

Conservation Management at Dibbinsdale Local Nature Reserve

O.Lady Bridge Wetland Scheme Phase 1.

Introduction:-

In 2002 a wetland scheme called the Babbs Meadow Water Vole Scheme undertook a similar project to the one being proposed. The benefits and practise gained in this scheme has led to the Lady Bridge Scheme being initiated.

The area of Dibbinsdale Local Nature Reserve involved in this wetland improvement scheme proposal can be found adjacent to the Lady Bridge and right of way from Raby Mere to Bromborough Rake Station :- Grid Ref SJ340 819. It is south of the Otters Tunnel and bounded by Marfords Wood and Bodens Hey Meadow. Part of the land is owned by Lancelyn Green Estates and on a management agreement with Wirral Borough Council , who manage the local nature reserve. The nearest road access is on Dibbinsdale Road, Bromborough, close to Poulton Bridge.

Background:-

The River Dibbin enters the reserve from the south and after passing Poulton Bridge crosses a wide flood plain that regularly floods. This flood plain extends throughout the valley north of Poulton Bridge and eventually merges with the Mersey about three miles downstream. Most of the land within this section of the river is within the SSSI and Dibbinsdale Local Nature Reserve. The land on the south bank of the river close to Poulton Bridge, known as Rose Cottage, is under lease from the Lancelyn Green Estates. This land and adjacent fields on the river bank are most liable to flooding. This was once seasonal with the ponded water from the river receding in the summer. The 'horse lake' is now a permanent feature throughout the year with flood waters unable to return to the river as they are below the level of the river bed.

The river channel throughout the reserve meanders greatly and combined with heavy sedimentation encourages the river to flood. The river banks cannot contain the sudden and often considerable flood waters that pass through the system- particularly in the winter. These conditions favour the nature conservation of wetlands. They also cause problems in access and safety within the reserve- paths and bridges are often underwater .These conditions have meant that the fields surrounding Rose Cottage are of little value to the estate because they are subject to prolonged flooding.

Recent History:

Discussions with the Lancelyn Green Estates and Denton Clark have led to considerations of a joint approach to this scheme. The scheme would lend itself to that of two inter-related parts. One would be the creation of a flood relief channel and wetland adjacent to the river near Poulton Bridge . The second part of the scheme would be an enhanced wetland fed by the rivers flood waters downstream close to the Lady Bridge. A series of pools and scraps would create all year open water within the reserve.

The objectives of the scheme would be fourfold.

- ◆ Improve wetland habitat for nature conservation. This follows the management plan for the nature reserve drawn up in 1999. It would be complimentary to the variety of wetland already in the reserve- fen pasture, reed beds, willow carr etc
- ◆ Improve water quality. Sediment build up within the river channel would be lessened as material was deposited in flood water settlement pools. Water flow in the main river would be improved with dredging and this would improve oxygenation. The creation of reed beds and wetland vegetation within the pools would help the filtration of pollutants.
- ◆ Improve access and safety. Material excavated from the pools close to the river (spoil) would be used to raise the footpath, or causeway, across the wetland at the Lady bridge. Channels would be dug to allow the flood waters to flow through the causeway (footpath)so that waters did not backup and cause flooding.
- ◆ Land reclamation. The land close to Poulton Bridge and Rose Cottage would be returned to useful pasture. A flood relief channel would maximise the wetland habitat closest to the river and create an all year wet grassland for grazing animals.

Progress to date :

A topographical study to establish land levels has been undertaken in Spring 2003. A vegetation survey has been undertaken in 2002 of the wetland affected by the proposals. Consultation with the Environment Agency and their Water Level Management Plan is on going. Discussions with United Utilities have taken place with view to work close to the main sewer. Discussions with Lancelyn Estates have been established involving Wirral Ranger Service, RIVA 2005 River Initiative Cordinator and Denton Clark. Mapping has been undertaken , based on the two surveys, to produce an outline of the scheme under proposal.

Conservation Management at Dibbinsdale Local Nature Reserve

P.Ladybridge Phase2

This planned work is part of a larger project to create an improved wetland corridor throughout the nature reserve. North of the Otters Bridge, an area of wetland known as Babbs Meadow, is also part of this scheme.

The work that was undertaken in 2002 at the Ladybridge area of Dibbinsdale Local Nature Reserve was a habitat creation, flood alleviation and improved access scheme. (See the map –point F) This scheme has been successful in its objectives and the opportunity is being sought to extend the project further downstream on similar lines. A vegetation survey was undertaken along the wetland corridor prior to work being undertaken.

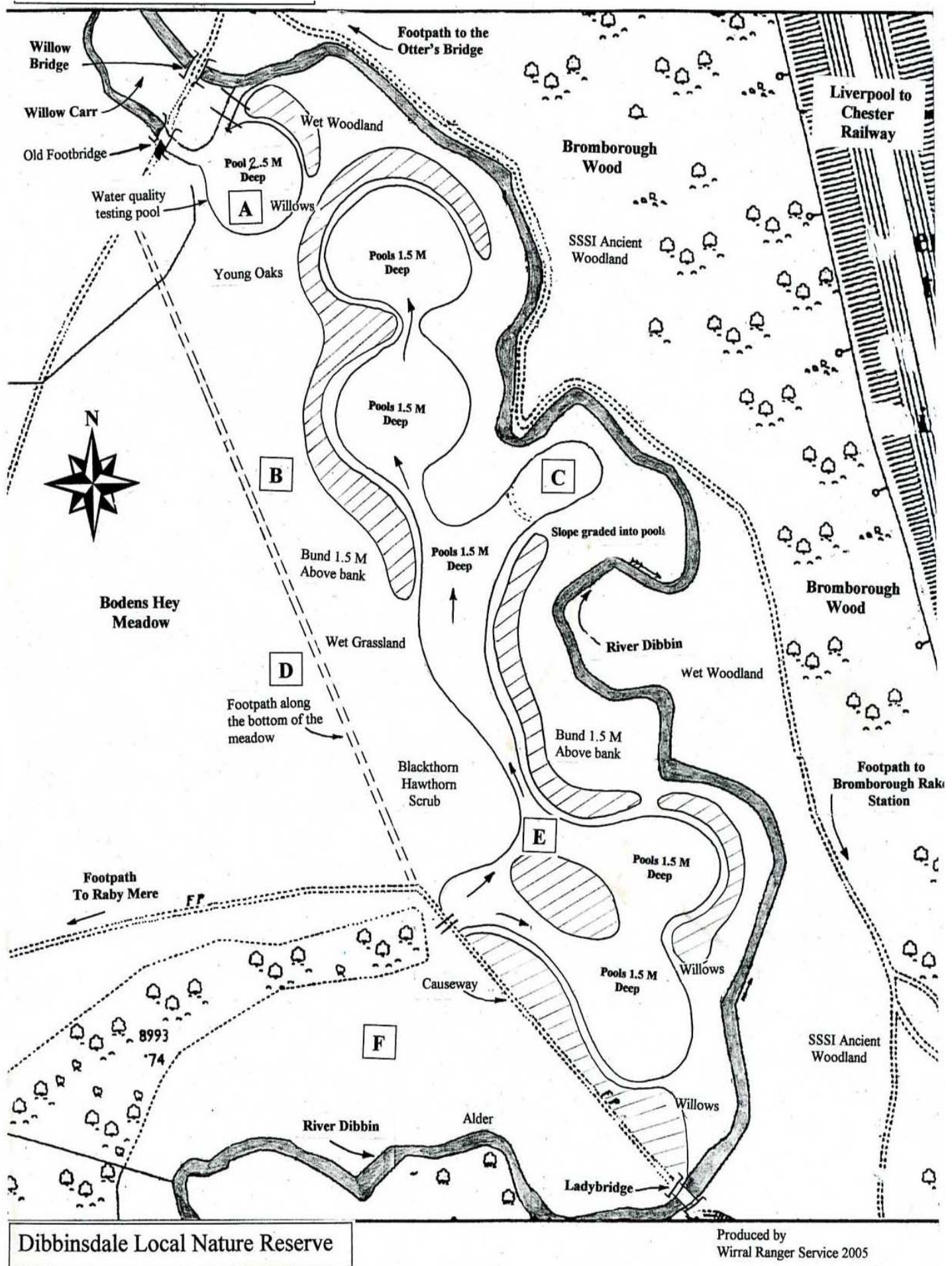
A series of interlinking pools are to be created fed by floodwaters of the adjoining River Dibbin. The first scheme undertaken in 2002 ties in with this idea. Ponded water from the river issues in to the new proposed pools through a pipe in the causeway leading to the Ladybridge. (See Point E on the map). The pools will be shallow and graded so that gently slope into the pools. The material excavated from the pools will be banded to form a series of banks. These will act as potential water vole burrow territory that will be above the level of floodwater. The bunds will help to direct the water to feed the interlinking pools. The gaps in the bunds will allow floodwaters to re-flood the pools.

An existing water vole pool (See the map- Point C) will be developed to encourage the further colonisation of the wetlands flora and fauna. It will be left undisturbed and a pool created adjacent to it leading into the interlinking series. A threshold will pond the water at point C so that the pond will be partially separate from the main body of water. This area will be monitored to assess the population of water voles in the area prior to the work commencing.

An improved and surfaced path at the bottom of the meadow is proposed. (See Point D on the map) The course of the path would follow an existing path line. The surface drainage of the sloping Bodens Hey Meadow creates very wet grassland where it meets the river flood plain. The path would act as a clear marker for management purposes between the meadow and the proposed improved wetland. The course of the path would not necessarily be straight but follow small variations in land contours and new planting. The new planting of hawthorn and blackthorn would mirror what is already bordering part of the wetland near Point E. It would also help to minimise disturbance to the wetland over time whilst providing a valuable ‘eco-zone’ to the adjoining meadow. To improve biodiversity it is proposed that Black Poplars are planted of this part of the flood plain. (See Point B on the map)

At Point A on the map, close to the new Willow Bridge, a water quality testing pool is proposed. This will enable easy access to the water and provide an opportunity to access the water quality of the river over time. A pool was created when the old bridge was bypassed and a new bridge was constructed. This was in effect a pool created by a truncated river meander. This pool borders a wet woodland area known as a willow carr. It is proposed that the pool is enlarged and partially revetted so that it can be used for river dipping. The area would need to be made safe to the public by some carefully constructed unobtrusive fencing. This is a potential good environmental education fieldwork focus because four of the reserves habitat types converge here- wet woodland, dry and wet grassland, and ancient woodland. It is also a convergence of routes through the reserve.

The work would also necessitate the desilting of sections of the River Dibbin. This would be done over three years to mitigate against environmental disturbance. There are a series of river blockages- fallen trees and debris – that would need to be cleared at the same time. Particular care would be taken close to the section of the river near Point C on the map. Over the three years of the project it is proposed that common reed would be encouraged to populate the pools by transplanting existing stock. The elimination of Himalayan Balsam would also be necessary after the disturbance to the seed bank due to excavation. The balance between open water and reeds would be achieved by cutting. The bunds would act as a means to gain access to the pools for machine at a much later date when further maintenance is required.



Original map of Ladybridge Phase 2

**Interim Progress Report
Ladybridge Phase 2 Wetland Scheme
Dibbinsdale Local Nature Reserve-2006- 2007**

The planning for the project began in 2006 with the application for funding from the Big Lottery Fund and Breathing Spaces. After discussion with the Friends of Dibbinsdale and following the Autumn Watch programmes on BBC the application was submitted. The plans for the works were a redrafting of a previous unsuccessful bid for funding from SITA in 2005.

The bid emphasised the two main benefits of the project – that of improvements in wetland habit by creating a wetland corridor parallel with the river and that of improvements to access at the bottom of Bodens Hey, adjoining the wetland. The viability of the present scheme had been tested in a previous project of 2003 that focussed on the Ladybridge. Phase two's aim was to extend the series of pools vegetated by reeds further down the valley. The benefit to wildlife and conservation would be to create pollution free refuges from the urban water of the Dibbin. The excavated pools would help provide flood relief storage capacity filter the water with its reedbeds and provide homes for water voles that would be able to create burrows in the banks that would be raised above flood levels.

The improvements to the footpath at the bottom of the meadow would define the two areas of management resulting from Countryside Stewardship agreement from DEFRA. (Oct 2005) Namely the Meadow and the Fen, or Wetland. An all weather surfaced path was proposed. Interpretative information and evaluation and monitoring of the development of the project were the other components of the scheme.

The application was successful and funds were acquired in June 2007. The scheme then needed the consent, or approval of Natural England and The Environment Agency to proceed. Applications for consent were at first considered a formality because there had been an almost identical previous scheme in 2003. This proved not the case. Natural England sent Steven Ayliss to consider the project while Emma Martindale of DEFRA also evaluated the Countryside Stewardship agreements progress. This was in July. Application was also made to the Environment Agency and Graham Todd.(Flood Defences) Natural England was to pass through their consent to EA, and EA to the project. Natural England sent their approval through in late August and EA sent on their approval by early October. The scheme could now proceed before winter flooding rendered contractors work impossible.

United Utilities were consulted with regard to the course of the main sewer that ran underground through the reserve.. Peter Reid of UU sent through plans of the course of the pipe. Griffiths of Newton Hall Farm sent through their estimate which was accepted. The second week in October was agreed.

It only left the marking out of the pools on the ground for the work to commence. The exact course of the sewer was crucial to this. Its course was between two manhole covers at either end of the wetland. The only problem was that the man holes at one end were completely covered by vegetation and finding them proved problematic. All was resolved with some advanced map work involving compass bearings and Sarah Morton, Eastham Ranger, whose eyesight was better than mine. The task day as part of Mersey Basin Week provided volunteers from Levers who marked the outline of the pools with what might be described as 'crop circles'.

Griffiths duly arrived at the crack of dawn Monday 8th October and deployed what seemed like a convoy of excavators and equipment. Robbie Griffiths who led the contractors described it as 'mob handed'. The job was discussed, health and safety forms filled in, signs and path closures put in place and we were off. Mob handed is not a fair description of the efficient and professional way the firm undertook the work. With on site discussions throughout the following days on subjects related to sensitive areas, angles of slope, run offs and gradings of banks, all was achieved ahead of schedule.

The slow process of collecting plant material to colonise the mud strewn pools when finished had begun many months earlier. Rushes, Purple Loosestrife, Common Reeds and Flag Irises had been propagated and assembled in the walled garden to wait transplanting. This was thanks to the work parties of volunteers from a combination of sources but mostly the Environment Agency and Unilever Research earlier in the summer. A water bed had been built in the walled garden by volunteers to house them.

At this point in time the Pest Control Officers team along with The Friends will take forward the transplanting of wetland plants in and around the pools- weather and water levels permitting.

Peter Miller. Ranger. October 2007

On going management

Annual

- Control of Himalayan balsam by strimming
- Felling and stump treating emergent trees(mostly willow)
- Strim edge of wet grassland(three or four times dependant on growth)



Metropolitan
Borough of Wirral



Project work

- Monitor amphibian and fish populations

Date completed

- De silt pools every ten years

Date completed

- Map & Control Japanese knotweed population(injection with Roundup) **July 2009**
Mapping and first eradication undertaken

Date completed

- Monitor spread of Japanese knotweed
(July 2009 begun)

Date completed

- Coppice mature willows and ashes on a rotation

Date completed

- Transplant common reed to assist colonisation of pools

Date completed

- Re introduction of water voles (followed by control and monitoring of populations/mink trapping)

Date completed



Metropolitan
Borough of Wirral



July 2009 On going Balsam Removal

Following the 2008 summer and efforts to remove balsam , it was decided that there was too much growth to eradicate it everywhere. i.e There was not enough time to strim out the balsam before it set seed. This was partly due to ‘abnormal’ amounts of rainfall and resultant flooding, as well as lack of manpower.

The areas that were considered a higher priority in order to get rid of the balsam were :-

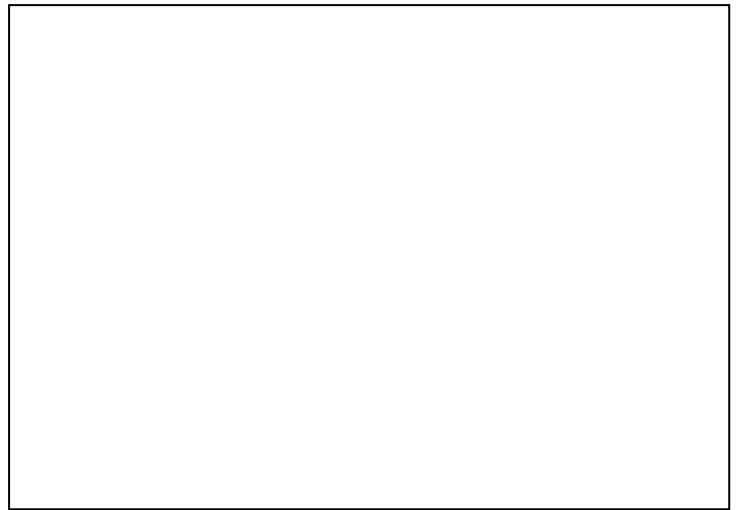
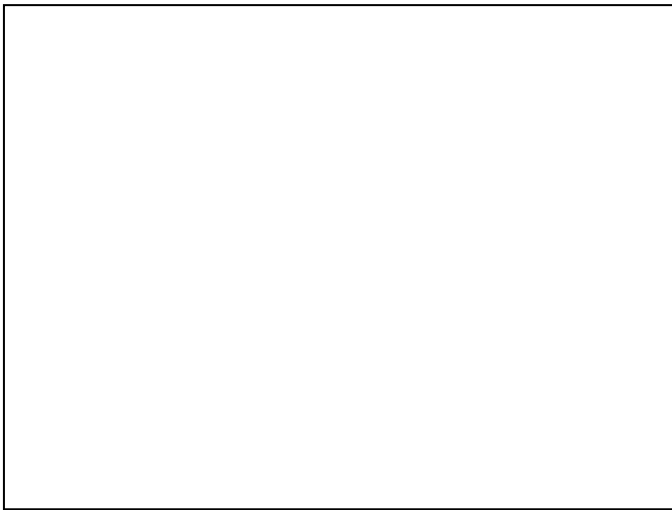
- Close to the Otters Tunnel
- At the bottom of Bodens Hey Meadow. This was defined as the section of the river between the Willow Carr (Point 6) and the Ladybridge (Point 7)

When the balsam was being strimmed out , previously unknown areas of Japanese Knotweed were found.

Those areas that were near the river were ‘injected’ with Tricile herbicide. The stems were cut back to reveal the hollow stems above the ‘knots’(leaf joints). The herbicide was put into the hollow stems. Other patches further away from the river were sprayed with ‘Roundup’ herbicide.

The evaluation of the effectiveness of the treatment was yet to be made.

Further searches for patches of the plant were needed.



Ladybridge Phase Two



Excavators dig pools near the river



Pools shaped and ready for planting

Reeds are transplanted from Babbs Meadow to colonise the pools. Pest Control officers help with the work. Reeds are propagated in the walled garden at Woodslee.



Potted plants were planted close to the waters edge

The shape of the pools is determined by the underground sewer pipe that follows the line of the river. The pipe lies between two manhole covers at the bottom of the meadow. Efforts were made to avoid this and the pool the toads use in spring

The 'soft' edge of the pools is an ideal place to plant marginal plants like purple loosestrife, rushes, and flag iris. Access for wildlife in and out of the pools is important



Himalayan balsam (left) was regularly strimmed out in the summer of 2008 so that the plant did not set seed. The middle picture shows the growth of phalaris close to the water in the first summer.



Pool shelf is planted up

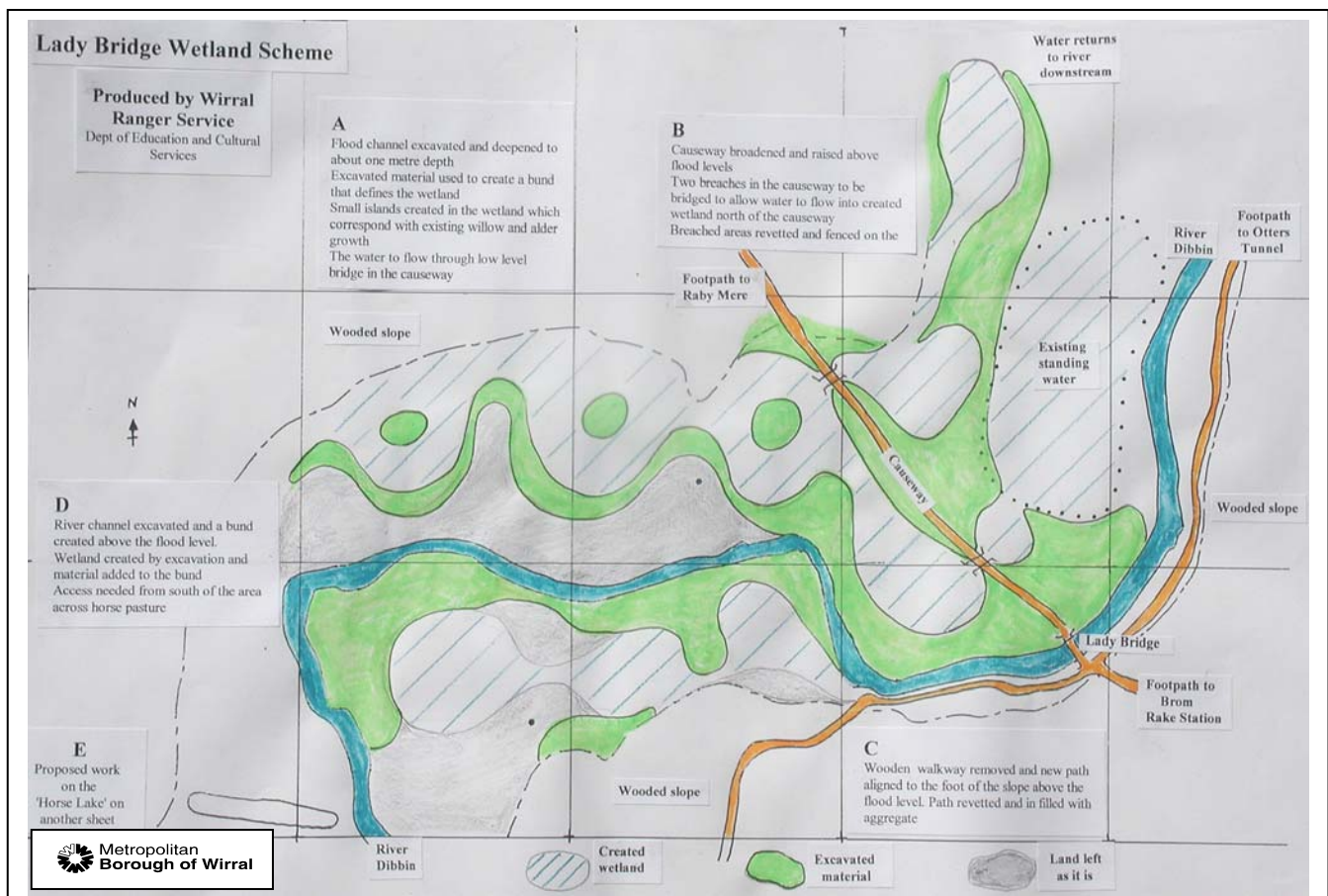


Reed growth by Ladybridge phase one pools

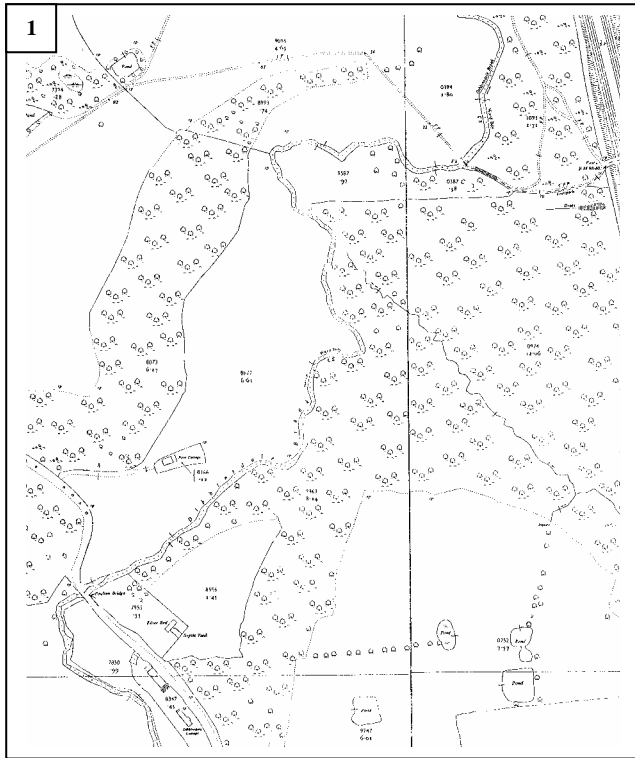
Ladybridge Wetland Scheme

On the week beginning Monday 6th October some major wetland restoration was undertaken in the 'Ladybridge' area. This involved three different improvement projects rolled into one.

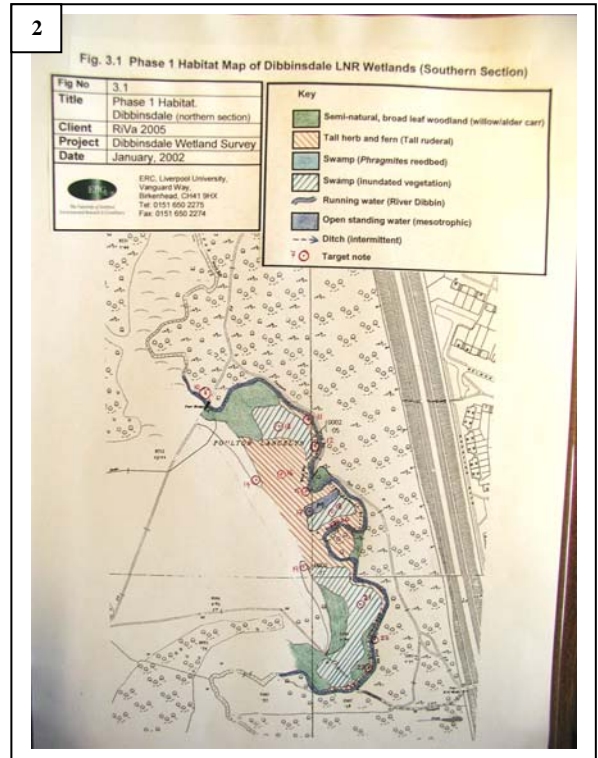
- 1** A wooden walkway close to the bridge running along the river bank had been decaying for many years. The wooden boards had become uneven, slippery and dangerous- regularly needing replacement and repair. The new path skirting the wooded slope behind the wooden walkway now replaces it. It is a stone path on flood free ground that will be a safer and sounder all season path. Efforts will be made to landscape the river bank in order to stabilize it and make it more natural.
 - 2** The second feature of the scheme was the causeway that linked Bodens Hey Meadow with the bridge. This was also prone to flooding, particularly in winter. This has now been raised and resurfaced with stone. The access to the bridge is now easier without the need for a step on and off. Excavated material has been used to make the causeway broader and less linear. Water that was held up by the causeway in times of flood can now flow under the path through a pipe that links one wetland area with another downstream.
 - 3** The third element of the scheme was the creation of a series of interlinking pools and scrapes. These will act to benefit the wetland in a number of ways. The pools will provide flood alleviation channels to ease the back up of floodwater. They will enable a healthy reedbed system to develop that in turn will help filter the water and lessen the sedimentation of the river. (A place for the sands and mud to settle) The secluded and vegetated pools will provide refuges for wildlife. The sheltered pools should attract a variety of water birds – ducks, herons, snipe and even kingfishers.
- Efforts have been made to preserve the fringe of mature river bank trees – willow, alder and ash - that will act as the foundation stones of the new wetland. The site will be more open it is hoped and less wooded within. The wetland will act as a corridor for wildlife between Poulton Bridge upstream and the Otters Tunnel downstream. The Ladybridge scheme is part of a series of improvements which include Central Avenue and St Patricks Well 'swales' and Babbs Meadow reedbed and watervole project. The creation of a sustainable wetland through the year will benefit the human and the wildlife visitors to the area. The new growth will be vigorous and soon overwhelm the pools.
- The spoil from the excavated pools has been deliberately piled in high banks along the rivers edge. As with Babbs Meadow Project, the banks will remain above the flood level. This will encourage water voles to recolonise it.



O.Lady Bridge Wetland Scheme Phase 1.



O.S Map of the Ladybridge area



Vegetation survey by Sheila Ross, ERC



How the Ladybridge looked before the causeway



Making the causeway in the 1980's



The causeway in 1985



The causeway floods in 2001



The wooden walkway and Ladybridge after flooding



The floodwater returning to the river



Lush phalaris grass in the wetland



Work on reducing willow growth



Willow blockage of the Dibbin

O.Lady Bridge Wetland Scheme Phase 1.

Day one –
new path
creation,
walkway
removal and
pool digging



Excavator removes wooden walkway



New path edging prepared



Excavator removes material onto aquatic dumper



Newly dredged river channel



Dredging near to bridge



Banks formed with excavated material



Stone unloaded for the paths



Stone unloaded onto path



New path under construction

Third day
of the
contractor –
causeway
pipe and
surfacing



Habitat3 /Ladybridge Project0304/
Ladybridgeday2/ siltrap5a



Habitat3 /Ladybridge Project0304/
LadybridgeDayOct03/ inrivershaping2

Second day
of the
contractor –
pool creation
and river
dredging



Flood relief pipe being installed



New causeway surface



Causeway revetment and firming

O.Lady Bridge Wetland Scheme Phase 1.- Project aftermath



Volunteers build fence and rail



Willow stakes planted as screening



Volunteer plants common reed



New willow plantings to stabilise the river bank



Floodwaters fill the south pool



Pools and filters beds fill with water



The flood relief pipe in mid summer



More willow screen planting near the bridge using coppiced willow



Railway sleepers used to build otter holt

Common reed p-lanted on the edge of the causeway



Himalayan balsam pulled out by the root before setting seed



View of the vegetated pcauseway pool in mid summer



Flooding showing effectiveness of the relief pipe



Extreme flooding showing how the causeway copes with water

Ladybridge Phase 1 – Project Update- 2009

Otters Holt constructed(2004)

Willows coppiced to make experimental Otters Holt at rear of first pool upstream from Ladybridge (i.e the one furthest downstream). Two level created. Covered with plastic membrane earthed over.

Strimming of Himalayan Balsam(2004 – 2008)

Regular strimming of balsam in 2004- 2008. Extremely wet summers in 2007 & 2008. Balsam is 'rampant' in all areas and control effectual despite a lot of serious work. Especially adjacent to the causeway and downstream from here

Water vole trapping 'stations'(2005)

Holes or tunnels dug in the bund created by the excavators in order to install 'dummy' tunnels prior to the introduction of traps in them. The idea is to get small mammals and mink accustomed to the features. (i. going in the tunnels even when the traps are not there)

Improvements to causeway drainage(2008)

Another sewer type concrete pipe installed in the causeway to help the pressure of water building up behind the causeway footpath at times of flood. Work done to also stop footpath material loss in between the two pipes through erosion. Wooden revetment installed.

Though the work has brought some alleviation to flooding here, it is not 100 % effective.

Introduction of Reeds and other marginals(2006)

Reeds propagated in the walled garden have been transplanted at the ends of the pool adjacent to the causeway. Reed mace (Typhus) and reed canary grass, purple loosestrife and flag iris also introduced into the wet. These have established very effectively

Tree work(2006-2007)

Some mature willow, including some affected by storm damage have been cut down in between the pools. Work needs to be done removing fallen trees across the river so balsam strimming can be facilitated. Some alders have also fallen in storms. A mature ash was removed by the district at the bottom of the steps leading to Bromborough Rake Station.

Strimming causeway(2004 – 2008)

Overhanging nettles and other path side plants have been systematically trimmed back at regular intervals through each of the summers. (Sometimes as many as three times). Particular attention has been given to strimming out any balsam that is near the causeway. Some young emergent willow will need cutting down and stump treating in 2009

Willows planted(2005)

Willow stakes planted on the Marfords Wood side of the river to help stabilise the bank and stop erosion. This had had little effect and the willows have not taken with any vigor. A clump of Japanese Knotweed needs chemical treatment here in 2009. Injecting ?

River Blockages

Debris has built up in the river just passed the Ladybridge. This has semi blocked the river and has obstructed it enough to cause the meander to be truncated(the water cuts through the meander) This needs to be unblocked and the short cut blocked in turn by debris- 2009

On going management

Annual

- Control of Himalayan balsam by strimming
- Felling and stump treating emergent trees(mostly willow)
- Strim causeway to Ladybridge(three or four times dependant on growth)



Project work

- Monitor amphibian and fish populations

Date completed

- De silt pools every ten years

Date completed

- Map & Control Japanese knotweed population(injection with Roundup)

Date completed

- Monitor spread of Japanese knotweed

Date completed

- Improve drainage on causeway(raise surface level and camber)

Date completed

- Improve flooding at meadow end of causeway

Date completed

- Maintain and inspect Otters Holt

Date completed

- Coppice mature willows and ashes on a rotation

Date completed

