

Management Recommendations for the Acres; Open Spaces Committee

- By Councillor Mike Deegan, September 2010

Introduction

This is an updated version of my July 2008 report, which provided a number of recommendations for management of the Acres.

The site provides a wonderful asset for the village and Parish Council. It is large and diverse enough to offer an array of opportunities such as recreation, play, education, allotments and wildlife areas. It contains one of the key landscape features of the village, the Doley Brook. This is a headwater stream that historically lies below the centre of the village and geographically splits the community in two.

Most of the site lies in the Environment Agency's designated floodplain. The brook and its floodplain are the reason why housing and intensive agriculture have historically not developed between the two halves of Gnosall. As a result of the brook, the Acres is home to a variety of wetland flora and fauna.

To truly utilise the site, it would be beneficial to develop a more detailed management plan in consultation with the local community. This would provide a long-term vision for the site and consider more carefully its history, anecdotal information and the views of villagers. Such a vision would enable the Parish Council to protect and enhance the living landscapes which form the Acres, whilst creating an appealing and easily accessible site for the whole local community.



For the purpose of this report, costings have not been included, but could be included in a more detailed list of prescriptions. It is anticipated that most of these recommendations will have funding implications. Options for Local Nature Reserve funding and some National Lottery grants are no longer available, but there is still considerable scope for Landfill Tax and other Lottery funding.



Report Findings

The report has been divided into six relevant sections of interest and subsequent recommendations. For ease of reading, the management recommendations have been brought forward in the report to immediately follow the introduction. The second section is an overview of site infra-structure and the subsequent sections cover the four distinct compartments owned by the Parish Council - the Acres Meadow, Doley Brook, Former Allotments and Roadside Fen.

1. Summary of Recommendations

i. Site Infra-structure & Facilities: - Management Recommendations

The Parish Council should develop an integrated strategy to improve the infra-structure of access, visitor facilities and public involvement at the Acres. These options will have significant cost implications, but if grant aided, they will have significant long-term benefits.

Facilities

- Install a series of wooden benches.
- Install a series of finger posts.

Access

- Develop an all-weather waymarked circular path, linked with both car parks and suitable for wheelchair and pushchair use.
- Maintain existing cut routes.
- Install a boardwalk across the fen and a new bridge to cross the brook as part of the all-weather footpath route.
- Consider the potential to develop safe links to footpaths with; the former railwayline, Health Centre and High Street side of the village.

Signage and Information

- Develop and strategically install a series of interpretation panels
- Consider the installation of gateway posts at each formal entrance.
- Re-evaluate current signage and replace signs where necessary.
- Develop and distribute an Acres leaflet.



Community Involvement

- Consider developing a volunteer work-party programme and volunteer warden scheme.
- Develop and distribute an education pack - help facilitate subsequent school/group visits.
- Develop environmental art projects with school or community groups.
- Implement a consultation programme for any future management plan or strategy.

An open amenity grassland area

- Create a Dog-Free Area for non-dog walkers.
- Install fixed benches or picnic tables.
- Consider creating a Dog Exercise Zone.
- Examine the feasibility of hosting special events or festivals
- Install litter and dog fouling bins.

ii. The Acres Meadow: - Management Recommendations

Maintain the Wildflower Meadow

- Control patches of docks and nettles
- Apply an additional load of wildflower hay to southern area (after chain-harrowing)
- Consider extending the wildflower meadow to other parts of the Acres.
- Cut the meadow each July and turned the hay at least twice before removal.
- Ensure that the cut hay is sold at its market value price
- Consider introducing aftermath grazing (ensuring that pedestrian access is maintained).

Other habitats

- Keep part of the pond bankside open and linked to the adjacent footpath.
 - Assess pond-bank gradients to determine their safety for visitors and pond-margins suitability for wildlife habitat.
 - Install a pond platform.
 - Allow the fen to develop and manage it in conjunction with the Brook and Fen.
 - Develop a tree & shrub maintenance regime.
 - Identify and leave an area of grassland uncut each year.
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iii. The Doley Brook: - Management Recommendations

Restoration of the Brook

- Commission a hydrological survey
- The Parish Council to lead on good riparian management and encourage others to work with EA's flood-map.
- A cessation of all intensive drainage (vegetation cutting & de-silting).
- Allow brook to re-establish a more natural depth, shape, level and flow.
- Consider restoring natural features such as riffles, backwaters & pools.
- Remove the spoil bund along the brooks eastern edge.
- Seek to establish a series of wetland areas to link with Doley Common.



Pollution

- Notify EA's Pollution Control of the pollution in the brook.
- Liaise with STW to prevent sewage and foul water entering the brook.
- Determine what other STW outlets enter the brook.
- Ensure that any future developments in the catchment adopt a SUDS.

Trees

- Remove all hybrid poplars.
 - Consider planting some suitable replacement trees
 - Coppice diseased alders
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iv. The Allotments: - Management Recommendations

- Commission a hydrological/topographic survey to establish areas prone to natural flooding.
- Relocate allotment plots from flood-prone areas to higher ground as soon as possible
- Implement Matt Jones' Flood Storage engineering proposals (which will probably require separate funding).
- Incorporate management of the abandoned allotments area with compartments 2 & 4
- Consider transferring the peaty topsoil from abandoned allotments to new higher land for allotments.



v. The Roadside Fen: - Management Recommendations

- Maintain open fen habitat of reeds through a cutting regime
- Where necessary install culverts or bridges over ditches.
- Consider introducing hay or seeds from a nearby similar SSSI habitat.
- Maintain an adequately high groundwater level
- Identify which drainage channels can be impeded.
- Implement a programme of ditch maintenance (and re-profiling).
- Manage trees/scrub (including removal of inappropriate species).
- Commission a survey to determine the fens ecological status.
- Restrict public access



1. Site Infra-structure and Facilities

The area is known and used by many people in the community. However, it does lack a collective sense of identity & place, while integrated access, signage and facilities are generally limited. There is enormous potential to create and maintain a more welcoming site without creating the sense of a Country Park or spoiling and compromising the Acres sense as a rural location at the centre of the village.

Facilities

There is provision for young children with a playground at the north-eastern corner of the site and an all weather basketball/football enclosure for older children just to the south – both above the floodplain. The Village allotments are located to the west of the brook below the former railway line.



Outside of the play facilities, there are currently no places for people to sit or rest on the site. The provision of a series of carefully placed benches would provide a much needed and appreciated resource.

Access

Public access is primarily restricted via Brookhouse Way – either from the small car park by the playground or across the grass periphery. There is vehicular access to the allotments and a car park from the A518, with a subsequent path leading to the Acres, but this sometimes waterlogged in wet conditions. Consequently visitors to the Acres from the Gnosall Heath end have to drive or walk around via Brookhouse Way.

The Acres field is primarily now used by dog walkers and a number of paths are routinely cut by the Parish Council to maintain pedestrian access. There is currently no disabled or pushchair access across the site, but potential does exist to cater for a wider range of villagers needs from both car parks.

The site would benefit from at least one waymarked circular path – ideally with an all-weather surface suitable for wheelchairs and pushchairs. Such improvements could include improving the access from the Allotments entrance – possibly with a boardwalk and new bridge to cross the brook (as a key feature). A series of finger posts would help with directions.



There is great potential to improve pedestrian access by linking the site to external footpaths. The new pedestrian crossing near the Royal Oak pub has improved safe access from the Gnosall Heath end of the village – also providing the potential to link up with the recently improved former railwayline route. A formal crossing across Brookhouse Way would also provide a much needed safe route from this side of the Village. A link to the Gnosall Health Centre (and new Village Green) would provide pedestrian access to this much-used facility and could be linked into their Healthy Walks programme.

Signage and Information

There is limited signage, apart from permanent warning signs. Likewise, there are no public information boards (other than the new Allotments board) or interpretation panels.



The site would greatly benefit from a number of interpretation panels/lecterns strategically and discretely placed to provide information or guidance to visitors. A consistent style would be required, but themed to reflect each distinct location. Modern interpretation panel designs now benefit from less clustered text and a greater use of images and illustrated maps.



It may be possible to install gateway posts at each formal entrance to the site. For example, durable oak wooden posts (see left) have provided a subtle, but greater sense of location & demarcation for visiting Staffordshire Wildlife Trust nature reserves.

A consistent style of signs and warning notices would also be beneficial for any that are deemed necessary, with greater consideration given to more appropriate and effective wording. For instance, temporary signage is often now used to deter dog fouling in some country parks - using changing themes, interesting imagery and less confrontational language.

A leaflet or pamphlet would promote this valuable facility, celebrate its position in the village landscape and offer visitors information. It could be distributed locally from shops, pubs and halls.

Community Involvement

This might be encouraged by developing regular volunteer work parties. Leadership and tools would have to be provided, but if possible, a voluntary scheme could serve a community need, while helping provide routine site/habitat maintenance. A managed volunteer warden scheme might also ensure that the site is regularly inspected, kept safe and well maintained on a more frequent basis – particularly if usage by villagers increases.

An education pack would be an excellent aid to facilitating environmental learning and encouraging school & local community group visits to the site. This would help increase appreciation/awareness of the site and its different habitats and uses – particularly by the younger population. The pack could be developed by the Parish Council in conjunction with both teachers and children from St Lawrence's Primary School.

An interesting diversification could come from developing environmental art projects with school or community groups. Themed artwork using natural materials could create onsite features as diverse as sculptures, murals and site furniture. Environmental art is an extremely popular way of getting people involved with the site and would provide a real attraction for visitors. Projects are led by trainers or local colleges and the artwork is usually temporary.



It is critical that any future management plan or strategy for the Acres is developed in consultation with the local community and key stakeholders.

An open amenity grassland area

Much of the site offers an important resource in the village for residents to walk their pet dogs. There is also scope to diversify interest by creating a Dog-Free Area for non-dog walkers to be used for mixed amenity-use such as recreation and play. A regularly cut area with fixed benches or picnic tables would enable people to enjoy the Acres without fear of dog fouling or being disturbed by dogs. Conversely, there may also be scope to create a specific Dog Exercise Zone where owners can let their dogs off leads.

The Acres provides a central location in the village for hosting special events or festivals. If the Gnosall festival becomes an annual July event, the cut meadow could also be added to any space needed for an event (ground conditions permitting).

One downside to encouraging increased visitor use is the risk of greater littering. Installing more litter bins is an option, but they would need to be maintained. Dog fouling bins could also be installed, but raise similar maintenance issues and are not always used by persistent offenders.



2. The Acres Meadow (*Compartment 1*)

This 12-acre field is the largest compartment, providing a significant resource for the village that is large enough to cater for both greater recreational use and wildlife habitats. Formerly summer grazing meadows, the Acres were drained and agriculturally improved, subsequently used as playing fields and more recently cut for hay.

Hay Meadow

Wildflower hay from Mottey Meadows was spread on the southern half of the field by the Parish Council in July 2010 to improve its botanical diversity. This project should also improve the aesthetic value of the grassland and provide an educational benefit for the local community.



The Parish Council has the option to extend the wildflower meadow restoration project to other parts of the Acres. If grant aid is acquired, an additional application of wildflower hay to the southern area would be beneficial (unfortunately, dry conditions this year restricted pre-harrowing of the soil and the spreading of the hay was not as extensive as desired). Prior to any further re-seeding, it will also be necessary to control the patches of docks and nettles. Then patience will be required – the meadow will show immediate improvement in its botanical biodiversity, but it will take many years for it to establish a balanced vegetational community.

- **Maintenance**

In terms of ongoing management, the wildflower meadow will need to be cut annually each July – after the seed has ripened. It should then be turned a few times (to allow the hay to dry and seeds to fall) before being removed. Hay from wildflower meadows attracts a premium price and the Parish Council should ensure that a competitive cost is sought.

Ideally, native meadows are traditionally after-grazed in late summer/early autumn and sometimes in early spring too (this helps to imbed seeds and remove surplus vegetation). Wooden post & rail fencing would provide visually discreet feature for this setting and enable the Parish Council to re-introduce a grazing regime. Pedestrian access across the area could still be maintained with a system of kissing gates. The fencing and cattle might also encourage more dog-walkers to collect their pet's droppings. Meanwhile the cattle would restore a traditional feature of the meadows and also provide an additional educational aspect to customary meadow management.

Other habitats

On the lower-lying peaty soils, a fen-type vegetation of reeds and reed sweetgrass is developing out from the margin of the brook. As peaty soils are drained, they dry out and shrink. This habitat may be expanding due to the shrinkage of the underlying peat from drainage – resulting in an even lower-lying topography in relation to the groundwater table. This type of vegetation is increasingly rare and now a national Biodiversity Action Plan (BAP) habitat. This is an important habitat that should be allowed to develop and managed in conjunction with the Brook and Fen compartments.



The pond is an attractive feature, but currently feels isolated from the rest of the Acres and nearby wetland. Keeping part of the bankside cut would link it with the adjacent footpath. A pond-dipping platform could be installed to aid access to the open water habitat for discovery and learning. An assessment of the bank gradients would also determine if they might be improved for wildlife or visitor safety.



The field also includes a number of planted copses and individual trees and shrubs that would benefit from a maintenance regime. Likewise, a rotation of small uncut grassland areas provide would provide continual cover/habitat each year and connectivity for many wildlife species.

3. The Doley Brook (*Compartment 2*)

Description

The brook runs south east to the Acres from Doley Common *Site of Special Scientific Interest* (SSSI), through agricultural land and past the cricket club, livery and allotments fields - leaving the site through the culvert under the A518.

Rivers and streams are dynamic parts of our landscape, but like many other such watercourses, the brook has been over-managed and lost much of its natural structure and features. Such tributary watercourses are self-regulating and should not require deepening or de-silting. If drainage is not artificially impeded, all such watercourses will naturally find their own level and course. Instead of a natural wide and shallow profile typical of a small headwater brook, however, it has been modified into a narrow and deep channel. With such a limited catchment, there is consequently little conveyance of water for much of the year - leading to increased silt deposition and a subsequent flush of aquatic vegetation.

Ongoing siltation is normally a natural characteristic only at deltas and estuaries. Further dredging or deepening of the channel will exacerbate the problem – creating further silting and vegetation growth for most of the year. Such expensive management has little effect on extreme flooding incidents such as during the summer of 2007 – events that are predicted to increase with climate change. There may possibly be some increase in drainage, but it is not cost-effective - only potentially shortening its duration in one area and speeding flooding further downstream. For the rest of the year, deepening of the brook will have a surprisingly limited impact on the adjacent groundwater levels.

Understanding the Floodplain

The Environment Agency's (EA) flood-map shows which part of the floodplain are liable to flooding. The floodplain of the Doley Brook has always been the natural area for water in the Gnosall catchment to collect when it rains – hence why it has not been heavily cultivated or developed to join the two parts of the village.



Unfortunately, inappropriate land-uses (i.e. the allotments, cricket club and livery) began encroaching on the floodplain during the drier decades of the past 30 years - when drainage opportunities seemed endless and former land-use practices were being forgotten.

Intensive use of the floodplain has led to increasing demands on the function of The Doley Brook. This is not a man-made ditch but a headwater brook and excessive management has totally altered its natural character. The Doley Brook should be an attractive watercourse for families to visit and appreciate. Unfortunately its perceived role has now become a problematic channel, useful only for drainage or to wash away excess sewage and foul-water. As described to the Open Spaces Group by Matt Jones in 2009, the brook has been modified and deepened to such an extent that channel drainage is now restricted at low flows (dry weather) – leading to greater silt deposition and vegetation growth. This has proved to be unsustainable and a prohibitively expensive process.

Recent Changes

Significant changes in recent years make the role of the floodplain in Gnosall more important than ever. Increasingly wetter and unseasonal conditions have increased flooding events - a pattern likely to significantly increase with climate change. This flooding is confounded by the considerable development that has occurred adjacent to Brookhouse Way, which now causes greater pulses of surface water during heavy rainfall to surge down to the Acres floodplain.

Furthermore, Defra & EA have significantly changed their approach to flood defence and water management. The EA no longer supports unsustainable management of rural watercourses because it is viewed as prohibitively expensive, damaging to wetland habitats and exacerbates flood incidents downstream. After years of intensive management, current national policy is now focused on the flood defence of urban areas and restoring naturally functioning river systems – hence Defra investing £300k to establish the local Farming Floodplains for the Future project. Defra is also increasingly looking to adopt Climate Change Adaptation methodology – ‘adaptation’ is the key word throughout current government thinking.



Above: Regular flooding of the Brook in 2006, 2007 and 2008

The Floodplain Group provides a wonderful opportunity to examine the options available for sustainable management of the Doley Brook and its floodplain. As a public body, the Parish Council is able to lead the way on good riparian management within the Doley Brook catchment. The Brook is a huge asset for the people of Gnosall and deserves to be treated as such - not as a drainage ditch. Adjacent landowners and user-groups should be encouraged to work with the flood-maps and if necessary seek how they can modify their land-use. This might mean confining year-round activities to the driest areas above the floodplain and adapting management on the naturally wetter areas.

Proposals for renewed drainage

It is essential that the Floodplain Group is able to broaden its principal objectives beyond just how to drain the brook. A proper hydrological study is needed to determine the full capacity and scope of the brook and its floodplain. Such a study would include an assessment of all factors to be considered – environmental, commercial, recreational, cost-effectiveness and legislative. A qualified hydrological consultant would be able to carry out an independent and integrated assessment to fulfil all requirements. This may have cost implications, but would be prudent before any expensive drainage project is contemplated.

In the meantime, a topographical survey would establish the relationship of the brook's hydrology to the local area - determining which parts of the floodplain are most prone to flooding. Matt Jones of the *Farming Floodplains for the Future* has floodplain maps of the whole Doley Brook catchment and would be willing to undertake a survey as part of his project. Co-operation with other adjacent riparian owners could also help to establish a series of marginal wetland areas along the upper section of the brook to link with Doley Common SSSI.

A soils survey would give an indication to the location of peaty areas that would denote historically saturated land. A historical perspective might also help determine the historical bed-level of the brook from Gnosall to Roule Farm, past riparian land-uses and how the brook managed to flow in former times.

Ecological Impact

Headland watercourses are Staffordshire BAP priority habitat, requiring sensitive management. Drainage. Dredging, even just to the centre of the channel will be highly destructive to the brook's ecosystem – in terms of water levels, habitat loss and channel destruction (for fish, invertebrates, plants, birds & mammals). Drainage on this scale will affect wetland habitats downstream to Lower Roule. Most crucially, it is likely to have a detrimental impact on habitats upstream – particularly to the hydrology of Doley Common SSSI.

An Environmental Impact Assessment (EIA) should be included in any appraisal of proposals for drainage – linked to a cost/benefit analysis of all options. This is standard practice for all drainage bodies (EA & Internal Drainage Boards) when they manage or adopt new watercourses for drainage. Drainage consent from EA will require consultation with their flood Defence & Biodiversity departments – neither of whom is likely to look favourably on such an unsustainable scheme that goes against current national guidance.

Restoration of the Brook

The most sustainable and cost-effective option would be a cessation of intensive drainage with the brook allowed to re-establish a more natural depth, shape level/flow. Likewise, routine vegetation cutting is superfluous as any significant flow during summer flood events will quickly channel its way through aquatic vegetation (during winter, vegetation also dies back and becomes irrelevant). Such an approach will require time and patience.

If works are required, resources should be used to restore the brooks former natural features (such as riffles, backwaters, meanders & pools). These would improve habitats for wildlife and provide attractive natural features. Additionally, the spoil-bund along the brooks eastern edge (covered with nettles) is an unsightly boundary and should be removed.



The wetland has huge landscape, wildlife and recreational potential as a village resource to be enjoyed by all. Once restored, it will be possible to consider developing visitor access and facilities to include the brook as part of the visitor experience to the Acres and Gnosall. Any consultation would provide an opportunity for input into options for future land-uses.

Pollution

Unfortunately, there are a number of outfalls into the brook taking foul water drainage from the village during heavy or prolonged downpours, when a rapid pulse of water is released into the brook from the built environment within the catchment of the brook. There is extensive evidence of sewage litter around two outfalls at the southern end of the brook from the combined foul water & sewage overflow, with some sewage litter even washing back onto footpaths. This is a serious cause of concern both as a health hazard and for wildlife.



Southern outfall into brook

The high levels of phosphates and nutrients from sewage will be a significant factor in promoting excessive vegetative growth in the brook. To compound problems, excessive nitrate levels in the brook also suggest pollution from upstream agricultural use. As a result of this, the brook now appears to be quite polluted.

This is an unacceptable situation and should be raised with the Pollution Control section of EA at Stafford. It should also be incumbent on Severn Trent Water (STW) to act to prevent sewage and foul water entering the brook and effectively turning it into an open sewer.

It would be useful to determine what other STW outlets enter the brook. Any future developments in the catchment should also give greater consideration to the treatment of foul water and sewage (i.e. Sustainable Urban Drainage Systems - SUDS).

Trees/Scrub

Unfortunately, there has been widespread planting of hybrid poplars, including a row along the western side – possibly to restrict vegetative growth in the brook (through shade) and drain the soil. Although shaded areas of the brook can be beneficial for habitat & wildlife diversity, these quick growing non-native trees are not a wetland species and have limited benefit for native wildlife.



It is important that the poplars are removed. This may provide a sensitive issue with some visitors now used to their presence, so could be carried out gradually over several years. If some replacement trees are desirable, native species such as willow could be replanted. Unfortunately, replanting alder where diseased alders (displaying evidence of *Phytophthora*) are known to occur presents a high risk, though trials have shown that coppicing can regenerate diseased trees.

4. The Allotments (*Compartment 3*)

The allotments were located to the west of the site, mainly in a low-lying peaty area adjacent to the brook. This was an unfortunate decision as it primarily lies within the floodplain and will always be liable to flooding events, regardless of what drainage is carried out. Simple hydrological and topographic modelling will help confirm areas prone to natural flooding and those suitable to long-term cultivation.



As with many of the drained areas in the floodplain, drainage of the ground during the drier decades will have resulted in shrinkage of the underlying peat— resulting in an even more unfavourable topography in relation to the groundwater table. Following repeated flooding, the lowest-lying allotments at the southern end have been abandoned, with a further recent retreat of adjacent plots. These abandoned allotments have quickly been colonised by coarse vegetation, forming a natural extension with the floodplain fen to the south.

The village desperately needs a sizeable area for allotment holders – especially at this time of current high demand. The Parish Council has made great progress to secure suitable higher ground for plot-holders above the floodplain. Hopefully further land will be acquired in the near future and every effort should be made to help facilitate the transfer of remaining plots from flood-prone areas. This will be a difficult change, especially as many holders have invested so much time and effort to improve and condition their plots over the years. However, the lower-lying allotments are always going to be prone to flooding and flood-defence of this area would be extremely difficult and prohibitively expensive.

A sustainable option has been provided by Matt Jones (Farming Floodplains for the Future project) that would utilise the area of abandoned allotments. If this naturally low lying area is re-linked with the adjacent fen to the south, it will provide greater flood-storage within the floodplain. This engineering project would provide an increased capacity of up to 3000 cubic metres of water and help reduce the impact of flooding (though it would have a negligible effect on the lowest-lying areas at the same level upstream on the eastern side of the brook). Although the initial funding deadline has passed, Matt Jones has stated that he is still willing to help the Parish Council develop, design and implement the proposed project. Additionally, he will be able to assist in trying to source new funding.

In terms of habitat management, the area of abandoned flood-prone plots should be incorporated with the low-lying areas in compartments 2 & 4 (the brook and roadside fen). A further option would be to remove the peaty topsoil from abandoned allotments (considerably enriched in the process of cultivation) and spread it on any new higher land that becomes available for allotments. This would have the added benefit of creating a depression in the peat that would remain more saturated throughout the year and expose a suitably impoverished soil base for re-colonising wetland vegetation.

5. The Roadside Fen (*Compartment 4*)

This field lies immediately to the southeast of the brook and appears to have been abandoned because of the wet conditions within the floodplain. Several ditches within and around the field provide evidence of past attempts at drainage – particularly a large east-west ditch at the southern end.

Fen

The field has probably been used as summer pasture in the past, but it is quickly reverting back to a fen habitat, with succession to reeds, willow and wetland plants such as meadow sweet & gypsywort. There doesn't appear to be many notably rare plants, but fens are a valuable habitat for wetland fauna in themselves. The former pasture still contains patches of dry grassland on higher ground. Without management (i.e. maintaining groundwater levels and removing dead vegetation build-up), it is likely that successional processes will continue and the fen will develop to scrub and then woodland.

It is important that the open fen habitat of reeds and associated vegetation is maintained. The principal aim should be to maintain an adequately high groundwater level – to be determined through the topographical survey. Secondly, it will probably be necessary to introduce a cutting regime to help remove the build-up of vegetation litter. In the absence of light grazing, this might be achieved by cutting the site on a rotation and removing the cuttings. To enable access around the site (pedestrian or with machinery) it may be necessary to install a number of culverts or bridges over ditches.



Ditches

Although intended to drain the site, if managed appropriately, ditches can provide a beneficial resource as open water habitat (linear ponds). The first step is to identify where drainage/outflow into the brook can be impeded. Once this is achieved, a programme of ditch maintenance can be established to provide different stages of open-water habitat (i.e. on a 5-year cycle) This maintenance could also include some re-profiling of the ditches to provide better aquatic habitats.

Trees

There are several clusters of willow species, mature alder (unfortunately displaying evidence of *Phytophthora*), elm and scrub encroachment. Although scrub and surrounding trees can provide good complimentary habitat of some wildlife benefit, it should be managed to retain its structure and extent as open fen habitat is of far more national importance than woodland.

There is again an issue of inappropriately planted species of trees. These are mainly around the periphery and include horse chestnut and limes, with a thicket of aspen or grey poplar at the northern boundary. The aspen/grey poplars should be contained and other trees inappropriate to the habitat either removed or periodically coppiced. The diseased alders should also be coppiced to see if this stimulates healthy regrowth, though some standing deadwood habitat should be retained. Likewise, the elm species should be monitored and managed to maintain healthy and undiseased young growth.

Other interest

A botanical and invertebrate survey would further determine the fens ecological status. If deemed desirable, the flora could subsequently be enhanced by taking hay or seeds from a nearby site with similar habitat conditions such as the SSSI's at Doley Common, Aqualate or Loynton Moss. Removal and transportation of the cut vegetation (which has no commercial value) could be arranged with the owners and dispersed on cut areas late in the summer or early autumn.

Much of the fauna associated with the fen will be relatively sensitive to disturbance – particularly birds and mammals. There is good access to the rest of the site, so it is suggested that there is controlled access to this one compartment.