

The development of a small waters monitoring network

People, Ponds and Water
... and beyond

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Our vision for People, Ponds and Water

We believe the best way to protect freshwater habitats is to increase people's enjoyment, knowledge and experience of them.

In the People, Ponds and Water project we wanted to inspire people to connect with, understand and appreciate the freshwater environment.

In doing so we wanted our audiences to become directly involved in actions that would make a nationally significant difference to the long-term protection of our freshwater heritage.

In People, Ponds and Water we wanted to achieve two overarching outcomes:

To engage many thousands of people with activities that helped them to learn about, participate in, and enjoy their freshwater heritage.

To make a nationally significant difference to the protection of freshwater biodiversity in the UK.

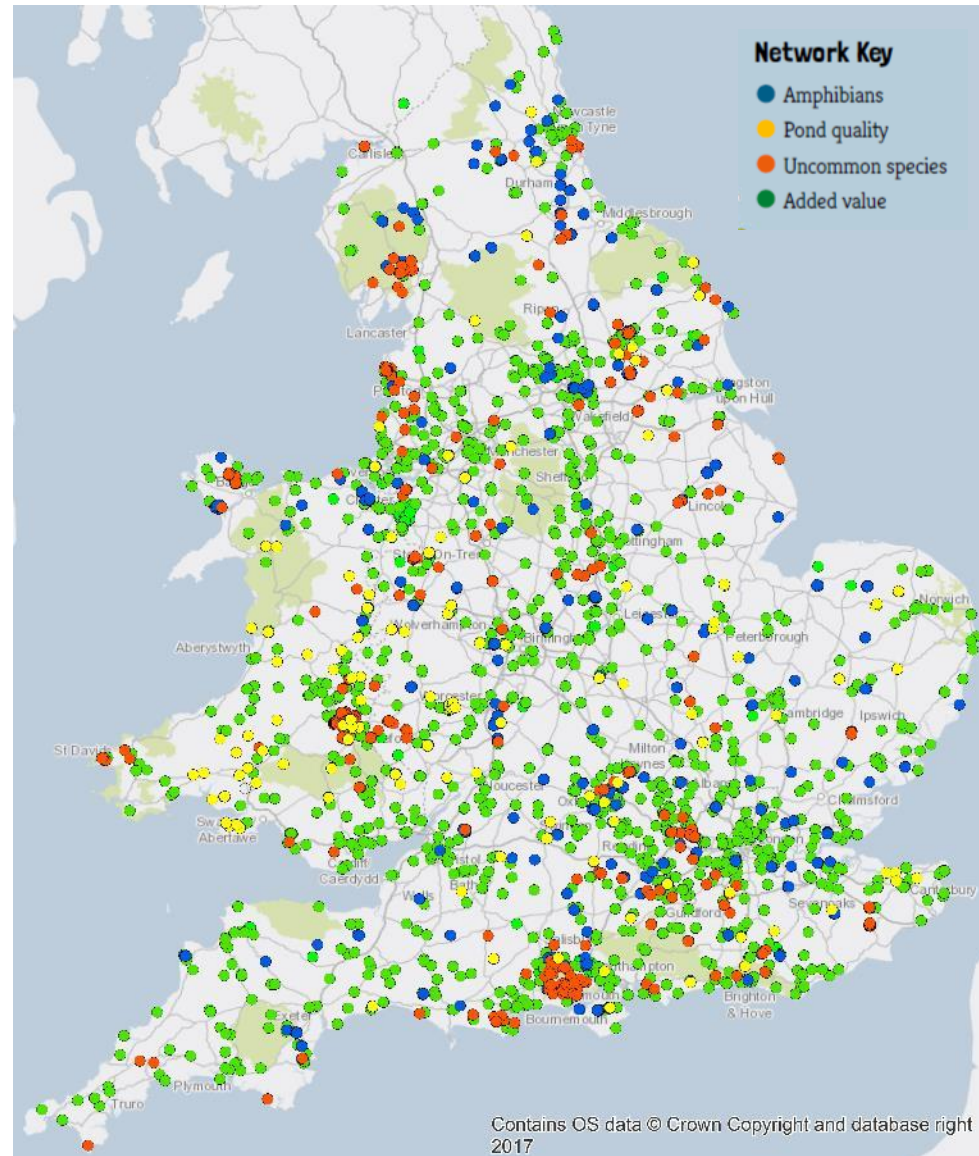


People, Ponds and Water

- **PondNet:** Creating a new national freshwater network to collect essential monitoring information on important ponds and uncommon freshwater species
- **Clean Water for Wildlife:** Raising awareness of the critical importance of clean water for protecting all freshwater biodiversity by enabling people to use ‘quick kits’ to survey nutrient levels across all waterbody types
- **Flagship Ponds:** Supporting local people to manage and monitor the most important ponds and pond landscapes in England and Wales

PondNet

- **8,500** individual records from over **3,300 ponds**
- **Up-to-date information** on the status and change of pond habitats
- National surveys for **15 priority pond species**
- We've held **210 training events** for more than **1,500 volunteers**



Pond Habitats

25 years after the first survey of the UK's best pond sites

Worrying **decline** in the number of plant species: 25 spp per pond in the 1990s, to 21 spp in the same ponds today (as in CS2007).

Submerged aquatic plants were particularly vulnerable.

Uncommon and rare species have also been badly hit: many ponds losing their most uncommon plants like Water Violet, Frogbit and Tubular Water-dropwort.

Pond quality is declining even in protected areas



Great Crested Newts

New technology (eDNA) has allowed PondNet volunteers to monitor Great Crested Newt occupancy trends in England and Wales

Over 450 volunteers helped us to collect eDNA samples from more than 380 ponds across England and Wales.

We now have certainty that between 18-32% of 1km grid squares are occupied by Great Crested Newts.

No change in Great Crested Newt populations detected in the short term, but occupancy is directly correlated with good quality habitat.

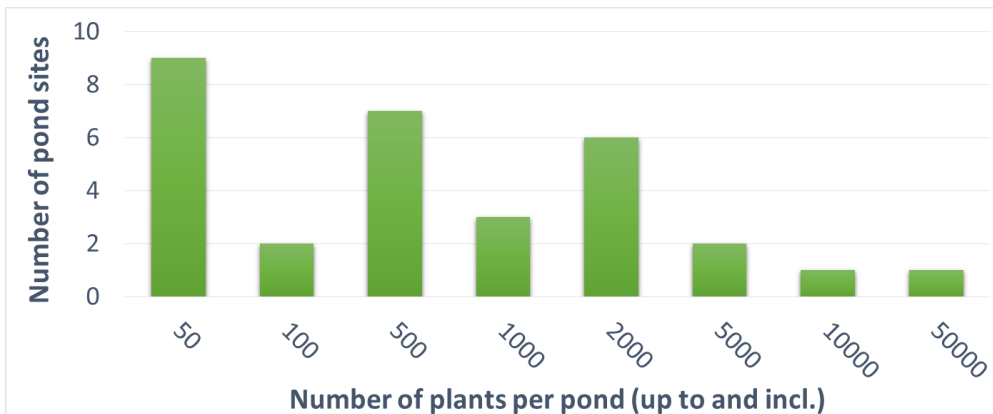
Protocols in place to detect long term changes in species and habitats



Tubular Water-dropwort

Tubular water-dropwort has been **lost from more than half** of the ponds visited

Only 13% of sites had more than 2000 plants, whilst **35% of sites had fewer than 100 plants**

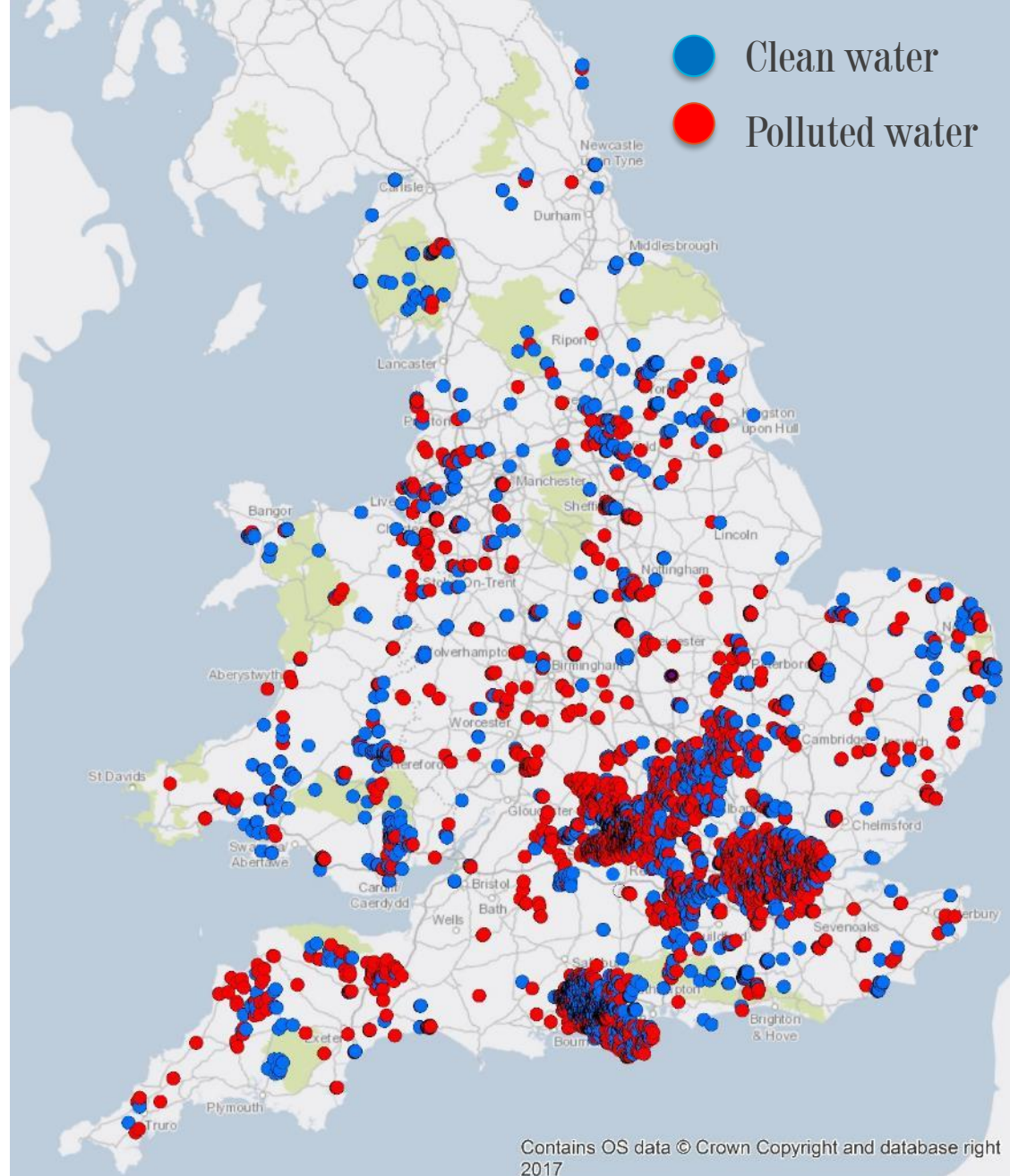


Declines in both range and abundance of restricted pond species

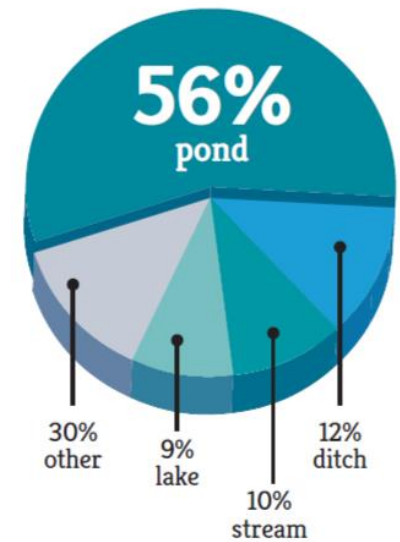
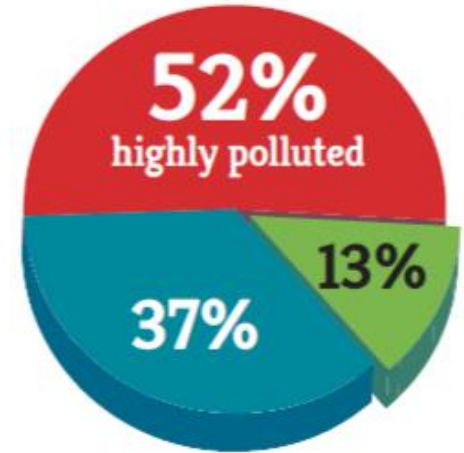
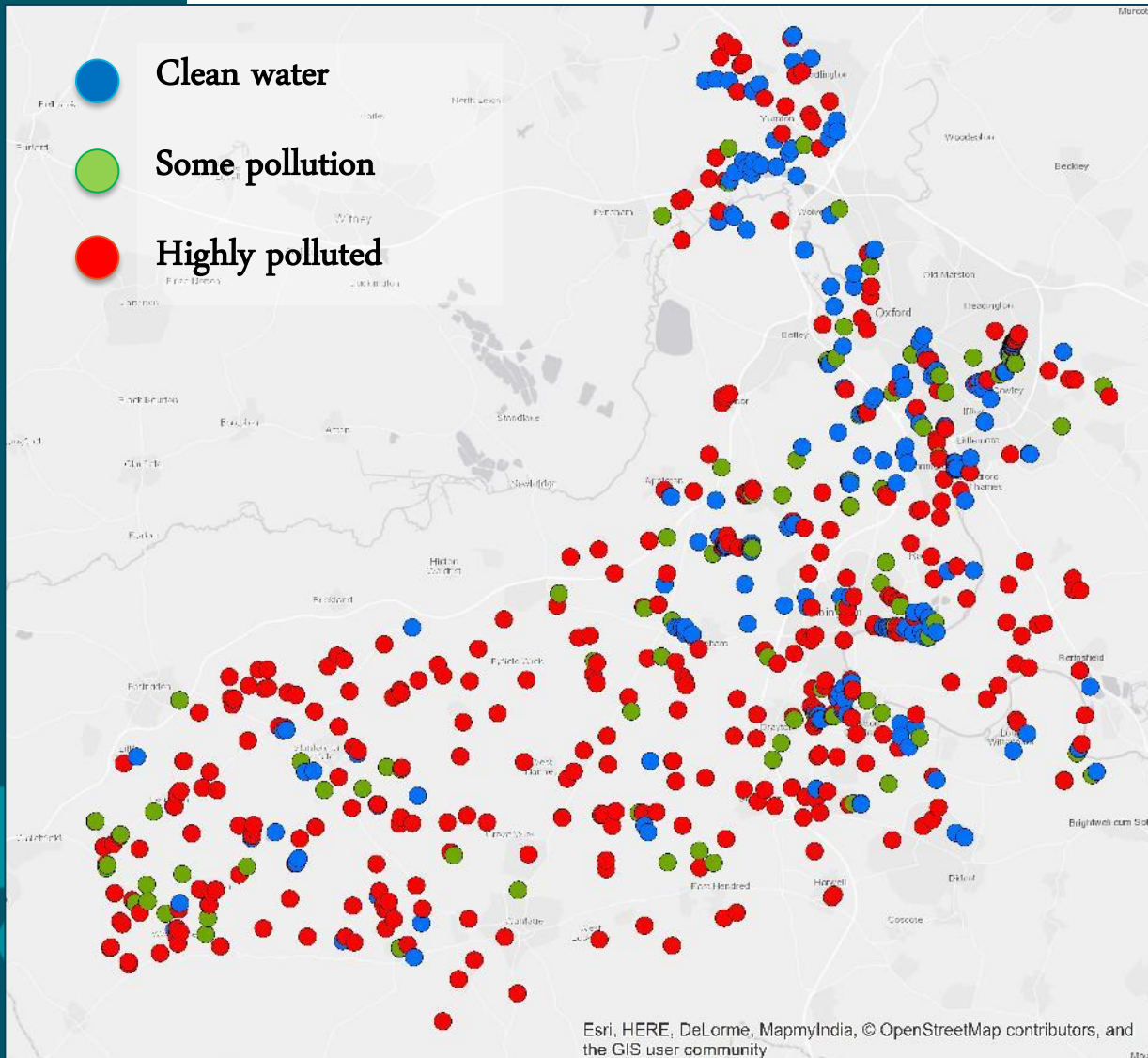


Clean Water for Wildlife

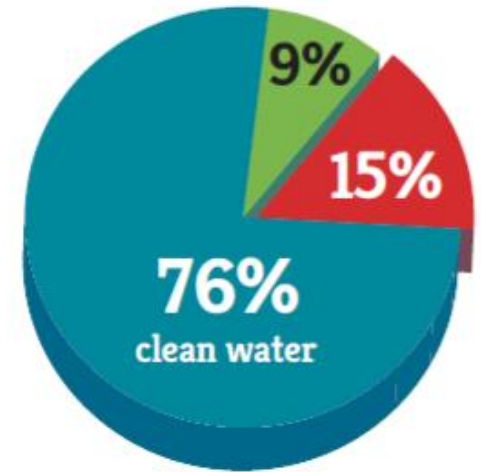
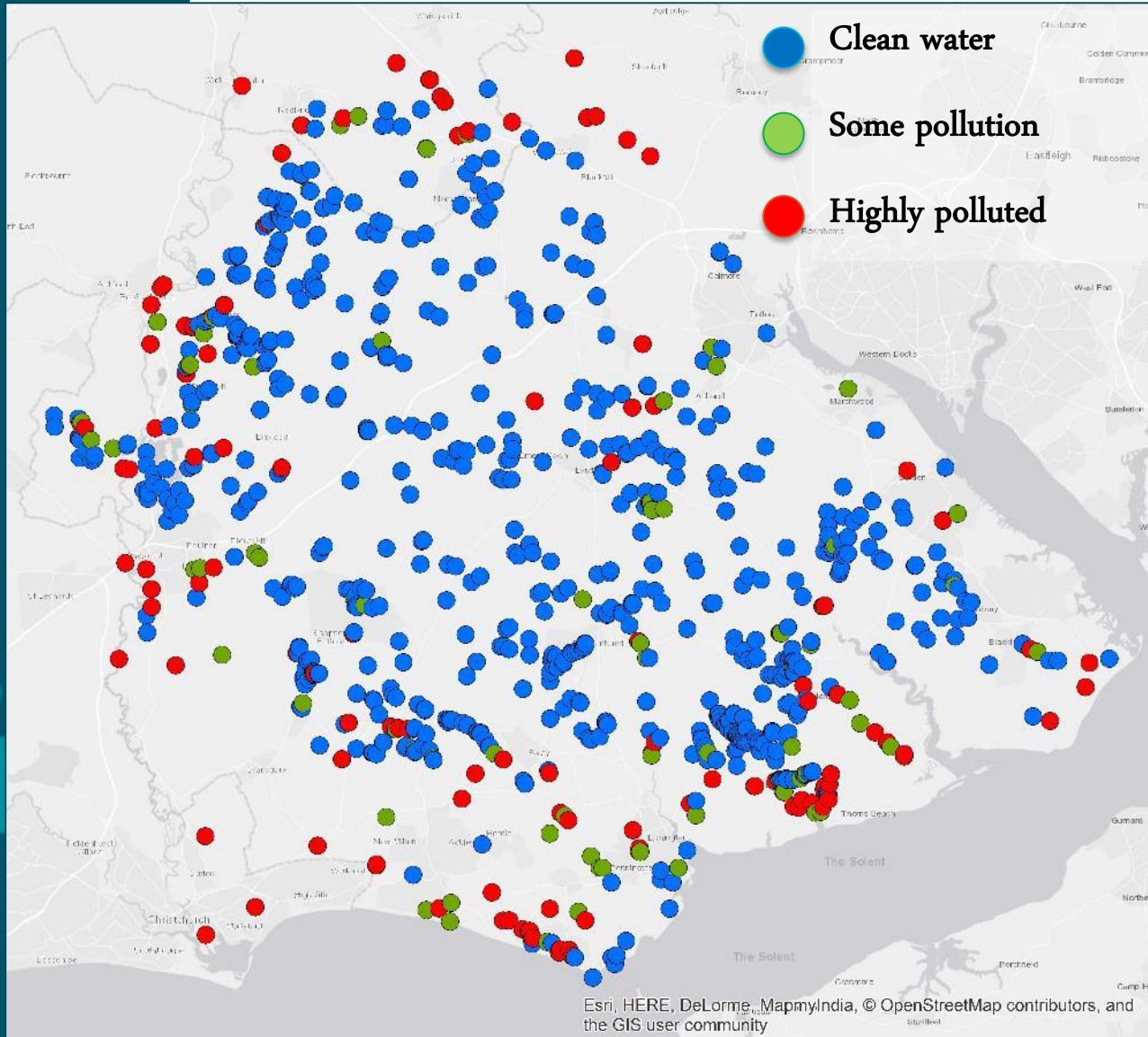
- **The bad news** - is the extent of nutrient pollution.
- **The good news** - people found clean unpolluted water in all the landscapes they tested.
- **More good news** - the results reveal for the first time the national importance of ponds in the clean water network.



The Ock Catchment



The New Forest



The best sites for freshwater wildlife are free from nutrient pollution

Flagship Ponds

- **72 Flagship Pond sites** identified and protected
- **600 active volunteers** at Flagship Pond sites
- **90 training sessions** with national experts for Flagship Group volunteers
- New pond creation and practical management **saving species** across the network
- **Site specific monitoring and research** to assess management outcomes

Barkbooth Lot
A wonderful site for the medieval cure all - the Medicinal Leech

Skipwith Common
Home to Pillwort - a delicate aquatic fern

Willow Tree Fen
One of the last ponds for the statuesque Greater Water-parsnip

Llyn Tegid
Now the only place in the UK where the Glutinous Snail still survives

Stow Bedon Common
One of the few English sites for Pond Mud Snail - a temporary pond specialist

The Lizard
Home to many endangered plants and animals including the winter buttercup, Three-lobed Water-crowfoot

Creech Heath
One of only a handful of sites for the dazzling, but tiny, Pondweed Leafhopper

Tadnoll Flagship Pond Site



People, Ponds and Water summary

- We've produced **up-to-date information** on the status and decline of many pond habitats and priority species (**mixture of volunteer and professional surveys**).
- We've generated the first ever data on the extent of nutrient pollution in **all waterbody types** across England and Wales (**using new technologies**).
- We've worked to **protect and manage** some of the most important pond sites, we've shown that we have the tools to turn things around (**a tiered approach to monitoring**).
- So **what next?**

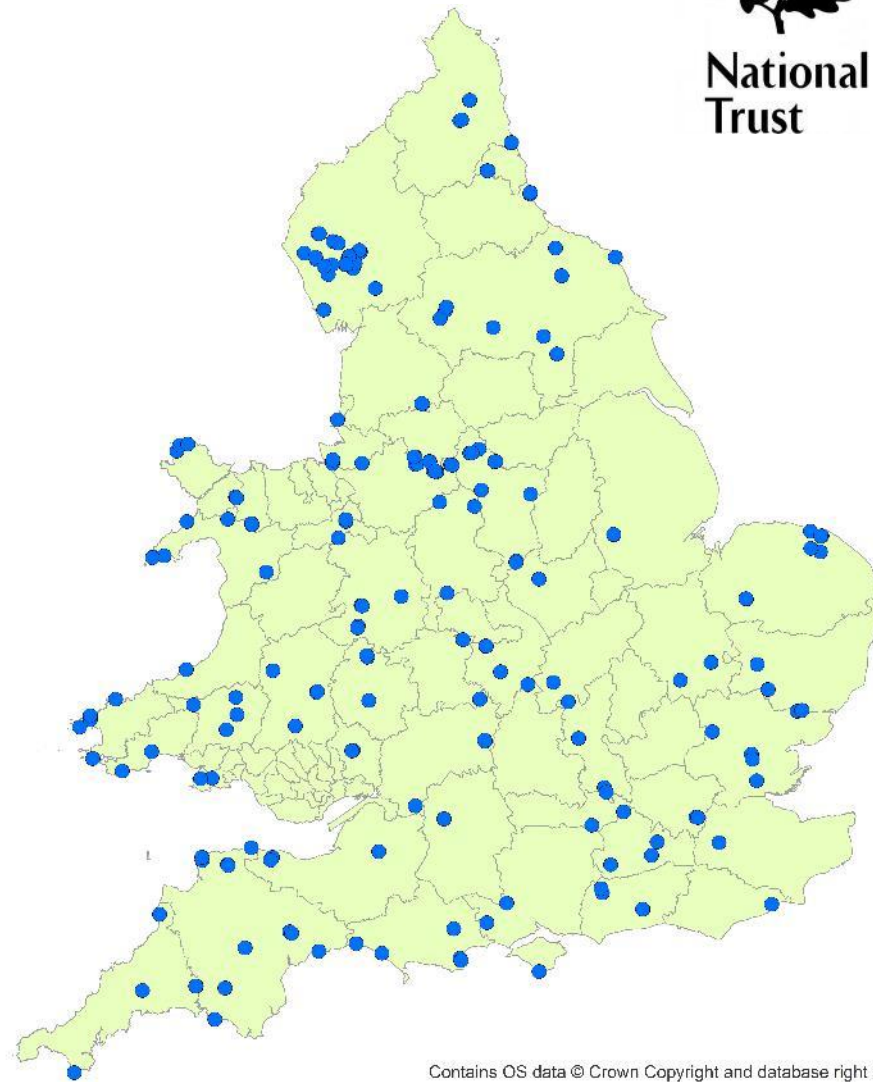
Developing a small waters monitoring network



National
Trust

Phase 1: With the **National Trust** to monitor the condition of freshwater habitats on their estate (especially small still and running waters) in order to:

- a) Determine the **status of freshwater habitats** as important wildlife features in their own right;
- b) Assess freshwater quality as an **indicator of change** - how well the National Trust is managing the land and soils on its properties.



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Tiered monitoring approach



National
Trust

- Professional surveys of **100 ponds and headwater streams** across the National Trust estate.
 - PSYM surveys for ponds
 - LEAFPACS plus for streams
- Volunteers surveys to **monitor water quality** (a baseline of a minimum 1,000 waterbodies).
- Use of **new eDNA technologies** to target species groups
 - All amphibians
 - Fish
- Bespoke **site based monitoring** for rare species.

Developing a small waters monitoring network – phase 2

Phase 2: Building on work with National Trust

- With further partners (e.g. MOD, FC, NE, National Parks, others) planning **eDNA-based citizen science monitoring** survey
- Objectives:
 - Technically credible data from full range of small and large waters (ponds, small lakes, streams, headwaters, ditches etc.)
 - Cryptic and rare species and groups
 - Mobilises large number of people
 - Will be inviting partners to join in planning this autumn.

Partners and funders

