Conservation Management at Dibbinsdale Local Nature Reserve

F. Babbs Meadow Conservation Diary Notes

Babbs Meadow reedbed appears from archive photographs of the 1970's to be integrated with the land surrounding it. This was the ornamental grassland of Brotherton Park. The digging of a ditch fed from the river had the effect of ducting the river to avoid the river meander around the reedbed. The ornamental grassland became isolated from the reedbed in the 1980's.

The siltation of the river has led to large deposits of sandy material being left in the ditch and also on the riverbed close to the reedbed. The river profile has become very shallow. The rivers incapacity to cope with large variations in water volume means that the river floods regularly. The sediment in the river is left in the ditch and reedbed. The reedbeds have become drier and land based vegetation has started to take over – wet woodland along with nettles and balsam**.**

The evaluation of the reedbed condition was undertaken by a university study. A vegetation survey and a topographic study were undertaken. Discussions with the Environment Agency and English Nature were undertaken and a plan was put together to restore the reedbed. In brief, the restoration would try to improve water levels in the reedbeds, remove sediment by creating banks and pools and control the spread of invasive willows by coppicing**.**

The restoration work was trialed in 2000 in the creation of wetland pools where a surface drain fed into the river. The 'swale' of Central Avenue became an experiment to show how excavated pools could act as a filter for polluted urban water. Using this model for development, led to the succession of pools or lagoons dug along the course of the old overgrown ditch that was begun in 2002

In 2002 the caterpillar tracked excavator-dug pools close to the outfall of the Central Ave swale, upstream close to the first bridge and adjacent to the course of the old ditch. It was discovered that a small population of water voles existed on the banks of the old ditch. The reed bed restoration became a water vole project as well. The excavated spoil would act as water vole burrows above flood levels. Healthier and more extensive reeds and open water would favour water vole populations.

In 2003 the management of the disturbed seed bank in the areas of excavation began. Himalayan balsam was already evident but flourished in the virgin soil conditions of the excavated banks in particular. Volunteer groups undertook some redistribution of wetland flora. Flag Irises, meadow sweet, common reed and purple loosestrife were transplanted (close to the Swale end of the reedbed- north) where Himalayan Balsam was strimmed out. Regular strimming was undertaken in control areas to see how effective the exercise might be**.**

The routes into the reebed used by the excavator were fenced off to restrict access by the public. This didn't prevent material from the first reedcut being set fire to at Easter time. Reed regeneration was probably given a helping hand.

2003 saw the cutting of a section of reed bed furthest downstream (north). Control of water entering the ditch was thought necessary. A small weir was put across the ditch close to the first bridge. (Upstream)
. The river seemed to be shortcutting the system through the ditch and lagoons. When cutting the reeds it was evident a third was being overwhelmed by invasive vegetation- nettles and balsam.

It was evident that further remedial work would be necessary in controlling river flow.

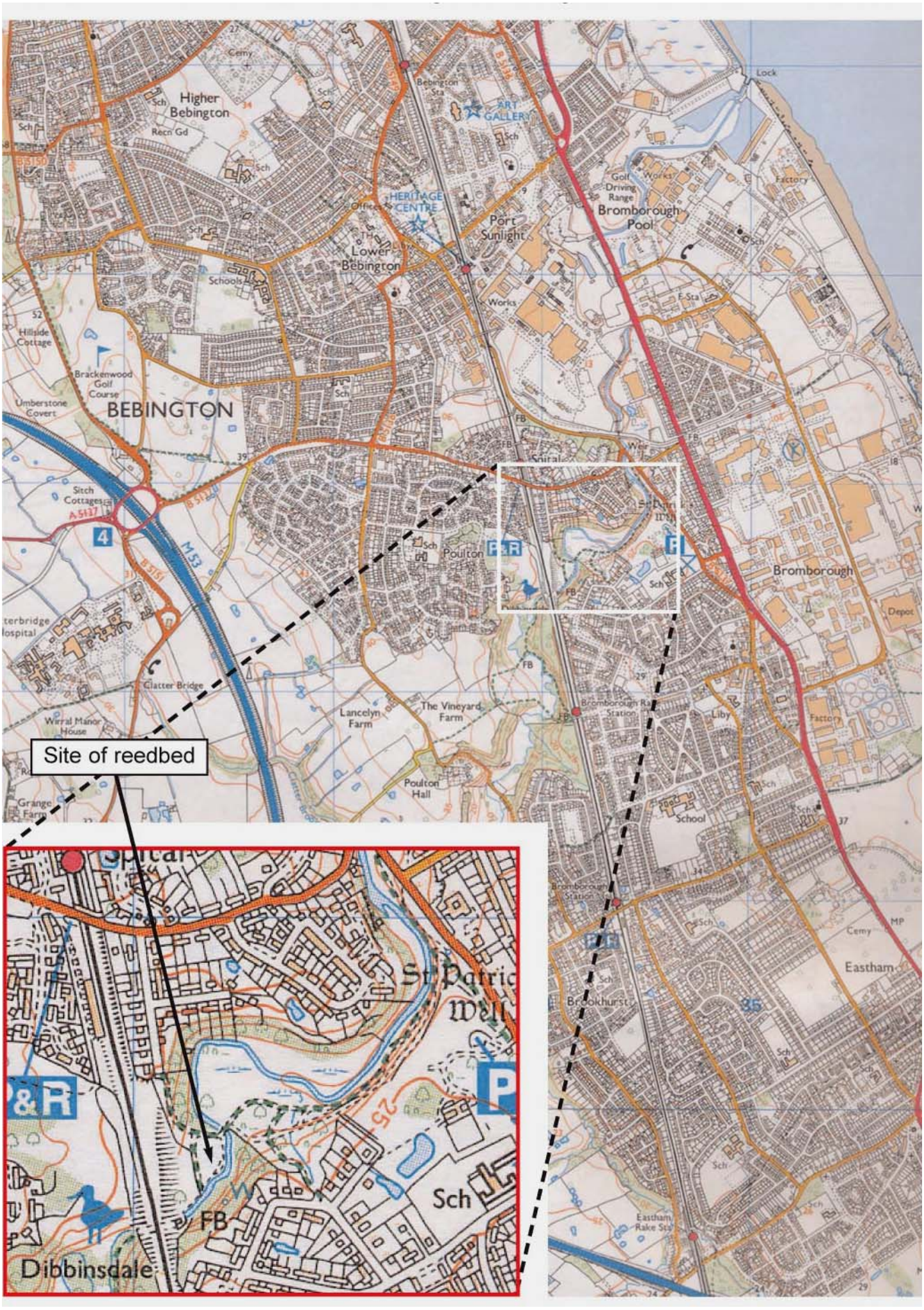
Small willow was coppiced and dug out close to the north end of the reedbed. Underneath the sandstone escarpment

2004 saw the second phase of reedbed restoration. The small weir was replaced by a more effective sluice gate. A further bund was created the other end of the ditch to keep in floodwaters. (Raising water levels in the reedbed)

A long berm or bank was created to pond water left by the river after flood.

A further shallow pool was added underneath the sandstone escarpment and further willows removed.

Work began in 2005 clearing up willows removed by the excavator. It was clear that the river still had severe flow problems and there were many blockages caused by tree fall. River water was now diverting entirely into the reedbed because the river was so badly silted . The year's reed cut took out the section in the middle of the reedbed. Marker posts were driven into the ground. Two more weirs were created to further control water coming into the reedbed from the river and leaving the reedbed When the river flooded after the reeds were cut in February the level of water appeared very good.



Location of Babbs Meadow. Bromborough , Wirral

Metropolitan Borough of Wirral

F.Babbs Meadow Water Vole Project –Update

The River Dibbin flows through reed beds in an area known as Babbs Meadow before it reaches Spital Dam half a mile downstream. The river then flows through the Lever industrial estate before entering the Mersey just passed Bromborough Pool. The whole of the reed bed area is a landscape that is relatively new, only coming into existence when the tidal influence of the Mersey was prevented from affecting the river valley with the construction of the weir at Spital Dam in the last century.

The reed beds lie in an area designated by English Nature as a SSSI, Site of Special Scientific Interest. The reed beds along with the ancient woodlands, grassland meadow and marshy 'willow carr' form several unique and diverse habitats here in the Dibbin valley. Reed beds are a very rare and diminishing habitat in the British landscape in general.

The survival and protection of this habitat is crucial for 'bio-diversity'. Such a rare habitat is threatened by the natural processes of the river itself. The reeds need flooded conditions in the river valley and play a vital role in the cleanliness of the water system. They help filter the water that passes through them. The sediment that is carried downstream by the river can be deposited in the reed bed area because the reeds slow down the passage of the water . This can result in changes in the flow of the river and the reed beds being raised higher than the average water level. This very slow process can mean that the reeds no longer flood successfully, other forms of vegetation invade the reed beds and the reeds deteriorate and are replaced by willows. The bio-diversity is therefore lessened.

The effective management of the reed beds is vital for the health of the river system. The Water Vole project encourages conditions for better reed growth. This involves. holding back river water within pools adjacent to and flooded by the river. The success of the surface drainage ponds (SWALES) two years ago, funded by Levers SWIM project (Sustainable Water Management Initiative) has inspired these water vole ponds in 2002. The reed beds will be encouraged by favourable conditions for growth, and this in turn will help filter and clean the waters of the river, which will also provide a valuable habitat for the voles. By producing a series of pools and banks for vole homes close to the river, the reeds and the voles will be encouraged. Holding back water in these pools is particularly important and necessary during the summer months when the volume of water is at its lowest. In order to encourage wetter reed bed conditions in summer, a future network of small ditches and mini lakes are proposed to cross the reed beds in the form of a matrix supplied by the adjacent river. The work being undertaken this year is the first stage of such reedbed restoration work.

A civil engineering survey of the reed beds, mapping the relative levels of the land and the river has been undertaken. A vegetative survey of the plant communities has also recently been undertaken. Discussion with Environment Agency and English Nature has resulted in permission for the reed bed works to commence this autumn. The effects of the works will be monitored in the year to come and their effectiveness evaluated with view to extending this management technique to other areas in the nature reserve. The improvement of wetland habitat is part of Dibbinsdale Management Plan undertaken by Wirral Rangers Service.

The Dibbinsdale Working Group who meet at the Rangers Office at Dibbinsdale Local Nature Reserve has given support and involvement. Along with English Nature and The Environment Agency , the other bodies represented at this forum hosted by Wirral Ranger Service are Wirral Wildlife, The Friends of Dibbinsdale, Mersey Basin's RIVA 2005(River Initiative), Environmental Research Centre (Liverpool University) Lancelyn Estates, Leverhulme Estates, other river side property owners on the Dibbin catchment and Levers Faberge Plc.

Levers have donated both funds and volunteers from their labour force to help in such river restoration work. They have continued to support projects here at Dibbinsdale for some years now. Volunteers from the company will be helping the ranger at the reserve this week to transplant and propagate reeds from Babbs Meadow. These will be introduced back into the new ponds next spring. This one of the Mersey Basin Weekend activities in the north west.

F.Babbs Meadow Water Vole Project -Update
October 2002.

Excavation of a series of connecting ponds(or lagoons) to encourage reed development and water vole recolonisation. The limited planting of some margin plants close to the first section of the lagoons.(Mostly yellow iris, meadow sweet, rushes and purple loosestrife) Fencing off of the lagoons close to the Central Avenue Swales. Cutting back of willows encroaching on the ditch. Using cut willow for propagation elsewhere(for screening next year)

Description

The excavations are in two sections. One series is at the bottom of Central Avenue and is fed by the surface drain that filters through two ponds before reaching the 'lagoons'. The two interconnecting ponds here are intended to take flood water from the river. One is circular in shape and is joined by a channel to the elongated one closer to the river, fed by a channel from the river itself. The lagoons are approximately one metre deep(dependant on seasonal water levels.)

The second series of lagoons has been developed adjacent to a ditch dug in the 1980's that was created to form a boundary to the area known as Babbs Meadow. Upstream ,or south, of the first section. It cuts through the meander of the river within which the reeds grow. The ditch meets the river close to the fist bridge of the reserve(north of the Otters Tunnel). The ditch was excavated of silt and two large pools were dug fed by water from the ditch. One of the banks of the ditch was dug back to create a seasonal wetland bounded by the excavated material. This was mounded into banks to encourage colonisation of them by water voles. This was the area of the reed bed that was drying out most and almost entirely taken over by Himalayan balsam and nettles.

Winter 2002.

Reeds propagated from collected seed and divided roots of reeds collected in Spring 2002.Ready for reintroduction –Easter 2003. December 2002,Environment Agency clear blockages to the main river in this area. January 2003 , Small weir installed to regulate water entering the ditch close to the first bridge.Creating a grassland clearing so the reedbed can be viewed from the path. Strimming down a section of bramble undergrowth on the bank of the ditch.

Spring 2003.

One third of the reedbed cut by strimmers in March 2003. (A particularly dry period) Willows adjacent to this cut section (south of Babbs Meadow) cut back to stumps- timber stacked at the base of the mature willows in this area. Young 'whips' of crack willow planted at the entrance of the ditch as screening. April 2003 completed barrier fencing along the whole of the footpath adjacent to Babbs Meadow (near Trail post 9) and at the first bridge. As much of the loose brash cut and left to rot last year was burnt and then buried in order to discourage vandalism. (Part of the cut area of reeds was burnt by vandals in mid April – it should regenerate even though burnt)

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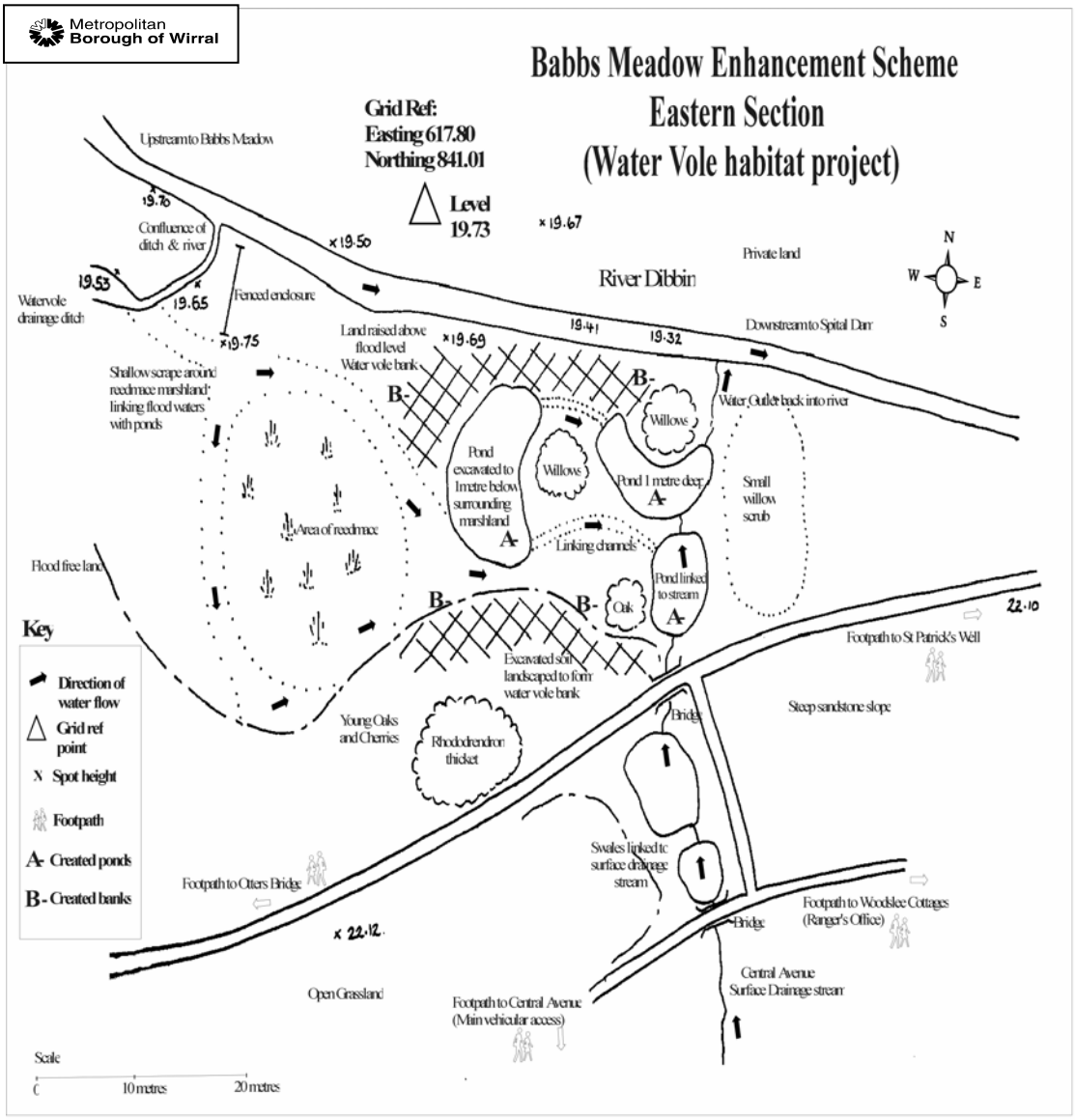
Babbs Meadow Enhancement Scheme
Eastern Section
(Water Vole habitat project)



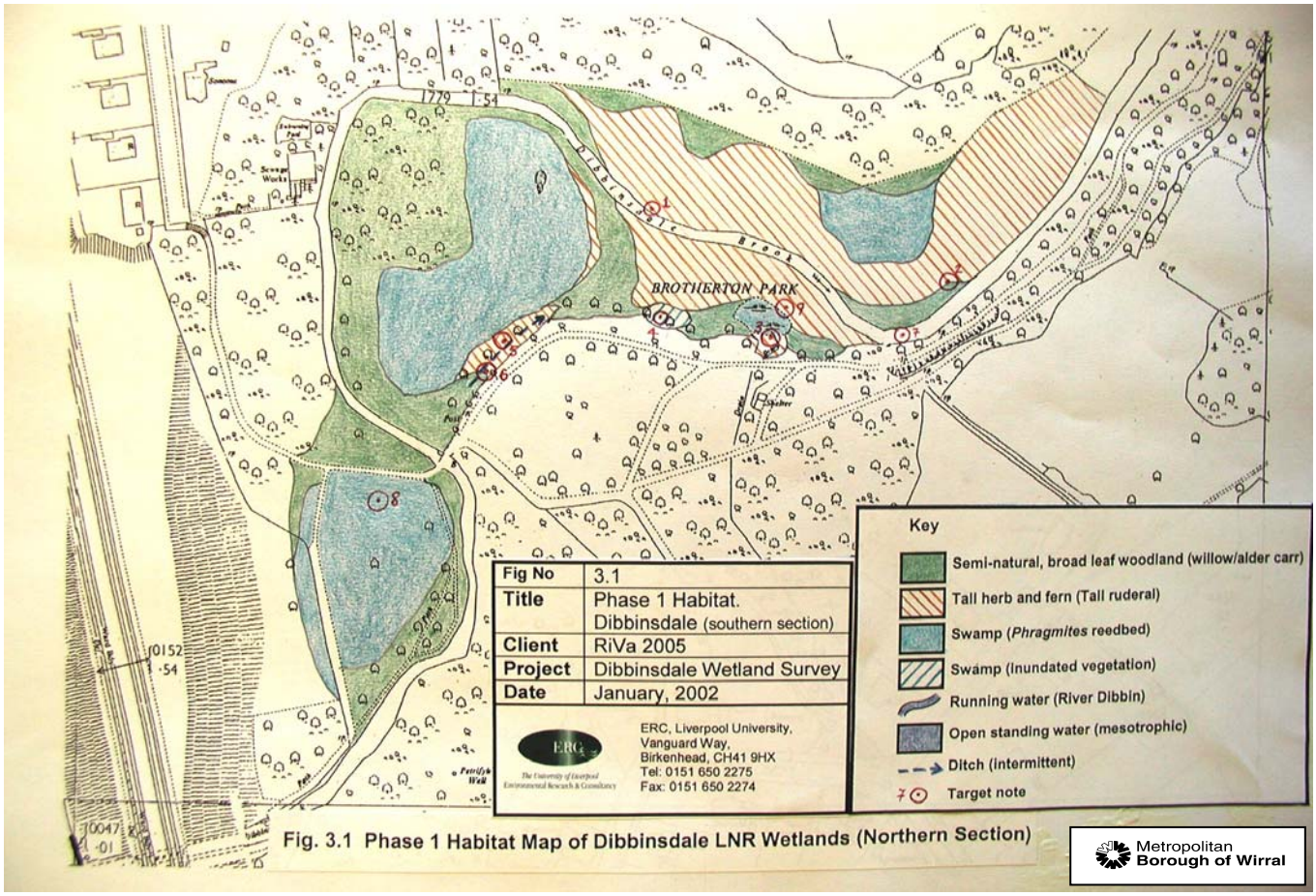


Fig. 3.1 Phase 1 Habitat Map of Dibbinsdale LNR Wetlands (Northern Section)

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Early ranger management (1970-80)

1

Ditch dug in the 1980's

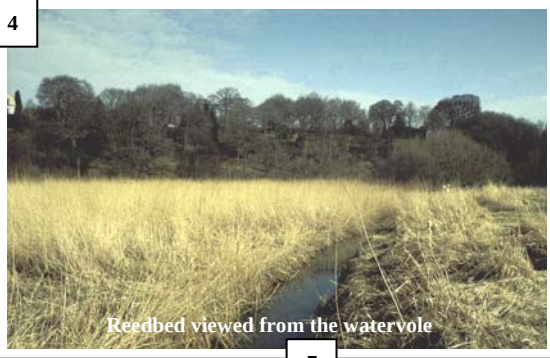
2

View of reedbed in 1978-mid winter

3

Ditchwork in the 1980's

4



Reedbed viewed from the watervole

5

Reed bed cut in 1978

6

Aerial view of Babbs Neadow- 1990's

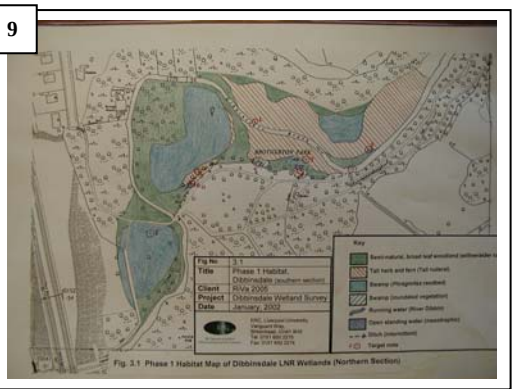
7

Ditch area showing balsam remains- 2000

8

Reed bed from the view point 2000

9



Vegetation survey done by Sheila Ross, ERC

10

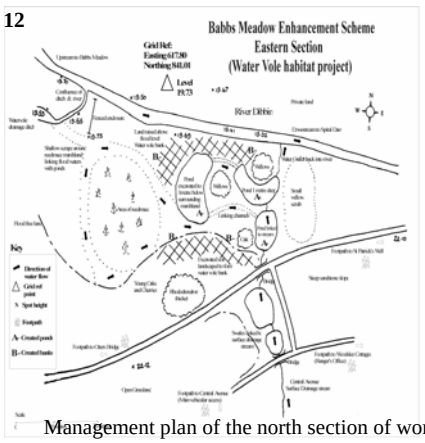
Reed bed transect and Sheila Ross, 2000

11

Balsam removed prior to work by contractors

First efforts towards restoration

12



Management plan of the north section of works

13

Willow clearance prior to contractors doing excavations

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F. Babbs Meadow Conservation
Conservation Management at Dibbinsdale Local Nature Reserve

1

North pools being dug close to Central Ave swales

2

South pools dug prior to flooding

3

The old ditch being dug out and broadened for 'lagoons'

Griffiths begin a weeks excavation work-Oct 02

4

The excavations of the lagoons prior to flooding

5

Ian Stringer of Levers making a fence with vols

6

Post fro kingfishers being driven into one of the south pools

7

Vigorous growth of balsam after excavation work

8

View of north pools from footpath

9

Fencing off access to lagoons close to the first bridge

10

New reed growth following excavation

11

Transplanated flag iris

The following year and management continues

12

Reed cut and burn- the first reed cut followed by arson attack

13

Vegetation growth after balsam strimming – one year on

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1

Bank of ditch after strimming out of balsam

2

Small weir constructed to limit water flow into lagoons

3

Animal tracks in the new wetland

Restoration work begins in 2004

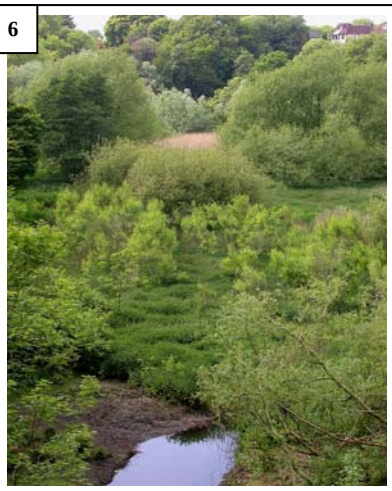
4

Second reed cut close to north pools

5

Removal of willow trees close to the river edge

6



View from the top of the escarpment, noting young willow growth

7

Small weir construction where the ditch join the river

8

Making the bund to pond the flood water

9

Building of a sluice gate in place of the small weir

10

The effectiveness of the weir work as shown after flooding

11

Water levels rise in the reed bed after flooding. The bund is on the right

Griffiths return to improve reed bed water levels

12

New reed pool is dug underneath the sandstone escarpment

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F. Babbs Meadow Conservation

1

Excavator in the corner of the reedbed removing willow stumps

2

Willow stumps and a gap created to allow flooding

3

Willow tree blocking the channel close to the meander

Tree work on the willows

4

Channel needing water control and weir construction

5

Weir being built by volunteers

6

Reed cutting looking west

7

Reed cut looking north- removal of cut reed

8

Reed strimming

9

Wooden bridge constructed to gain access

Control of water in and out of reed bed established and the construction of two dams

10

Weir constructed downstream to stop water escaping from Babbs Meadow

11

Reedbed under flood after weirs built

12

Bund after flooding

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On going management
Annual

- Eradication of Himalayan balsam.
- Monitor and map its regrowth.
- By strimming and by pulling. Trying to leave the areas most visible from the footpath until just before the balsam seeds down. (thereby allowing the boundaries of the lagoons to vegetate to discourage human disturbance & access)
- Strimming out on a regular basis most of the other balsam adjacent to the river (i.e. on the far side of Babbs Meadow)

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Project work

♦ Monitor and map other invasive alien plants (i.e Japanese knotweed)
Date of completion

♦ Monitor population of water voles.
Date of completion

♦ Cutting back more encroaching willow to allow regrowth from the stools
Date of completion

♦ Regulating water levels in the pools by holding back – damming water in the pools
Date of completion

♦ Cutting out of the river willow that have fallen from the banks
Date of completion

♦ Propagating more reeds from lifted plants in other reed bed(close to Otters Tunnel)
Date of completion

♦ Interpretative information / noticeboard

Date of completion

- Programme of water vole reintroduction

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Babbs Meadow July 2007
Looking South

Note the tree growth within the reed bed