NATURAL ENGLAND

FRESHWATER BIOLOGICAL ASSOCIATION

Discovering Priority Habitats

in England

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Priority Habitats

- River and lake habitats were action to protect and restore biodiversity is a priority
- Much of what we know related to larger waterbodies
- This project aims to identify:

Sites that are in good condition (so we can protect them)
Sites that are in poor condition (so we can restore them)

With a focus on smaller water bodies

About the project

- Collaboration between Natural England and the Freshwater Biological Association
- UK commitment to protecting biodiversity
- Currently in pilot phase (Oct 2021 – Mar 2022)
- Train citizen scientists to carry out **naturalness assessments** on waterbodies that have 'fallen through the cracks' of WFD

Norfolk Hawker Dragonfly

Naturalness surveys

Simple 4-part visual survey:

Physical | Hydrological | Chemical | Biological

Naturalness scoring: 1 (highly natural) to 5 (highly unnatural)

Confidence scoring: low, moderate, high

Training materials & guidance documents available at: **priorityhabitats.org**

Table 1. Naturalness class descriptions.

Class[1]	Naturalness components			
	Physical	Hydrological	Chemical	Biological
1	No evidence of human physical modifications within the reach – channel straightening/deepening/ widening, bank reprofiiling or reinforcements, impounding structures (weirs/dams). At least patchy cover (>1/3 of surveyed length) of riparian trees*, providing leaf litter and woody material to the channel, some of which is retained. Tree roots strongly influencing channel dynamics (patterns of erosion and deposition, channel sinuosity). Riparian zone (up to 5 metres from bank top) with semi-natural vegetation.	No evidence of impacts on the natural flow regime from abstraction, diversion, upstream impoundment or discharges (e.g. abstraction pipes or pumps, leats, discharge pipes, upstream artificial lakes). Note that if the reach is in the headwaters it may naturally dry up in the summer months – such naturally intermittent stream sections are highly important for a range of specialist species.	No evidence of pollution within the reach. No sewage fungus, or substantial filamentous algal growths that are likely to be attributable to nutrient enrichment. No direct effluent discharges. No evidence of artificially enhanced input of fine sediment. If used, water quality test kits do not register any positive results. Biological sampling indicates no impacts on water or sediment quality.	No evidence of non-native species (plants or animals). As a minimum assessment this should include Himalayan Balsam, Japanese knotweed and Giant Hogweed.
2	Physical modifications (described above) of limited spatial extent within the reach - no more than 5% of surveyed length). BUT no artificial impounding structures. At least patchy cover (>1/3 of channel length) of riparian trees*, providing leaf litter and woody material to the channel, some of which is retained. Tree roots having some influence on channel dynamics (patterns of erosion and deposition, channel sinuosity). Riparian zone (up to 5 metres from bank top) with semi-natural vegetation.	Evidence of minor impacts on the natural flow regime from abstraction, diversion, upstream impoundment or discharges (e.g. abstraction or discharge points creating a discernible difference in flow).	Evidence of low-level pollution. Small amounts of sewage fungus in the reach, or patches of filamentous algal growth that are likely to be attributable to nutrient enrichment (e.g. downstream of effluent discharge). Low-level evidence of artificially enhanced input of fine sediment. If used, water quality test kits register positive results but at low concentrations. Biological sampling indicates only minor impacts on water or sediment quality.	One or more non-native species are present in small numbers or spatial extent. Non-native plants should occupy no more than 5% of channel length. Non-native animals (e.g. signal crayfish) should rarely be encountered during searches.
3	Physical modifications of moderate spatial extent – no more than 30% of reach length. Artificial impounding structures may be present but rare and with limited impact on physical habitat or free movement of species.	Evidence of moderate impacts on the natural flow regime from abstraction, diversion, upstream impoundment or discharges. e.g. abstraction or discharge points creating an appreciable difference in flow.	There may be moderate levels of filamentous algal growth or sewage fungus through most of the reach. Moderate evidence of artificially enhanced input of fine sediment. If used, water quality test kits register moderate levels of pollution. Biological sampling indicates moderate impacts on water or sediment quality.	One or more non-native species have a significant presence in the reach, occupying up to 25% of the reach.
4	Physical modifications extensive – more than 30% of reach length but still some segments of natural channel and bank. And/or artificial impoundments have a considerable impact on physical habitat.	Natural flows are heavily depleted by abstraction, upstream impoundment or water diversion	There may be high levels of filamentous algal growth or sewage fungus through most of the reach. High levels of evidence of artificially enhanced input of fine sediment. If used, water quality test kits register high levels of pollution. . Biological sampling indicates high impact on water or sediment quality.	One or more non-native species are a major component of the flora or fauna, occupying up to 60% of reach length.
5	Physically modified throughout the reach (i.e. 100% of reach length). Channel is uniformly straightened and oversized, or with reinforced banks.	The reach is dry for the majority of the year due to abstraction or water diversion.	Major pollution issues. There may be very high levels of filamentous algal growth or sewage fungus throughout the reach, or chronically poor water clarity (not just after heavy rain). Major evidence of artificially enhanced input of fine sediment. If used, water quality test kits register very high pollutant concentrations. Biological sampling indicates high impact on water or sediment quality - very few types of aquatic invertebrates present.	One or more non-native species are widespread in the reach, dominating the riparian zone or the channel.

* Riparian trees should be present where natural environmental conditions allow, which includes higher altitudes up to at least 700 metres (Natural England 2018).

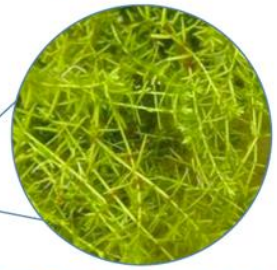
Training material

Non-native species

Himalayan balsam

Giant hogweed
(do not touch me!)

Japanese knotweed



New Zealand pygmyweed

Identification

Identification

OTHER INFORMATION

On your assessment form, you will see we ask for other pieces of information to supplement the main visual inspection you have carried out. Some parts of this are quite simple, however, some parts require a bit of extra knowledge.

Key habitat features

While it is not essential to record habitat features, they can be very useful in helping us to understand your river or stream when we come to analysing the assessment data and mapping the presence of different habitat features around the country.

Let's look at some key habitat features:

Bankside flushes & springs

Areas where ground water is seeping into the system are known as flushes & springs. They are often appear as boggy areas along the bank.

Trees along the river bank may extend their roots into the channel, or dip branches, creating a more complex habitat.

Trees interacting with channel

Waterfalls & cascades

Waterfalls and cascades will often form in the upper reaches of streams, where the gradient of the land is changing more steeply.

Discarded woody material such as fallen branches or trunks often make their way into undisturbed channels.

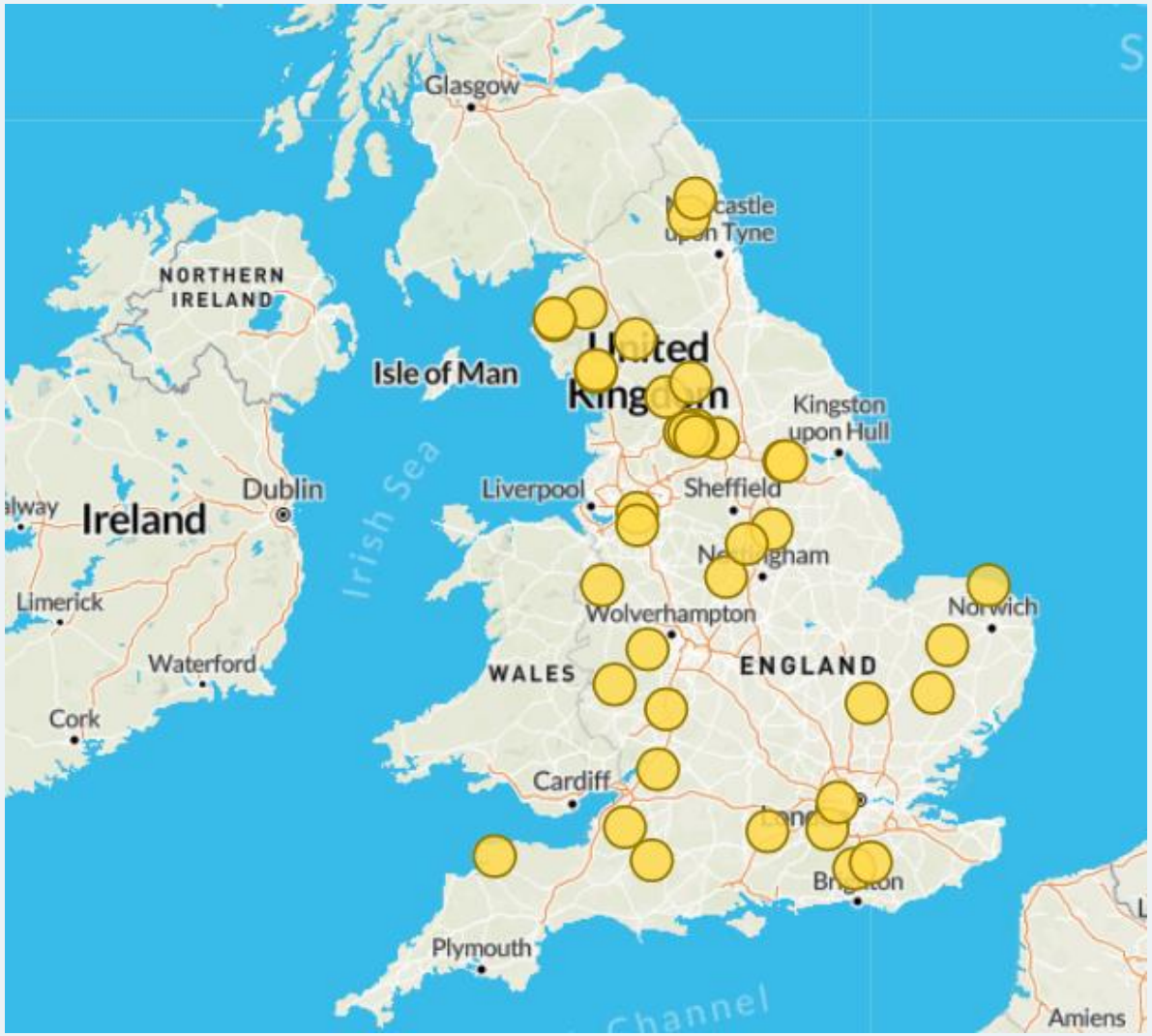
Woody material in-channel

Natural mire-stream transitions

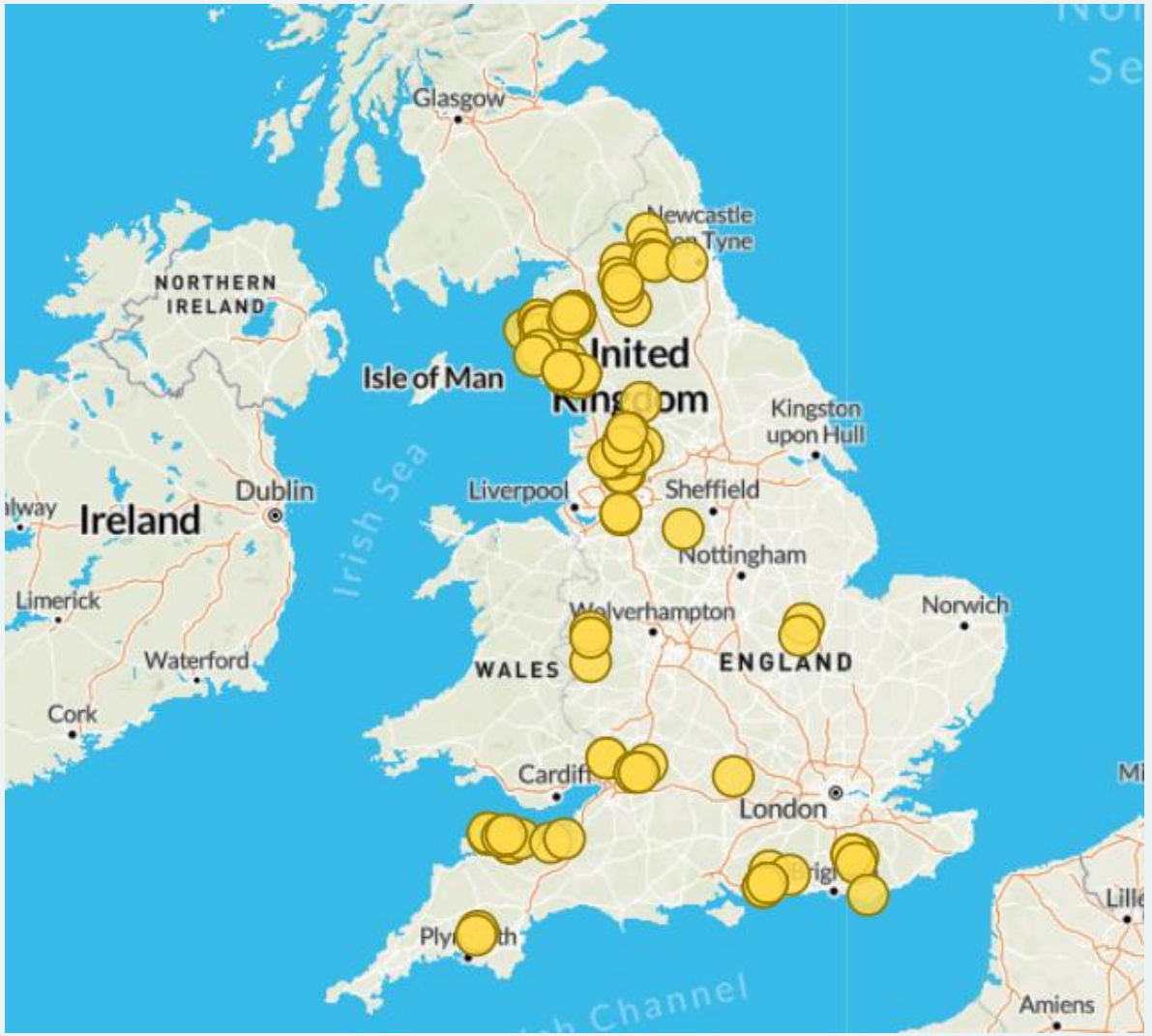
Usually occurring in peatland, mire-stream transitions occur where the wetland and stream are connected to eachother.

You may see meandering stretches of river in your assessment, as well as rivers that have split into several distinct channels.

Sinuous & multiple channels



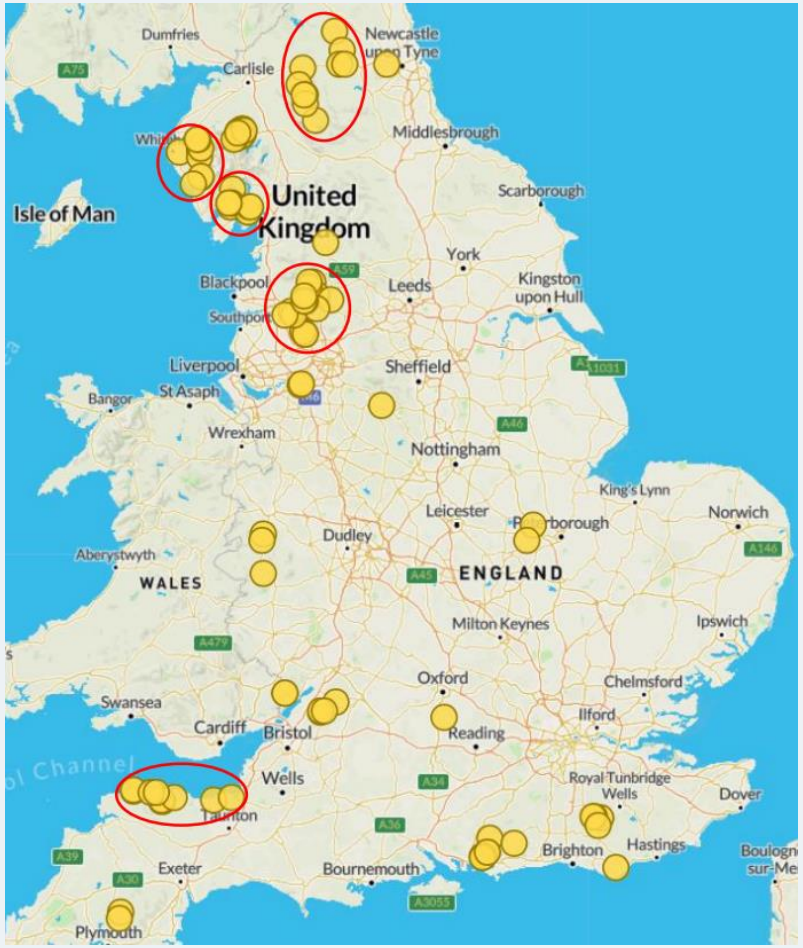
Lakes



Rivers/Streams

Project Progress

- **10** Priority Habitats training courses
- **128** citizen scientists trained from Wildlife Trusts, Rivers Trusts, species recording groups, practitioner groups, universities and Riverfly
- **215** citizen scientist uploads to *Cartographer*
- Data used as part of **Local Nature Recovery Strategies** (Cumbria & Lancashire)
- Host an **improved chalk rivers map**
- Development of ***Cartographer*** **mobile application**



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Future Objectives

- Focus on and fill **data gaps** for lakes and reservoirs

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Future Objectives

- Encourage professionals to upload **restoration priorities**
- Integrate restoration priorities **training** into the current priority habitats training agenda

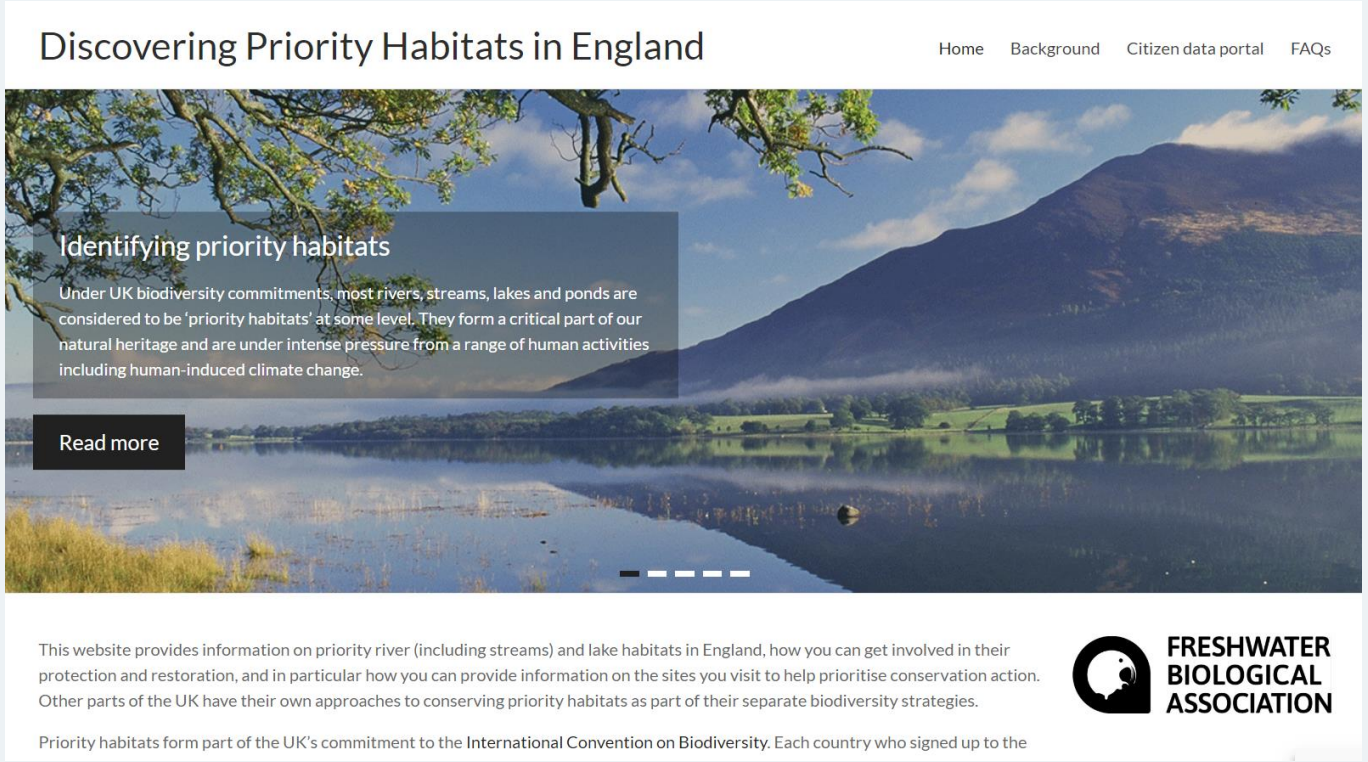
Future Objectives

- Targeting citizen scientists interested in **lakes** e.g. angling clubs, wild swimmers

- Continued engagement with **Rivers Trusts** and **universities**
  - Develop lakes initiatives with Rivers Trust e.g. Lakes Challenge with Ribble Rivers Trust

Future Objectives

- Launching the ***Cartographer*** **app**
- Improve training resources & website guided by CS feedback and evaluation
- Regular **virtual Q&A** sessions



Help and Queries

- Please visit **priorityhabitats.org** FAQs and background info
- Contact me at **ajones@fba.org.uk**
- Join us at face-to-face training events

Any questions?