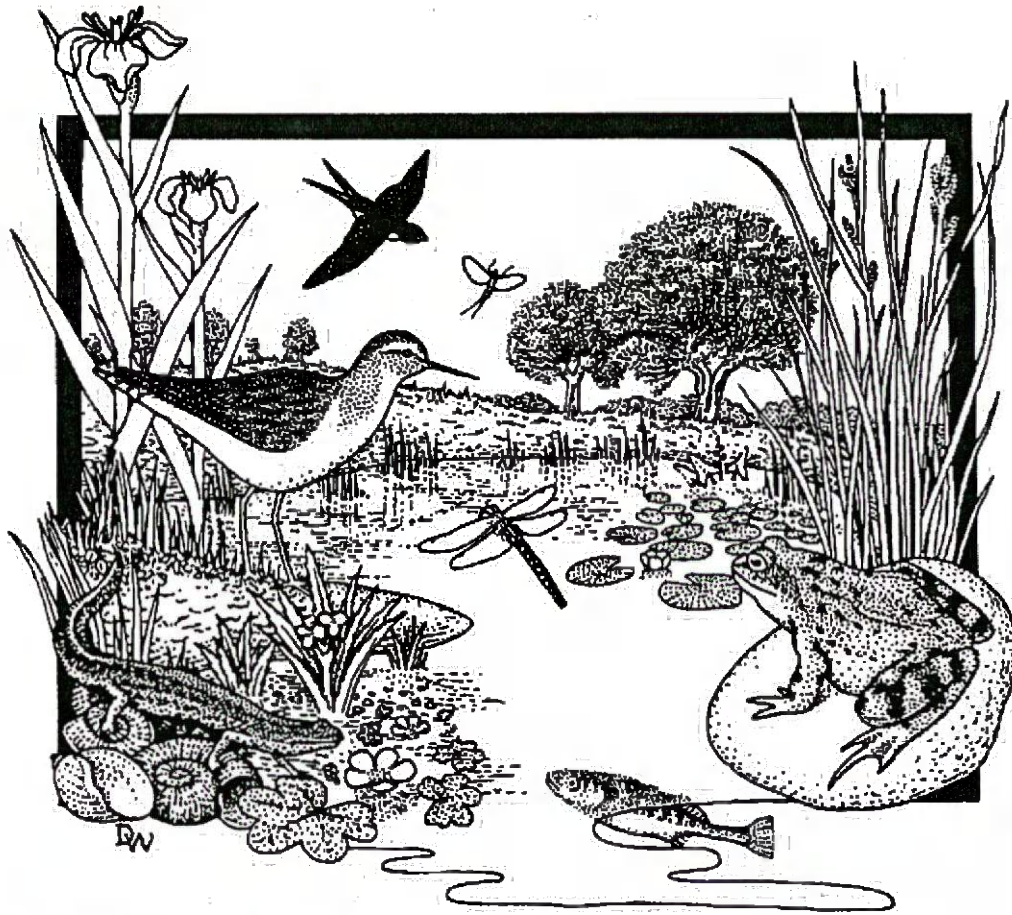


Ecological Survey of Farnley Dams



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ECOLOGICAL SURVEY OF FARNLEY DAMS

1. Aims and objectives

This report describes the results of a plant survey undertaken by Pond Action at Farnley Dams (SE 253 313), near New Farnley (West Yorkshire).

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 29th 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 plants¹ 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).

¹The 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

Farnley Dams supported a very poor wetland plant community with only five species recorded (Table 1). This is considerably lower than would be expected from high quality, unpolluted ponds (average number of wetland plant species in unpolluted ponds = 23) (see Appendix 1). All the plants recorded were species that are common and widespread in Britain.

Most of the pond's margin was overhung by trees. However, where shade was reduced or fishermen had cleared areas of bank, the edge was locally fringed by tussocks of Soft Rush (*Juncus effusus*), sparse patches of the grass Creeping Bent (*Agrostis stolonifera*) and occasional scrambling stands of Bittersweet (*Solanum dulcamara*). In the water, there were occasional stands of Water-cress (*Rorippa nasturtium-aquaticum* agg.), particularly in the inflow delta area and along the north-east bank.

No submerged aquatic plants were recorded from the pond. It is possible that aquatic plants are present in deeper water beyond the reach of a thrown grapnel but no fragments (e.g. turions or other dispersal propagules) were seen at the water's edge suggesting that, if submerged plants are present, they occur in low abundance.

Table 1 Plant species recorded

<i>Plant species</i>	<i>English name</i>	<i>Status</i>
<i>Agrostis stolonifera</i>	Creeping Bent	Common
<i>Epilobium hirsutum</i>	Great Willowherb	Common
<i>Juncus effusus</i>	Soft Rush	Common
<i>Rorippa nasturtium-aquaticum</i> agg. ¹	Water-cress species	Common
<i>Solanum dulcamara</i>	Bittersweet	Common
Number of Submerged species	0	
Number of Floating species	0	
Number of Emergent species	5	
Total number of species	5	

¹ Fruit were not present so plants could not be identified to species level

4. Discussion

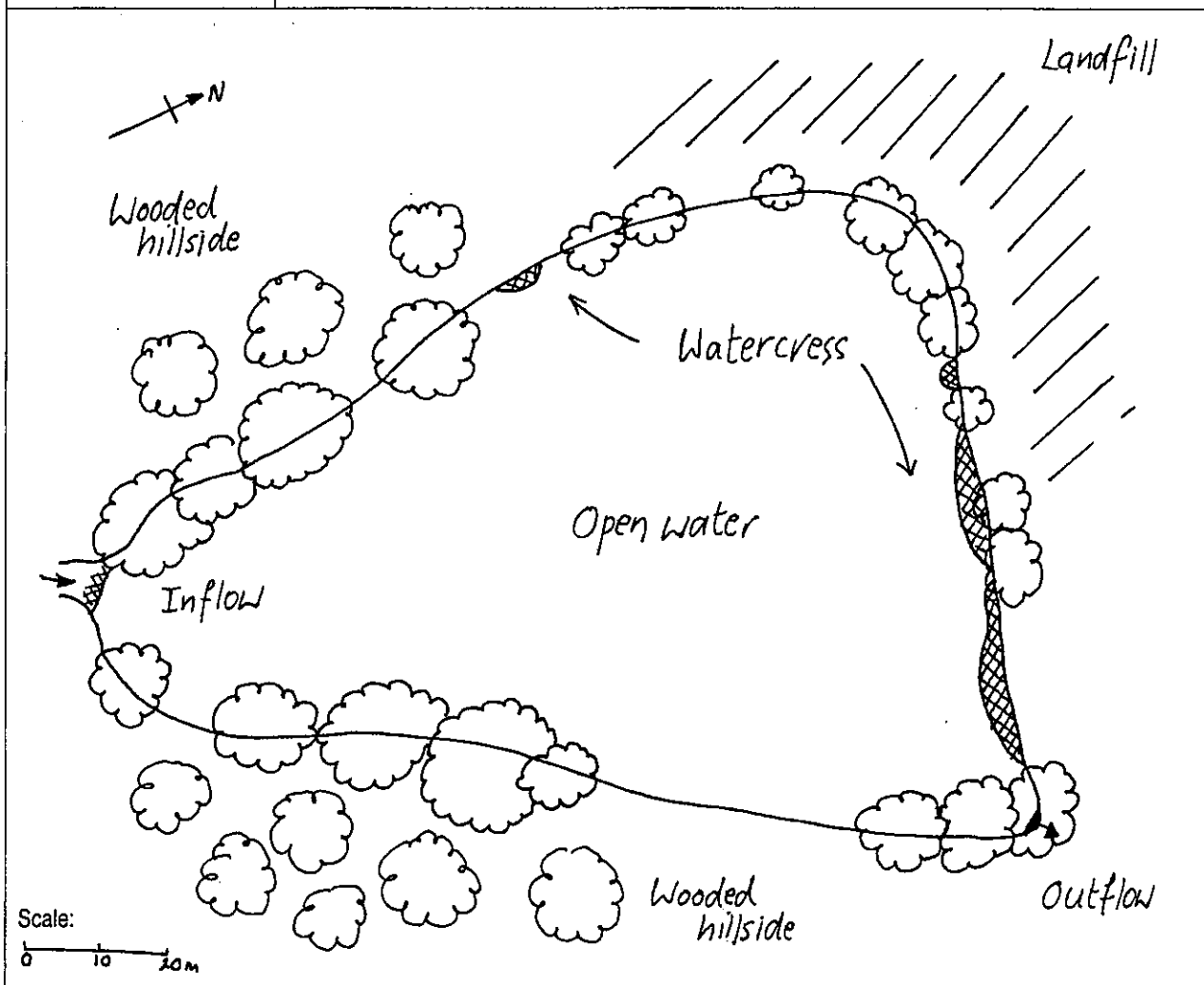
The reason for the low species richness of Farnley Dams is not clear. The poor *submerged* plant community is likely to be in part due to the moderate turbidity of the water, a factor likely to be related to a high biomass of fish.

The limited number of *emergent* plant species is particularly disappointing for a relatively large and well established pond. This may be partly due to the rather shaded margins, and perhaps too, to the fact that the site is relatively isolated from other waterbodies and wetlands so that, if plant extinctions occur, re-colonisation is slow.

Under such circumstances, it might be beneficial to plant-up small areas of the pond with common water plants such as Reed Sweet-grass (*Glyceria maxima*) or Branched Bur-reed (*Sparganium erectum*). These plants should ideally be gathered from nearby waterbodies and wetlands (rather than being purchased), in order to maintain local genetic diversity and, more particularly, to avoid the transfer of alien species (such as *Crassula helmsii*) which are often introduced to sites via garden centre and aquarist stock.

Farnley Dams site details

Location	Grid reference: SE 253 313. West of New Farnley, a village to the south-west of Leeds (West Yorkshire).
Date of visit	29 th September 2000.
Description	A disused mill pond largely surrounded by woodland but with a land-fill site to the north and north-west.
Pond area	0.7 ha.
Shade	Approximately 70% of the margin and 10% of the pond are directly overhung by trees.
Depth and permanence	The pond is permanent but silt and sediment depths were too deep to measure without use of a boat.
Water clarity	The water was brown and turbid.
Water source	The pond was fed by a stream inflow entering the south-west corner of the pond. It also receives surface runoff from the wooded hillside above and a small amount of surface run-off from bare soil covering the adjacent landfill.
Impacts	The water is turbid suggesting a high fish biomass. The quality of the inflow stream is not known, but it may bring in additional pollutants.
Invertebrate habitats	The pond supported a moderate amount of marginal habitats suitable for aquatic invertebrates including: (i) stands of watercress and (ii) a fringe of marginal grasses and scrambling plants such as Bittersweet growing in the water around c.10% of the pond edge.



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

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

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