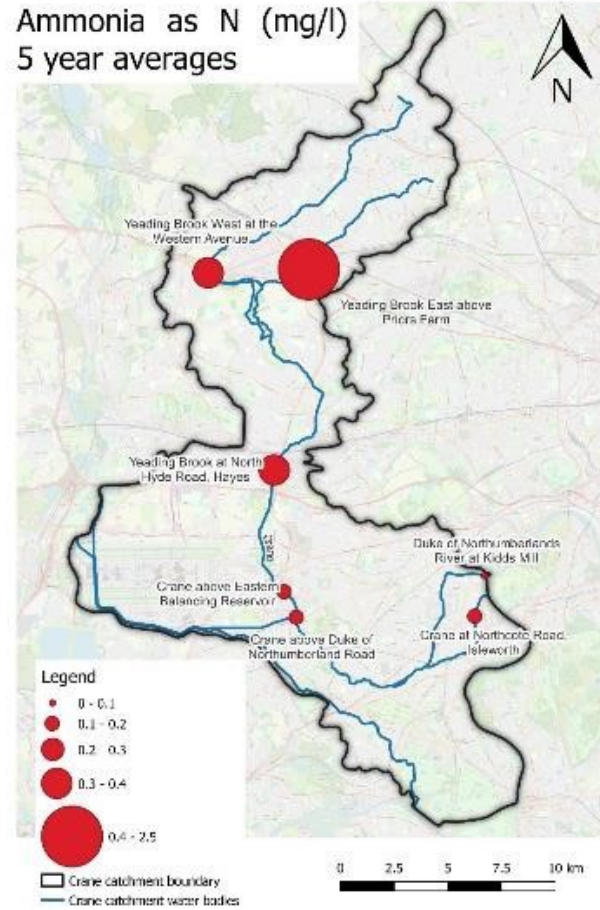


# Water quality : First Flush and links to Sewer Network

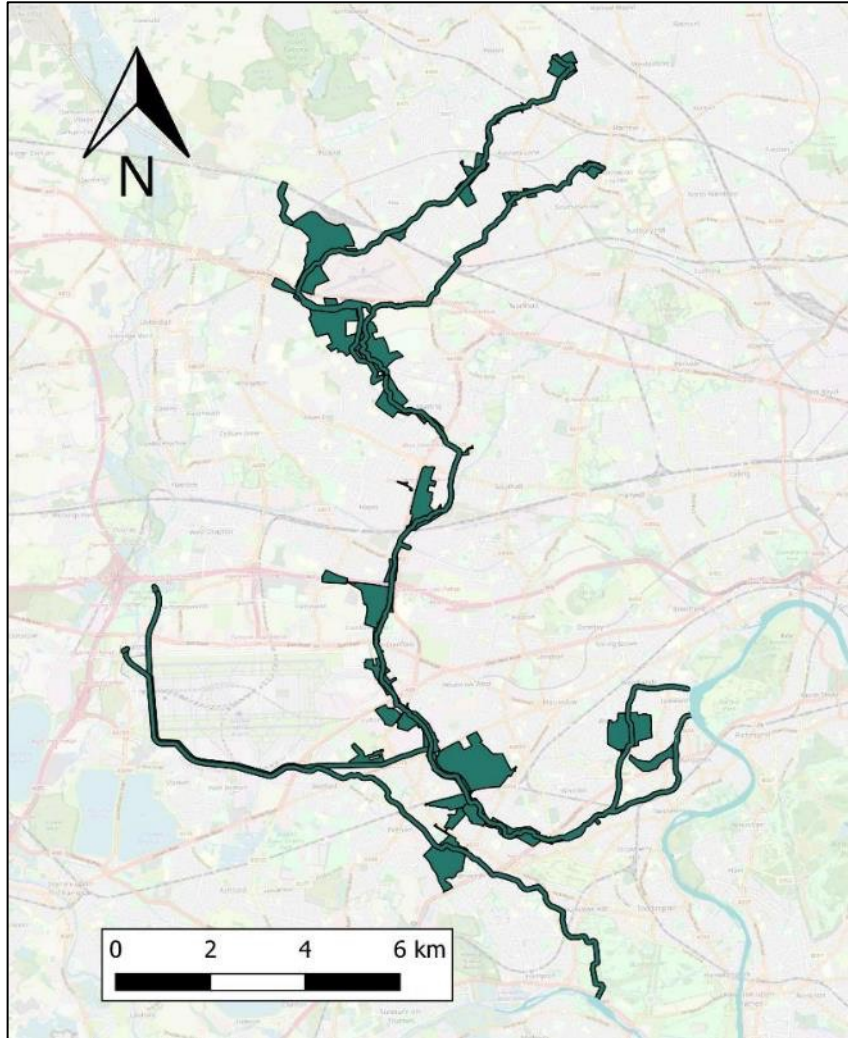
DO and precipitation at Cranford park



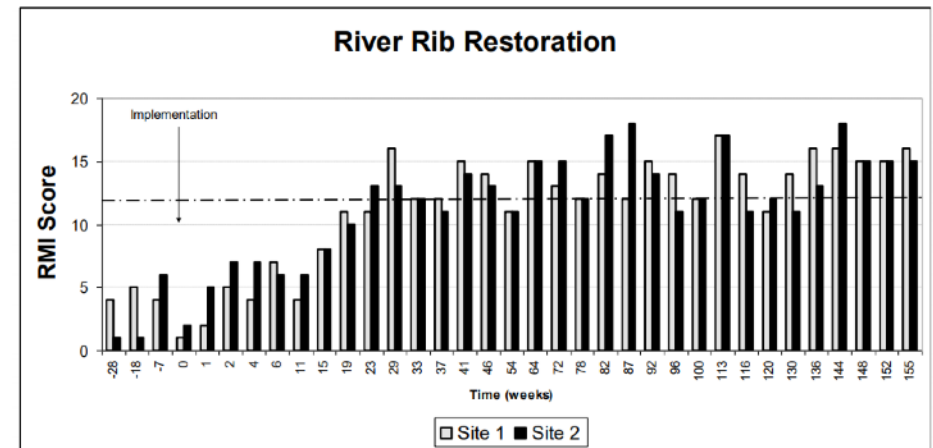
# Water quality: Ammonia



# Plan Wins for both Water Quality and Biodiversity at Catchment Scale



# Case study: Lower Crane restoration, Twickenham



# Case study: Headstone Manor Wetlands, Harrow



## Inlet

	AMMONIUM	DO
Average	1.61	28.26
Min	0.1	2.88
Max	16.7	55.22
	Poor	Poor

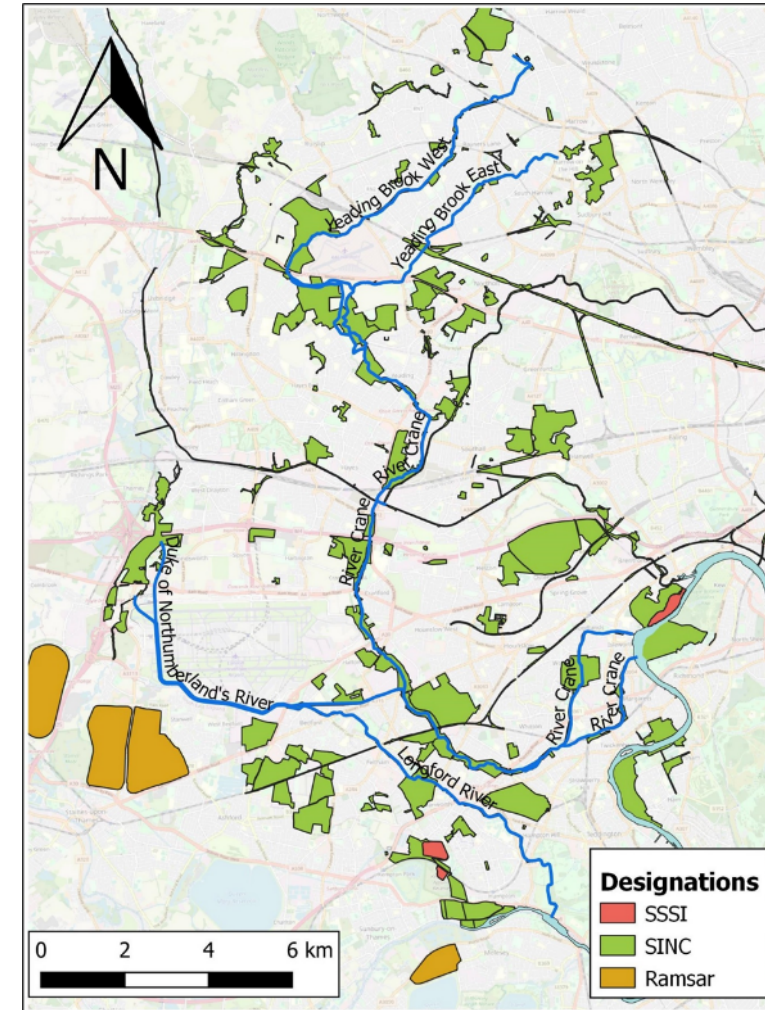
## Outlet

	AMMONIUM	DO
Average	0.83	119.70
Min	0.38	-0.66
Max	3.3	371.39
	Moderate	



# Priorities for Wildlife and Habitats

- Improve in-channel habitat
- Give the river light
- Increase connectivity between river and terrestrial habitats
- Link terrestrial wildlife sites within the corridor
- Manage selected invasive species (mink, pennywort)
- Restore connectivity for fishes – focus on linking with the tidal Thames and the Colne



# Community Science: Citizen Crane

- Eight years of Citizen Crane; empowering communities to gather the right evidence
- Leading example of how communities work within a catchment partnership to improve an urban river
- Crane Citizen Science Officer



Thank you for listening  
Join our workshop to discuss your plans

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# Prof. Angela Gurnell

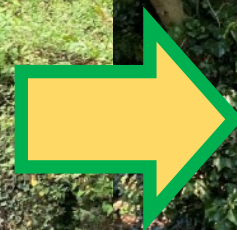
hello@cartographer.io



# RIVER CRANE: PHYSICAL HABITAT (GEOMORPHOLOGY)

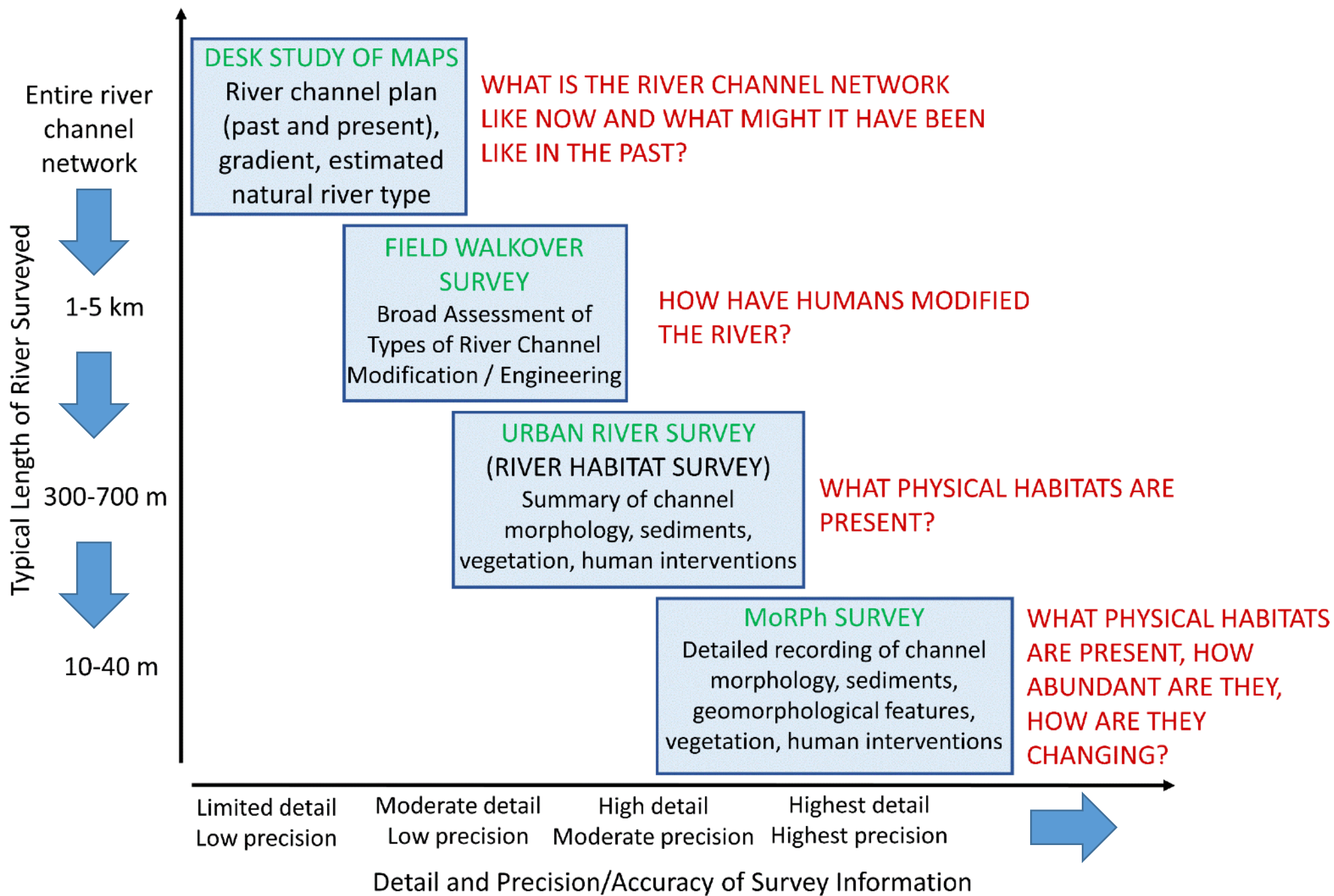


**UNIFORM – FIXED - ARTIFICIAL**



**COMPLEX – DYNAMIC - NATURAL**

# DATA AT DIFFERENT SCALES



**DESK STUDY OF MAPS**  
River channel plan (past and present), gradient, estimated natural river type

WHAT IS THE RIVER CHANNEL NETWORK LIKE NOW AND WHAT MIGHT IT HAVE BEEN LIKE IN THE PAST?

**FIELD WALKOVER SURVEY**  
Broad Assessment of Types of River Channel Modification / Engineering

HOW HAVE HUMANS MODIFIED THE RIVER?

**URBAN RIVER SURVEY (RIVER HABITAT SURVEY)**  
Summary of channel morphology, sediments, vegetation, human interventions

WHAT PHYSICAL HABITATS ARE PRESENT?

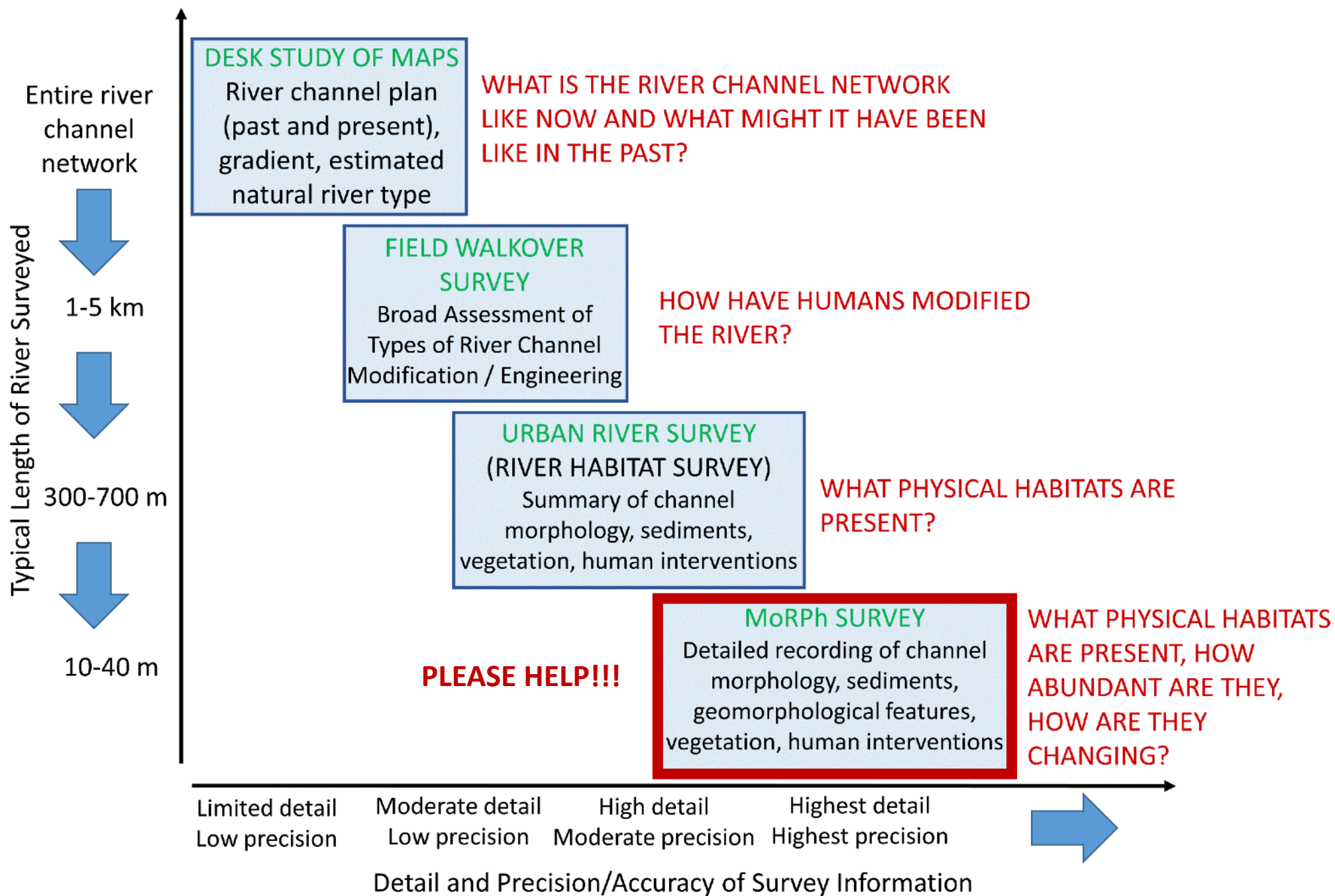
**MoRPh SURVEY**  
Detailed recording of channel morphology, sediments, geomorphological features, vegetation, human interventions

WHAT PHYSICAL HABITATS ARE PRESENT, HOW ABUNDANT ARE THEY, HOW ARE THEY CHANGING?

Limited detail    Moderate detail    High detail    Highest detail  
Low precision    Low precision    Moderate precision    Highest precision

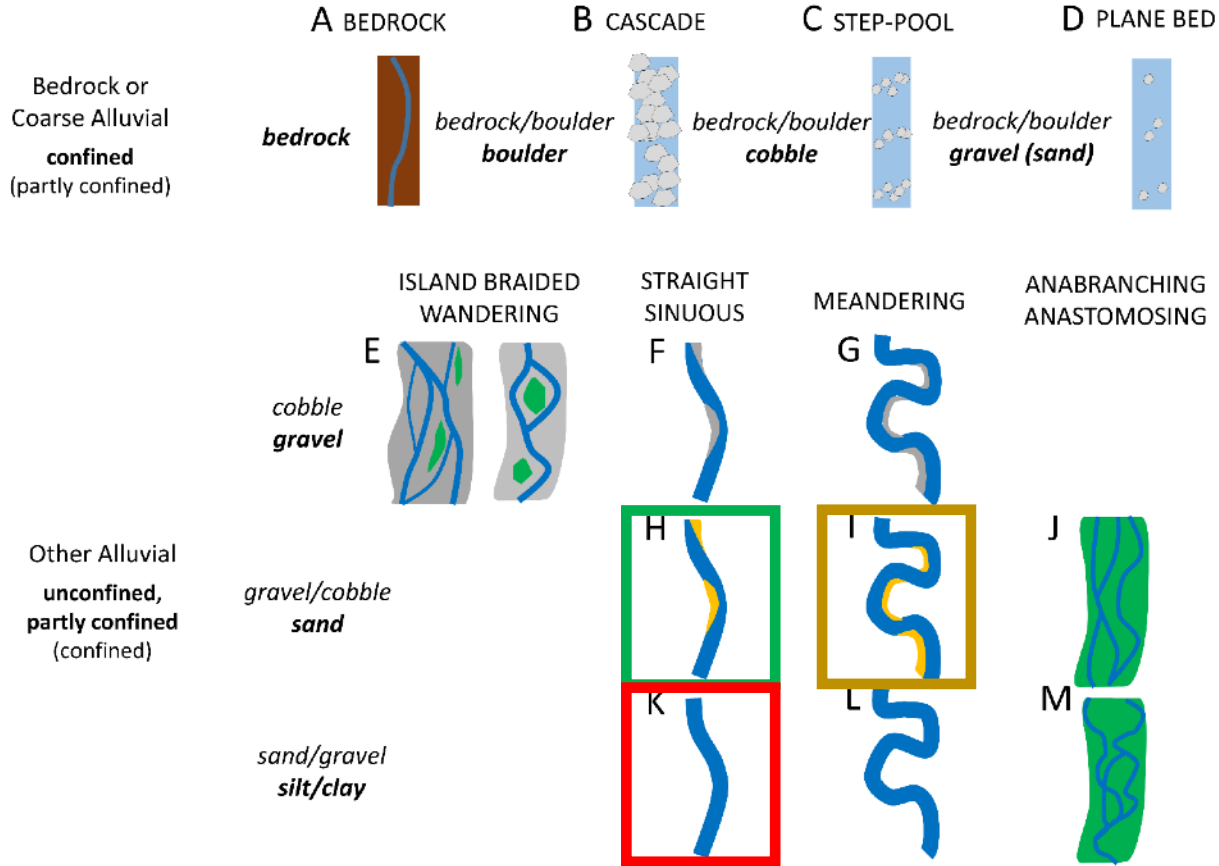
Detail and Precision/Accuracy of Survey Information

# DATA AT DIFFERENT SCALES

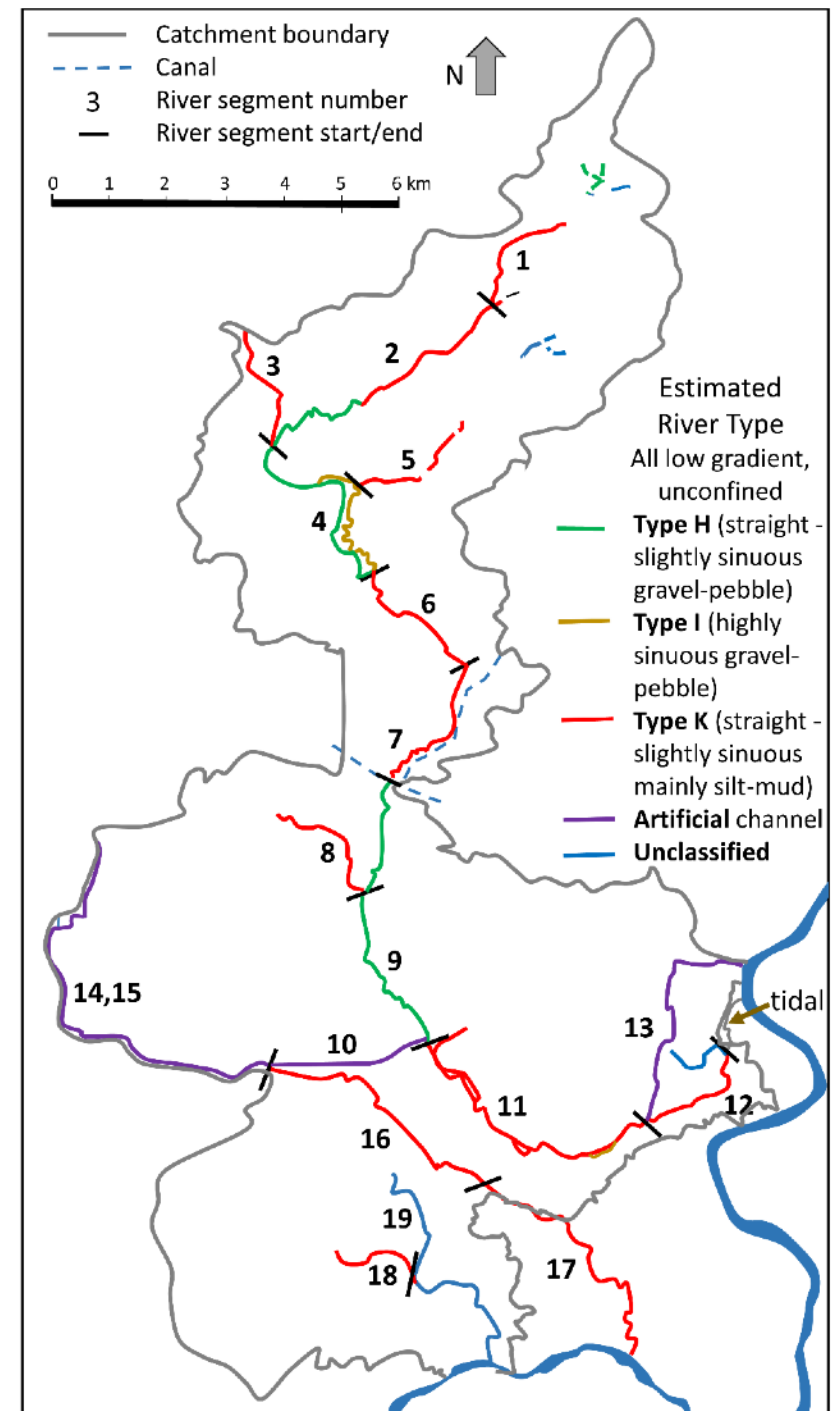


# DESK STUDY OF MAPS

What would the river be like **WITHOUT** human modification?



Thirteen near-natural river types that might be encountered in England

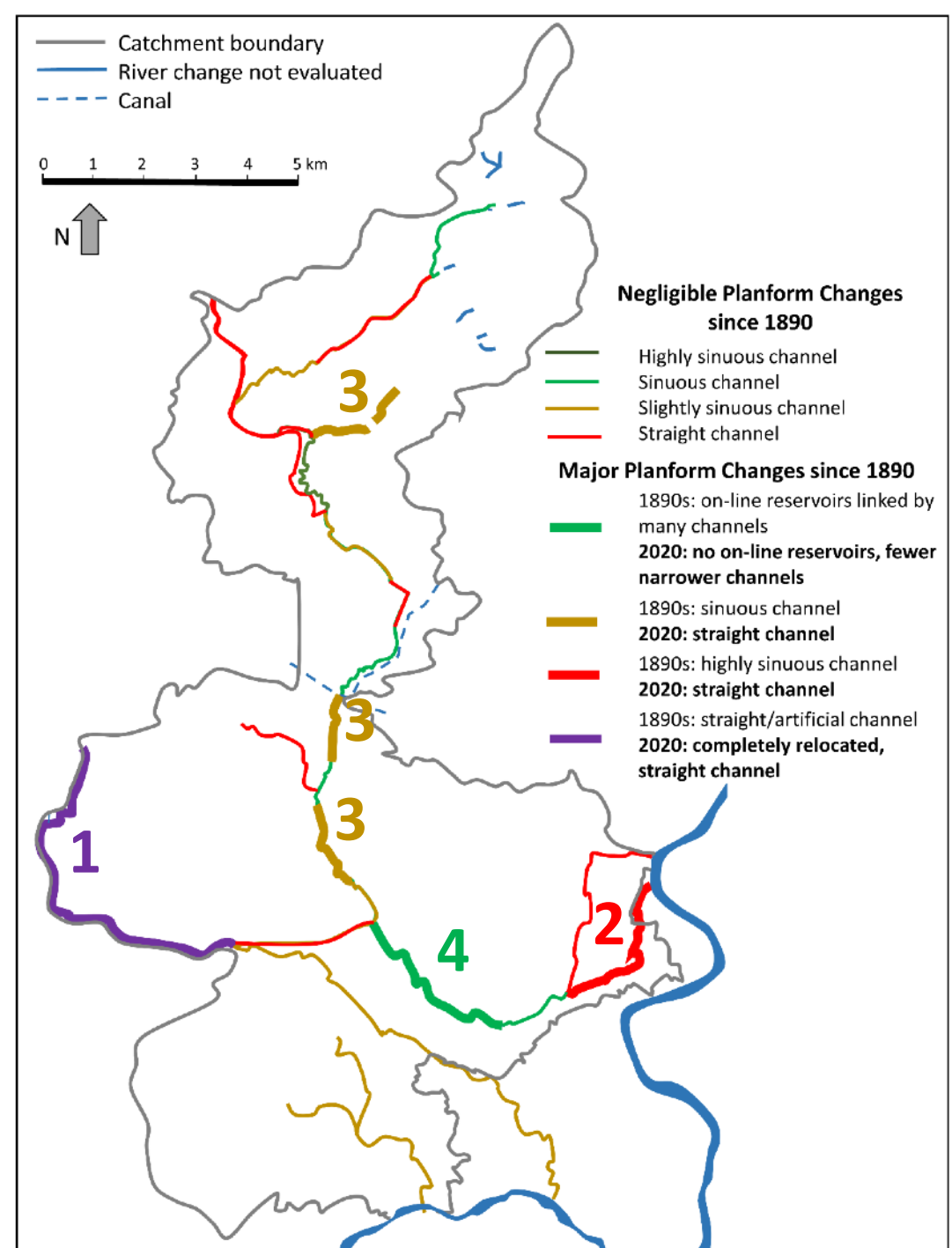




# DESK STUDY OF MAPS

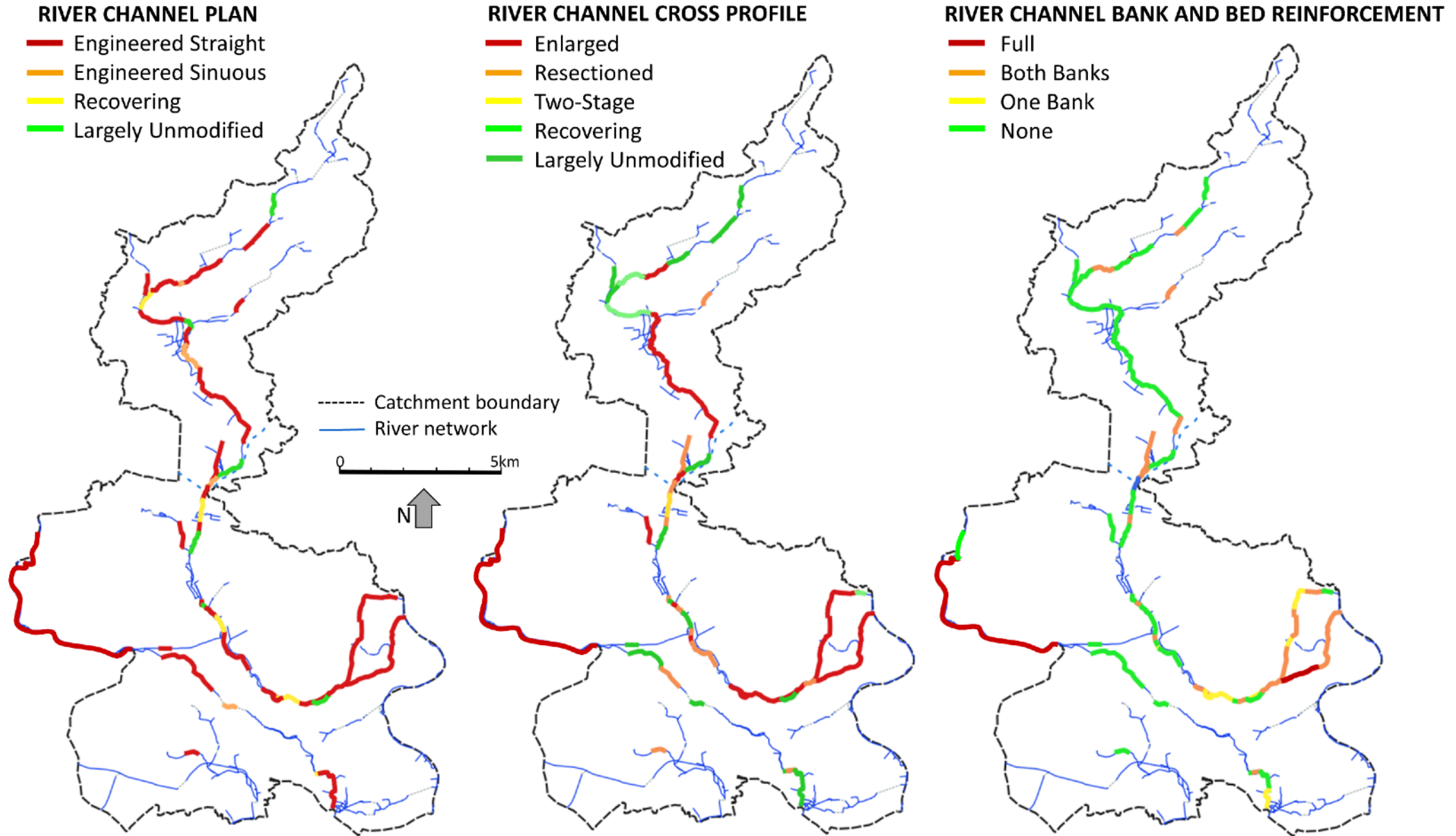
What human changes have happened since 1890?

1. Complete relocation and straightening of channels around Heathrow Airport
2. Straightening of highly sinuous channel through Twickenham
3. Straightening of sinuous channels
4. Major channel recovery from 19<sup>th</sup> century shot manufacturing



# FIELD WALKOVER SURVEYS

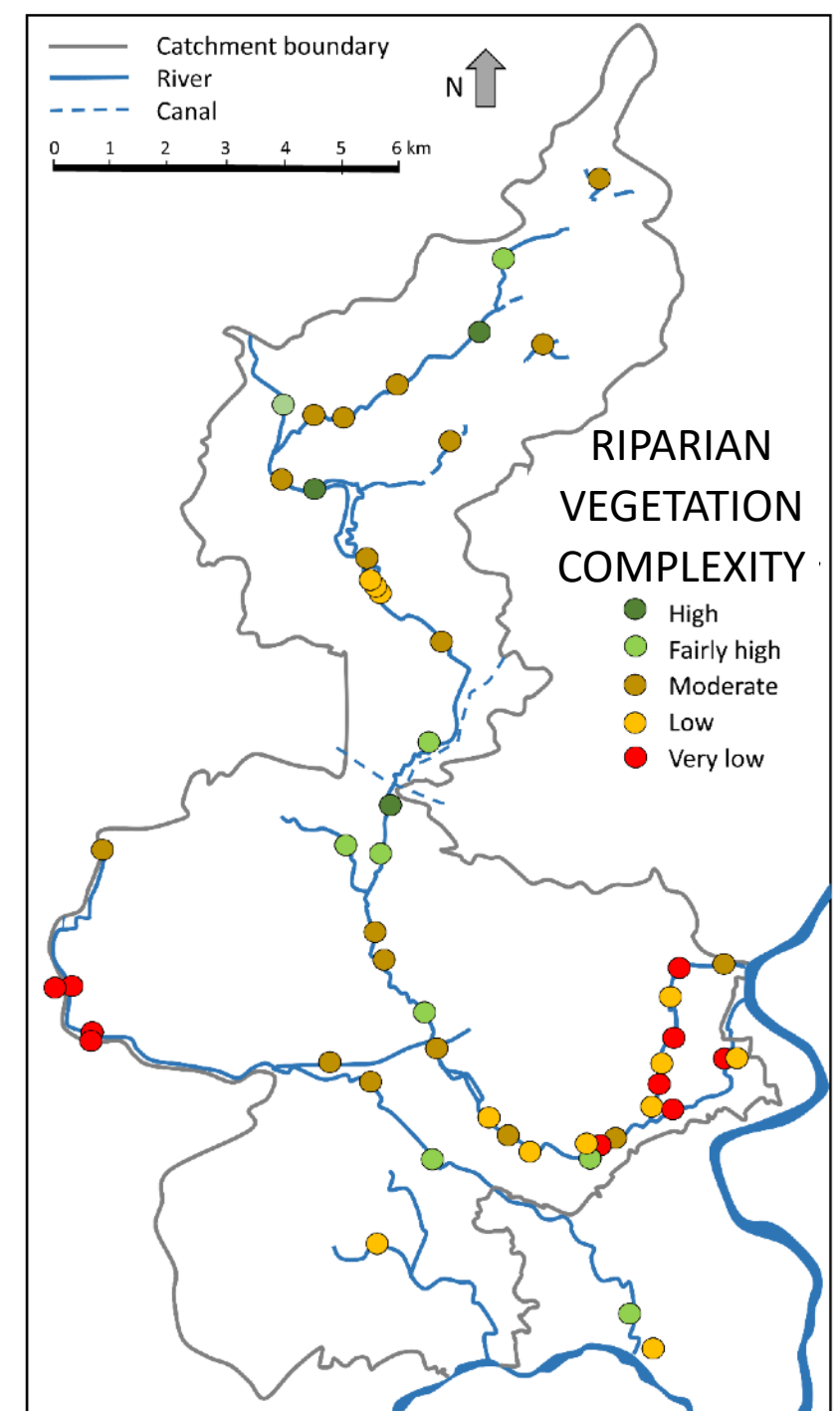
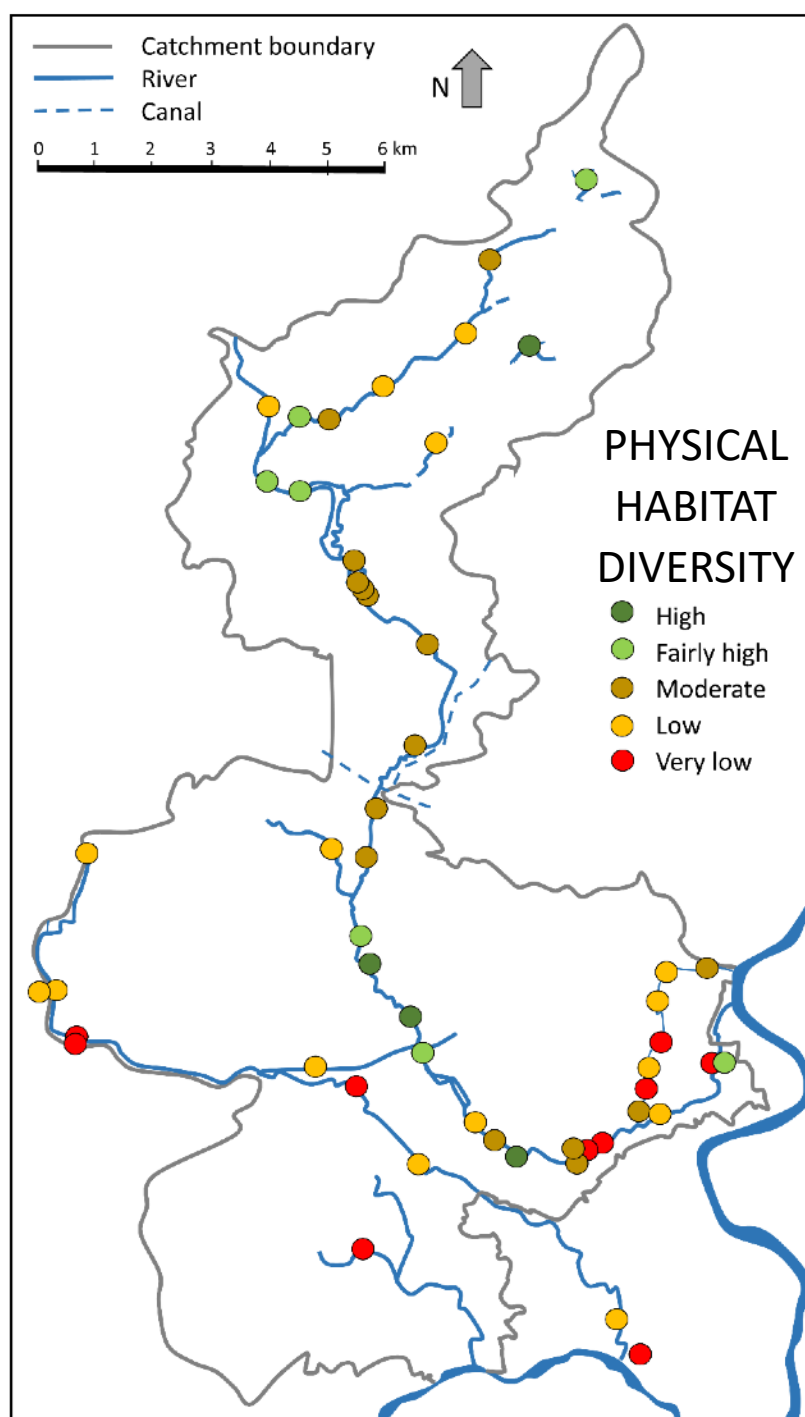
Broad types  
of channel  
modification  
by humans



# URBAN RIVER SURVEYS

Physical  
Habitat  
Diversity

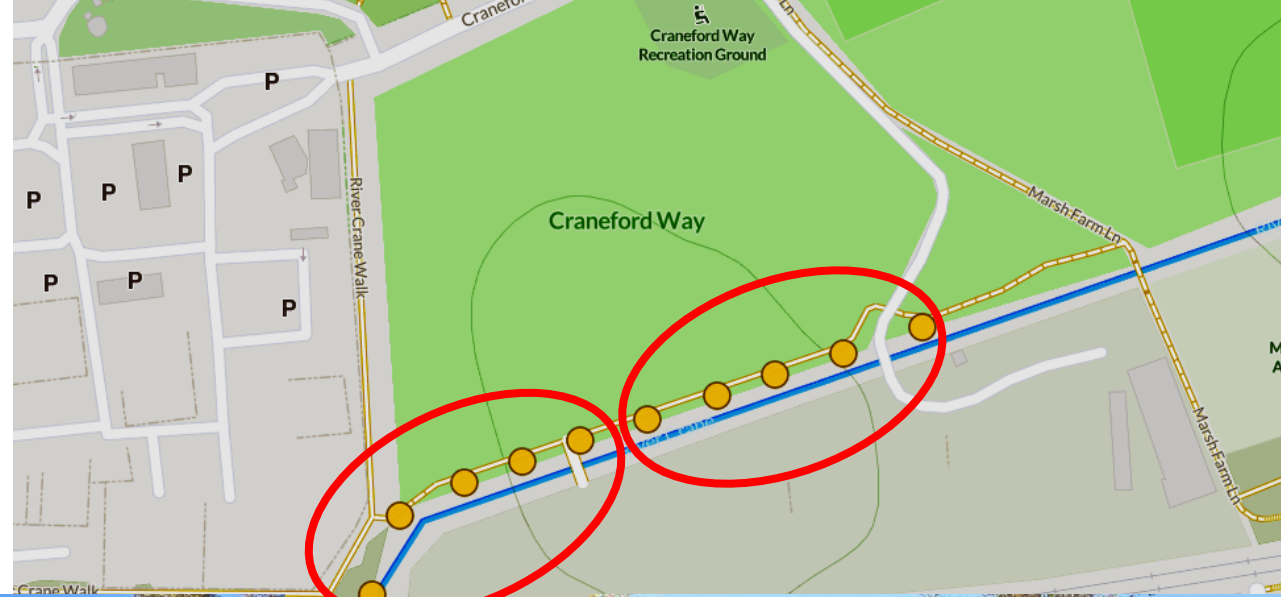
PHYSICAL  
HABITAT  
ATLAS  
(40 maps)



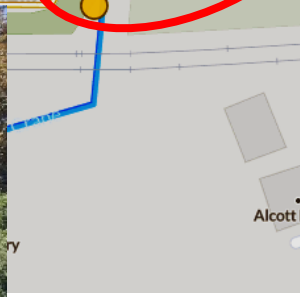
# MoRPh Surveys

## River Rehabilitation and Restoration

### MONITORING IMPACTS

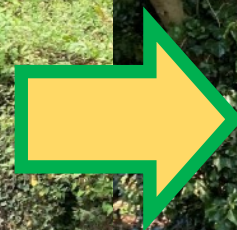


**FAIRLY POOR**



**POOR**

THANK YOU!  
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# Frances Bennett

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# RIVER CRANE CATCHMENT CONFERENCE

Issues and  
opportunities across  
the key themes



Community Engagement  
and Access

# RIVER CRANE CATCHMENT CONFERENCE

Community Engagement  
and Access



## Who are we?

- Let's Go Outside and Learn CIC
- Habitats & Heritage
- Sustrans



# RIVER CRANE CATCHMENT CONFERENCE

Key aims for Community  
Engagement and Access

The community theme of the Smarter Water Catchment initiative aims to:

- achieve widespread recognition that the river corridors are valued by local communities and policymakers.
- place every section of the river corridors under community stewardship.
- establish an unbroken Crane Valley trail with visitor facilities at regular intervals.
- and encourage public use of the river corridor for recreation and health/wellbeing.



Cranford Bridge where the A4 Bath Road crosses the River Crane and industrial units around Heathrow beside river Crane.



# Challenges

Include:

- The catchment is largely urban, covers five West London boroughs and is home to over 650,000 people.
- Areas of both affluence and deprivation, some with both high deprivation and demographic churn.
- The river corridors are crossed by several major highways (including the M4, M40 and A30).
- Many commercial and light industrial areas, including much of Heathrow perimeter, with few opportunities for community stewardship.

# Community stewardship gap analysis

Research (LGOAL & H&H) into community engagement in the Crane catchment showed the strength of community engagement within the catchment.

58 community stewardship organisations were identified across the catchment

Of these groups, 44 were community led organisations (e.g. Friends Groups)

938 volunteers were actively engaged in activities, including conservation volunteering

Gaps in the geographical coverage of community stewardship coincided with:

- Significant infrastructure such as main roads
- Business/industrial estates

This is particularly noticeable on the upper Duke of Northumberland's River and Eastern arm of Yeading Brook.



# Opportunities for public engagement

Together with Habitats & Heritage, LGOAL is seeking to build the capacity of the existing of community stewardship in the Crane catchment through:

## Easy access to funding

The Crane Project Fund and Crane community fund launched 2022.



## Supporting capacity building

The development of a network to communicate, share best practice and targeted advice.

## Developing a Public Engagement Strategy

The development of a Strategy with campaign with an annual strand covering all SWC themes.



## Incubating new community stewardship

Fostering environmental stewardship in the geographical gap areas.

What we have  
discovered so far?

We need to involve everyone living  
and working in the catchment

The “public” do not understand what  
a catchment is. We need to  
communicate in an accessible way.

Fragmentation

Demographic churn.



# RIVER CRANE CATCHMENT CONFERENCE

Access  
Key Aims



This theme of the Smarter Water Catchment initiative aims to:

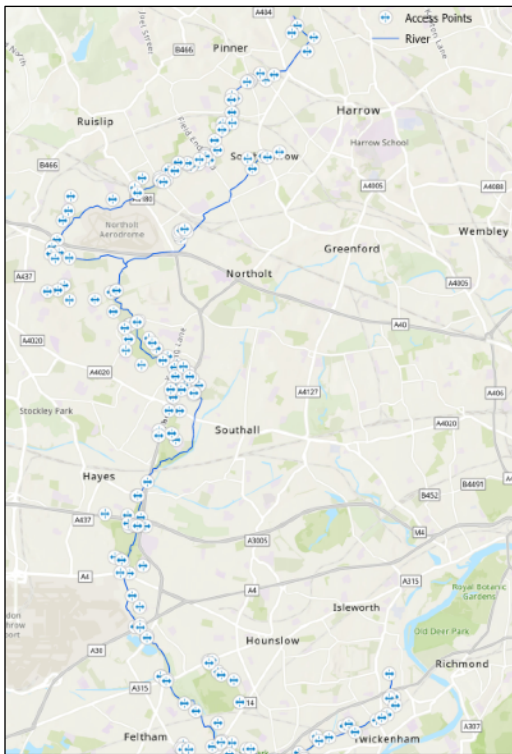
- establish an unbroken Crane Valley trail with visitor facilities at regular intervals.
- and encourage public use of the river corridor for recreation and health/wellbeing.

# River Access Audits

Sustrans audited the entire length of the Crane river corridor in 2021

- Over 100km of river frontage along the corridor
- Looked at movement along, and access to, the corridor

Used GIS mobile app (ESRI Field Maps) for real time data



## Found variable quality

- Paths – widths, surfacing, condition
- Access barriers – steps, chicanes, gates, A-frame
- Signage – wayfinding, information
- Severance – major roads, railways
- Bridges – along and over the river
- Nodes/hubs – toilets, facilities
- Some breaks in continuity with no access

# Corridor Paths

63km of paths along the corridor and leading to it

Many spaces are effectively inaccessible to certain groups of people



**28% sealed paths**

A section of sealed access path at Brookside open space. This hard, sealed surface is accessible to all people walking, cycling and wheeling.



**35% made, unsealed paths**

A section of made, unsealed corridor path at Cranford Park. This type of path of path is accessible to some users, but not all.



**36% unmade paths**

A section of unmade corridor path at Hounslow Heath. This type of path is inaccessible to many users.



# Inclusive Access

Focus on access for people walking and wheeling

- Consider all possible users, including those with protected characteristics, e.g. those using mobility aids, with buggies, or the elderly
- Of more than 200 access points to the river corridor, <10% could be



**This afternoon's workshop – not everyone is like me**

# RIVER CRANE CATCHMENT CONFERENCE

Community Engagement  
and Access



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