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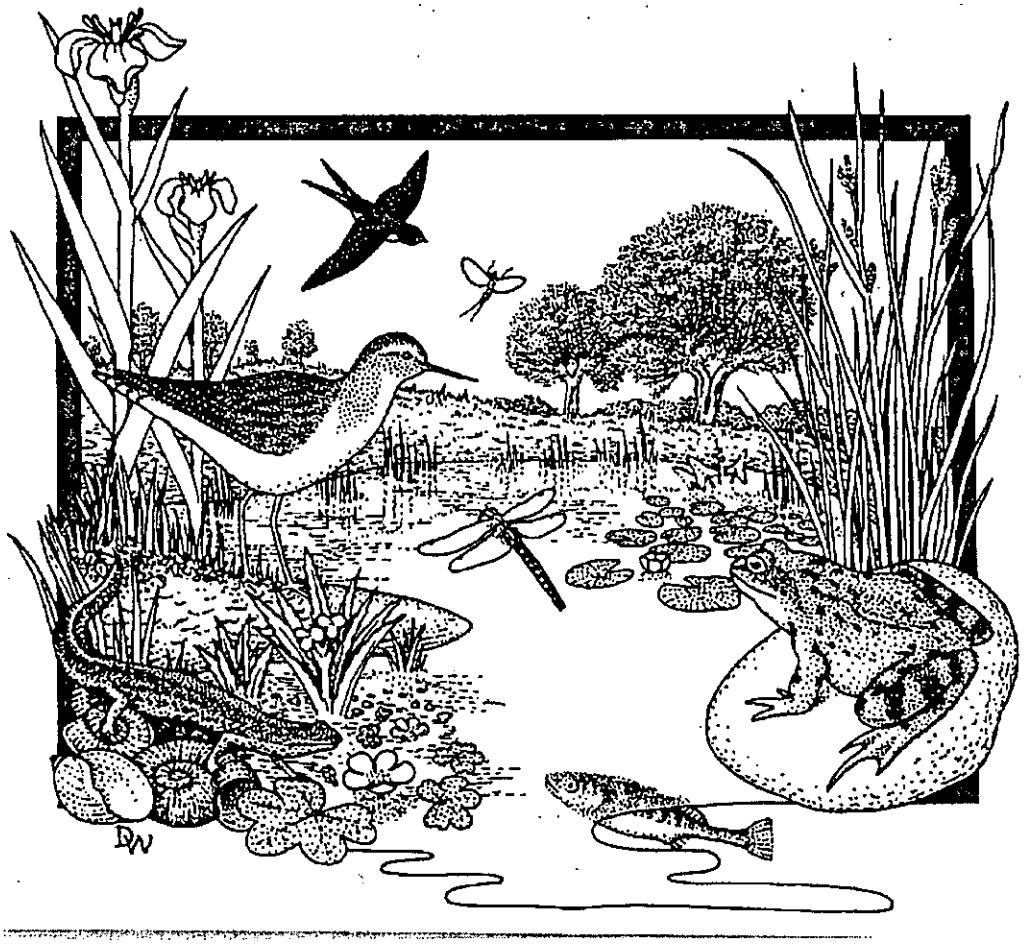
Ecological Survey of Spring Mill Upper Pond



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ECOLOGICAL SURVEY OF SPRING MILL UPPER POND

1. Aims and objectives

This report describes the results of a plant survey undertaken by Pond Action at Spring Mills in Ossett, West Yorkshire (Grid reference SE 288 208). Two ponds are present at the site, linked by a small stream. Only the upper pond was surveyed for the current project.

The work was commissioned by The Ponds Conservation Trust in order to give information about the ecological value of the site and to help provide the basis for decisions about its future management.

The current study forms part of The Ponds Conservation Trust's (PCT) 'Ponds for People' project. The first phase of this project is currently running in the NE of England as a collaborative venture between the PCT, the Environment Agency, local authorities, water companies and local community groups. The project's overall objective is to help deliver local Biodiversity Action Plan objectives with respect to ponds.

2. Methods

The site was surveyed for wetland plants, by Penny Williams, on 28th September 2000. Note that the survey was carried out relatively late in the year, and that additional species, particularly aquatic plants such as stoneworts, water-buttercups and pondweed species, may have been present at the site earlier in the season.

The method used for the assessment was based on a standard technique developed for the National Pond Survey.

Wetland plants[1] were surveyed by walking and wading the perimeter and open water areas less than 1 m deep noting the species present.

The pond's conservation value was assessed in terms of:

(i) the number of species of plants recorded,

(ii) the number of uncommon plant species found.

Plant data from the site were compared with information from other UK sites that have been surveyed using the same methodology (see Appendix 1).

[1]The term 'wetland plant species' refers to species defined as wetland plants on the National Pond Survey field recording sheet list. Terrestrial plant species are not recorded.

3. Plant survey results

Spring Mill Upper Pond supported a rather poor wetland plant community with eight species recorded (Table 1). This is considerably lower than the average number of wetland plant species recorded in high quality, unpolluted ponds protected from human impacts (average number of wetland species in unpolluted ponds = 23; see Appendix 1). All of the plants recorded were species that are common and widespread in Britain.

The pond was very overgrown, predominantly by willows, stands of tall emergent wetland plants and damp-ground ruderals growing on the stream-deposited silts, sands and shale pebbles that filled much of the pond.

The most common emergent plants were Great Willowherb (*Epilobium hirsutum*) and (*Phalaris arundinacea*) which together filled approximately 65% of the pond. Stands of Bulrush (*Typha latifolia*), Branched Bur-reed (*Sparganium erectum*) and Yellow Iris (*Iris pseudacorus*) occurred more locally. Bulrush and Bur-reed, in particular, grew where slightly deeper and more permanent water occurred towards the north-western edge of the pond.

No submerged aquatic plants were recorded from the site. This is likely to reflect both the lack of extensive areas with permanent water and the poor water quality of the pond.

The lower pond was not surveyed in detail but its plant community appeared to be very similar to the Upper Pond's with the exception of two additional aquatic species: the alien submerged species Nuttall's Waterweed (*Elodea nuttallii*), and the small floating-leaved plant Common Duckweed (*Lemna minor*).

Table 1 Plant species recorded from Spring Mill Upper Pond

Plant species	*English name*	*Status*
Agrostis stolonifera	Creeping Bent	Common
Epilobium hirsutum	Great Willowherb	Common
Iris pseudacorus	Yellow Iris	Common
Juncus effusus	Soft Rush	Common
Phalaris arundinacea	Reed Canary-grass	Common
Solanum dulcamara	Bittersweet	Common
Sparganium erectum	Branched Bur-reed	Common
Typha latifolia	Bulrush	Common
Number of Submerged species	**0**	
Number of Floating species	**0**	
Number of Emergent species	**8**	
Total number of species	**8**	

4. Discussion

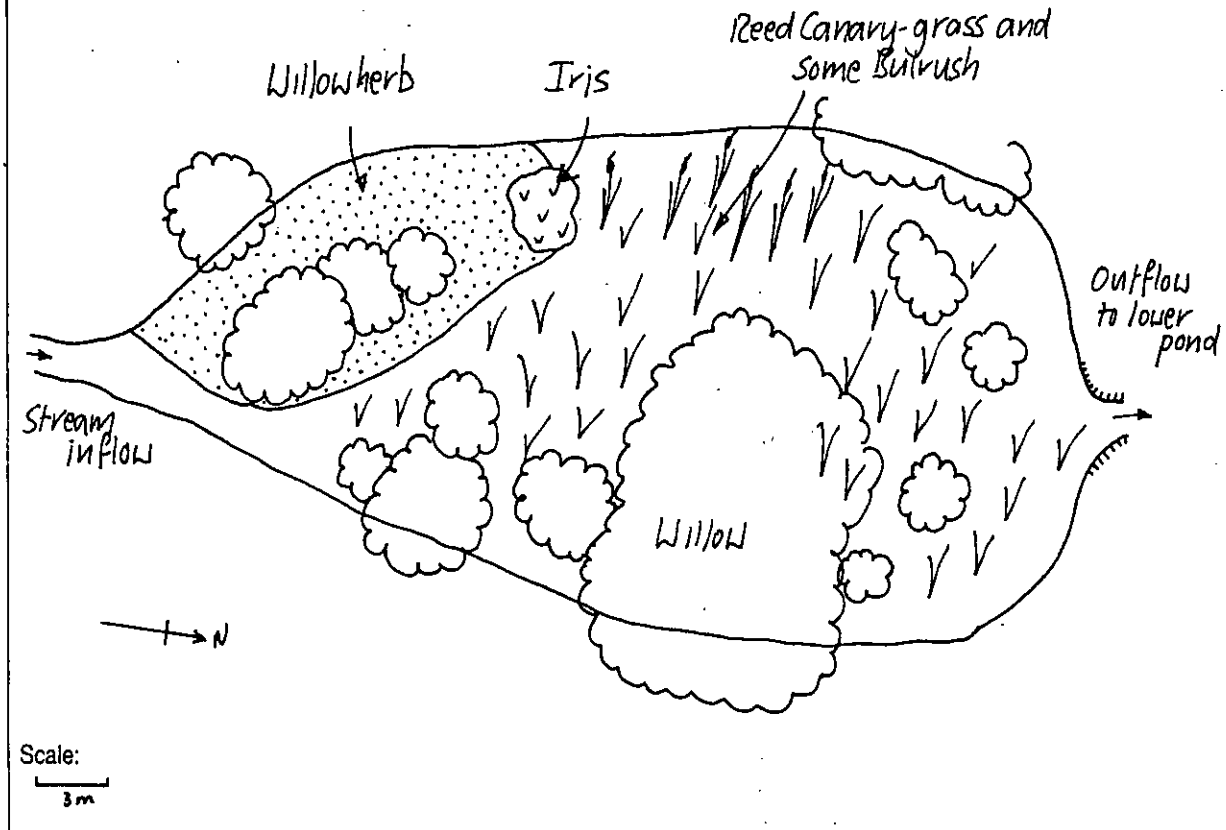
From current evidence it seem likely that the pond has a relatively low wildlife value. Its plant community is rather species-poor and appeared to include only very common and widespread taxa. It is not possible to be certain about the quality of the pond's aquatic invertebrate community without further survey work. However, given that the pond is fed by an urban stream with poor water quality and a flashy discharge the invertebrate community is likely to be rather degraded.

It has been suggested that the Upper Pond could be transformed into a reed-bed to protect the quality of the lower pond. The limited evidence from the current survey suggests that this would be unlikely to cause significant ecological damage to the pond.

We have not seen the proposals for the new reed-bed. However it should be noted that: (i) the stream inflow carries a very considerable sediment burden which would rapidly fill in any reed bed feature unless an effective sediment trap is installed, and (ii) the northern and north-western areas of the pond had very deep accumulations of soft sediment which would be dangerous if any volunteer work is considered at the pond.

Spring Mill Upper Pond site details

Location	Grid reference: SE 288 208. On the northern outskirts of Ossett (between Wakefield and Dewsbury) (West Yorkshire).
Date of visit	28th September 2000.
Description	The uppermost of two on-stream ponds located in a small valley in an urban park.
Pond area	0.07 ha.
Shade	Approximately 40% of the margin and 35% of the pond are directly overhung by trees.
Depth and permanence	The pond is almost completely filled with stream-borne sediments (silt, sand and shale pebbles). The stream channel runs through these sediments, flooding over the remaining pond area when it is in spate.
Water clarity	The water was brown and rather turbid.
Water source	The pond is fed by a stream inflow entering the southern corner of the pond. It also receives surface runoff from grassland and woodland on the valley sides.
Impacts	The stream inflow drains urban runoff from adjacent areas. Oil and some urban rubbish were present in the pond.
Invertebrate habitats	At the time of the survey the pond supported moderate habitats for invertebrates including, particularly, stands of tall emergents growing in shallow water. However, most of these areas would be dry for much of the year and probably subject to flashy inundation after rain.



Appendix 1. Comparative data for assessing pond conservation value

The following information gives a range of data about the conservation value of ponds in Britain. This information indicates the *typical* plant species richness of UK ponds based on standard surveys using National Pond Survey methods.

Note that National Pond Survey sites indicate the standard that ponds *should* reach in Britain when they are not exposed to damaging human impacts (e.g. water pollution, intensive land management, over-stocking with fish, artificial feeding of waterfowl). The two wider countryside surveys show the typical state of ponds in the "ordinary countryside" where ponds are often exposed to a variety of factors which reduce their conservation value.

Appendix Table 1. Number of plant species recorded from UK ponds

		Number of species:		
		Marginal plants	*Aquatic plants*	***Total plants***
National Pond Survey (high quality ponds mostly protected from pollution)	*Average*	18	5	**23**
	Range	(1-42)	(0-14)	(1-46)
Wider countryside ponds (DETR Lowland Pond Survey 1996)	*Average*	8.0	2	**10**
	Range	(0-30)	(0-10)	(0-35)
Wider countryside ponds (ROPA Survey*)	*Average*	11	3	**14**
	Range	(1-32)	(0-11)	(1-38)

*The ROPA survey was undertaken by Pond Action with funding from the Natural Environment Research Council.