

Pillwort ID and Survey



What is Freshwater Habitats Trust?



Our aim

To protect freshwater life for everyone to enjoy

We are:

- An evidence-based conservation charity, with a strong science grounding.
- Highly strategic – we target or work where evidence suggests it will be most effective
- Concerned with all freshwater including those that are small and undervalued like headwater streams, ponds, flushes and ditches
 - Working in partnership with people, communities and organisations to get the best results for freshwater wildlife

What is Freshwater Habitats Trust?



Our strategy

Freshwaters are amongst the most threatened habitats in our modern world, and it is essential that we have strong independent voices that stand up for them.

Our vision is that:

- All threatened freshwater plants and animals have recovered and developed sustainable populations
- The UK has a functioning network of freshwater habitats: The Freshwater Network
 - People value freshwater habitats and their wildlife
- We deliver our conservation aims through our expert staff and our conservation, community, research and policy work

Pillwort

Pilularia globulifera



Pillwort: What is its habitat type?

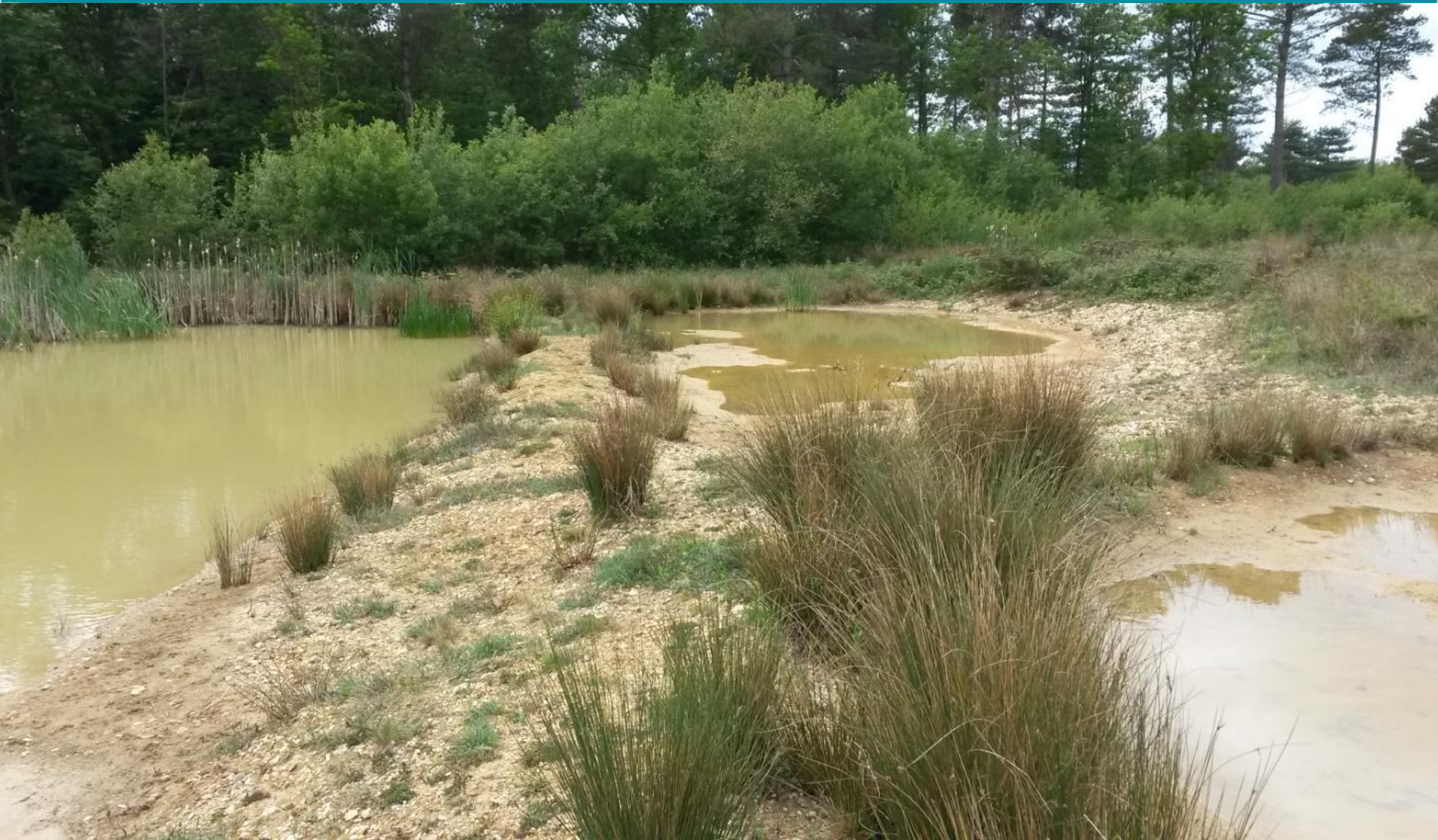
- **Seasonally fluctuating water levels.**
- **Slightly acidic ponds or ruts on clays, sands and peaty substrates.**
- **Grazed open habitats, e.g. heathlands and acid grasslands**
- **Sites with clean, unpolluted water**



Bouldnor Forest: Old Pillwort Pond

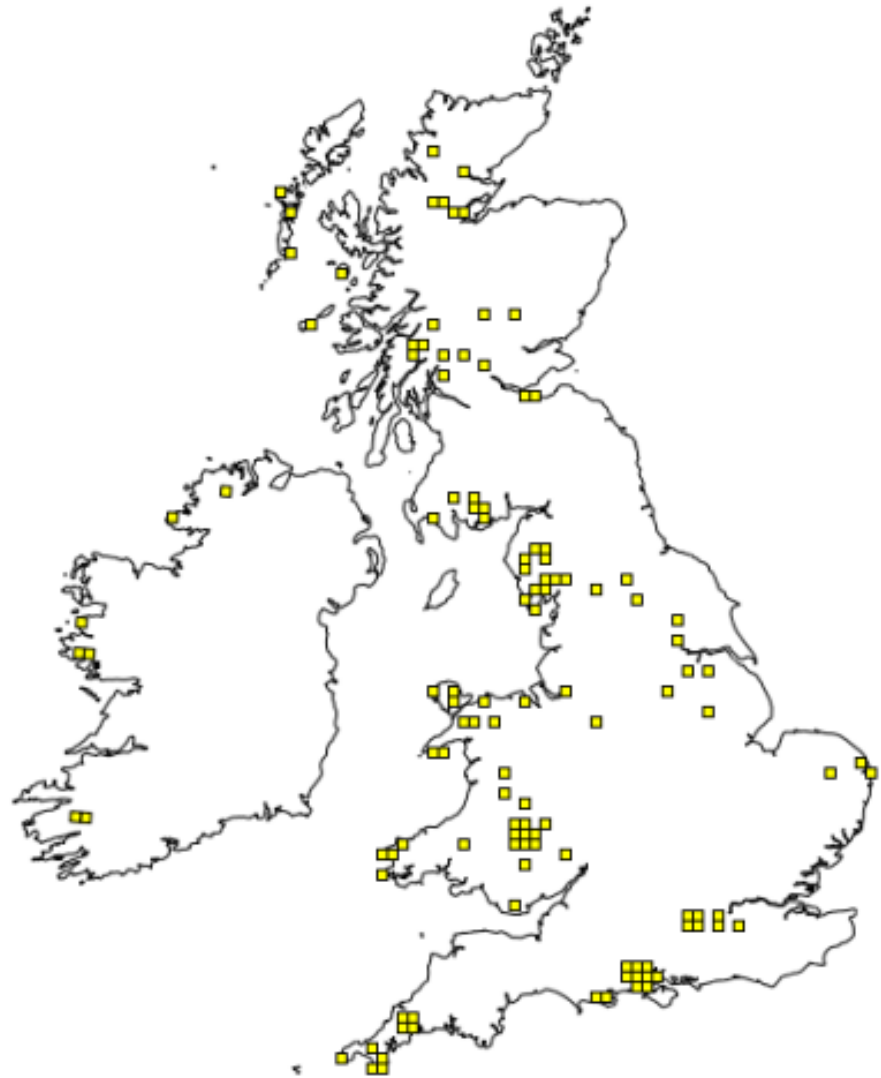


Bouldnor Forest: New Pond Creation

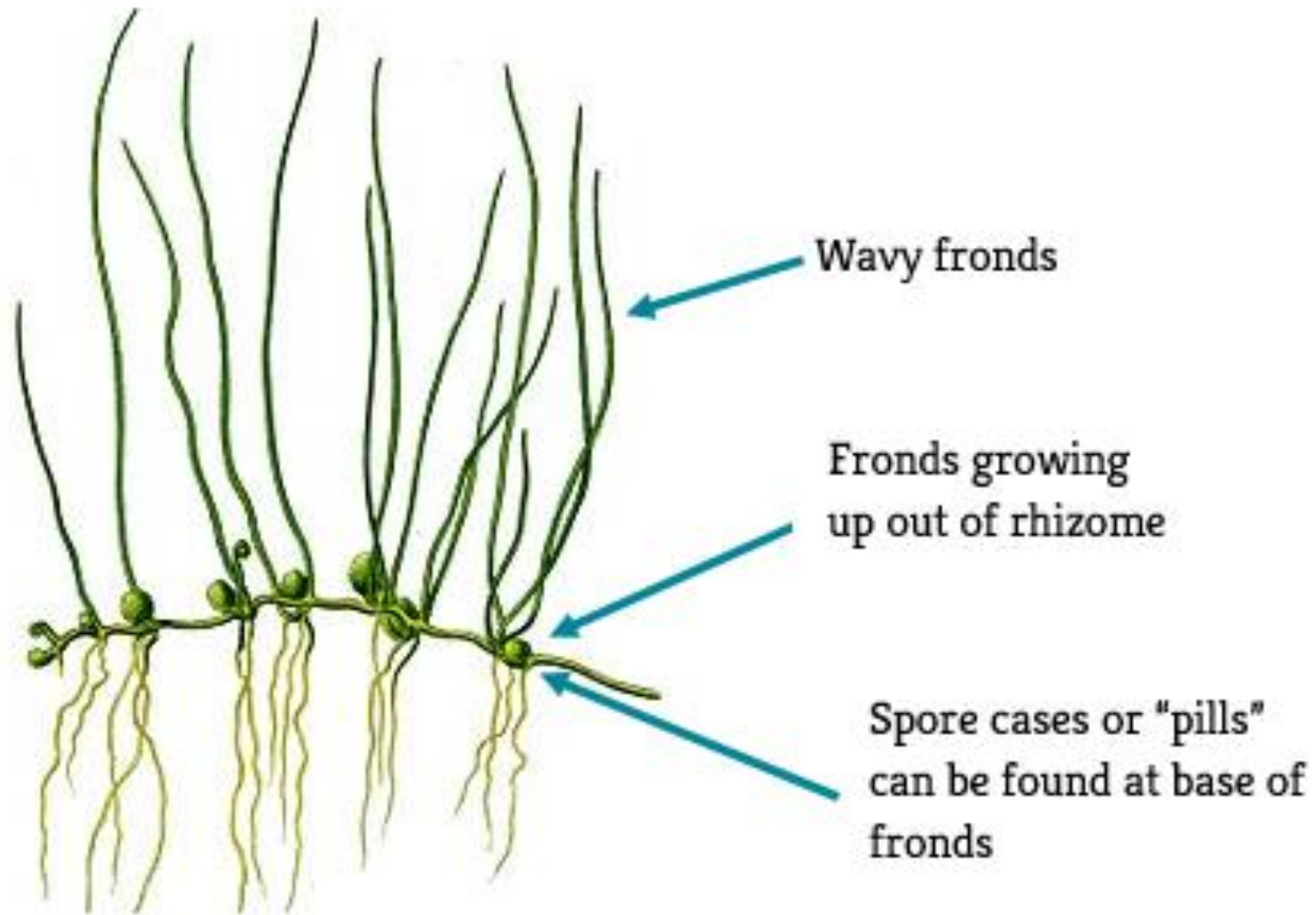


Pillwort: Current Status

- **Currently known from ~100 10km squares**
- **Lost from 2/3^{rds} of its range**
- **Classified as Near Threatened**



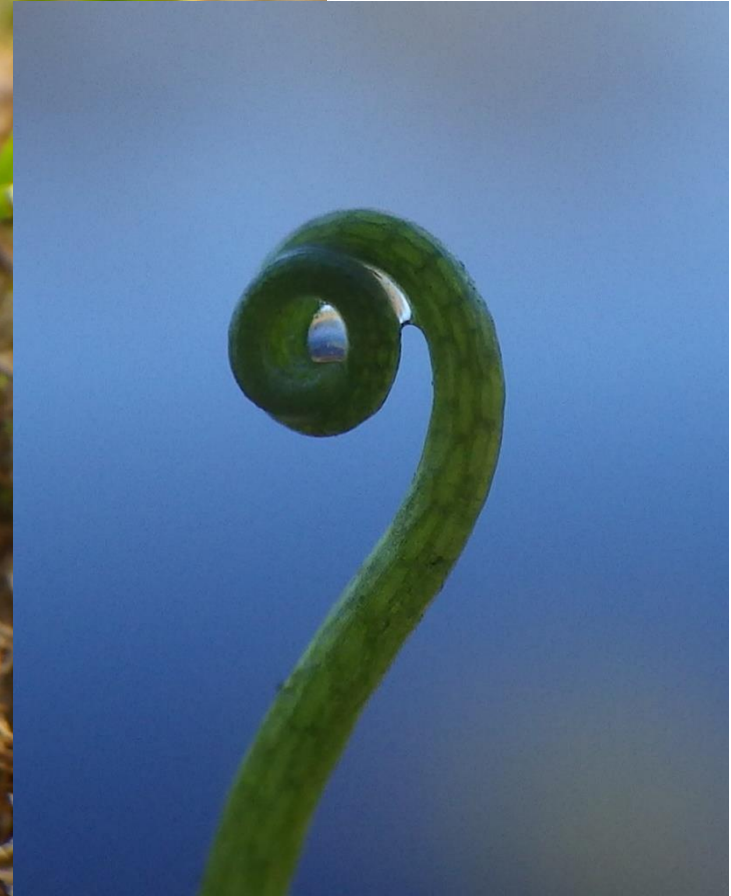
Pillwort Identification



Pillwort *Pilularia globulifera*



Pillwort *Pilularia globulifera*



Pillwort Identification



Pillwort Identification



Could it be anything else?



Bulbous rush
Juncus bulbosus

- Grows in tussocks
- Has reddish stems

Could it be anything else?



Spike rush *Eleocharis acicularis*

- Has a fruiting head at the end of each stem
- Stems are straight, not wavy

Could it be anything else?



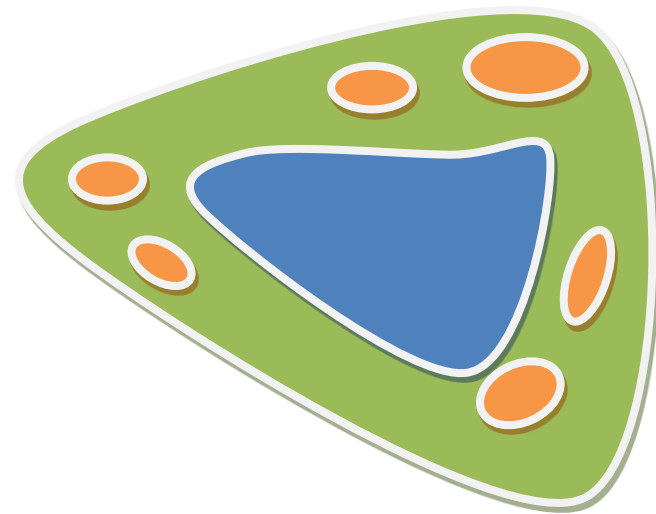
Club rush

*Eleogeton
fluitans*

- Has a fruiting head at the end of each stem
- Leaves flattened, not round

Record abundance : Estimate of plant cover

1. Record the area of the pond covered by the plant (m^2)
2. Record the percentage of pond occupied within the maximum winter water level

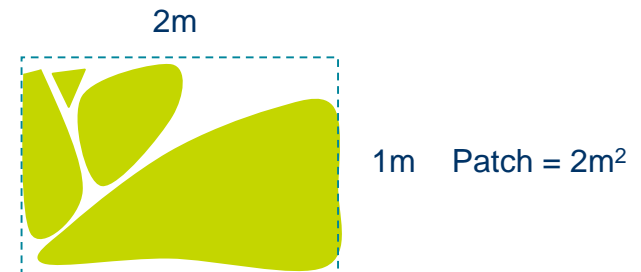
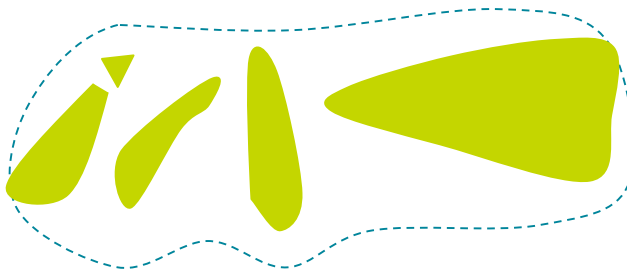


How to record Pillwort

Measurement 1. Area covered by Pillwort:

The aim is to record the total *area* of the Pillwort growing in the pond (in m²). To do this, record the size of each patch of plants, e.g. (1m x 1m) + (1m x 2m) = 3m².

Group-up small patches to make them easier to record



Measurement 2. % of the pond occupied by Pillwort:

The aim is to estimate the percentage of the pond that Pillwort occupies. Example: for a pond which is 800m² and has a 5m² area of Pillwort, the percent of pond covered is 0.6%

(i.e. $5/800 \times 100 = 0.6$).

Note: At very low abundance record the percentage as 1%.

How to record Pillwort

No.	Grid Reference	Notes	M ²
1	SE 6616237166	50 cm x 30 cm	0.5
2	SE 66165 37191	3 m ²	2
3	SE 6619837157	.5 m ²	0.5
		TOTAL AREA	3

Total area of
Pillwort

Total pond
area

$$3/6310 \times 100 = 0.04 (1\%)$$



Abundance of Pillwort in your Focal Pond

(NB Record plants from the *whole* pond, not just the water area, i.e. include areas in the drawdown zone that would be wet in winter, but may be dry in summer). If there is a large area of Pillwort, estimate the abundance in a small area and multiply up. If you find Pillwort please take a confirmatory photo, especially if it's the first time the pond has been surveyed.

3 M ²	Abundance measurement 1. Area covered by Pillwort in square metres (e.g. 3 m ²)
1 %	Abundance measurement 2. Percentage of the pond occupied by Pillwort (e.g. 20% or 1%)

Space for calculations:

Abundance measurement 1: See below for calculations

Abundance measurement 2: $3/6310 \times 100 = 0.04 (1\%)$