

Environmental Stewardship Agreement

AG00387916

Pond survey for Natural England

Freshwater Habitats Trust

March 2022

1 Introduction

Thank you for participating in our national pond study by allowing us to survey your pond. The study was commissioned by Natural England to evaluate the impact of agri-environment schemes on pond quality.

Between August and October 2021, we surveyed 120 ponds across England, including yours. The survey of your pond will help us to evaluate whether the agri-environment scheme options of maintaining, restoring and creating ponds have resulted in good quality ponds; to understand the causes of variations in pond quality; and to identify ways in which future schemes can be improved to provide better outcomes for pond wildlife.

1.1 Nature conservation value of ponds

Ponds are widespread features in the landscape which make a greater contribution to landscape biodiversity than their small size would suggest. Ponds can form wildlife hotspots within agricultural land and recent research has shown how they can also be important for terrestrial species such as birds, mammals (including bats) and pollinators in these landscapes. Ponds are also a priority habitat for conservation, identified in national biodiversity action plans. Research suggests that at least 20% of ponds (excluding garden ponds) may be considered priority habitat.

National surveys of pond habitat in England have reinforced the view that not all ponds are of equal value for wildlife. The 2007 Countryside Survey found that around 80% of ponds surveyed were of poor or very poor quality. Ponds were poorer in quality where: (i) they had elevated nutrients levels; (ii) were located in areas of arable land; or (iii) had inflows. There was also a strong relationship between poorer pond quality and greater tree shade. There was evidence that pond quality was greater where ponds were located close to other waterbodies and wetlands.

1.2 Ponds in agri-environment schemes

For priority habitat reporting it has been assumed that, if a pond was situated in a land parcel that was in an agri-environment scheme, then that pond would likely be in good condition. However, recent work has cast doubt on that assumption, with species being lost from more than two thirds of England's best ponds over the last 25 years, particularly uncommon species. This is despite pond options being available in agri-environment schemes during that time and a number of ponds being in protected sites. This decline is thought to be due in

part to increases in shading of ponds and declines in traditional grazing. However, ponds in larger semi-natural areas were found to be in better quality, as were ponds where there were more water bodies and wetland areas nearby.

The agri-environment scheme options relevant to pond quality include management of the land parcel in which the pond sits, buffers surrounding the pond, pond management, pond creation and pond restoration. These have been available in various forms as the schemes have evolved. The pond options and capital items are intended to maintain, create and restore good quality pond habitat that benefits a range of biodiversity rather than concentrating on the benefits for a particular species. However, previous evaluations of agri-environment schemes in England have not assessed the impact of the schemes on pond quality. Hence, whilst agri-environment scheme options and capital items have the potential to be successful, there is a need for a more complete understanding of where these measures will be successful.

2 Survey method

A pond in the agreement AG00387916 and under option PC (Pond creation - first 100m²) was selected at random from Natural England's database of ponds in Environmental Stewardship options. The pond was visited for survey on 13 October 2021.

The pond was surveyed following [Freshwater Habitats Trust's PondNet survey method](#). In this method, a range of environmental parameters are recorded, such as pH, the area of the pond covered by trees and recent management, and a complete list is made of all submerged, floating and emergent plant species. Where there was standing water in the pond, nutrients were measured using simple kits which provide an indicator value for nitrate and phosphate dissolved in the water.

3 Results

A map of the pond surveyed is provided in Figure 1. The plant species recorded are listed in Table 1.

The environmental parameters recorded from the pond are listed in Table 2.

Based on the results of the survey, your pond qualifies as priority habitat.



Figure 1. Location of pond surveyed

Table 1: Plant species recorded from the pond

Growth form	Common name	Scientific name
Emergent	American Willowherb	<i>Epilobium ciliatum</i>
Emergent	Bog Stitchwort	<i>Stellaria alsine</i>
Emergent	Creeping Bent	<i>Agrostis stolonifera</i>
Emergent	Floating Sweet-grass	<i>Glyceria fluitans</i>
Emergent	Great Willowherb	<i>Epilobium hirsutum</i>
Emergent	Greater Bird's-foot-trefoil	<i>Lotus pedunculatus</i>
Emergent	Jointed Rush	<i>Juncus articulatus</i>
Emergent	Lesser Spearwort	<i>Ranunculus flammula</i>
Emergent	Marsh-bedstraw	<i>Galium palustre</i>
Emergent	Marsh Thistle	<i>Cirsium palustre</i>
Emergent	Monkeyflower	<i>Mimulus</i>
Emergent	Soft-rush	<i>Juncus effusus</i>
Emergent	Tufted Hair-grass	<i>Deschampsia cespitosa</i>
Emergent	Water-purslane	<i>Lythrum portula</i>
Floating	Fat Duckweed	<i>Lemna gibba</i>

Growth form	Common name	Scientific name
Submerged	Water-Starwort	<i>Callitriche</i>

Table 2: Environmental parameters recorded from the pond

Parameter	Result
Pond perimeter (m)	106
Pond area (m ²)	421
Ponds dries?	Never dries
Average water depth (m)	0.1
Maximum water depth (m)	1.5
Pond in protected area?	No
Percentage of pond area with standing water	85
Drawdown depth (cm)	20
Main source of water	WatersupplyGroundwater
Discrete outflow present?	No
Diffuse outflow present?	Yes
Pond impounded (dammed-up) regulating the outflow?	No
Proportion of bank dammed-up	0
Structures on the outflow?	No
Turbidity	Turbid
Inflow present?	Yes
pH	7.1
Conductivity (uS)	73
Nitrate concentration	< 0.2 ppm
Phosphate concentration	< 0.02 ppm
Percentage base geology silt / clay	67-100%
Percentage base geology sand, gravel or cobbles	0-32%
Percentage base geology hard rock	0-32%
Percentage base peat	0-32%
Percentage base other	0
Average sediment depth (m)	0.35
Percentage of pond covered with trees	0
Percentage of margin covered with trees	0
Percentage of pond area with emergent vegetation	22
Percentage of water area covered by all macrophyte vegetation (excl. duckweed)	6
Waterfowl	Major
Fish presence	Possible
Percentage of pond area grazed	10
Percentage of margin grazed	80