

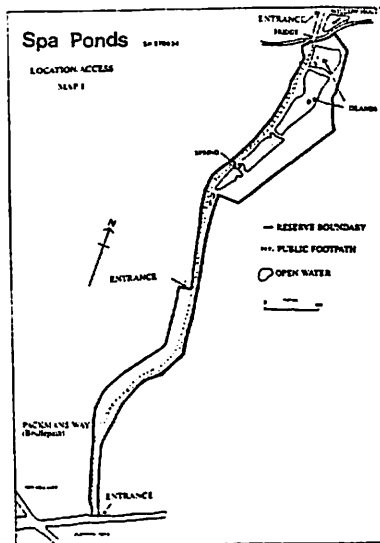


## Management Plan

for

### SPA PONDS NATURE RESERVE

#### Clipstone, Mansfield



by

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NOTTINGHAMSHIRE WILDLIFE TRUST

April 1996



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# **CONTENTS**

## **PART 1 DESCRIPTION**

### **CHAPTER 1.1 General Information**

- Section 1.1.1 Location/Access
- 1.1.2 Summary Description
- 1.1.4 Map Coverage
- 1.1.5 Photographic Coverage

### **CHAPTER 1.2 Environmental Information**

- Section 1.2.1 Physical

- Sub-section 1.2.1.1 Climate
- 1.2.1.2 Hydrology
- 1.2.1.3 Geology
- 1.2.1.4 Soils
- 1.2.1.5 Geomorphology

- Section 1.2.2 Biological

- Sub-section 1.2.2.1 Flora
- 1.2.2.2 Fauna

- Section 1.2.3 Cultural

- Sub-section 1.2.3.1 Archaeology
- 1.2.3.2 Land use history
- 1.2.3.3 Past management for nature conservation
- 1.2.3.4 Public Interest

- Section 1.2.4 Ecological Relationships and Implications for Management

### **CHAPTER 1.3 Bibliography**

## **PART 2 EVALUATION AND OBJECTIVES**

### **CHAPTER 2.1 Conservation Status of the Site**

- Section 2.1.1 Historic

- Sub-section 2.1.2.1 Site Description

- Section 2.1.3 Site definition and boundaries

### **CHAPTER 2.2 Evaluation of Features**

- Section 2.2.1 Evaluation

- Sub-section 2.2.1.1 Size
- 2.2.1.2 Diversity
- 2.2.1.3 Naturalness
- 2.2.1.4 Rarity
- 2.2.1.5 Fragility
- 2.2.1.6 Typicalness

- 2.2.1.7 Recorded History
- 2.2.1.8 Position in Ecological Unit
- 2.2.1.9 Potential Value
- 2.2.1.10 Intrinsic Appeal

- Section      2.2.2 Identification/Confirmation of Important Features  
                  2.2.3 The site in wider perspective and Implications for management  
                  2.2.5 Ideal Management Objectives

### **CHAPTER 2.3 Factors Influencing Management**

- Section      2.3.1 Natural Trends  
                  2.3.2 Man Induced Trends  
                  2.3.3 External Features  
                  2.3.4 Obligations/Legal Constraints  
                  2.3.5 Management Constraints  
                  2.3.7 Impact Assessment

### **CHAPTER 2.4 Operation Objectives and Management Options**

- Section      2.4.1 Rationale  
                  2.4.2 Identification of Operation Objectives, Selection of Management  
                  Options and Outline Prescriptions

## **PART 3 PERSCRIPTIONS**

### **CHAPTER 3.1 Projects**

- Section      3.1.1 Project Register  
                  3.1.2 Project Groups

### **CHAPTER 3.2 Work Schedule**

- Section      3.2.1 Work Programme  
                  3.2.2 Annual Work Plan

### **CHAPTER 3.3 Control**

- Section      3.3.1 Project Recording System  
 Sub-section      3.3.1.1 Compartment Notes

## **APPENDICES**

## **PART 1 - DESCRIPTION**

### **Chapter 1.1 General Information**

#### **Section 1.1.1 Location/Access**

**Site Name:** Spa Ponds

**Grid Reference:** SK 570634

**Habitat Type:** Wetland

**Local Planning Authority:** Mansfield District Council

**Status:** Grade 2 County Wildlife Site as identified on the Nottinghamshire Biological and Geological Records Centre Alert Site Schedule and a Nature Reserve managed by Nottinghamshire Wildlife Trust, as held on licence from a private owner, under agreement since 1984.

**Access:** Via Packmans Way bridlepath maintained by Nottinghamshire County Council, entrances at Clipstone drive and Spa Lane via the Maun River Valley.

**Area:** 6.5 ha

#### **Section 1.1.2 Summary Description**

The reserve comprises three 14th century (mediaeval) ponds and 1 modern one, fed in sequence by a spring. The underlying geology is Sherwood Sandstone, on which ponds and springs are rare. The edges of the ponds support oak and birch woodland and stands of willow scrub. The reserve is an important site for dragonflies. There are many interesting birds seen, such as: kingfisher, swallow, little grebe and blue tits. Forest Enterprise's Garibaldi Plantation, just outside the south-eastern boundary of the reserve, attracts coal tits and gold crests. The River Maun runs adjacent to the northern boundary where a swamp has developed due to subsidence. This has been planted with osier, with a view to managing the area as a withy bed.

The mediaeval ponds have an archaeological interest as remains of piping, culverts and stone sluices have been found in excavations. These indicate past irrigation systems. The area has been neglected and is at present littered with rubbish and suffers from vandalism. Vegetation is overgrown onto a poorly levelled footpath, which requires immediate maintenance.

The reserve is currently used for quiet recreational purposes by local residents and Trust members. Fishing also takes place though not permitted.

#### **Section 1.1.4 Map Coverage**

**Ordnance Survey Maps:**

1:50,000	: Landranger sheet 120
1:25,000	:
1:10,000	: SK56SE

**Nottinghamshire Wildlife Trust Maps:**

**Management plan maps:**

Map 1:	Reserve boundary, footpaths, access, etc
2:	Outline hydrology



### **Section 1.1.5 Photographic Coverage**

The Trust has a collection of photographs in the Spa Ponds file.

- slides, colour prints, b&w prints showing habitats, management, species, etc

Mr Tony Davison the reserve warden also has photographs.

## **Chapter 1.2 Environmental Information**

### **Section 1.2.1 Physical**

#### **1.2.1.1 Climate**

Nottinghamshire is situated on the Midland Plain, some 160Km from the coast and has a relatively uniform climate.

Annual averages for the years 1950 to 1980 given below are from the Meteorological Office, Climatological Recording Station at Watnall with the exception of rainfall which is from Ranskill 1993.

**a) Rainfall**

Average annual rainfall: 681mm

Average no. of rain days per year (when 0.2mm or more fell): 178

**b) Snow**

Average no. of days per year with no snow or sleet falling: 34.7

Average no. of days with snow lying at 0900 GMT: 16.1

**c) Sunshine**

Average no. of total sunshine hours: 1257

Average daily mean of sunshine hours: 3.4

**d) Fog**

Average no. of days when horizontal visibility is less than 200m at 0900 GMT: 12.8

**e) Temperature**

Average annual daily maximum: 12.7°C

Average annual daily minimum: 5.6°C

Average annual daily mean: 9.1°C

Extreme maximum: 33.8°C

Extreme minimum: -13.3°C

Average no. of days with air frost: 49.7

Average no. of days with ground frost: 110.5

### 1.2.1.2 Hydrology

The outline hydrology of the site is shown in Map 2 in the Appendix.

The man-made mediaeval ponds are fed by a strong spring in the Sherwood Sandstone, a rare feature. This spring would have fed an area of swamp and ponds before the existing ponds were made. The outflow from the lowest pond forms a stream which runs into the River Maun and at this point marsh has developed due to subsidence (known as the Willow Holt, refer to Map 1). The exact catchment area that feeds the spring is unknown but includes areas of Garibaldi Plantation to the east, agricultural land to the west and run off from Clipstone Drive urban area to the south.

Much of the footpath from the southern entrance has been badly eroded due to runoff from Clipstone Drive and as a result has created an area of bog/marsh on deposited sediments prior to reaching the spring. The eastern boundary of the reserve has a steep slope from which runoff enters the ponds. There is a great deal of run-off and erosion from the arable land on the western boundary which has created gullies. During heavy rainfall the path is swamped with water and turns the sand into quick sand. Silting up of the ponds is a major problem on the reserve.

### 1.2.1.3 Geology

The underlying solid geology is the Triassic Nottingham Castle Formation, which runs in a narrow band North-South, close to the Western edge of the county. At Spa Ponds the Bunter Pebble Bed series outcrops in places.

### 1.2.1.4 Soils

The sandstone has produced a light sandy loam which is acidic and free draining. This attracts acid loving plants and is dry except where close to the water table where the soil becomes saturated.

### 1.2.1.5 Geomorphology

The ponds are situated in a valley that runs north to south. The reserve has a height of 350m Above Sea Level (ASL) along its eastern edge. From the eastern boundary the land drops 100m across the valley to the western boundary. The reserve slopes down from 350m ASL at the southern end to 250m ASL at the northern end.

## Section 1.2.2 Biological

### 1.2.2.1 Flora

The reserve has a number of important trees and ground vegetation this can be described in relation to the designated compartments (Map 4).

Compartment A supports Willow scrub (*Salix caprea* and *Salix cinerea*) and Black Poplar (*Populus nigra*), in a marsh that has developed along the River Maun.

Compartments B,C and D support Broom (*Quercus robur*), Birch (*Betula pendula*) and Willow Scrub (*Salix caprea* and *Salix cinerea*).

Compartment E supports dense marsh and reeds on deposited silt.

Compartment F has a covering of wavy hair grass (*Deschampsia flexuosa*) and a dense oak (*Quercus robur*) canopy.

Compartment G, the northern half of Packmans way, has a silver birch (*Betula pendula*) canopy and a hawthorn (*Crataegus monogyna*) hedge.

Compartment H, the southern half of the bridle path, has a dense Oak (*Q.robur*), Silver Birch (*B.pendula*) and Chestnut (*Castanea sativa*) canopy.

The scrub layer is mainly Bracken (*Pteridium aquilinum*) and Hawthorn thickets (*Crataegus monogyna*). The Bracken covers the path in places.

Along the River Maun Brooklime (*Veronica beccabunga*) and Water mint (*Mentha aquatica*) are seen, along with an unidentified species of Orchid.

Forest Enterprise manage Garibaldi Plantation which is dominated by Corsican Pine (*Pinus nigra*).

A more detailed species list is in the Appendix. (Urban habitat and Green Space Survey, 1994, EMEC).

### 1.2.2.2 Fauna

The area has always been an important place for birds, which were affected by the loss the heathland habitats in the 1960's. The infilling of the flood-dykes ( The Duke of Portland Water Meadows) at the northern end of the reserve along the Maun Valley has also affected the visiting bird populations.

Birds which are now seen at the reserve include: kingfisher (*Alcedo atthis*), little grebe (*Podiceps nigricollis*) and blue tit (*Parus caeruleus*). The Garibaldi Plantation attracts coal tits (*Parus ater*) and gold crests (*Regulus regulus*). The Maun valley meadows near-by attract waders including redshank (*Tringa totanus*) and snipe (*Gallinago gallinago*).

The open water attracts several species of dragonfly. Also caddisfly, alderfly, mayfly, stoneflies and butterflies are also in abundance. Coots (*Fulica atra*) breed readily on the ponds.

Healthy toad, frog and newt populations thrive in the ponds and river, which are both full of frogspawn in the spring. Some ponds contain healthy numbers of perch (*Perca fluviatilis*) 2-3 oz, which have been restocked by the fishermen. The ponds have a long history of angling which attract a great deal of interest. In the past dead fish have been

seen in one of the ponds (compartment D) perhaps as a result of anaerobic conditions caused by overgrown weed.

Mammals seen are bats, signs of squirrels (shredded cones), fox (*Vulpes vulpes*), bank voles (*Clethrionomys glareolus*) and also indications of mink (*Mustela lutreola*). See Appendix for faunal species list.

### **Section 1.2.3 Cultural**

#### **1.2.3.1 Archaeology**

The Ponds have several hundred years of history, it is thought that two ponds were first constructed in the early 14th century as part of the Peel Manor Farm by the Duke of Portland. This supplied the provender for King Johns Palace, the royal hunting lodge at Clipstone. A few stones remain to mark the site of the Gate House to the Peel, now known as Beeston Lodge. Within the reserve remains of past irrigation systems, piping, culverts and stone sluices have been excavated.

#### **1.2.3.2 Land Use History**

This section of the maun valley supported thousands of acres of heathland and was used as a Deer park from 12th-19th century. The ponds were surrounded by grass, heath and various grasses. The Duke of Portland once had the ponds drained because he was offended by the nude bathers he saw when he was riding home on his horse. The ponds were also used by the men of Clipstone Military Training Camp as a place for leisure activities, during the First World War. The ponds were then left and became derelict and overgrown. In the 1960's broad expanses of corn and rape were planted; the Forestry Commission set up its coniferous plantation and osier was planted so saleable basket willow could be produced. In 1982 the owner Mr A Shaw-Browne and Notts. Wildlife Trust decided to clear up the site and re-construct the ponds. They were dredged and four ponds were restored on different levels becoming progressively lower to the River Maun to allow the water to gradually flow through each pond replenishing the oxygen and preventing flooding.

#### **1.2.3.3 Past Management for Nature Conservation**

The nature reserve was formally established in 1984 when the landowner Mr Anthony Shaw-Browne licenced 6.5ha to Nottinghamshire Wildlife Trust. The Trust installed a footpath and has planted native black poplar in the Willow Holt. More recently (August 1995) a skip was hired and a team cleared the rubbish. Past task days have taken place when jobs were carried out depending upon available resources e.g. October 1995, reinforcement of the third pond (compartment D). Nottinghamshire County Council have recently fortified the old bridge over the River Maun at the northern entrance to the reserve.

#### **1.2.3.4 Public Interest**

1) Research: East Midlands Environmental Consultants Urban Habitat and Green Space Survey (1994, EMEC).

2) Recreation: The reserve is open to the general public and is used by anglers, walkers and horseriders. Unfortunately the path is abused by motor bike scramblers which has contributed to damage of the path surface which needs maintenance. The site is well used due to its location on the edge of 3 different urban settlements, unfortunately this means that fly-tipping does occur.

3) Landscape: The reserve is a very attractive and accessible woodland and water landscape. The ponds have an important ecological, recreational and archaeological interest which contributes to the landscape value.

#### **Section 1.2.4 Ecological Relationships and Implications for Management**

The conservation interest relies on good water quality which is dependent on sympathetic management of the catchment area which extends beyond the reserve.

The marsh communities depend on the existence of shallows around the pond edges. The aquatic communities depend on adequate water depth and variation in shading. These require the ponds to be retained by the maintenance of the dams and reducing the amount of silting from erosion. Marginal scrub and trees may also need to be managed.

Many species, particularly birds and mammals, will be dependent upon the level of disturbance from recreational use.

Public access requires safe and attractive access routes to be maintained.

#### **Chapter 1.3 Bibliography**

Alton. S., 1993, Data on Rainfall at Ranskill.

Barton. T., 1984, Spa Ponds, Clipstone Park, Mansfield., Notts. Wildlife Trust, Winter Newsletter.

Crook. D., Clipstone Park and Peel. Article in Trust file

Davison. T., 1995, Spa Ponds, Site Survey.

Divit. J., 1994, Spa Ponds, Clipston - Site Visit., Reserve Management Event Sheet.

EMEC., 1994, Urban Habitat and Green Space Survey.

Marquiss. R., 1987, A Background to Nottinghamshire., Nottinghamshire Trust for Nature Conservation. Barracuda Books.

Meteorological Office, Climatological Recording Station, Watnall. 1950-1980.

NEWCO., 1990, Proposed Robin Hood Theme Park and Associated Developments, Mansfield, Nottinghamshire, Report on Wildlife Resource.

## **PART 2. EVALUATION AND OBJECTIVES**

### **Chapter 2.1 Conservation Status of the Site**

#### **Section 2.1.1 Historic**

The history of the site is covered in section 1.2.3

##### **2.1.2.1 Site Description**

The reserve is an important wetland site providing an ideal place for caddisflies, mayflies, alderflies, butterflies and of particular interest dragonflies, of which several species are attracted to the open waters. Many bird species also use the site for breeding and feeding including waders and kingfisher. The ponds provide a home for amphibians and fish.

Bats a protected species, along with squirrels inhabit the oak and birch woodland. A range of trees and shrubs support the ponds and wildlife on the site. Along the river brooklime, watermint and an unidentified species of orchid are found.

#### **Section 2.1.3 Site Definition and Boundaries**

The boundaries are outlined in Map 1.

The reserve was established in 1984 to preserve the mediaeval ponds and to manage its nature conservation value and the wildlife which they attract. The northern boundary is marked by the River Maun, which runs west-east. The western boundary abutts arable land and is marked by a predominantly hawthorn hedge parallel with Packmans way bridlepath. The eastern boundary includes the edge of the Garibaldi Conifer Plantation. The southern and of the reserve becomes quite narrow, to the width of the footpath which terminates at the entrance to the reserve on Clipstone Drive.

The reserve boundary is nominal along the eastern side and currently excludes much of Garibaldi Plantation which naturally forms part of the pond-woodland ecological unit.

## **Chapter 2.2 Evaluation of Features**

### **Section 2.2.1 Evaluation**

#### **2.2.1.1 Size**

Spa Ponds at 6.5ha is large enough to be a valuable and viable site for plant and animal habitats in the local area. Its size and number of ponds allows some recreational use whilst giving sensitive species space to avoid passing disturbance.

#### **2.2.1.2 Diversity**

The reserve has a naturally poor diversity of terrestrial and aquatic flora and fauna due to the acidic conditions. The constant supply of water of good quality from the spring attracts a diverse population of invertebrates into the ponds. The diversity of water edge habitats is limited by shading in places

#### **2.2.1.3 Naturalness**

The spring arising from the Sherwood Sandstone originally supported swamps and this habitat has been continued by the creation of the ponds. The surrounding land has been planted for commercial use and is unnatural. The ponds are the only part of the original irrigation system left and have created naturally colonised wetland habitats and oak and birch Woodland.

#### **2.2.1.4 Rarity**

The site is of particular geological importance as the spring fed pools are rare in Sherwood Sandstone. The wetlands attract a diverse fauna, of particular importance are the number of dragonfly species found there. Bats and kingfishers are protected under the Wildlife and Countryside Act, 1981. The bird community is of county importance. There is not a great deal of woodland in the locality due to agriculture. The unidentified species of orchid could possibly be of importance.

#### **2.2.1.5 Fragility**

The sites main threat is from vandalism and the dumping of rubbish, this could inhibit the natural progression of certain habitats if the site is not cleared. Ground flora and fish could become suffocated and the ponds may become toxic if rubbish is continually dumped. Animals which may be attracted to the site by this rubbish could interfere with the established foodchain.

Weed in the ponds is becoming overgrown and dead fish indicate either: suffocation caused by overgrown weed or the infiltration of chemicals e.g pesticides and insecticides from run-off from the arable land.

In some areas the banks of the ponds will have to be re-enforced (this was carried out around one pond compartment C, in October 1995) as run-off from the adjacent agricultural land and continual erosion by anglers is causing stability problems of the surrounding oak and birch woodland, also leaves from overhanging branches are causing shading and leaf litter in the ponds. The problem of unofficial fishing is reducing the fish stocks, but apparently the fishermen are restocking them.

If the site is not protected it could become isolated and lose its original conservational value.

#### 2.2.1.6 Typicalness

Spa ponds is typical of a wetland site, found adjacent to ancient agricultural land and in the past has been used as part of a irrigation system. It is of significant value to migrating birds, which feed on the abundance of mayflies, gnats and midges found around water. During the spring frogs, toads and newts return to there home pond to spawn. The ponds contain perch, stickle back and roach. The dragonflies are a typical feature of a wetland site.

#### 2.2.1.7 Recorded History

Nottinghamshire Wildlife Trust, reserve fact sheet and maps.

David Crook 'Clipstone Park and Peel' mentions the ponds as being used for fishing, watering livestock and irrigation.

J.C Fareham, Clipstone Camp an account of a Military Training Camp.

Tony Davison,(Reserve Manager) Spa Ponds, Site Survey, 1995.

#### 2.2.1.8 Position in Ecological Unit

Spa Ponds is situated in the Maun River Valley. The River Maun is a major landscape feature in the area which lies on Sherwood Sandstone. It is a typical adjacent river feature, creating a wetland habitat. This has made it and important urban nature reserve on the outside edge of three towns. Migrating birds use the ponds to feed on the abundance of flies found around their edges.

The ponds provide open water for a range of diverse submergent, floating and marginal vegetation. Fish are in stock due to continual replenishment by local fishermen. The scrub and canopy provide a home to small mammals and birds. The acidic soil limits the vegetation potential and it has poor flora species.

The site is surrounded by agricultural land although in the autumn of 1995 a multi-leisure park was planned along the reserves western boundary. This could alienate the site with respect to migrating birds and disturb the conservation value of the reserve.

The site has not only a long history of cultivation, but also recreation and is an important area for the local community.

#### 2.2.1.9 Potential Value

Adaption of a long term Management Plan with important work being prioritised e.g. reinforcement of the ponds, levelling of the footpath and partial de-weeding of the ponds, would increase the already good ecological value of the site. It would allow species to be given the chance to reach their maximum diversity and also attract new species, bringing more interest to the reserve and an increase in its aesthetic value to the Trust, local community and the County. Signs need to be erected to inform the local community that the site is a nature reserve, this will hopefully change residents perception of the site and so effect the way they use and treat the area. Local resident input in the initial clear-up and introduction of a management regime may also create a certain amount of respect for the site.



#### **2.2.1.10 Intrinsic Appeal**

The site has a present appeal to anglers and walkers. The birds, dragonflies and insects which populate the trees and willow scrub around the ponds attract Ornithologists and Entomologists as well as local residents. Once the site is cleared and a plan in place the appeal will increase, thus making Spa Ponds a popular recreational and study area.

## Section 2.2.2 Identification/ Confirmation of Important Features.

### SITE FEATURES

### IMPORTANCE

National

Regional

Local

#### 1. GEOLOGY & GEOMORPHOLOGY

Sherwood Sandstone, Bunter Pebble Bed  
Spring in Sherwood sandstone

\*  
\*

#### 2. VEGETATION TYPES

Lowland Heathland  
Oak and Birch Woodland  
Pond Margins, Wet Communities  
Osier

\*  
\*  
\*  
\*

#### 3. SPECIES

##### Plants:

<i>Deschampsia flexuosa</i>	Wavy-hair Grass	*	*
<i>Nymphaea alba</i>	White water-lily		*
<i>Erodium cicutarium</i>	Common stalks-bill		*
<i>Hyacinthoides non-script</i>	Blue bell		*
<i>Phragmites australis</i>	Common reed		*
<i>Carex paniculata</i>	Tussock sedge	*	*
<i>Populus nigra</i>	Black poplar		*

##### Birds:

<i>Alcedo atthis</i>	Kingfisher	*	
<i>Gallinago gallinago</i>	Snipe	*	
<i>Anthus pratensis</i>	Meadow pipit		*
<i>Lullula arborea</i>	Woodlark		*
<i>Oenanthe arborea</i>	Wheateater	*	
<i>Asio flammeus</i>	Short eared owl	*	
<i>Lanius cristatus</i>	Red backed shrike	*	
<i>Falco columbarius</i>	Merlin	*	*
<i>Curcus cyaneus</i>	Hen harrier	*	*

##### Animals:

<i>Plecotus auritus</i>	Bat	*	
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##### Invertebrates:

Dragonflies			*
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### **Section 2.2.3 The Site In Wider Perspective and Implications for Management**

The water supplying the site is collected from a much larger area that is partly intensive agricultural land, partly conifer forest and partly built development. There is some vulnerability to water pollution therefore and care needs to be taken in the catchment to avoid pollution.

Spa Ponds was once a part of thousands of acres of heathland, however due to changing land requirements (agriculture and commercial forestry) there has been a 80% loss of heathland within Nottinghamshire. Because of this The Nottinghamshire Heathland Strategy was developed in 1993, this will identify existing heathland, document its status and condition so that policies can be recommended so to safeguard against future destruction. This reserve is ideal for re-establishment of heathland, in terms of both its rare geological feature and its history. This must be taken into consideration, with respect to management within a wider perspective.

Fauna use areas outside the reserve for part of their life cycle or feeding or nesting and so there external resources must also be taken into consideration and protected.

### **Section 2.2.5 Ideal Management Objectives**

- 1) Maintenance of pond edges and flow pipes between ponds so as to keep water level constant and flow between ponds.
- 2) Maintain and enhance the diversity of species and habitats on the reserve, with regards to light appropriate to an Oak and Birch woodland and submergent and floating vegetation.
- 3) Increase diversity of vegetation structure with a view to attracting present bird species and others.
- 4) Restoration of the heathland to restore the past land use features to comply with Nottinghamshire's Heathland Strategy objectives.
- 5) To develop the use of the site for promotion of nature conservation through education, research and recreation, where this does not compromise the scientific interest of the site.
- 6) To encourage the local community's awareness of the reserve.
- 7) To maintain public access and provide interpretive facilities.

## **CHAPTER 2.3 Factors Influencing Management**

### **Section 2.3.1 Natural Trends**

A major problem is the bank erosion due to the easily eroded Sandstone. During and after rainfall silt runs from the neighbouring agricultural fields (western boundary of the reserve). This has brought about the widening of the ponds and narrowing of the path (Packmans Way). There is over grown bracken which has to be controlled in the aim of re-establishing the heathland.

Weed in ponds becomes overgrown leading to anaerobic conditions which could suffocate aquatic flora and fauna.

Swamp areas developed due to subsidence which may now have ceased as the Trust has planted osier and black poplar.

### **Section 2.3.2 Man Induced Trends**

A continual problem facing the site is the litter. This large amount of non-biodegradable material has and may again cause problems of pipe blockage between each pond if not deterred or regularly cleared and it detracts from the appearance and appreciation of the site.

Trampling to the edges of the ponds by anglers is causing instability of soil, effecting the structure and its stability to hold flora. Motorbike scramblers and horseriders are unlevelling the path which may cause some hazard to the public.

A change in the water table could effect the site in a devastating way. This might result increased pumping of water from the Bunter sandstone aquifer.

Pesticide run-off from the nearby arable land most probably accumulates in the sandstone reservoir, which will subsequently leach into the ponds and effect the aquatic life.

### **Section 2.3.3 External Factors**

The main problem is the soil erosion from the agricultural fields, which bringing run-off and silt into the reserve. This is exacerbated by the topography and silts-up the ponds and erodes the banks/paths around the reserve.

Other problems which the reserve seems to suffer from are; flytipping, car dumping, fire lighting and vandalism to trees.

### **Section 2.3.4 Obligations/Legal Constraints**

- 1) Shooting rights: There is a shooting club in the Garibaldi Conifer Plantation adjacent to Spa Ponds.
- 2) Public right of way: Packmans Way is a bridlepath that has to be kept clear and accessible under the Wildlife and Countryside Act 1981. This is maintained by Nottinghamshire County Council.

- 3) Any responsibilities to the owner Mr Anthony Shaw Browne of Cavendish Lodge, Clipstone, Mansfield, Nottingham:

Land is to be managed jointly by the owner and the Trust.

Every effort should be made to persuade members of the public to remain on the public bridleway.

The Trust will use its best endeavours to install barriers at the southern entrance of the reserve so to prevent access by motor cyclists.

The Trust will not allow anything to be done within the boundaries of the land that will cause nuisance damage or inconvenience to the Owner or to the Owners or occupiers of neighbouring land.

The Trust will not transfer its right of use of the area to any other person or body without the Owners consent.

- 4) Adjacent land owners: Courtesy to maintain good relations with all adjacent landowners e.g. Forest Enterprise's Garibaldi Coniferous Plantation and Warren farm.

### **Section 2.3.5 Management Constraints**

The amount of work which can be carried out on the reserve is largely controlled by the availability of resources in terms of labour and finances, either from local community project teams, employment action initiative programmes, Trust staff and members, local schools and colleges, Groundwork and BTCV or contractors at an affordable cost.

Financial resources for equipment and materials is also a constraint. Grants and additional funds may be applied for by Nottinghamshire Wildlife Trust through national and local schemes and RSNC's national initiatives. There are also annual management grants available under the Forestry Authority woodlands grants scheme.

### **Section 2.3.6 Impact Assessment**

- 1) A management regime will improve the current diversity and vegetation structure.  
2) There are a number of problems facing the reserve at present:

Litter - Blocking-up the ponds and flow pipes between each pond.

Illegal fishing - lowering fish stocks and against the wishes of the land owner.

Motor bike scramblers - unlevelling the path.

Horse riders - also unlevelling the path, but it is an official bridlepath

Pesticides, insecticides and silt - run-off from the adjacent agricultural land

Flytipping, fire lighting and vandalism to trees - altering the aesthetic perception of the site to the public.

Most of these problems would require the installation of interpretative material at the entrances to the reserve in remediation. However it will be impossible to do this.

- 3) Management constraints such as, availability of labour, materials and finance may mean that prioritisation of the most important aspects of the reserve will have to be decided upon, to do this a detailed habitat and species study will have to be undertaken.

4) All resources must be used to their maximum effect. If resources are not consistent the long term management will have to be modified so to compromise with available resources.

5) Any improvements or deterioration should be recorded (by the method of fixed position photography) to assess the current management plan. Improvements or revision can then be made.

## **Chapter 2.4. Operational Objectives and Management Options**

### **Section 2.4.1 Rationale**

A set of management objectives must be identified in order for a management plan to be written, with allowances for any management constraints.

#### **Objective 1**

Maintenance of pond edges and flow pipes between ponds so to keep present water levels and flow between ponds at a constant rate.

#### **Rationale**

The easily eroded Bunter Sandstone and silt run-off from adjacent agricultural land on the western boundary of the reserve has caused the collapse of the corner edges in three of the ponds, compartments B, C and D. This has meant that the footpath is slowly disappearing and the pond edges are becoming wider. This movement of material is also occurring between the top ends of two ponds, compartments C and D and at B the last pond, adjacent to the River Maun. The flow pipes are becoming blocked with rubbish and dead vegetation, this is causing water to flow over the pond edges, thus creating ditches, uncovering the flow pipes and consequently becoming a rubbish trap.

#### **Policy**

The top and bottom edges and corners of compartments B and D need reinforcing, this has already successfully taken place in the top western corner of compartment C, which was particularly bad. This has reinforced the path and bank.

Rubbish needs cleaning out regularly and the pipes need re-covering and un-blocking, so to allow a constant flow between ponds.

#### **Objective 2**

Maintain and enhance the diversity of species and habitats in the reserve appropriate to an Oak, Birch and Bracken woodland.

#### **Rationale**

The woodland has been neglected and mistreated by fishermen, who have cut away at banks, vegetation and overhanging branches and trees. This is starting to de-stabilise the pond banks. Over hanging branches are shading areas, thus preventing sunlight from reach ground vegetation. Management of the canopy will allow ground flora to improve its performance and diversity. The soil is acidic and so plants requiring low nutrients will be most successful at Spa ponds.

#### **Policy**

Compartments G, F and the edges of B, C, D, and E need to be maintained so that there is no need for vandalism and destruction.

It is not so necessary for ground flora to maintain woodland cover by diversifying the

age structure, but it will help to hold soil together and may prevent to continual runoff problem. To enhance the development of the ground flora the establishment of a cyclical coppicing regime with standards staggered between compartments. The length of the cycle will be determined by the species composition of each compartment.

The aquatic vegetation should be encouraged by periodical partial-clearing. Some emergent vegetation should be maintained for the benefit of Dragonflies.

### **Objective 3**

Increase diversity of vegetation structure with a view to attracting present bird species and others.

### **Rationale**

By improving the present vegetation structure, thus allowing a wider diversity of species to populate the reserve present birds, animals and new species will hopefully be encouraged to the site to feed and breed.

### **Policy**

The existing habitats have to be maintained foremost. Coppicing will increase diversity of the vegetation structure and provide new habitats which will attract new species.

### **Objective 4**

Restoration of the Heathland so to restore the past land use features as to comply with Nottinghamshire Wildlife Trusts Heathland strategy objectives

### **Rationale**

The area was once part of thousands of acres of open lowland Heathland. Due to the increasing loss of this heathland throughout Nottinghamshire, The Nottinghamshire Heathland Strategy was developed. Spa Ponds has the potential to re-establish as a heathland.

### **Policy**

Identify the sites status and condition and recommend individual policies. Protect the area from development. Note during 1995 a planning application was submitted to Mansfield District Council. This application detailed the Sherwood-Metropolitan Leisure Park, planned on the western boundary of Spa Ponds. Notts. Wildlife Trust has no immediate objection to the development, but its first and foremost concern is the implications of the development on Spa Ponds. So to ensure that no negative impacts occur a set of recommendations have been set out and are available at the Trust office.

### **Objective 5**

To develop the use of the site for promotion of nature conservation through education, research and recreation, where this does not compromise the scientific interest of the site.

### **Rationale**

Any studies by schools, universities or private individuals should be welcomed, as long as they do not compromise the interest of the site. Such work provides results which increase the understanding of a site and lead to better management.

### **Policy**

Any application for the use of the reserve for detailed study should be encouraged. As a condition of approval the trust should have a copy of all result. Groups must be led when visiting the site, by a trust representative or suitably instructed leader. It must be insured that any on-site study does not compromise the interest of the site.

#### **Objective 6**

To encourage the local community's awareness of the reserve.

#### **Rationale**

The site has a long recreational history among the local community. This has however created a constant threat from vandalism, illegal fishing and flytipping.

#### **Policy**

Community awareness of the status and importance of the site. Participation in the maintenance and cleaning of the reserve through task days may bring a certain amount of respect to the site.

#### **Objective 7**

To maintain public access and provide interpretive signs.

#### **Rationale**

The reserve is open to members of the trust and the public at all times. The site should play an important role in the local community as a recreational amenity, without compromising the scientific interest of the site.

#### **Policy**

Footpaths should be maintained and signs erected instructing visitors to;

The status and entrances of the reserve

Keep to the footpath Packmans Way

Do not pick flowers

Bins could be provided to combat the litter problem, but this will attract the problem of vandalism. Maintenance of the hedges is imperative if the reserve is to be managed properly. A kissing gate or stile may be ideal at a point along the path, compartment G, where access from a public footpath through the neighbouring arable field has no existing fence or hedge.



## Section 2.4.2 Identification of operational objectives, and selection of management options and outline prescriptions

Operational Objectives	Management option	Outline prescription
1) Maintain pond edges and pipes between ponds	Habitat management Option A3	1) Reinforce pond edges compt. B,C and D 2) Reinforce paths between ponds 3) Stabilize pipes and recover 4) Clean pipes of blockages
2) To maintain and enhance the diversity of habitats	Habitat management Option A3	1) Coppice compartments; B,C,D
	Active management	2) Removal of Sycamore in compartment H, leaving mature trees  3) Maintain ponds; compartments B, C, D & E by partial de-weeding and coppicing surrounding trees to avoid leaf litter in ponds  4) Maintain Hawthorne hedge along western boundary
	Habitat management Option A2 Limited intervention	1) Notable communities should be monitored and management modified if necessary  2) Compartment A the Willow Holt to be cleaned-up and trees planted
3) Increase diversity of vegetation structure with a view to attracting present bird species and others	Unclassified	1) Monitor any changes in plant communities
	Species management Option B3 Encouragement and	1) Coppice trees and shrubs around edges of ponds to encourage new growth so to provide food for birds increase
	Species management Option B2 Control and reduction	1) Partial de-weeding of ponds to increase oxygen content and encourage new growth of flora and attract a wider diversity of fauna

**4) Re-establishment of heathland to comply with Notts. Heathland strategy**

**5) Develop the use of the site for promotion of nature conservation through education, research and recreation**

**6) Encourage local community awareness**

**7) Maintain public access and provide interpretive material**

**Habitat management  
Option A  
Species management  
Option B3**

**Study and research  
Option C3  
Controlled facilities**

**Study and research  
Option D3  
Active publicity**

**Education  
Option D3**

**General access and recreation  
Option E4  
Open access**

**1) Control bracken**

**1) Encourage Heather, wavy-hair grass**

**1) Allow research by individuals with conditions; supervision and access to any data collected**

**1) The reserve should be used for education and publicity voiced through the local press and the distribution of Trust fact sheets within the local community**

**2) Display boards to show nature trail and important features**

**3) Organise litter picking days including the local volunteers**

**1) Meetings  
2) Task days**

**1) No permission is needed**

**2) Provide/maintain access at four places only**

**3) Erect notices and signs to inform the public of reserve rules**

## **PART 3 - PRESCRIPTIONS**

### **Chapter 3.1 Projects**

#### **Section 3.1.1 Project Register**

<b>Project code</b>	<b>Description</b>
<b>1) Archive</b>	
RV00	List/collect references, published and unpublished.
RV10	Collect ground fixed position photographs
RV51	Collect press cuttings
RP10	Collect data, Hydrological
RP13	Monitor water flow through ponds and water quality in ponds, both chemical and biological
<b>2) Flora</b>	
RF00	Collect data, vegetation
RF02	Continue to survey vegetation types
RF03	Monitor any notable species and affects of management on ground flora, scrub layer and canopy
RF10	Collect data, trees and shrubs
RF12	Continue to survey trees and shrubs
RF13	Monitor any notable species and affects of management on ground flora, scrub layer and canopy
RF20	Collect data, other vascular plants
RF22	Continue to survey any other vascular plants present
RF23	Monitor populations of locally rare/notable species and assess the affects of management
RF30	Collect data, bryophytes
RF32	Conduct a survey of bryophytes in the reserve
RF33	Monitor any notable species found
RF36	List species
RF60	Collect data, fungi
RF62	Conduct a survey of fungi in the reserve
RF63	Monitor any notable species found
RF66	List species
<b>3) Fauna</b>	
RA00	Collect data, mammals
RA02	Continue to survey present mammal species
RA03	Monitor notable species and assess the affects of management
RA10	Collect data, birds
RA12	Continue to survey present bird species
RA13	Monitor populations, notable species and assess affects of management

RA20	Collect data, herptiles
RA22	Conduct survey of reptiles and amphibians
RA23	Monitor species present and population levels
RA30	Collect data, fish
RA32	Conduct a survey of fish species in the ponds
RA33	Monitor stock numbers
RA50	Collect data, odonata
RA52	Conduct a survey of dragonfly species
RA53	Monitor any notable species found
RA54	Undertake a research project to determine the species present and the present population levels
RA56	List species and send to Nottinghamshire biological records department at Wollaton Hall
RA70	Collect data, other insects
RA73	Continue to monitor
RA80	Collect data, other invertebrates
RA83	Continue to monitor

#### 4) Human impact

RH00	Collect data, archaeology Collect any information regarding the archaeology of the site
RH30	Collect data, public research Any research that is carried out should be reproduced and given to the trust
RH50	Collect data, public use, recreation
RH53	Monitor present land use and assess implications of management on recreation
RH60	Collect data, public use, trespass/theft/damage Record instances of damage to vegetation, structures and unauthorised access by motorbike scramblers
RH30	Collect data, management by, owners/tenants/public bodies/neighbours Record all management work carried out by the 'Trust and its representatives
RH90	Collect data, other activities by, owners/tenants/public bodies/neighbours Record all activities other than reserve management, taking place on or near the reserve

#### Management

##### 1) Wardening

MI00	Inform public, off site Encourage local communities to participate in the
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management of the site, e.g public meetings and local media

MI10 Inform visitors/general  
Provide interpretive signs, e.g instructing visitors to keep to path, put rubbish in bins etc.

MI30 Inform visitors, specialist  
Ensure that groups who carry out research projects on the reserve are supervised and made aware of the correct conduct

MI50 Provide interpretive material  
Continue to produce and make available reserve fact sheet material

ML00 Liaise, with owner  
Continue to keep good relations

ML30 Liaise, neighbours  
Continue to keep good relations with adjacent landowners

ML40 Liaise, local authority  
Liaise with local authority regarding management of footpath

ML50 Liaise, local community groups  
Encourage participation of local community in management work

ML70 Liaise, media  
Use local media to encourage involvement of local community in the site management

MP00 Protect site/species by patrol  
Continue regular inspection of the site and its structures

## 2) Estate

MH00 Manage habitat, woodland scrub, by coppicing  
Establish a coppicing regime in specified compartments

MH01 Manage habitat, woodland scrub, by planting/sewing  
Plant a mixture of native trees in areas where non-natives have been removed

MH02 Manage habitat, woodland scrub, by thinning/group felling  
Thin out or group fell non-native trees in specified compartments

MH04 Manage habitat, woodland scrub Ride/path/glade maintenance

MH05 Manage habitat, woodland scrub, by non-intervention  
Adopt a policy of limited or non-intervention in specified compartments

MH07	Manage habitat, Scrub control Remove and tidy any scrub which is invading the paths
MH08	Manage habitat, Clearing dead wood chop down damaged trees and use elsewhere on the site
MH60	Manage habitat, open water, by water level control The level of water in the ponds must be monitored so that any pipe blockages can be detected
MH63	Manage habitat, open water, by pollution prevention Agricultural spray drift and run-off from the adjacent arable land must be prevented and the ponds monitored to detect pollution
MH64	Manage habitat, open water clearing/dredging/ re-profiling The ponds need to be de-weeded so to prevent stagnation
MH65	Manage habitat, open water, by Clearing surrounding vegetation Over hanging branches must be removed to stop leaf litter shading
MH86	Manage habitat, rock, by removal of debris Large pieces of sandstone which may cause injury must be removed and put to use elsewhere on the site
MH91	Manage habitat, marine, by fishing control The illegal fishing of the ponds is causing bank erosion and reducing fish stocks
MA04	Manage habitat, artificial, by Felling/cutting/pruning/ clearing When necessary
MA05	Manage habitat, artificial, by path maintenance When ground flora and scrub becomes invasive
MS00	Management of species, by trees and shrubs
MS10	Management of species, by other vascular plants ,
ME00	Protect site, by providing boundary structures
ME10	Protect site, by maintaining boundary structures Maintain boundary until hedges are sufficiently well-developed, lay hedges where appropriate, Maintain gates and styles
ME20	Equip site, by providing other structures Provide marker posts for nature trail and signs with reserve regulations
ME30	Equip site, by maintaining other structures
ME40	Maintain site, by removing unwanted structures and rubbish

- ME60 Protect site, by controlling erosion/dumping/extraction
- ME70 Equip site, by providing/maintaining rides/paths
- ME80 Equip site, by providing/maintaining ditches/dykes  
(except where part of habitat management)

### 3) Administration

- AA30 Declare nature reserve local  
Erect interpretive signs and use local press to inform people  
of the site status
- AP20 Prepare/revise plan, management, reserve  
This plan should be updated every 5 years
- AP60 Prepare plan, annual work  
Annual work plan to be prepared each year
- AR00 Prepare report, project recording forms  
Supply forms for recording work carried out on the site
- AL20 Prepare report, annual progress  
Collect information from recording forms for annual report
- AR30 Prepare correspondence, general administrative  
officer/conservation officer
- AR50 Record financial details, e.g estimate, book-keeping  
Keep records of all expenditure and income from any sales  
of reserve products
- AT50 Liaise/supervise voluntary/honorary wardens  
Liaise with warden over the implementation of this plan
- AT60 Liaise/supervise voluntary groups  
Supervise groups undertaking management work



### Section 3.1.2 Project Groups

Operational Objectives	Outline Prescription	Project Group
1) Maintain pond edges and pipes between ponds	a) reinforce pond edges comp't B, C & D, stabilize pipes and cover, clean pipes of blockages.	ME20, ME30, ME60 ME70, AI10, AI30
2) To maintain/enhance the diversity of habitats	a) removal of Sycamore in compartment H, leaving some mature trees	MH02, MS00, RF03 RF13
	b) maintain ponds; comp'ts B, C, D & E de-weeding and coppicing so to avoid leaf litter in ponds	MH00, MH60, MH64 MH65, RF03, RF13, RF23, RH24, RH60, RH70, RH71, RH80
	c) maintain Hawthorne hedge along western boundary	MH01, MH03, ME00 ME10, RF13, RH80
	d) notable communities monitored and management modified if necessary	AS30, AS40, AS50 RF02, RF03, RF04 RF06, RF13, RF14, RF16 RF23, RF24, RF26, RF33 RF34, RF36, RF43, RF44 RF46, RF63, RF64, RF66 RF80
	e) comp't A, the willow holt cleared up and trees planted	MH01, MH08, MH50 MH51, MS00, RF03 RF13, RF23, RF50, RF80
	f) monitor any changes in plant communities	RF03, RF13, RF23 RF33, RF43, RF53, RF63 RF80
3) Increase diversity of vegetation structure with a view to attracting present bird species and others	a) coppice trees and shrubs at pond edges to encourage new growth and food for birds	MH00, MH07, MH52, MH65 MS00, MS10, RF13, RA12 RA13, RA14, RH80
	b) partial de-weeding of ponds to increase $O_2$ and so encourage growth of flora and fauna	MH60, MH64, MH65, RA13, RA33 RF43
4) Re-establish heathland	a) control bracken and encourage heather	MH07, MH22, MH31



and wavy hair grass

5) Develop the use of the site for promotion of nature conservation through, education, research and recreation

a) allow research by individuals with conditions; supervision and access to any data collected

MI30, RH90

b) the reserve should be used for education and publicity voiced through the local press and the distribution of fact sheets within the local community

MI00, MI20, MI40, MH50  
RH90

c) display boards to show nature trail and important features

MI10, MI50, AA30, ME20  
RH90

d) organise litter picking days including local volunteers

MI00

6) Encourage local community awareness

a) meetings and task days

MI00, MI10, MI20  
MI40, MI50, ML00,  
ML10, ML30, ML40  
ML50, ML70.

7) Reduce disturbance through maintenance of footpath and secure boundaries

a) no permission needed to enter reserve

MI00, MI10, MI20, MI30  
MI40, ME20

b) provide and maintain access at 3 places only

ME00, ME10, ME20, ME70  
ME90, MP00

c) erect notices and signs to inform the public of reserve rules

MI10, ME20, RH90

## Chapter 3.2 Work Schedule

### Section 3.2.1 Work Programme

Project code	Project title	Year				
		1	2	3	4	5
RV00,RV10,RV51	List/collect references published and unpublished	X	X	X	X	X
RP10,RP13	Collect data, hydrological	X	X	X	X	X
RF00,RF02,RF03	Collect data, vegetation	X	X	X	X	X
RF10,Rf12,RF13	Collect data, trees and shrubs	X	X	X	X	X
RF20,RF22,RF23	Collect data, other vascular plants	X	X	X	X	X
RF30,RF32,RF33, RF36	Collect data, bryophytes	X	X	X	X	X
RF60,RF62,RF63, RF66	Collect data, fungi	X	X	X	X	X
RA00,RA02,RA03	Collect data, mammals	X	X	X	X	X
RA10,RA12,RA13	Collect data, birds	X	X	X	X	X
RA20,RA22,RA23	Collect data, herptiles	X	X	X	X	X
RA30,RA32,RA43	Collect data, fish	X	X	X	X	X
RA50,RA52,RA53 RA54,RA56	Collect data, odonata	X	X	X	X	XX
RA70,RA73	Collect data, other insects	X	X	X	X	X
RA80.RA83	Collect data, other invertebrates	X	X	X	X	X
RH00	Collect, data, archaeology	X	X	X	X	X
RH30	Collect data, public research	X	X	X	X	X
RH50,RH53	Collect data, public use	X	X	X	X	X
RH60	Collect data, public use, trespass/theft/damage	X	X	X	X	X
RH30	Collect data, management by, owners/tenants/ public	X	X	X	X	X

RH90	Collect data, other activities by, owners/tenants/public bodies/neighbours	X	X	X	X	X
MI00	Inform public, off-site	X	X	X	X	X
MI10	Inform visitors, general	X	X	X	X	X
MI30	Inform visitors, specialist	as necessary				
MI50	Provide interpretive material	X	X	X	X	X
ML00	Liaise, with owner	as necessary				
ML30	Liaise, with neighbours	as necessary				
ML40	Liaise, with local authority	X	X	X	X	X
MI50	Liaise, local community groups	X	X	X	X	X
ML70	Liaise, media	X	X	X	X	X
MP00	Protect site/species by patrol	X	X	X	X	X
MH00	Manage habitat, woodland scrub, by coppicing	X	X	X	X	X
MH01	Manage habitat, woodland scrub, by planting/sewing	X	X	X	X	X
MH02	Manage habitat, woodland scrub, by thinning/group felling	X	X	X	X	X
MH04	Manage habitat, woodland scrub, ride/path/glade maintenance	as necessary				
MH05	Manage habitat, woodland scrub, by non-intervention	X	X	X	X	X
MH07	Manage habitat, scrub control	X	X	X	X	X
MH08	Manage habitat, clearing dead wood	X	X	X	X	X
MH60	Manage habitat, open water, by water level control	X	X	X	X	X
MH63	Manage habitat, open water,					

	by pollution prevention	X	X	X	X	X
MH64	Manage habitat, open water, by cleaning/dredging/ reprofiling	X	as necessary			
MH65	Manage habitat, open water, by clearing surrounding vegetation	X	as necessary			
ME50	Fire plan					
ME60	Protect site, by controlling erosion/dumping/ extraction	X	X	X	X	X
ME70	Equip site, by providing/ maintaining rides/paths	X	as necessary			
ME80	Equip site, by providing/ maintaining ditches/dykes	X	as necessary			
AA30	Declare nature reserve, local	X				
AP20	Prepare/revise plan, management reserve					X
AP60	Prepare plan, annual work	X	X	X	X	X
AR00	Prepare report, project recording forms	as necessary				
AR20	Prepare report annual progress	X	X	X	X	X
AR30	Prepare correspondence general	as necessary				
AR50	Record financial details	X	X	X	X	X
AT50	Liaise/supervise voluntary/ honorary wardens	X	X	X	X	X
AT60	Liaise/supervise voluntary groups	X	X	X	X	X



### Section 3.2.2 Annual work plan, 1996

Pr= Priority ( 1= highest, 3= lowest )

Se= Season ( 1= Spring, 2= Summer, 3= Autumn, 4= Winter )

M.D= Man Days

As req= As required

Project Code	Project Title	Pr	Se	M.D	Remarks
RV00,RV10,RV51	List/collect references	3	1-4	As req	Incorporate in files/ revise plan
RP10,RP13	Collect data, hydrological	1	1-4	As req	Incorporate in files/ revise plan
RF00,RF02,RF03	Collect data, vegetation	2	1-3	As req	Incorporate in files/ revise plan
Rf10,RF12,RF13	Collect data, trees and shrubs	2	1-3	As req	Incorporate in files/ revise plan
RF20,RF22,RF23	Collect data, other vascular plants	2	1-3	As req	Incorporate in files/ revise plan
RF30,RF32,RF33 RF36	Collect data bryophytes	2	1-3	AS req	Incorporate in files/ revise plan
RF60,RF62,RF63 RF66	Collect data, fungi	2	1-3	As req	Incorporate in files/ revise plan
RA00,RA02,RA03	Collect data, mammals	3	1-4	As req	Incorporate in files/ revise plan
RA10,RA12,RA13	Collect data, birds	2	1-4	As req	Incorporate in files/ revise plan
RA20,RA22,RA23	Collect data, herptiles	2	1-3	As req	Incorporate in files/ revise plan
RA30,RA32,RA33	Collect data fish	1	1-4	As req	Incorporate in files/ revise plan
RA50,RA52,RA53 RA54,RA56	Collect data, odonata	1	1-3	As req	Incorporate in files/ revise plan

RA70,RA73	Collect data, other insects	3	1-4	As req	Incorporate in files/ revise plan
RA80 RA83	Collect data, other invertebrates	3	1-4	As req	Incorporate in files/ revise plan
RH00	Collect data, archaeological	3	1-4	As req	Incorporate in files/ revise plan
RH30	Collect data, public research	3	1-4	As req	Incorporate in files/ revise plan
RH50,RH53	Collect data, public use, recreation	2	1-4	As req	Incorporate in files/ revise plan
RH60	Collect data, trespass/theft/ damage	2	1-4	As req	Rectify damage and modify pol- icy accordi- ngly
RH80	Collect data, management by, owners/tenants/ public bodies/ representatives	1	1-4	As req revise plan	Incorporate in files/
RH90	Collect data, other activities by owners/tenants/ public bodies/ neighbours	2	1-4	As req revise plan	Incorporate in files/
MI00	Inform public, off- site	1	1-4	As req	Encourage work parties
MI10	Inform visitors, general	1	1-4	As req	Provide notice boards
MI30	Inform visitors, specialist	1	1-4	A req	Instruct research groups
MI50	Provide interpretive material	1	1-4	As req	Make reserve fact sheet available
ML00	Liaise, owner	2	1-4	As req	Maintain good

ML30	Liaise, neighbours	3	1-4	As req	relations Maintain good relations
ML40	Liaise, local authority	3	1-4	As req	Ensure management of footpath
ML50	Liaise, local community	2	1-4	As req	Encourage work parties
ML70	Liaise, media	2	1-4	As req	Issue press releases when work is completed
MP00	Protect site,	1	1-4	52	Inspect weekly
MH00	Manage habitat woodland by, coppicing	1	3-4	As req	Establish coppicing regime
MH01	Manage habitat, woodland by planting/sewing	1	3-4	As req	Plant mixed native spp.
MH02	Manage habitat woodland by, thinning/group felling	1	3-4	As req	Thinning out group felling of Sycamore
MH04	Manage habitat woodland by, ride/path/glade maintenance	1	1-4	As req	
MH05	Manage habitat woodland by, non-intervention	1	1-4	As req	Pursue policy of non-interven- tion
MH07	Manage habitat, scrub control	1	1-4	As req	
MH08	Manage habitat, clearing dead wood	2	1-4	As req	
MH60	Manage habitat, open water by, water level control	1	3-4	As req	Maintain ditches
MH63	Manage habitat, open water by, pollution prevention	1	1-4	As req	

MH64	Manage habitat, open water by, clearing/dredging/re-profiling					Clear out silt and vegetation from ponds
MH65	Manage habitat, open water by, clearing surrounding vegetation	1 1	4	As req		Coppice trees around ponds
MH86	Manage habitat, rock by, removal of debris	1	1-4	As req		Collect debris to prevent hazards and use elsewhere on site
MH91	Manage habitat, marine by, fish control	1	1-4	As req		
MA04	Manage habitat artificial by, felling/cutting pruning			As req		
MA05	Manage habitat, artificial by path maintenance	1	1-4	As req		
MS00	Management of species by, trees and shrubs	1		As req		
MS10	Management of species by, other vascular plants					
ME00	Protect site by, providing boundary structures	1	1	1		Maintain and replace if neccesary
ME10	Protect site by, maintaining boundary structures	1	3-4	As req	appropriate	Lay hedge, maintain as
ME20	Equip site by providing other structures	3	1-4	As req		Provide notice board
ME30	Equip site by, maintaining other structures	3	1-4	As req		
ME40	Maintain site by, removing rubbish and unwanted vandalism	2	1-4	As req		Remove litter and vandalism



ME60	Protect site by, controlling erosion/dumping/extraction	2	1-4	As req	Plant/ remove/ fence-off
ME70	Equip site by, providing and maintaining rides/paths	2	3-4	As req	
ME80	Equip site by providing and maintaining ditches	3	3-4	As req	Maintain ditches, western boundary
AA30	Declare nature reserve	1	1-4	All	Erect notice boards
AP20	Prepare/ revise plan	1	1-4	5year's	Update per 5 years
AP60	Prepare plan, annual work	1	1	1	
AR00	Prepare report, project recording forms	2	1-4	1	
AR20	Prepare report, annual progress	1	4	1	Reserve management officer to carry-out
AR30	Prepare correspondence, general administration	2	1-4	As req	Admin officer to undertake
AR50	Record financial details	2	1-4	As req	Reserve management officer to carry-out
AT50	Liaise/supervise voluntary/honorary wardens	2	1-4	As req	Conservation officer to carry-out
AT60	Liaise/supervise voluntary groups	1	1-4	As req	Reserve management officer

## Chapter 3.3 Control

### Section 3.3.1 Project Recording System

#### 3.3.1.1 Compartment Notes

Comp't	Brief Description	Work Required	Years
A	Willow holt, swamp along River Maun planted with Poplar	Clean-up rubbish, install interpretive panel at entrances, plant native trees	1
B	Lowest pond, very clean water	Remove some of the floating emergent vegetation, reinforce northern bank of pond, clean pipe out that allows water to flow into the Maun regularly	1
C	Largest pond with island	Bank erosion in the left northern corner needs to be infilled, reshaped and stabilised, clean pipe out regularly	1
D	Second largest pond	Pond water is leaking from both northern corners creating a gully in comp't C, the banks need stabilising and the gully infilling, the spring needs cleaning out so that water can once again bubble out	1
E	Smallest pond, which has become a marsh	The pond is continually being filled with sand run-off from the adjacent arable field so French drains need to be created so to stop the run-off, rubbish needs cleaning up	1
F	Path and woodland along eastern side of reserve	Burnt-out car needs removing and the immediate area cleaned up, to prevent cars being burnt out again a bollard or post and wire fence could be erected along the eastern boundary of the reserve, benches or a broadwalk could help to prevent erosion along the bank of comp't C, Oak trees need pollarding and the barren bank needs temporarily fencing off to allow vegetation to be established, Sandstone rock debris needs removing to prevent a hazard	1
G	Path and hedge along western boundary	Path needs immediate maintenance, old path edging needs removing as it has become a hazard, Hawthorne hedge needs gapping up and wattle fencing erected to prevent the problem of run-off and silting up of the path and ponds, a ditch needs digging and French drains installed at the gap between the reserve and public right of way through the	

neighbouring field, also a style/sleeper  
bridge and fence at this gap would enforce  
the reserve boundary 1

H Narrow path from Clipstone  
drive along side the  
Garibaldi Conifer Plantation

Sycamores need felling/thinning, footpath  
needs to be infilled, re=cambered and  
compacted- the county councils  
responsibility, an interpretive panel  
needs to be installed at the reserve  
entrance 1

## APPENDIX

### SPECIES LIST : 1) FLORA

EMEC., 1994, Urban Habitat and Green Space Survey.

#### Trees and Shrubs

<i>Salix viminalis</i>	Osier
<i>Acer pseudoplatanus</i>	Sycamore
<i>Alnus glutinosa</i>	Alder
<i>Betula pendula</i>	Silver birch
<i>Corylus avellana</i>	Hazel
<i>Crataegus monogyna</i>	Hawthorne
<i>Cytisus scoparius</i>	Broom
<i>Fagus sylvatica</i>	Beech
<i>Fraxinus excelsior</i>	Ash
<i>Malus sylvestris</i>	Crab tree
<i>Populus tremula</i>	Aspen
<i>Quercus robur</i>	Pendunculate oak
<i>Salix caprea</i>	Goat willow
<i>Salix cinerea</i>	Grey willow
<i>Sambucus nigra</i>	Elder
<i>Sorbus aucuparia</i>	Rowan
<i>Pteridium aquilinum</i>	Bracken
<i>Betula pubescens</i>	Downy birch
<i>Salix multinervis</i>	Willow
<i>Castanea sativa</i>	Chestnut
<i>Populus nigra</i>	Black poplar
<i>Sorbus aria</i>	Common white beam

#### Grasses, Sedges and Rushes

<i>Agrostis capillaris</i>	Common bent
<i>Arrhenatherum alatum</i>	false oat
<i>Carex acutiformis</i>	Lesser pond sedge
<i>Carex riparia</i>	Bottle sedge
<i>Dactylis glomerata</i>	Cocks foot
<i>Holcus lanatus</i>	Yorkshire fog
<i>Holcus mollis</i>	Creeping soft
<i>Hordeum murinum</i>	Wall barley
<i>Juncus effusus</i>	Soft rush
<i>Lolium perenne</i>	Italian rye
<i>Phalaris arundinacea</i>	Reed canary
<i>Poa annua</i>	Annual meadow
<i>Typha latifolia</i>	Bulrush
<i>Carex paniculata</i>	Tussock sedge
<i>Phragmites australis</i>	Common reed
<i>Deschampsia flexuosa</i>	Wavy hair grass

#### Herbs

<i>Angelica sylvestris</i>	Wild angelica
<i>Anthriscus sylvestris</i>	Cow parsley
<i>Arctium minus</i>	Lesser burdock
<i>Apium nodiflorum</i>	Fools water cress
<i>Artemisia vulgaris</i>	Mugwort
<i>Cirsium arvense</i>	Meadow thistle



*Cirsium palustre*  
*Crepis capillaris*  
*Digitalis purpurea*  
*Galium aparine*  
*Glechoma hederacea*  
*Heracleum sphondyl*  
*Hyacinth. non-script*  
*Impatiens glandulif*  
*Iris pseudacorus*  
*Lamium album*  
*Lemna minor*  
*Lonicera europaeus*  
*Lycopus europaeus*  
*Mentha aquatica*  
*Myosotis scorpiodes*  
*Myriophyllum spicatum*  
*Plantago lanceolata*  
*Plantago major*  
*Polygonum amphibium*  
*Ranunculus repens*  
*Rubus fruticosus*  
*Rumex idaeus*  
*Rumex obtusifolius*  
*Silene alba*  
*Solarium dulcamara*  
*Sparganium erectum*  
*Stellaria holostea*  
*Trifolium repens*  
*Urtica dioica*  
*Veronica beccabunga*  
*Erodium cicutarium*  
*Nymphaea culba*  
*Teucrium scorodonia*  
*Crassula helmsil*  
*Rorippa nast-aquabium*  
*Polygonum*

Marsh thistle  
 Smooth hawks-beard  
 Foxglove  
 Cleavers  
 Ground ivy  
 Hogweed  
 Bluebell  
 Indian balsam  
 Yellow iris  
 White dead nettle  
 Common duck weed  
 Honeysuckle  
 Gypsywort  
 Watermint  
 Water forget-me-not  
 Spiked water-milfoil  
 Ribwort plantain  
 Greater plantain  
 Amphibious bistart  
 Creeping buttercup  
 Bramble  
 Raspberry  
 Broadleaved dock  
 White campion  
 Bittersweet  
 Branched bur-weed  
 Greater stitchwort  
 White clover  
 Common nettle  
 Brooklime  
 Common stalks-bill  
 White water-lily  
 Wood sage  
 New zealand pigmyweed  
 Great yellow crest  
 Knotweed

## SPECIES LIST : FAUNA

### Birds

*Anthus pratensis*  
*Saxicola rubetha*  
*Lullula arborea*  
*Acrocephalus arundinaceus*  
*Oenanthe oenanthe*  
*Asio flammeus*  
*Falco combarius*  
*Circus columbarius*  
*Lanius cristatus*  
*Tringa totanus*  
*Gallinago gallinago*  
*Alcedo atthis*  
*Podiceps nigricollis*  
*Parus ater*  
*Regulus regulus*  
*Hirundo rustica*  
*Parus caeruleus*

Meadow pipit  
 Whinchat  
 Woodlark  
 Warbler  
 Wheateater  
 Short eared owl  
 Merlin  
 Hen harrier  
 Red backed shrike  
 Redshank  
 Snipe  
 Kingfisher  
 Little grebe  
 Coal tit  
 Gold crest  
 Swallow  
 Blue tit

*Fulica atra*  
*Columba palunhus*  
*Phainus colchicus*  
*Perdix perdix*  
*Gallinula choropus*  
*Anas platymynchos*  
*Anas crecca*  
*Aythya ferina*  
*Nette rufina*  
*Cygnus olar*  
*Accipter nisus*  
*Falco tinnunculus*  
*Tyto alba*  
*Erithacus rubecula*  
*Turdus merula*  
*Troglodytes troglodytes*

### Amphibians

*Rana temporaria*  
*Rana ridibunda*  
*Tritus vulgaris*  
*Tritus cristatus*

### Fish

*Gasterosteus aculeatus*  
*Perca fluviatilis*  
*Scardinius erythrophthalmus*  
*Squalis lephalus*  
*Rutilus rutilus*  
*Trinca tinca*  
*Cyprium capia*

### Mammals

*Lepus capensis*  
*Oryctolagus cuniculus*  
*Vulpes vulpes*  
*Clethrionomys glareolus*  
*Mustela nivalis*  
*Erinaceus europaeus*  
*Talpa europaea*  
*Plecotus auritus*

### Insects

*Sympetrum striolatum*  
*Aeshna grandis*  
*Aeshna mixta*  
*Aeonna cyanea*  
*Libellula quadrimaculata*

Coot  
 Pigeon  
 Pheasant  
 Partridge  
 Moorhen  
 Mallard  
 Teal  
 Porchard  
 Tufted  
 Swan  
 Sparrow hawk  
 Kestrel  
 Barn owl  
 Robin  
 Blackbird  
 Wren

Common frog  
 Marsh frog  
 Common newt  
 Crested newt

Stickle back  
 Perch  
 Rudd  
 Chub  
 Roach  
 Trench  
 Carp

Hare  
 Rabbit  
 Fox  
 Bank vole  
 Weasle  
 Hedgehog  
 Mole  
 Mink  
 Bat

Dragonfly;  
 Common darter  
 Brown hawker  
 Migrant  
 Southern  
 4-spotted chaser  
 Caddisfly  
 Stonefly  
 Mayfly  
 Butterfly  
 Grasshopper

+

1981

Bracken	Weld	Ground Ivy
Male Fern	Meadowsweet	White Dead Nettle
Field Horsetail	Great Burnet	Common Hemp Nettle
Water Horsetail	Parsley Piert	Red ..
Crack Willow	Dog Rose	Hedge Woundwort
White Willow	Field Rose	Water Mint
Gallow	Bramble	Gipsywort
Tared Gallow	Raspberry	Bittersweet
Osier	Wild Strawberry	Common Figwort
Silver Birch	Barren do	Water ..
Downy Birch	Verb Bennet	Small Toadflax
Alder	Tormentil	Toxglove
Hazel	Silverweed	Germander Speedwell
Sweet Chestnut	Crab Apple	Wood ..
Pendunculate Oak	Rowan	Field ;;
Gossilz Oak	Hawthorn	Brooklime
Turkey Oak	Blackthorn	Greater Plantain
Scots Pine,	Corse	Ribwort ..
Austrian Pine	Broom	Common Valerian
Wych Elm	Bush Vetch	Elder
Sycamore	Bitter Vetchling	Honeysuckle
Field Maple	Birdsfoot Trefoil	Harebell
Holly	Black Medick	Daisy
Ash	Red Clover	Scentless Mayweed
Nettle	White ..	Pineapple ..
Annual Nettle	Haresfoot ..	Marsh Cudweed
Redshank	Wood Correl	Yarrow
Water Pepper	Herb Robert	Mugwort
Knotgrass	Caper Spurge	Ox-eye Daisy
Common Sorrel	Gun Spurge	Coltsfoot
Sheep's Sorrel	Petty ..	Ragwort
Broad Leaved Dock	Himalayan Balsam	Marsh ..
Curled Dock	Imperforate St John's Wort	Oxford Ragwort
Wood Dock	Sweet Violet	Burdock
Fat Hen	Dog Violet	Creeping Thistle
Red Goosefoot	Heath do	Spear ..
Three-veined Vinkwort	Field Pansy	Wetted ..
Greater Stitchwort	Rosebay Willow Herb	Marsh ..
Chickweed	Great ..	Knapweed
Lesser Stitchwort	Broad Leaved ..	Smooth Sow-thistle
Bog do	Marsh ..	Prickly ..
Common Mouse Ear	Cow Parsley	Perennial ..
Corn Spurry	Pignut	Nipplewort
Fladder Campion	Fool's Parsley	Dandelion
Red Campion	Hogweed	Catsear
White do	Angelica	Smooth Hawksbeard
Marsh Marigold	Hemlock	Marsh ..
Meadow Buttercup	Water Parsnip	Water Plantain
Bulbous do	Fool's Warecress	Bluebell
Creeping do	Heather	Black Bryony
Lesser Celandine	Yellow Pimpernel	Wild Arum
Goldilocks	Scarlet ..	Waterwort
Galaxy leaved Buttercup	Hedge Bindweed	Branched Bur-reed
Water Crowfoot	Field ..	Water Starwort
Wind do	Crosswort	uckweed
Tintaroon	Marsh Bedstraw	Soft Rush
Charlock	Lady's ..	Reed Sweetgrass
Edlysmoth	Cleavers	Jointed Rush
Garlick Mustard	Field Forgetmenot	Toud Rush
Watercress	Water ..	Greater Pond Sedge
Fairy Fittercress	Bugle	Lesser ;;
Thale Grass	Skullcap	Grasses not fully worked out but at least
Shepherd's Purse	Wood Sage	20 species. Wavy Hair Grass, Nardus, Yorkshire
Shepherd's Greens	Self Heal	Fog, Foxtails etc included
Field Pennywort		

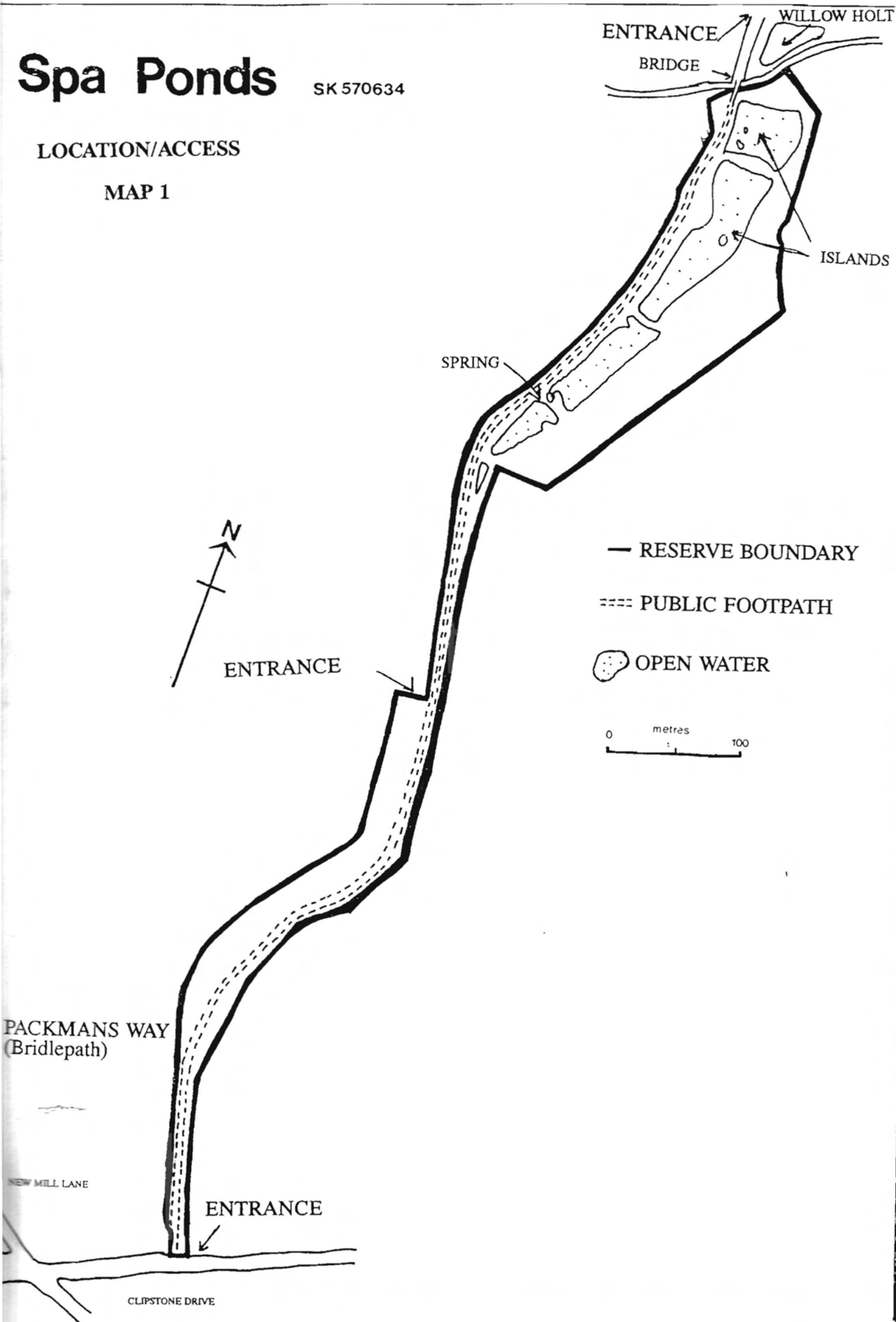


# Spa Ponds

SK 570634

LOCATION/ACCESS

MAP 1



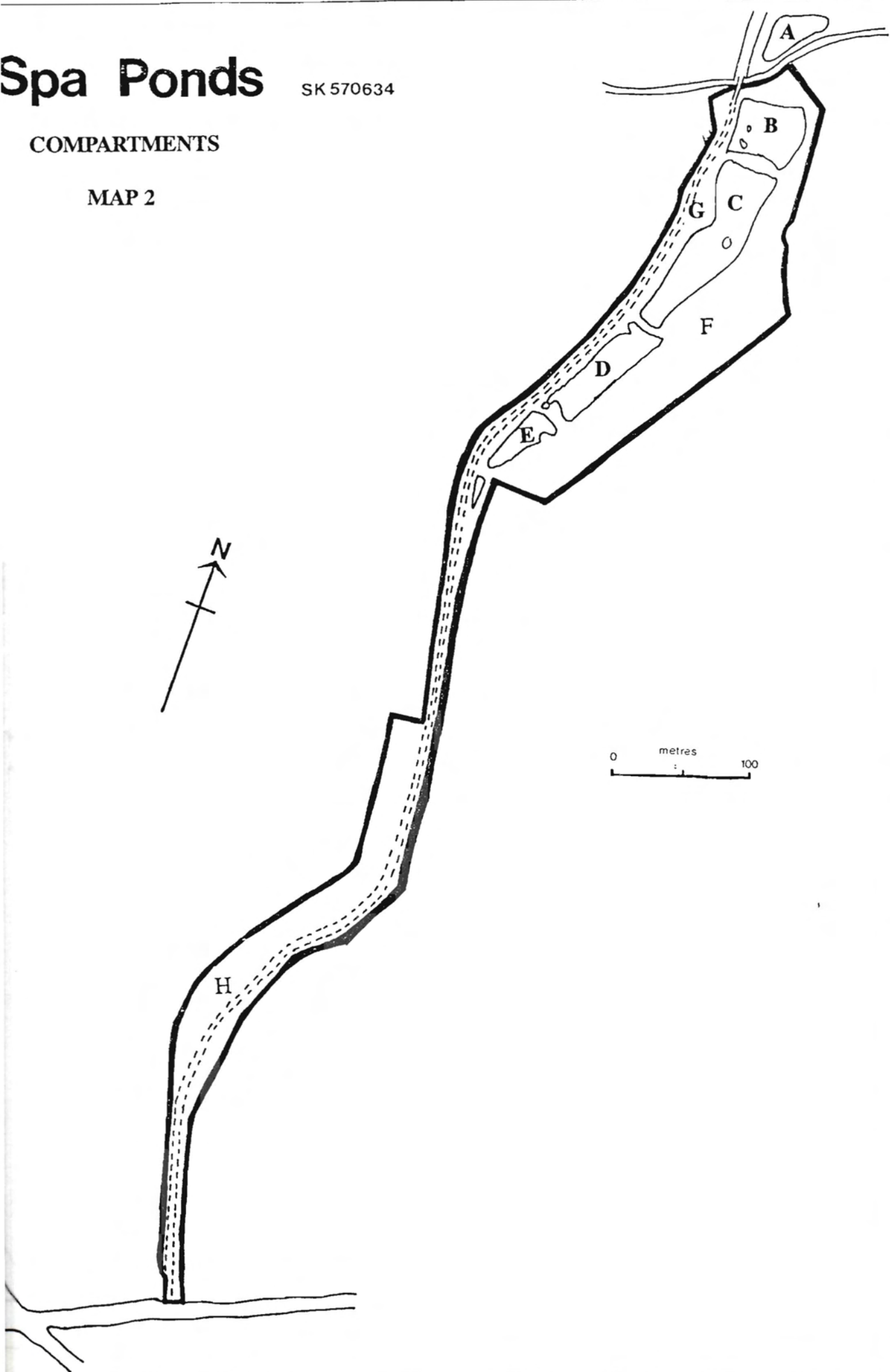


# Spa Ponds

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COMPARTMENTS

MAP 2

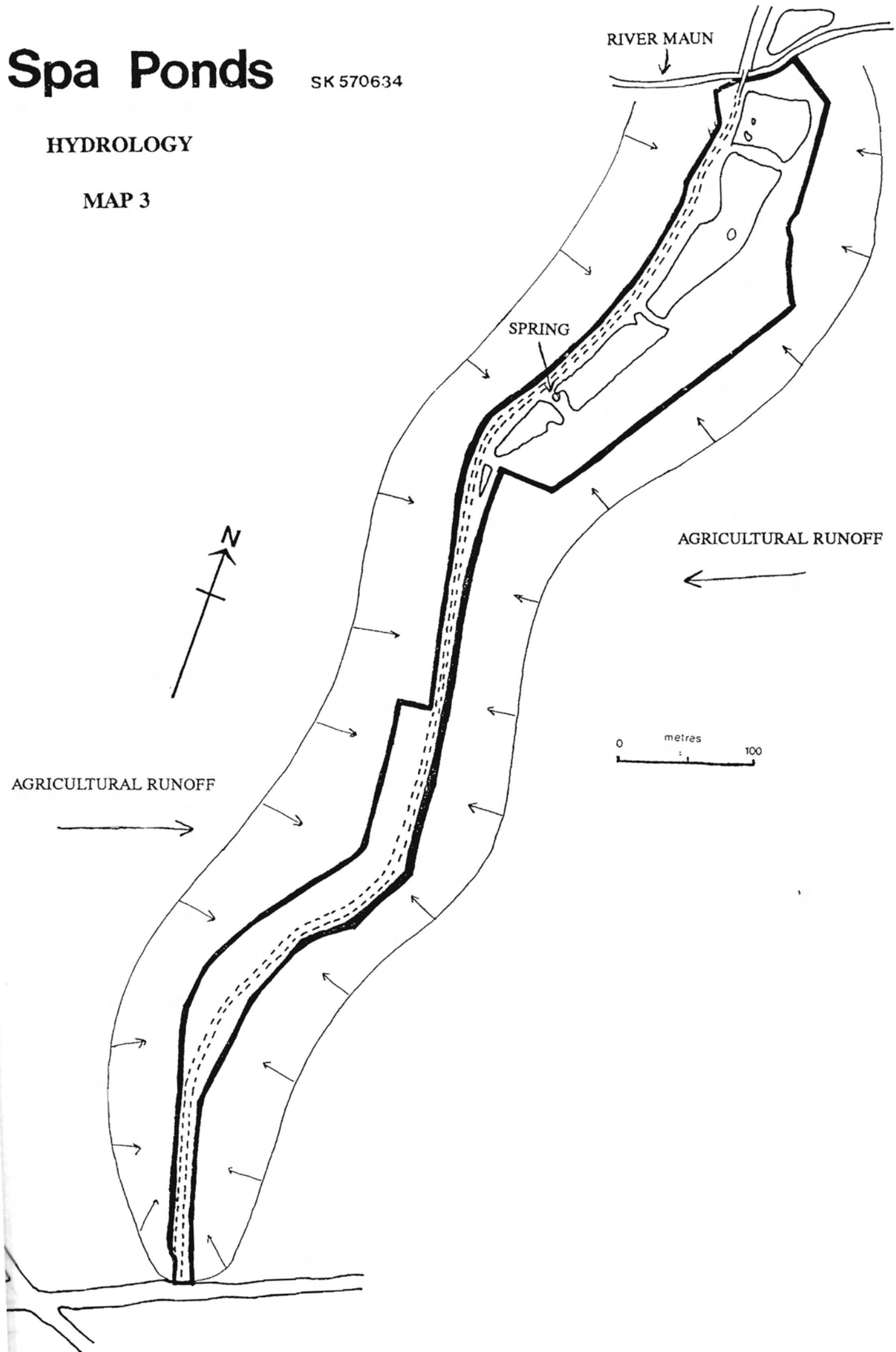


# Spa Ponds

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## HYDROLOGY

### MAP 3

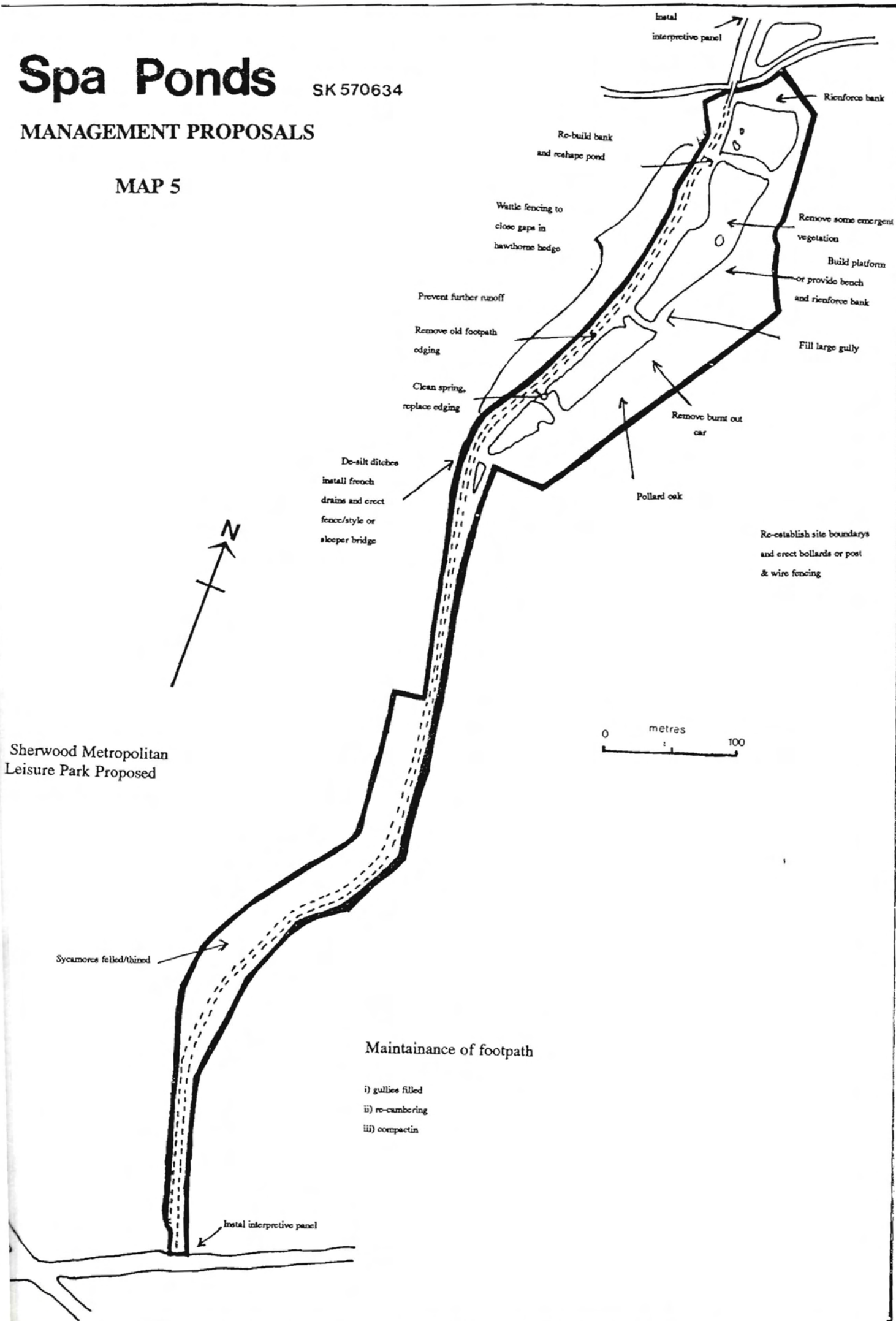


# Spa Ponds

SK 570634

## MANAGEMENT PROPOSALS

### MAP 5



Sherwood Metropolitan  
Leisure Park Proposed