THE ENHANCEMENT OF TREASURE ISLAND

AN ASSIGNMENT FOR THE

COLLEGE DIPLOMA IN

UPLAND RESOURCE MANAGEMENT.

BY FRANK WALLER.

FRONT PIECE & TITLE. "THE ENHANCEMENT OF TREASURE ISLAND."

Ms Fiona Chalmers
S.W. Area Manager
The Yorkshire Dales National Park
Colvend Hebden Road
Grassington Skipton
NORTH YORKSHIRE
BD23 - 5LB

6 FEBRUARY 1995

Dear Ms. Chalmers,

1995 is The European Nature Conservation Year and as I own a small parcel of land bounded by the River Aire which is devoted entirely to conservation I wish to apply for a grant to construct a small pond to encourage bio-diversity and to promote the growth of frogs, newts, amphibians, dragon-flies and other pond life.

The pond would be constructed within an existing wet area fed by streams from Scothrop beck through the embankment wall(see Plan). The Bog and wet area already contain an abundance of wetland flora such as Wild Iris, Common Duckweed, Brooklime, Water Forgetmenot, Marsh Marigold, Ragged Robin, Water Avens, Meadowsweet, Cuckoo Flower, Herb Bennett,Great Willowherb etc.

The land is overlooked by two footpaths - The Pennine Way on the eastern bank of the Aire and a footpath on the embankment on its western side. The pond would enhance the attractiveness of the land and be of benefit to walkers on both sides of the Aire who would see the efforts being made to improve the quality of the Dales. Finally, I would like to apply for a grant to plant additional trees to augment those I've already planted during the two previous years.

The attached sheet is an estimate of the cost of constructing the pond and the cost of the trees.

Hoping that this will meet with your approval, I remain,

Yours sincerely,

Frank Waller.

Mon Apartement

Mon apartement que je l'ai vendu l'année derniere et que je l'ai aimé beaucoup etait un de dix-neuf apartements dans une conversion d'un vieux moulin à eau. Il est situé `a Airton, un petit village très content et tranquille sans pub ou sans magasin parce qu'il a établi par les Quakers et maintenant se vante un population prés de deux cents ârmes. Il se trouve dans l'interior d'un Parc Nationale le Yorkshire Dales et tout prés de Malham Cove un favouri endroit pour les touristes.

Le vieux moulin se nomme « Riverside Walk » se trouve à coté de la riviere Aire où j'y l'ai acheté mon apartement il y a dix-sept ans, en Septembre 1985. Il avait deux chambre, un salon, une salle `a manger, une cuisine et une salle de bain. Les fenêtres à guillotine de le salon et la cuisine donnent sur la riviere et les collines de loins. Le salon, la salle `a manger et la cuisine étaient tous ensemble mais la cuisine est distinct à cause d'un mur entre la cuisine et le salon.

La raison principale qui me fait acheter cet apartement était le grenier au dessus de l'apartement. Les dimensions étaient aussi grands que l'apartement au dessous. Ainsi, au moment de le voir, je savais bien que je devais l' acheter parce qu'il y avait ouvert le possibilité d'un autre apartement different et interessant.

J'ai commencé immediatement a faire une influence Suédoise car j'étais travailler en Suéde pendant ces années et j'adore les maisons Suédoises si elegant et aussi plus simple. Alors j'ai couvris tout le platfond avec les planches de bois. J'ai construis un sauna et puis au dehors un endroit où on pouvait s'asseoir et refroidir. Il y avait aussi une autre toilette et une douche.

Une influence Japonaise aussi complément le Suédoise – l'un l'autre, parce qu'il y avait deux chambres Japanaises avec les lits de « Tatami » et de « Futon » `a cause du platfond ici était trop bas mais le centre de toit était trés haut qui me permitait une construction d'un autre étage- un petit studio pour mes peintures !

En 1991, j'ai eu l'occasion acheter une petite parcelle de terre environ 0.25 hectare droit vers le nord. et à coté du moulin. Je l'ai nommé « Treasure Island » ainsi j'ai devenu un propriétaire terrien. Bien que il ne soit pas une ile, c'est bien nommé car la terre est isolé complètement par la riviere et un talus haut sur l'ouest de la terre. Sur ce talus est un passage public pour piétons et sur le rivage en face est le passage public bien connu pour piétons le « Pennine Way ». Trésor abonds sur la terre, dans les richesses de la vie sauvage, les fleurs sauvage et les agés arbres. J'y ai planté des 80 arbres nouveux. Un année avant j'ai vendu mon apartement j'ai fait don de terre à « Riverside Walk Management Co. » pour l'usage et plaisir de les habitants.

THE ENHANCEMENT OF "TREASURE ISLAND"

INTRODUCTION.

"Treasure Island" is a small piece of land a little over half an acre (0.23 ha.) bounded by the river Aire on three sides and a boundary drystone wall with a high embankment on the west side.It is situated on (O.S.Map SD 90355940) at a height of 160M (525ft.) and lies due north of the old Airton mill now converted into nineteen flats and is accessed via a public footpath on top of the high enbankment. The land before it was purchased on 5th Sept.1991 was left very much to its own resources and in a wild and derelict state, only grazed occasionally when sheep and cattle could ford the river in late spring and summer months. The long distance footpath - the Pennine Way - runs parallel to the river on the opposite bank and walkers along this footpath can easily look down on "Treasure Island". Although it is not an island in the true sense of the word, it has been aptly named as the land is completely isolated by the river and the embankment. Treasure abounds in the wealth of wild life, flora and mature trees. There is in effect five distinct habitats encompassed on this land.

1.) The river and river bank.

2.) The flat meadow land.

3.) The bog, wetlands & dug area.

4.) The wall.

5.) The waterfall.

MANAGEMENT OBJECTIVE.

To survey the land in order to produce a management plan for the land that will improve its aesthetic, wild life and flora value.

MANAGEMENT PLANS STAGE I. (CONSTRUCTION FEATURES.)

1. To erect a stock fence to prevent animals grazing on the land.

2. To constuct two gates to access the river and the waterfall.

3. To construct a series of steps leading off the public footpath down the enbankment onto the land.

4. To construct a small footbridge over the bog and wetlands and a pond bordering the footbridge.

5. To construct a footpath from the steps to the footbridge.

6. To produce a management plan to maximise and enhance the existing habitat.

1. FENCE CONSTRUCTION

The periphery of the land bordering the river was measured and the quantities of posts, straining posts, stock fencing and barbed wire required purchased.(See Appendix 9 for costs.)

A strainer post was established by digging a hole about two metres from the wall at the far northern end of the land sufficiently large to allow the post to be secured by some large stones and rocks. This was to be the hinge post for the gate leading to the waterfall. Another post with a support strut was erected close to the river bank with the line of the fence at right angles to the wall.

Two further strainer posts were erected for the gate accessing the river bank and where a bend in the river bank neccessitated a bend in the fence. (See plan.Map 1)

Plain round tanalised posts were now erected between the strainers at approximately two metre intervals to complete the run of the fence. One end of the wire netting was now secured firmly onto the first strainer making sure that the smallest mesh was at ground level.

The rest of the roll was unrolled with the netting on the river side and stapled lightly onto intermediate posts to keep the netting in an upright position. The wire fence was now tensioned with the use of a special strainer tool applied to each strand of wire separately and then stapled to every post in three positions, top, middle and bottom. Barbed wire was lastly fastened to the side of each post suffiently high to

deter stock.Construction of the fence was completed over two sessions with the invaluable help of several fellow students. Completed 23-10-91.(See photo 3.& main photo.)

2. GATE CONSTRUCTION

The gates were made from half-round posts cut to size except the two end uprights which were constructed from round posts.(see sketch 1 and photo 1 & 2) Completed: 22.02.92

3. STEP ACCESS CONSTRUCTION.

The steps were constructed entirely from large flat stones found in the vicinity of the wall particularly from part of the wall that was broken through and eroded which allowed access for the steps. The largest flat stone was placed at the foot of the wall and on the surface of the land. A step was then cut in the soil of the embankment and another flat stone placed on this surface. All the steps were thus constructed until the top of the bank was reached. On some steps buttress stones had to be placed in position to strengthen the step. Completed 9.05.92.(See photo 6.)

4. FOOTBRIDGE CONSTRUCTION

It was neccessary to build a small footbridge over the wet-land and bog. Water from this area subsequently draining into the river. The footbridge was easily constructed by means of two lengths of 4"x 2"x 12ft. beams. One length being well secured to three upright posts by No 10 x 6" screws sufficiently high to clear the land. The other length was secured to three shortened posts equi-spaced along the beam and notched to provide a seat for the beam. Posts and beam were driven into the ground until they attained the same height as the other beam and at a width sufficient to allow three pallets to be laid along its length. (See photo 4.) Completed 16-05-92.

5. FOOTPATH CONSTRUCTION.

A path was constructed from the step access to the footbridge by using all the fallen timber and old tree trunks to define the width of the path to run parallel with the fence. The ground was leveled off and surfaced with pea gravel. Completed 25-05-92.(See photo 5.)

MANAGEMENT PLAN STAGE II. (ECOLOGICAL FEATURES.)

1. To survey the land to record existing species, in order to maximise the various habitats and to enable a management plan to be structured.

2. To promote and encourage the growth of indigeneous fauna and flora and introduce other wild flowers compatible with the local species.

3. To restrict and retard the growth of plant species that are overwhelming weaker species.

4. To plant native tree species in suitable locations to enhance the natural beauty of the "island".

5. To improve the quality and appearance of the land to make it aesthetically pleasing and attractive to walkers along the Pennine Way and for the enjoyment of the local residents.

HABITAT ASSESSMENT. PROFILE 1. THE RIVER & RIVER BANK.

SURVEY DATES:- 1992. MARCH 22, APRIL 25, MAY 2, JUNE13.

A) PHYSICAL FEATURES. SD90355940 is 2.8M from Airehead.

RIVER. Fast flowing. Bedrock limestone with limestone boulders, rocks and large pebbles scattered over river.

QUALITY. A1. Very clear except under heavy rain and flood conditions, when river becomes brown and murky with run-off water.
(See N.R.A.'s River analysis appendix 1)

DEPTH. Varies between 10cms.-70cms.(deep pockets.) in dry weather conditions in summer to the land being submerged after snowmelt and heavy rains in JANUARY 1992. i.e. up to 2M.(See slide 39,40) but river soon returns to normal levels within 24 hours. after heavy rains have ceased.

TERRAIN. Flat solid limestone underfloor bedrock falling in a series of three small weirs from north to south.

AGE. >100 years.

AREA. < 0.5 ha.

(B) WILDLIFE FEATURES.
(* = present<3;** = moderately common 3-10;*** = frequent >10)

VEGETATION COVER.

(1) MOSSES. on exposed rocks.

Silky wall feather moss.	Camptothecium sericeum.	*
	Brachythecium rutabulum	***
	Cinclidotus fontinaloides	***

(2) ANIMALS

INSECTS.

Caddis fly	Trichoptera.	**
Common gnat	Culex pipiens	***
Ringed mosquito	Theobaldia annulata	***

FISH

Brown trout	Salmo trutta	*
Bullhead	Cottis gobio.	**
Stickleback	Gasterosteus aculeatus	**

BIRDS.

Kingfisher	Alcedo atthis.	*
Goosander	Mergus merganser.	*
Moorhen	Gallinula chloropus.	*
Grey heron.	Ardea cinerea.	*
Grey wagtail	Motacilla cinerea.	*
Pied wagtail	Motacilla alba.	**
Dipper	Cinclus cinclus.	**
Mallard	Anas platyrhynchus.	***
Blackheaded gull	Larus ridibundus.	**

MAMMALS

Water vole	Arvicola terrestris	*
Mink	Mustela vison	*

RIVER BANK.

(A) PHYSICAL FEATURES.
Soil analysis:- pH7.5 Slightly alkaline. Sandy loam. Well drained.
(See analysis appendix 4 & sample appendix 5)
Least humus of all samples taken and least water retention which is typical for a sandy loam soil. Has a high gravel and course sand content which can be expected so close to the source of the river Aire.

TERRAIN
Top of bank to the river bed varies between 50cms at the flat area around Eastgate sloping gently in both directions to a high of 150cms. around tree No. 20 and waterfall northwards and the footbridge southwards. See photo 13.

AGE. >100 years.

AREA. <0.5ha.

(B) WILD LIFE FEATURES.

VEGETATION COVER.

LICHENS

Hypogymnia physodes		***
Cetraria chlorophylla.		***
Pseudevernia furfuracea		***

MOSSES.

Hylocomium splendens	***	Rh
Rytidiadelphus squarrosus.	***	

FUNGI

Dryads bracket fungus (Slide38)	Polyborous squamosus	**
Tawny grisette	Amanita fulua	**
Coprinus atramentarius		**

HERBS & WILD FLOWERS.

Meadow cranesbill (Slide 32)	Geranium pratense	***
Common valerian (Slide33)	Valeriana officinalis	**
Coltsfoot (Slide 9)	Tussilago farfara	**
Common scurvy grass (Slide 12)	Cockiearia officinalis	***
Common spotted orchid(Slide 30,31)	Dactylorhiza fuchsil	*
Marsh marigold	Caltha palustris	**
Butterburr	Petasites hybridus	***
Primrose	Primula vulgaris	***
Lesser celandine	Ranculus ficara	***
Rough hawksbit	Leontodon hispidus	**
Dandelion	Taraxacum hamatum	***
Watercress	Nasturtium officinale	**
Hairy bittercress	Cardimine hirsutra	**
Shepherds purse	Capsella bursa-pastoris	**
Ramsons	Allium ursinum	***
Meadow buttercup	Ranculus acris	***
Common sorrel	Rumex acetosa	***
Barren strawberry	Potentilla sterilis	***
Daisy	Bellis perennis	***
Cow parsley	Anthriscus sylvestris	**
White clover	Trifoliumens	***
Red clover	Trifolium pretense	***
Herb Robert	Geranium robertianium	**
Ground elder	Aegopodium podagraria	***
Ribwort plantain	Plantago lanceolata	***
Greater plantain	Plantago major	***
Hoary plantain	Plantago media	***
Dwarf thistle	Circium acaule	**
Black knapweed	Centaurea scabiosa	***
Wood forgetmenot	Myosotis arvensis	***

GRASSES

Sheeps fescue	Festuca ovina	***
Creeping bent	Agrostis stolonifira	***
Common bent	Agrostis capillaris	***
Yorkshire fog	Holcus lanatus	***
Red fescue	Festuca rubra	**
Meadow foxtail	Alopecurus pratensis	***
Sweet vernal	Anthoxanthum odoratum	***
Annual meadow grass	Poa annua	***
Crested dogstail	Cynosurus cristatis	***
Ivy	Hedera helix	***

TREES & SHRUBS. (See Table appendix 6.)

Dog rose	Rosa canina	*
Elm	Ulmus procera	*
Ash	Fraxinus excelsior	**
Hawthorn	Crataegus monogyna	***

(2)ANIMALS.

INSECTS.

Common gnat	Culex pipiens	***
Ringed mosquito	Theobaldia annulata	***
Common field grasshopper	Chorthippus brunneus	**
Common earwig	Forficula auricularia	**
Thrips	Thysanoptera	**
Lacewing	Neuroptera	**
Crane fly	Tipula paludosa	***
Hover fly	Syrphus	***
Yellow dung fly	Scatophaga stercoraria	***
Common red ant	Myrmica rubra	***
Common wasp	Vespa vulgaris	***
Bumblebee	Bombus terrestris	**
Honeybee	Apis mellifera	***

BIRDS

Wren	Trogloytes troglodytes	**
Dunnock	Prunella modularis	**
Blackbird	Turdus merula	**
Robin	Erithacus rubecula	**
Song thrush	Turdus philomedos	**
Wood pidgeon	Columba palumbus	**
Magpie	Pica pica	**
Blue tit	Parus caeruleus	***
House sparrow	Passer domesticus	***
Rook	Corvus frugilegus	***
Jackdaw	Corvus monedula	*
Carrion crow	Corvus corone corone	**
Chaffinch	Fringilla coelebs	***

MAMMALS

Water vole	Arvicola terrestris	*
Mink	Mustela vison	*
Rabbit	Oryctolagus cuniculus	**

CONCLUSION

RIVER:- It was fortunate that a comprehensive water quality analysis was obtained from the National River Authority taken on seven occasions between 10th JULY 1990 and 9th JULY 1992. inclusive of these two periods.

pH.(0061) The mean pH. over these periods was 8.03 which shows a moderately high alkaline content which is not unusual for a river in a limestone area.

D.O.% (0081) Dissolved Oxygen. Only one reading was listed showing 100%

D.O. mg/L.(0082) Again only one reading was shown so no conclusions can be made.

B.O.D.mg/L (0085) Biochemical Oxygen Demand. This showed the most variation and appeared to be higher in the winter than in the summer. This can be attributed to land and road run-off being higher in the winter because of higher rainfall. Farmers also add manure and slurry to their land in the winter and add fertilisers in early spring. However there seems to be a significant improvement in the figures taken in 1992 compared to 1990. This is not only because enlightened farmers are applying less manure and slurry but could also be attributed to the improvement of the sewage system at Airton and a completely new sewage system at Malham completed in 1991.

AMMONIA mg/L (0111) The first reading taken on 10th JULY 1990 registered .06 mg/L and is different to all the other readings consistantly showing less than .05mg/L It may be concluded that this may be an error in reading or a particularly bad run-off that day. Neverthless these readings are all well within a Class 1A river condition.

NITRATE.mg/L.(0117) The Nitrate level in the table shows considerable variation from a A.49mg/L on the 10th JULY 1990

to a A2.26mg/L on the 9th JULY 1992. Both taken in the summer within one day of each other.However if the seasonal averages were looked at then it appears that the presence of nitrates are higher in the winter but a glance down the tables would indicate that nitrate concentrations seem to be rising and should be watched with care. It must be stated that levels below A5mg/L are accepted as the criteria for a Class1A river.

NITRITE. mg/L.(0118) Nitrite levels are consistantly below .01mg/L

SOLIDS.mg/L (0135) Tables show a higher concentration of solids in winter compared with summer. Again this could be due to land and road run-off. If averages are taken then findings show a 75% increase of solids in the winter.

ORTHO-PHOSPHATE mg/L (0180) Levels are consistantly below .03mg/L and no comment can be made.

The conclusion from these findings are that the river Aire at this point just above the sewage works in Aiton is indeed a Class 1A river.

RIVER BANK.

Stock can continue to graze along the narrow strip of land beyond the perimeter of the fence and enclosed by the river (See map 1) uninterrupted. It would be interesting to note the changes that may occur over the years between the enclosed land which will be free from grazing and only managed by man with conservation uppermost in mind and compare it with this strip of land which in the main will be left to nature. The common spotted orchid was an only specimen. Fortunately a photograph was obtained the day before being grazed by a cow. Maintenance of the river bank is envisaged in the near future in order to stop the bank from eroding any further. This can be done by shoring up the bank with the boulders and rocks lying in the river.

HABITAT ASSESSMENT PROFILE 2. THE FLAT MEADOWLAND.

SURVEY DATES:- 1992. MARCH 22, APRIL 25, MAY 2, JUNE 13.

(A) PHYSICAL FEATURE
Soil analysis:- pH 7.0 neutral.-loam. (See appendix 4)
The highest humus content of all the samples taken and is a good example of a mull soil with evidence of many worm casts to be found in the spring.
When flooding takes place there are deposits of gravel, course sand and stones all of limestone origin giving the soil a good calcium content and therefore rich in nutrients.It has the lowest clay content allowing it to be well drained although it never dries out even in summer due no doubt to absorption from the wet bogland area and the river.

TERRAIN.
The meadowland is flat only haphazardly grazed in the summer when sheep and cattle could ford the river.
The land was not improved with inorganic fertilisers or slurry being too small and inaccessible to be bothered with only fertilised by sheep droppings and cattle manure. It was therefore thought that after fencing it could be returned to a Haymeadow condition from the number of species found to be existing.

AGE >100 years.

AREA.<0.5ha.

(B) WILD LIFE FEATURES
(* =present<3;** = moderately common 3-10;*** = frequent >10)

(1) VEGETATION COVER

LYCHENS.

Hypogymnia physodes	***
Cetraria chlorophylla	***
Pseudevernia furfuracea	***

MOSSES.

Hylocomium splendens	***
Rhytidiadelphus squarrosus	***

FUNGII

Tawny grisette	Amanita fulua	**
Fairy ring champignon	Marasmius oreade	**
	Melanoleuca melaleuca	**
	Nolanea staurospora	*

HERBS & WILD FLOWERS.

Meadow cranesbill	Geranium pratense	***
Common valerian	Valeriana officinalis	**
Butterburr(Slide 6)	Petasites hybridus	***
Primrose (Slide 5,6)	Primula vulgaris	***
Lesser celandine(Slide 6)	Ranculus ficara	***

Rough hawksbit (Slide 17)	Leontodon hispidus	***
Dandelion (Slide 18)	Taraxacum hamatum	***
Hairy bittercress	Cardimine hirsutra	**
Shepherds purse	Capsella bursa-pastoris	**
Ramsons	Allium ursinum	***
Meadow buttercup	Ranculus acris	***
Common sorrel	Rumex acetosa	***
Barren strawberry	Potentilla sterilis	***
Daisy	Bellis perennis	***
Cow parsley	Anthriscus sylvestris	***
White clover (Slide 22)	Trifolium repens	***
Red clover (Slide 22)	Trifolium pretense	***
Herb Robert	Geranium robertanium	**
Ground elder	Aegopodium podagraria	***
Ribwort plantain(Slide 23)	Plantago lanceolata	***
Greater plantain	Plantago major	***
Hoary plantain	Plantago media	**
Creeping thistle	Cirsium arvense	**
Spear thistle	Cirsium vulgare	**
Dwarf thistle	Cirsium acaule	***
Black knapweed	Centaurea arvensis	***
Nettle stinging	Urtica dioica	***
Crosswort (Slide 26)	Cruciata laevipes	***
Ragged robin	Lychnis flos-cuculi	***
Herb bennet	Geum urbanum	**
Water avens	Geum rivale	***
Germander speedwell(Slide 10)	Veronica chamaedris	***
Ox-eye daisy(Slide 21)	Leucanthemum vulgare	***
Cuckoo flower	Cardamine pretensis	***
Meadow sweet	Filipendula ulmaria	***
Common mouse ear	Cerastium fontanum	***
Broad leaf dock	Rumex obtusifolius	***
Red campion	Silene dioica	***
Wood anemone (Slide 19)	Anemone nemorosa	*
Cowslip (Slide 16)	Primula veris	*
Common vetch	Vicia sativa	***
Meadow vetchling	Lathyrus montanus	**
Birdsfoot trefoil(Slide 29)	Lotus angustissimus	**
Devilsbit scabious(Slide 27)	Succisa pratensis	**
Self heal (Slide 28)	Prunella vulgaris	***
Hedge woundwort(Slide 37)	Stachys sylvatica	**
Wood forgetmenot	Myosotis sylvatica	***
Blue bell	Endymion non-scriptus	**
Hedge bedstraw	Gallium mollugo	***
Lady's bedstraw	Galium verum	***
Pignut	Conopodium majus	***
Wild carrot	Daucus carota	***
Common cleavers	Gallium aparine	***
Ivy	Hedera helix	***

<u>INTRODUCED SPECIES</u>

Snowdrops	Galanthus nivalis	***
Wild daffodil	Narcissus pseudonarcissus	***
Tulip	Tulipa praestans	**
Blue anenome	Anenome apennina	***

GRASSES

Sheeps fescue	Festuca ovina	***
Creeping bent	Agrotis stolonifira	***
Common bent	Agrostis capillaris	***
Yorkshire fog(Slide 24)	Holcus lanatus	***
Red fescue	Festuca rubra	**
Meadow foxtail	Alopecurus pratensis	***
Sweet vernal	Anthoxanthum odoratum	***
Annual meadow grass(Slide 24)	Poa annua	***
Crested dogstail	Cynosurus cristatis	***
Quaking grass (Slide 25)	Briza media	***
Timothy	Phleum pratense	***
Perennial rye grass(Slide 24)	Lolium perenne	***

TREES & SHRUBS.

Dog rose	Rosa canina	**
Ash	Fraxinus excelsior	**
Hawthorn	Crataegus monogyna	***

INTRODUCED SPECIES.

White willow	Salix alba	1
Osier willow	Salix viminalis	6
Goat willow	Salix caprea	6
Common hazel	Corylus avellana	3
Guelder rose	Viburnum opulus	3
White dogwood	Cornus alba	3
Common dogwood	Cornus sanguinea	3
Blackthorn	Prunus spinosa	3
Rhamnas rose	Rosa rugosa	3

TOTAL 31

The following trees were donated by CRAVEN COUNCIL.

Downy birch	Betula pubescens	1
Silver birch	Betula pendula	1
Larch	Larix descidua	1
Bird cherry	Prunus padus	1
Wild cherry	Prunus avium	1
Alder	Alnus glutinosa	1
Mountain ash	Sorbus aucuparia	1
Bay willow	Salix fragilis	1
Weeping willow	Salix pendula	1
Field maple	Acer campestre	1

TOTAL 10

(2)ANIMALS

INSECTS.

Common gnat	Culix pipiens	***
Ringed mosquito	Theobaldia annulata	***
Common field grasshopper	Chorthippus brunneus	***
Common earwig	Forficula auricularia	***
Thrips	Thysanoptera	***
Lacewing	Neuroptera	***
Crane fly	Tipula paludosa	***

Hover fly	Syrphus		***
Common red ant	Myrmica rubra		***
Common wasp	Vespa vulgaris		***
Bumblebee	Bombus terrestris		***
Honey bee	Apis mellifera		***
Robber fly	Asilus crabroniformis		***
Green bottle	Lucilia caesar		**
Green fly	Aphid		***
Black fly	Aphid		***
Ladybird various	Adalia-bi,7,10 punctata		***
Cardinal beetle	Pyrochroa coccinea		*
Soldier beetle	Rhagonycha fulva		**
Wolf spider	Lycosa saccata		***
Money spider	Linyphiidae		***
Harvest spider	Orpilones		**
BUTTERFLIES & MOTHS.			
Small tortoiseshell	Aglais urticae		***
Red admiral	Vanessa atalanta		**
Meadow brown	Maniola jurtina		**
Orange tip	Anthocharis cardamines		***
Small white	Pieris rapae		***
Common blue	Polyommatis icarus		**
Six spot burnet	Zygaena filipendulae		**
The forrester	Procris statices		**
Angle shades	Phlogophora meticulosa		*
INVERTEBRATES			
Common snail	Helix aspersa		***
Grove snail	Cepaea nemoralis		***
Black slug	Arion ater		***
Field slug	Agriolimax agrestis		***
Common earth worm	Lumbricus terrestris		***
Millipede	Diplopoda		**
Centipede	Lithobius forficatus		*
Pill woodlouse	Armadillidium vulgare		***
Common woodlouse	Oniscus asellus		***
Pill millipede	Glomeris marginata		***
BIRDS. (O/F= Overflying)			
Pheasant	Phasianus colchicus		*
Stock dove	Columba oenas		*
Wood pigeon	Columba livia		**
Great spotted woodpecker	Dendrocopus major		*
Skylark	Alauda arvenis	O/F	*
Swift	Apus apus	O/F	***
Swallow	Hirundo rustica	O/F	***
House martin	Delichon urbic	O/F	***
Wren	Trogloytes trogloytes		**
Dunnock	Prunella modularis		**
Blackbird	Turdus merula		**
Robin	Erithacus rubecula		***
Song thrush	Turdus philamedos		**
Mistle thrush	Turdus viscivorus		**
Magpie	Pica pica		**
Blue tit	Parus caeruleus		***
House sparrow	Passer domesticus		***
Rook	Corvus frigilecus		***

Jackdaw	Corvus monedula	*
Carrion crow	Corvus corone corone	**
Chaffinch	Fringilla coelebs	***

AMPHIBIANS

Common frog	Rana temporaria	***

MAMMALS

Common shrew	Sorex araneus	*
Field vole	Microtus agrestis	*
Pipistrelle bat	Pipistrellus pipistrellus	***

CONCLUSION

THE FLAT MEADOWLAND.

The proof that the meadow is rich in nutrients is evident by the number of species recorded even though the land measures less than 0.3ha. The wood anemone and cowslip were single specimens and again grazed by sheep which accidently entered the meadow in the spring of 1992. To date i.e. April 1993 there is no evidence of their reappearance although there has been a diligent search for them on many occasions. The butterburr has been reduced quite drastically which allowed low growing plants more light. Thus this year has shown a marked increase in primroses.

All the trees planted have shown signs of growth but some of the trees have been planted in areas of ground elder and this area needs to be dug to remove the ground elder. A policy of constantly keeping the land under survey to record species not yet identified will be maintained.

A natural path towards the Northgate and Eastgate has now developed and because they are not wellworn or overused they appear greener and shorter than the rest of the meadow.

It is in the meadow area that most of the mature trees exist and on three of the ash trees bird boxes have been mounted in the spring of 1992. Two of the boxes have been inhabited but unfortunately disturbance from a swing and trapeze on the third tree have prevented occupation of the bird box. The box will be left for another year to determine whether blue tits will nest in it and if not the box would be moved to another location.

All the trees have been located accurately by the use of the patent species locator (See photo 7) and appendices 7 & 8. The method employed was to set the locator on the ground at a predetermined position and zeroed with a compass to magnetic north allowing for magnetic deviation. With a tape fixed to the centre the angle and distance to the required tree can easily be determined. It was a simple task then to transfer all the measurements to a map (See Map 1.)

Future management plans are to plant more trees particularly Rowen, Silver birch and Alder but these will be restricted to areas where trees already exist allowing the meadow to reach its potential as a true haymeadow.

In conclusion it can be said that this is an exciting and interesting project to see whether man alone can return the land to a haymeadow condition by cutting the field and raking the debris in early spring and once again after seeding has finished in July/August or whether man needs the help of cattle and sheep to graze the land after seeding.

HABITAT ASSESSMENT. PROFILE 3. THE BOG, WETLANDS. & DUG AREA.

SURVEY DATES:- 1992. MARCH 22,APRIL25, MAY 2, JUNE13.

THE BOG & WETLANDS.

(A) PHYSICAL FEATURES.

Soil analysis:- pH 6.0 Acid -Peaty clay loam.(See appendix 4) This soil has the highest silt and clay content (14%) and a humus content of 9% but the water content is 51%! because this area is fed by Scosthrop beck via the now defunct Mill-race on the other side of the embankment through which it drains.

TERRAIN.

There must be a gentle slope from north to south by the side of the wall and over the area shown. (See map 1 showing wetlands. & map 2 showing the beck and old mill-race) The boundary of the wetland is roughly as shown on the map and eventually drains into the river under the footbridge. Any attempt to enter the bog will find the hapless person up to his calf in black oozy mud but here too there are rich nutrients for wetland flora.

AGE. >100 years.

AREA. <0.5ha.

(B) WILD LIFE FEATURES.
(* = present<3;** = moderately common 3-10;*** = frequent>10)

(1) VEGETATION COVER

LICHENS.
None

MOSSES.

Bryum pseudotriquetrum	***
Hypnum cupressiforme	***

HERBS & WILD FLOWERS.

Common duckweed	Lemna minor	***
Opposite-leafed saxifrage	Chrysosplenium oppositifolium	***
Yellow iris (Slide 34)	Iris pseudacorus	***
Water forgetmenot	Myosotis scorpioides	***
Meadowsweet	Filipendula ulmaria	***
Marsh marigold (Slide 13)	Caltha palustris	***
Great willowherb	Epilobium hirsutum	***
Butterburr	Petasites hybridus	***
Ragged robin (Slide 14&15)	Lychnis flos-cuculi	***
Cuckoo flower (Slide 8)	Cardamine pratensis	***
Lesser celandine	Ranculus ficara	***
Watercress	Nasturtium officinale	***
Water avens	Geum rivale	***
Meadow buttercup	Ranculus acris	***
Red campion	Silene dioica	***

RUSHES & SEDGES.

Compact rush	Juncus conglomeratus	***
Soft rush	Juncus effusus	***
Heath rush	Juncus squarrosus	***
Tufted sedge	Carex elata	***

GRASSES

Mat grass	Nardus stricta	***
Tufted hair grass	Deschampsia caespitosa	***

TREES None.

DUG AREA. ((See plan Map 1)

(A) PHYSICAL FEATURES.

Soil analysis:- pH7.5 Slightly alkaline.Loam.Well drained. (See analysis appendix 4)
The percentage water content here was lower than the meadow and this was surprising as this area lies up to the wetlands although it is somewhat higher.

This can be explained by the fact that the sample taken was close to the step access and furthest from the wetlands Also this area was dug which allowed the water to drain away faster, and there was less humus content here compared to the meadow.

The stone content is high compared to all the other areas but this is explained by the presence of a large pebble found in the sample taken.

TERRAIN.

The area was dug primarily to rid it of butterburr and to create an area bounded by the path defined by old tree trunks and dead timber. This in itself would hopefully create a habitat for insects, mosses and fungi. The line bordering the wetlands has been planted with six osier willows and behind them three goat willows.

(B) WILD LIFE FEATURES.

VEGETATION COVER.

LICHENS.

Hypogymnia physodes.	***
Cetraria chlorophylla	***

MOSSES.

Hylocomium splendens	***

FUNGI None

HERBS & WILD FLOWERS.

Ivy-leaved speedwell	Veronica herderifolia	***
Butterburr	Petasites hybridus	**
Common chickweed	Stellaria media	***
Meadow cranesbill	Geranium pretense	**
Dandelion	Taraxacum hamatum	***

Meadow buttercup	Ranculus acris	***
Lords & ladies	Arum maculatum	***
Lesser celandine	Ranculus ficara	***
Common cleaver	Galium aparine	***
Ramson	Allium ursinium	***
Cow parsley	Anthriscus sylvestris	*
Opposite-leaved saxifrage	Chrisosplenium oppositifolium	***
Field forgetmenot	Myosotis arvensis	**
Hogweed	Heraculeum sphondylium	***
Great willow herb	Epilobium hirsutum	***
Herb Robert	Geranium robertanium	***
Water avens	Geum rivale	***
Meadow sweet	Filipendula ulmaria	***
Primrose	Primula vulgaris	**
Germander speedwelll	Veronica chamaedris	***
White dead nettle	Lamium album	*

INTRODUCED SPECIES.

Honesty	Lunaria annua	**

GRASSES.

Annual meadow grass	Poa annua	***
Yorkshire fog	Holcus lanatus	**
Sweet vernal	Anthoxanthum odoratum	**

TREES. (Introduced.)

Downy birch	Betula pubescens	1
Silver birch	Betula pendula	1
Larch	Larix descidua	1
Bird cherry	Prunus padus	1
Osier willow	Salix viminalis	6
Goat willow	Salix caprea	3

CONCLUSION.

THE BOG & WETLANDS.

This area is enriched by Scosthrop beck bringing nutrients from the embankment and the limestone wall and because the area is constantly wet, slightly acid and peaty different species of flora exist and flourish here.

There is an abundance of rushes and sedges wild Iris, Marsh marigolds, Duckweed, Butterburr, Great willow herb, (These two species need to be restricted to allow shorter plants to flourish.)

In the dryer areas at the northern end Ragged robin, cuckoo flower, Water avens, Red campion, and meadow sweet flourish together with the tufted hair grass, and matt grass.

The area was raked in March of this year to clear it of the dense dead undergrowth of Great willow herb and dead rushes and a vast improvement can be seen in the improved growth of the other species.

A future project in this area wuld be the addition of a small pond by the footbridge to encourage amphibians.

THE DUG AREA.

The ground over this area is about 30cm. higher than the wetlands consequently it is somewhat dryer. The plants that flourish here are similar to those growing in the northern dryer part of the wetlands with the noted absence of Ragged robin which seem to require a damper meadow land although Red campions are growing well here as they require a richer soil indicated by the more alkaline soil found here a pH7.5.

The larch and Bird cherry whips introduced here will not remain permanantly but will be replanted in the meadow land.

It is hoped to plant herbs such as rosemary, parsley mint, coriander and sweet cicely etc. behind the barrier of tree trunks. The whole area would be devoted to introduced plants.

HABITAT ACCESSMENT. PROFILE 4. THE WALL.

SURVEY DATES:- 1992. MARCH 21, APRIL 26, MAY 3, JUNE 21

(A) PHYSICAL FEATURE

The wall extends the complete length of the embankment and beyond the area of "Treasure Island". Because it is a retaining wall soil can penetrate the cracks and gaps in the wall and allow plants to flourish. The height of the wall on average is about five feet and constructed of limestone boulders.

TERRAIN.

The terrain on which the wall sits varies from being damp in the vicinity of the waterfall to being very wet around the centre of the wetlands and then drying gradually towards the stepped access.

AGE. >100 years. as old as the mill.

LENGTH OF WALL. 100 metres approx. X 1.5 metres. high.

(B) WILD LIFE FEATURES.

(* = present<3; ** moderately common 3-10; *** = frequent >10)

The survey was conducted from the waterfall to the stepped access. (North to South.) and species listed are in this order.

(1) VEGETATION COVER.

LICHENS.

Selenopsora candicans		***
Caloplaca heppiana		**
Lepraria incana		**
Cladonia pyxidata (Slide 44)	Cup lichen	***
Caloplaca ferrinea		***
Peltigera canina (Slide 45)	Dog lichen	**

MOSSES.

Camptothecium lutescens	***
Bryum capillare	***
Bryum argenteum	***
Tortella tortuosa (Slide 46)	***
Hypnum cupressiforme (Side 47)	***
Mnium hornum	***
Neckera complanata (Slide 48)	***

FERNS.

Maidenhair spleenwort fern (Slide 49)	Asplenium trichomanes	**
Wall rue	Asplenium ruta-muraria	*

HERBS & FLOWERS.

Nettle stinging	Urtica dioica	***
Hairy bittercress (Slide 50)	Cardimine hirsutra	**
Common cleavers	Gallium aparine	***
Field forgetmenot	Myosotis avensis	***
Dandelion	Taraxacum hamatum	**
Shining cranesbill	Geranium lucidum	***
Cut leave cranesbill	Geranium dissectum	***
Herb Robert	Geranium robertianum	***

CONCLUSION

THE WALL

The wall is very rich in a variety of mosses and lichens and offers a good backdrop to the plants in the meadow and wetlands. The history of the mill dates back to early medieval times but even if the developement of the mill took place during the time of the industrial revolution, it would date it at 1787 when a consortium of local people negotiated with Mr. Alcock the then owner to purchase the freehold in order to commence improvements and alterations to add to the original mill and increase the water supply to the waterwheels which were the only source of power at that time. It is surmised that the wall and embankment was improved and strengthened at the same time.
(Reference:- History of Airton mill by W. Sharp)
Therefore it can be assumed that the mosses and lichens must be very ancient,evidenced by the fact that the mosses are very luxuriant and thick on the wall. It was interesting to note that the moss Neckera complanata existed on the upper part of the wall whilst the Hypnum cupressiforme inhabited the lower damper reaches of the wall. The Spleenwort fern and wall rue were all found in the vicinity of the waterfall area. The dog lichen flourished in the wettest area and is shaded by a Hawthorn tree growing on the embankment.

HABITAT ACCESSMENT. PROFILE 5. THE WATERFALL. (See slide 54)

SURVEY DATES:-1992 MARCH 21, APRIL 26, MAY 3, JUNE 21.

(A) PHYSICAL FEATURES.

Scosthrop beck runs through a concrete sluice at its junction with the river Aire. This sluice lies within "Treasure Island" and is about 1.5 metres above the river and just over one metre wide. A good opportunity offered itself to break up the harsh line of the concrete sluice by building a small waterfall with rocks from the river in a gentle slope over a length of over two metres. The waterfall was the very first task undertaken and completed by the end of September 1991.

TERRAIN

A series of limestone rocks and boulders especially those covered in moss were extracted locally from the river and built up to the concrete sluice to make a small waterfall running from the sluice to the river. (See slide 54)
Alluvial soil as run-off is deposited amongst the rocks and forms rich areas for plants to flourish. The results can be seen by comparing slides 35, 51 and 52 with 54.

SCOSTHORPE BECK. Fast flowing - runs through fields and narrow channels sometimes underground. it is generally very clear with the depth varying between 10cm.in the summer months to an average depth of 20cm. in the winter.The quality is A1 according to the N.R.A. analysis.
(See N.R.A.'s analysis appendix 2 & 3)

AGE. >100 years.

(B) WILD LIFE FEATURES

VEGETATION COVER.

LICHENS.

Lunularia cruciata		***

MOSSES

Hylocomium splendens		***
Tortella tortuosa		***

HERBS & WILD FLOWERS

Monkey flower	Mimulus guttatus	***
Nettle stinging	Urtica dioica	*
Opposite-leaved saxifrage (Slide 51)	Chrysosplenium oppositifolium	***
Water forgetmenot(Slide 52)	Myosotis scorpiodes	***
Wavy bittercress	Cardamine flexuosa	**
Watercress	Nasturtium officinale	**
Red campion	Silene dioica	***

CONCLUSION.

THE WATERFALL.

Although the waterfall was only created in September 1991 the plants have established themselves extremely well and have infact taken over from the mosses which initially came with the rocks from the river. The monkey flower was introduced and has established itself so well that it became necessary to request a visit from the N.R.A.pollution officer because indications were that there was too much Nitrate running into Scosthrop beck as all the plants showed signs of extreme leaf growth at the expense of flowers. The monkey flower had stems as thick as a thumb and grew to prodigious heights. (See slide 35)
(See N.R.A.'s analysis appendix 2 & 3) and the following conclusions.

SCOSTHROP BECK:-

The N.R.A. survey was conducted on 16 June 1992. and it can be seen that the Nitrate levels A4.69mg./L only just falls within a Class 1A river(A5.0mg/L) and is about ten times as high as the river Aire on 10 July 1990. which more than justified a test to be taken.

Nevertheless N.R.A. conclude that the beck is a Class 1A river condition.

pH. The pH. at 7.24 was as expected for a beck in a limestone area although this was slightly lower than the river because the beck ran over meadows and sometimes underground.

B.O.D.0.9mg./L Biochemical Oxygen Demand. This was even lower than the last reading taken for the Aire and confirms the improvement in the use of chemicals and reduced application of slurry and manure.

C.O.D.10mg./L Chemical Oxygen demand. This was not taken for the river Aire so no conclusions or comparisions can be made.

NITROGEN AMMONIA.0.08mg./L This reading was somewhat higher than those taken in the Aire and can be accounted for by the beck running over meadow land.

NITROGEN TOTAL OXIDE 4.7mg/L Again no comparision can be made with the Aire as this reading was unique to this sample.

NITRATE A 4.69mg/L As stated previously this reading just falls within the scope of a class 1A river and even if a comparision is made with a reading taken only one month later from the Aire at A2.26 mg/L Nitrate levels in Scosthrop beck is more than double that of the Aire. It can therefore be concluded that application of nitrate to the soil in farms around Scosthrop seem unreasonably high and affecting the plants growing on the rocks of the waterfall.

NITRITE < 0.01mg/L Exactly the same as the Aire so no comment can be made.

SOLID PARTICLES @ 105C mg/L At 6mg/L considerably higher than the Aire but can once again be attributed to the beck running over the meadows and picking up solids on the way.

OTHO-PHOSPHATE mg/L Level is below .03mg/L and the same as the Aire.

SUMMARY.

The survey is now complete for the present and for the purpose of this project. It has brought about all the changes that have occurred since the land was purchased in 1991. There has already been a vast improvement to the flora both in the quantity of the finer herbs and flowers and in the appearance of the field and this must be to the gain of walkers on the Pennine Way.

However, a constant monitor of "Treasure Island " will be undertaken to try to improve the land for its aesthetic, wild life and flora values. In March of 1993 the meadow was raked to rid it of dead grasses, moss and debris. (See slide 41) and also the wetlands were raked (Conclusion Wetlands refers.) This year will see the task of restricting and limiting the Butterburr and Ground elder on the meadow continue. The Ground elder will be removed by digging rather than use herbicides for fear of damaging other species.

Additional features to be added for future projects would be a small pond located within the footbridge area, and a bird-hide within the small copse of hawthorn trees 27-30. (See map 1) More trees will be planted from October to December. The species selected will be Mountain Ash, Silver Birch, Alder, Cherry and Field maple. The same species being planted together in small groups.

This project is obviously an on-going one and its aim is to provide information on the botanical interest on all the habitats within "Treasure Island"

All five habitats have been studied and described and shows that this isolated piece of land small though it is reflects a microcosm of all that is typical of Dales vegetation and offers a niche to all the wild life it supports.

ACKNOWLEDGEMENTS.

Mr. Edward Wilkinson. Course tutor.

Mr. Kevin Lambert. Course practical instructor.

Mr. Nigel Hutchinson for supplying additional trees.

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Mr. D. J. Gallagher N. R. A.
For his sample report on Scosthrop beck & river Aire.

Fellow students who helped erect the fence.

Craven District Council for their donation of ten trees.

Riverside Walk management Co. Ltd. for allowing the stepped accesss to be built.

Mr. Jon Avison, Yorkshire Dales National Park Officer for his advice on trees and woodlands grant aid.

The following reference books were used to complete the Habitat Surveys:-

The Wild Flowers of Britain & Northern Eurpope.	R. Fitter : A. Fitter : M. Blamey
British Wildlife	N. Arlott : R. Fitter : A. Fitter.
The Sunday Times Countryside Companion	G. Young.
Grasses, Sedges, Rushes and Ferns of Britain and Northern Europe	R. Fitter A Fitter : A Farrer.
Mushrooms	R. Phillips : J. Hurst.
Mushrooms and Toadstools.	S. Buczacki : J. Wilkinson
Trees	A. Fitter : D. More
Trees and Shrubs	W. H. Rowe
A History of Airton Mill.	W. Sharp.

.SFS.WATQ.PAGE.01. 9 MAR 93 15:46

WATERQUALITY FILE ENQUIRY TYPE 1

SPT=.494T665 . START DATE=.01..01..89. END DATE=.31..12..92. NO DETS .9.
RIVER AIRE ABOVE AIRTON STW

			DETERMINAND VALUES							
DATE -	TIME	PURPOSE	.0061..	.0081..	.0082..	.0085..	.0111..	.0117..	.0118..	.0135..	.0180.
10071990	0950	PR S	8.000	100.0	11.10	*1.200	.0600	A.4900	<.0100	2.000	<.0300
29111990	1038	PR S	7.950			*2.400	<.0500	A1.390	<.0100	3.000	<.0300
03071991	1210	PR S	8.070			*1.000	<.0500	A.8400	<.0100	1.000	<.0300
02101991	1155	PR S	8.050			*1.800	<.0500	A.9200	<.0100	4.000	.0300
15011992	1200	PR S	7.900			*1.200	<.0500	A1.930	<.0100	4.000	<.0300
02041992	1150	PR S	8.240			*1.700	<.0500	A1.430	<.0100	3.000	<.0300
09071992	1130	PR S	8.020			*1.100	<.0500	A2.260	<.0100	3.000	<.0300

NO MORE RECORDS

0061 = pH

0081 = DO %

0082 = DO $mg\,l^{-1}$

0085 = BOD $mg\,l^{-1}$

0111 = Ammonia $mg\,l^{-1}$

0117 = Nitrate $mg\,l^{-1}$

0118 = Nitrite $mg\,l^{-1}$

0135 = Solids $mg\,l^{-1}$

0180 = Ortho phosphate $mg\,l^{-1}$

APPENDIX 2

NRA

National Rivers Authority
Yorkshire Region

Mr Waller
13 Old Mill
Airton
Near Skipton
North Yorkshire

Your Ref:

Our Ref : OH/PC/DJG
A/R:52

22 June 1992

Dear Mr Waller

Water Quality Scosthorpe Beck - Airton

I refer to the recent visit of my Pollution Control Officer, Mr Gallagher, regarding the above matter. As you are aware a sample of the watercourse was taken and please find enclosed a copy of the analysis. The analysis indicates that the watercourse is satisfactory and meets our criteria for a Class 1A river (water of high quality suitable for portable supplying abstractions and for all other abstractions).

If you require any further information or advice on this matter please contact my office at the address below.

Yours sincerely

Mr T Ward
AREA POLLUTION CONTROL MANAGER

For telephone enquiries contact D J GALLAGHER EXTN 2168
SK 508

Olympia House
Gelderd Road
Leeds
LS12 6DD
Tel: Leeds (0532) 440191
Fax: (0532) 312116
Kenneth W. Newham
Regional General Manager

YORKSHIRE N.R.A. ARCHIVED SAMPLE REPORT

- INVESTIGATIONAL RIVER ANALYSIS

URN: **4PZ0070 AIRE ZONE 1**

SAMPLE TAKEN ON: **8-Jun-1992** AT **1345**

PURPOSE CODE: PI S LAB NO: 177031 LOCAL REF: C111182

WEATHER: APPEARANCE: FLOW:

DISTRICT: AIRE COMMENTS: @ AIRTON SD904593

VALIDATION DATE: 16-Jun-1992 TAKEN BY: D. J. Gallagher

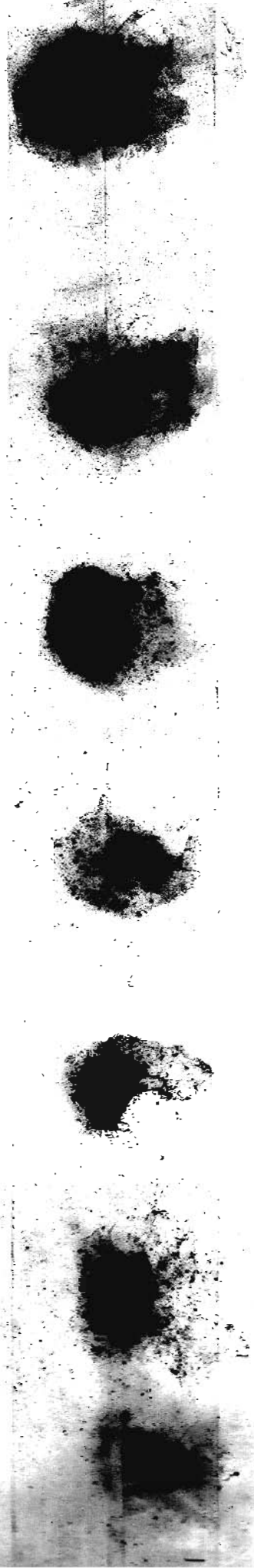
DET	UNITS		RES	DET ST	LOWER 99%	UPPER 99%	FIXED LIM 1	FIXED LIM 2
pH			7.24	E				
BOD TOTAL +ATU	mg/l	O	0.9	E				
COD TOTAL	mg/l	O	10	E				
NITROGEN AMMONIAC	mg/l	N	0.08	E				
NITROGEN TOT OXID	mg/l	N	4.70	E				
NITRATE	mg/l	N	A 4.690	G				
NITRITE	mg/l	N	< 0.01	E				
SOLIDS PARTC 105C	mg/l		6	E				
O-PHOSPHATE	mg/l	P	< 0.03	E				

Print run on 16-Jun-1992

SOIL ANALYSIS

	RIVER BANK	MEADOW.	WETLANDS.	DUG PATCH.
pH	7.50	7.00	6.00	7.50
WATER %	23.00	38.00	51.00	29.00
HUMUS %	7.00	11.00	9.00	9.00
STONE %	3.00	8.00	2.00	27.00
GRAVEL %	24.00	17.00	6.00	6.00
COURSE SAND %	22.00	11.00	13.00	13.00
FINE SAND %	10.00	6.00	6.00	6.00
VERY FINE %	4.00	3.00	3.00	4.00
SILT %	1.00	1.00	2.00	2.00
CLAY %	6.00	5.00	12.00	8.00

RIVER BANK SAMPLE



CLAY	0.6g
SILT	0.1g
VERY FINE SAND	0.4g
FINE SAND	1.0g
COURSE SAND	2.2g
GRAVEL	2.4g
STONE	0.3g

TREE & SHRUBS.(Within fence perimeter)

A general land survey was conducted on 22-MARCH-92 to identify and record all the trees and shrubs on the land. (See plan 1.)

TREE.		QUANTITY
ASH.(Fraxinus excelsior)		3.
HAWTHORN.(Crataegus monogyna)		24.
DOG ROSE.(Rosa canina)		3.
	TOTAL	30.

TREES & SHRUBS. (River Bank.)

ASH. (fraxinus excelsior)		5.
ELM. (Ulmus procera)	Regenerated	1.
HAWTHORN.(Crataegus monogyna)		13.
DOG ROSE. (Rosa canina)		1.
	TOTAL	20

Further surveys of the flora within their own habitats were conducted during the spring and summer months and recorded.

TREES & SHRUBS WITHIN FENCE PERIMETER.

TRIG. POINT:-DUE N. TO GATE STRAINER 12.8ft.

DUE E. 72ft.

		MAP (mm) conversion	DISTANCE ft.	ANGLE degrees
1	CENTRAL ASH.	19.8	28.3	83
2	HAWTHORN (OLD)	18.9	27	89
3	DOG ROSE.	11.9	17	97
4	HAWTHORN	45.2	64.5	108
5	HAWTHORN	48.0	68.5	115
6	HAWTHORN	53.8	76.8	118
7	HAWTHORN	27.0	38.5	119
8	DOG ROSE	28.8	41	121
9	HAWTHORN	39.2	56	123
10	HAWTHORN	49.5	70.6	127
11	HAWTHORN (SMALL)	60.3	86	132
12	HAWTHORN	62.1	88.6	133
13	HAWTHORN (OLD) WITH IVY	62.4	89	134
14	HAWTHORN (OLD) WITH IVY	61.4	87.6	138
15	HAWTHORN	62.0	88.5	141
16	DOG ROSE	62.3	89	142
17	HAWTHORN (SMALL)	64.2	91.6	155
18	ASH	40.6	58	161
19	HAWTHORN	31.4	44.75	167
20	ASH (WITH SWING)	48.4	69	169
21	HAWTHORN (YOUNG)	61.3	87.5	170
22	HAWTHORN(YOUNG)	62.7	89.5	177
23	HAWTHORN (YOUNG)	76.9	109.62	178
24	HAWTHORN (YOUNG)	17.2	24.5	180
25	HAWTHORN (OLD)	61.7	88	324.5
26	HAWTHORN (YOUNG)	22.4	32	325
27	HAWTHORN (YOUNG)	64.5	92	325
28	HAWTHORN (OLD)	60.5	86	327
29	HAWTHORN (OLD)	64.2	91.5	328
30	HAWTHORN (2)	65.9	94	330

THE RIVER & RIVER BANK

		MAP (mm) conversion	DISTANCE ft	ANGLE degrees.
1	HAWTHORN	45.00	64.20	2.00
2	DOG ROSE	43.50	62.00	39.00
3	HAWTHORN	43.50	62.00	40.00
4	ASH	44.00	62.80	42.50
5	HAWTHORN	45.00	64.20	45.00
6	HAWTHORN	43.50	62.00	47.00
7	HAWTHORN	45.50	65.00	47.50
8	HAWTHORN	45.00	64.20	53.50
9	HAWTHORN	51.50	73.50	90.00
10	HAWTHORN	56.00	80.00	105.00
11	HAWTHORN	91.50	130.50	164.00
12	HAWTHORN	93.00	132.70	165.50
13	ASH (young)	109.00	155.50	172.50
14	ASH (young)	111.00	158.30	173.50
15	ELM (regenerated)	113.00	161.20	174.00
16	ASH (young)	120.60	172.00	176.00
17	HAWTHORN	70.10	100.00	331.50
18	HAWTHORN	71.00	101.30	332.00
19	HAWTHORN	68.00	97.00	333.00
20	ASH (Large old)	59.00	84.20	343.00

FENCING COSTS.		QUANTITY	PRICE.
ROUND TANALISED POSTS.5ft.-6ins	95p ea.	50	£47.50
STR AINING POST.	£6 ea.	6	£36.00
WIRE NETTING C-8/80/15	£22 ea.	3	£66.00
STAPLES	£14/BOX.	half	£7.50
BARB WIRE	£12.50 ea.	1	£12.50
SUB TOTAL			£169.50
V.A.T.			£29.67
TOTAL			£199.17

GATE COSTS.

CRANKED BANDS W/- HOOKS ON PLATE.	5.78ea.	2	£11.56
OVAL PADLOCK BOLT 4.1/2 ins	1.92 ea.	2	£3.84
AUTO GATE CATCH	2.10 ea.	2	£4.20
SUPADRIV STL WD. SCREWS. 1.1/2 ins x 10		30	£1.11
MS SQ HD COACH SCREW 1.1/2 ins x 3/8		4	£1.26
MS SQ HD COACH SCREWS 1.1/2 ins x 5/16		8	£2.00
MS JAPANNED RD HD WD SCEWS		8	£1.40
FENCING POSTS RD & 1./2 RD			£17.40
SUPADRIV STL WD SCREWS 3ins x 12	8p ea.	70	£5.60
SUBTOTAL			£47.97
V.A.T.			£8.39
TOTAL			£56.36

BIRD BOX COSTS

TIMBER			£11.00
GRAND TOTAL			£266.53

ESTIMATED COST OF POND

Approximate size of pond:- 27ft x 17ft = 460 sqft.

Maximum depth:- 2ft 6in.

EPDM (Rubber Liner) 32ft x 22ft = 704 sqft.

EPDM @ 52p per square ft. = £366.08

To dam and divert water, to dig pond, to line pond and to place stones ontop of liner, to fill pond:-

80 man/hrs. @ £10.00/hr. = £800.0 TOTAL = £1166.08

ESTIMATED COST OF TREES.

ALDER (Alnus Glutinosa)	@ 0.65ea. 3 Off	= £1.95
ASPEN (Populus Tremula)	@ 0.65ea. 2 Off	= £1.30
BEECH (Fagus Sylvatica)	@ 0.65ea. 1 Off	= £0.65
BEECH (Fagus Purpurea)	@ 0.65ea. 1 Off	= £0.65
CRABAPPLE (Pyrus Malus floribunda)	@ 0.65ea. 1 Off	= £0.65
CRABAPPLE (Pyrus Malus Aldenhamensis)	@ 0.65ea. 2 Off	= £1.30
DOGWOOD (Alba Siberica)	@ 0.65ea. 6 Off	= £3.90
GUELDER ROSE (Viburnum Carlesii)	@ 0.65ea. 6 Off	= £3.90
HAZEL (Corylus Avellana)	@ 0.65ea. 3 Off	= £1.95
LIME (Tilia Cordata)	@ 0.65ea. 3 Off	= £1.95
OAK (Quercus Coccinea Splendens)	@ 0.70ea. 2 Off	= £1.40
ROSE (Rosa Moyesii)	@ 0.70ea. 6 Off	= £4.20
ROSE (Rosa Rugosa)	@ 0.70ea. 6 Off	= £4.20
SPINDLE TREE (Euonymus Europaeus)	@ 0.90ea. 3 Off	= £2.70
	TOTAL	= £30.70

TOTAL FOR GRANT APPLICATION:- £1166.08+&30.70 = £1196.78

North Yorkshire County Council
YORKSHIRE DALES NATIONAL PARK

GRANT AID TO FARMERS & LANDOWNERS

A Contract & Authorisation

CATEGORY	TICK	CATEGORY	TICK
Agricultural Buildings		Visitor Damage	
Archaeological Sites		Trees & Woodlands	✓
Built Environment		Eyesore Removal	
Wildlife/Scientific		P R O W	
		Conservation Schemes	

Ref No JA/300.

Name F. WALLER

Address 13 RIVERSIDE WALK, AIRTON.

Parish AIRTON. NGR SD 90355940.

Description of project and detailed estimate of TOTAL costs: Grant towards the cost of planting trees and fencing at Riverside walk Airton Hill..

TOTAL Estimated Cost £ 290 —.

Grant Aid agreed/recommended (%) 75

The above project has been jointly inspected and implementation of work is authorised under the agreed terms as specified. Detailed separate receipts/invoices will be submitted to support payment for Grant Aid. All works to be completed within three months of this agreement.

Signed F Waller Farmer/Landowner

Signed Authorising Officer

Date of Agreement: 8/3/93.

Offer of grant expires: 8/6/93.

B Certificate of Completion

Ref No

The above project has been completed to my satisfaction and relevant receipts/invoices have been verified.

TOTAL costs — actual £

Grant aid authorised as agreed £

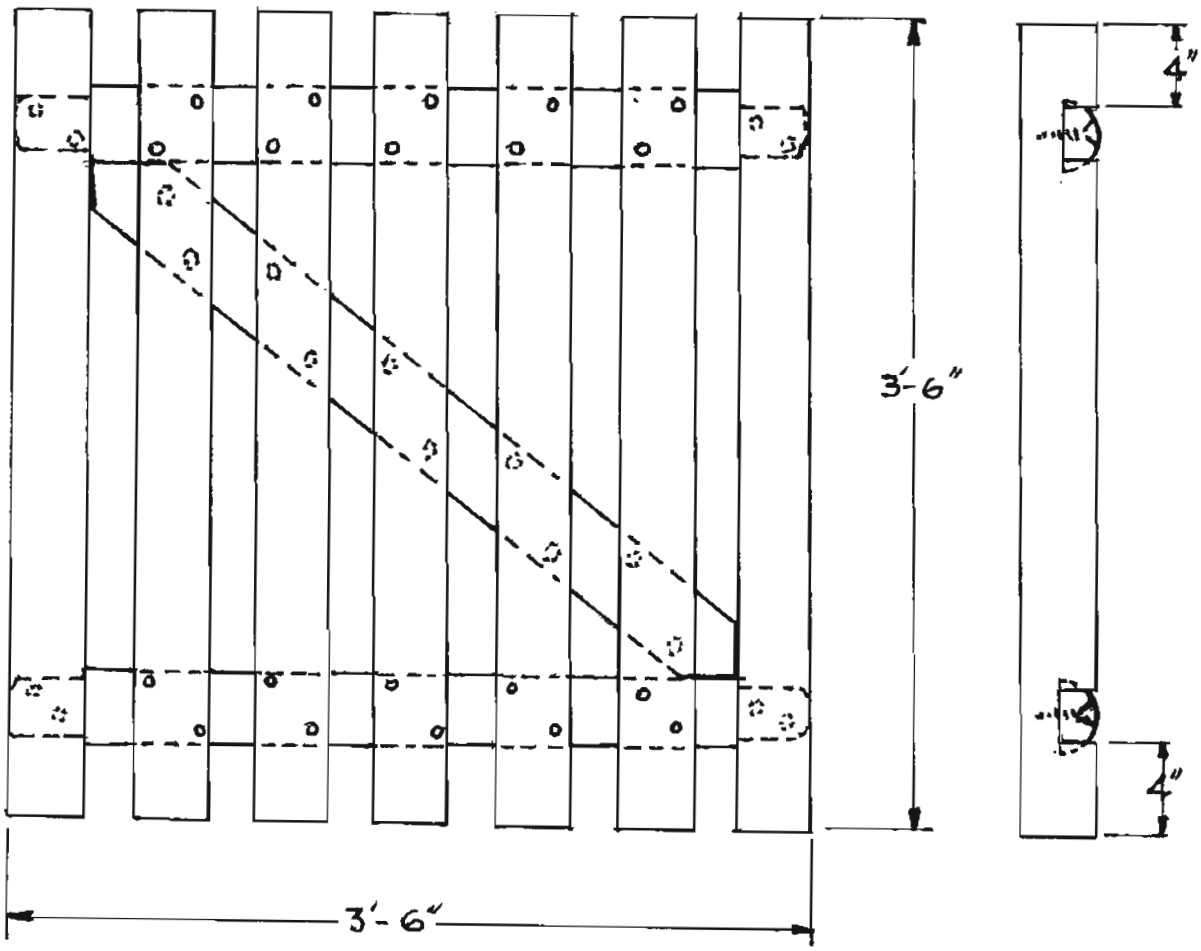
Payment to:

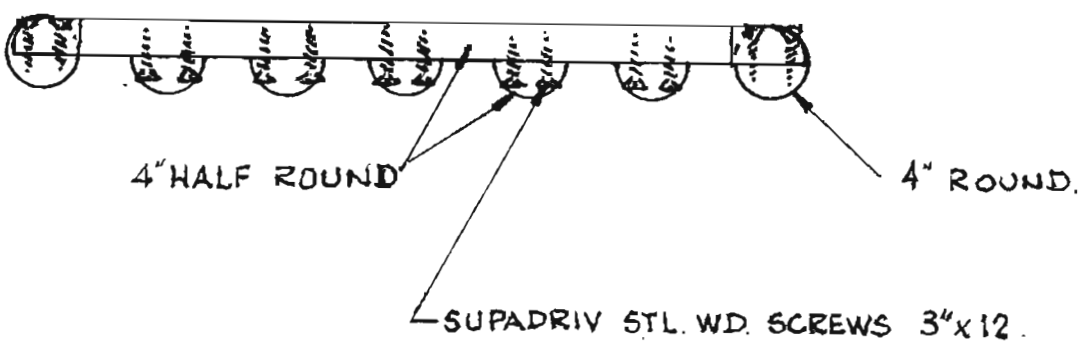
Signed (Authorising Officer)

Signed (Designated Officer) Date

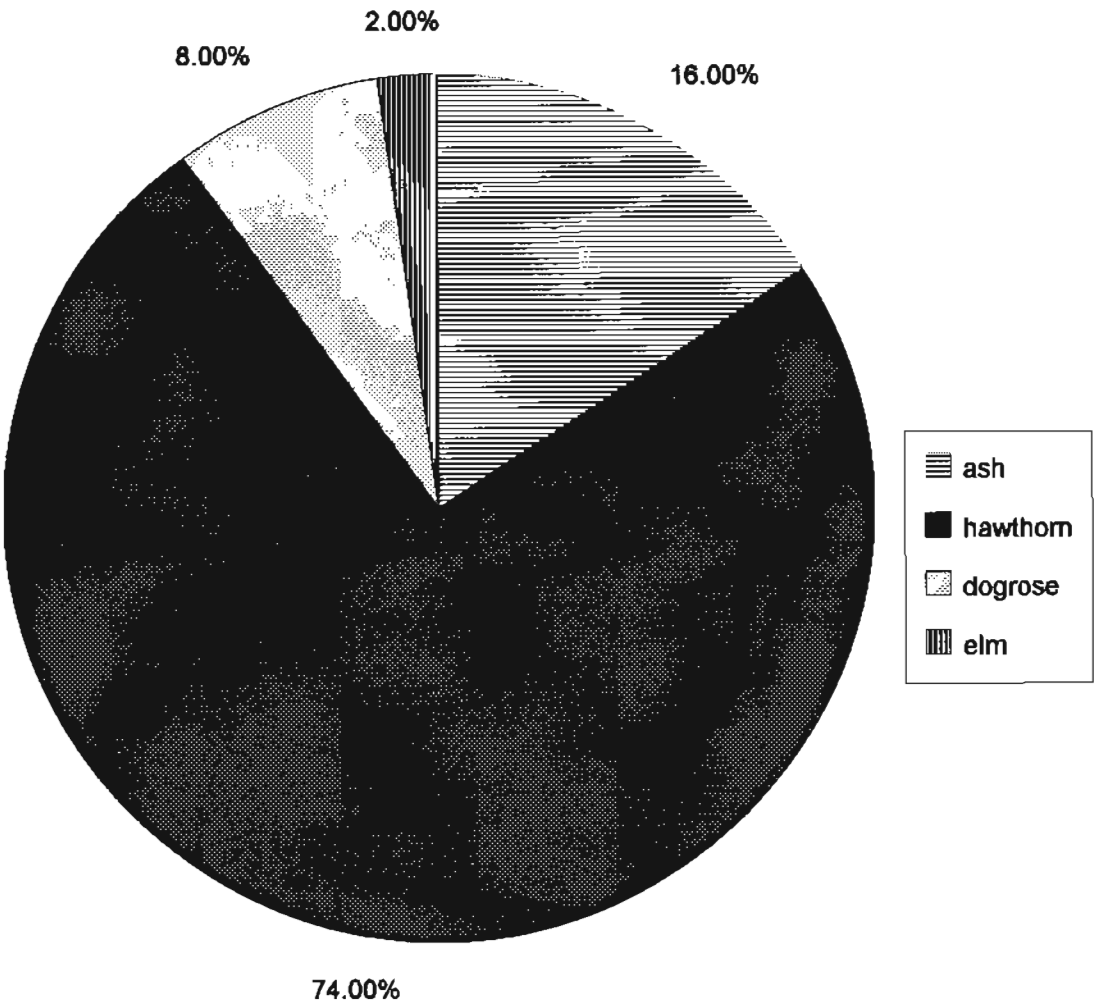
YDNP 23 PLACE BACKING SHEET BENEATH FIRST YELLOW COPY BEFORE WRITING

SKETCH 1





TREES & SHRUBS



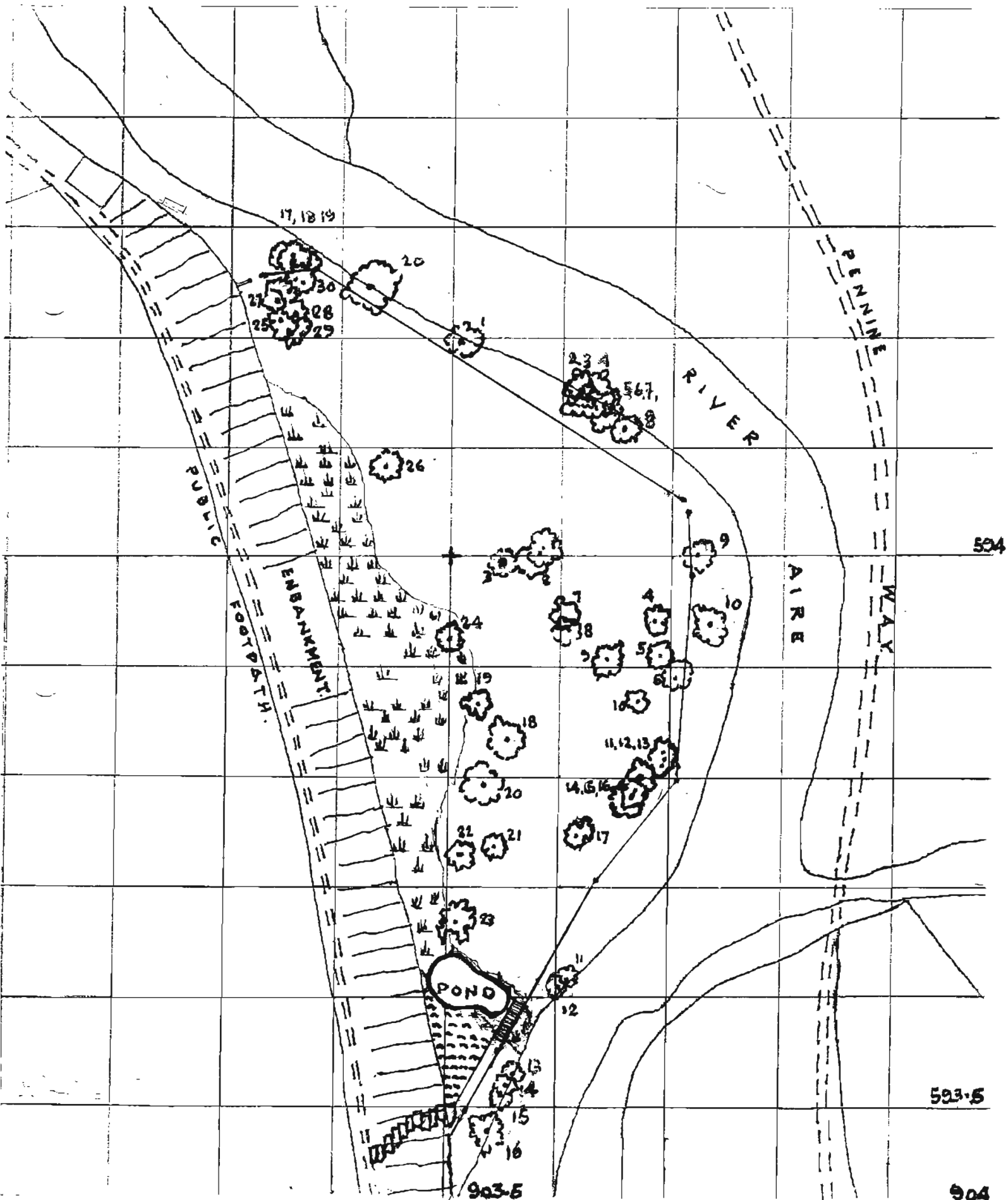
MAP 1

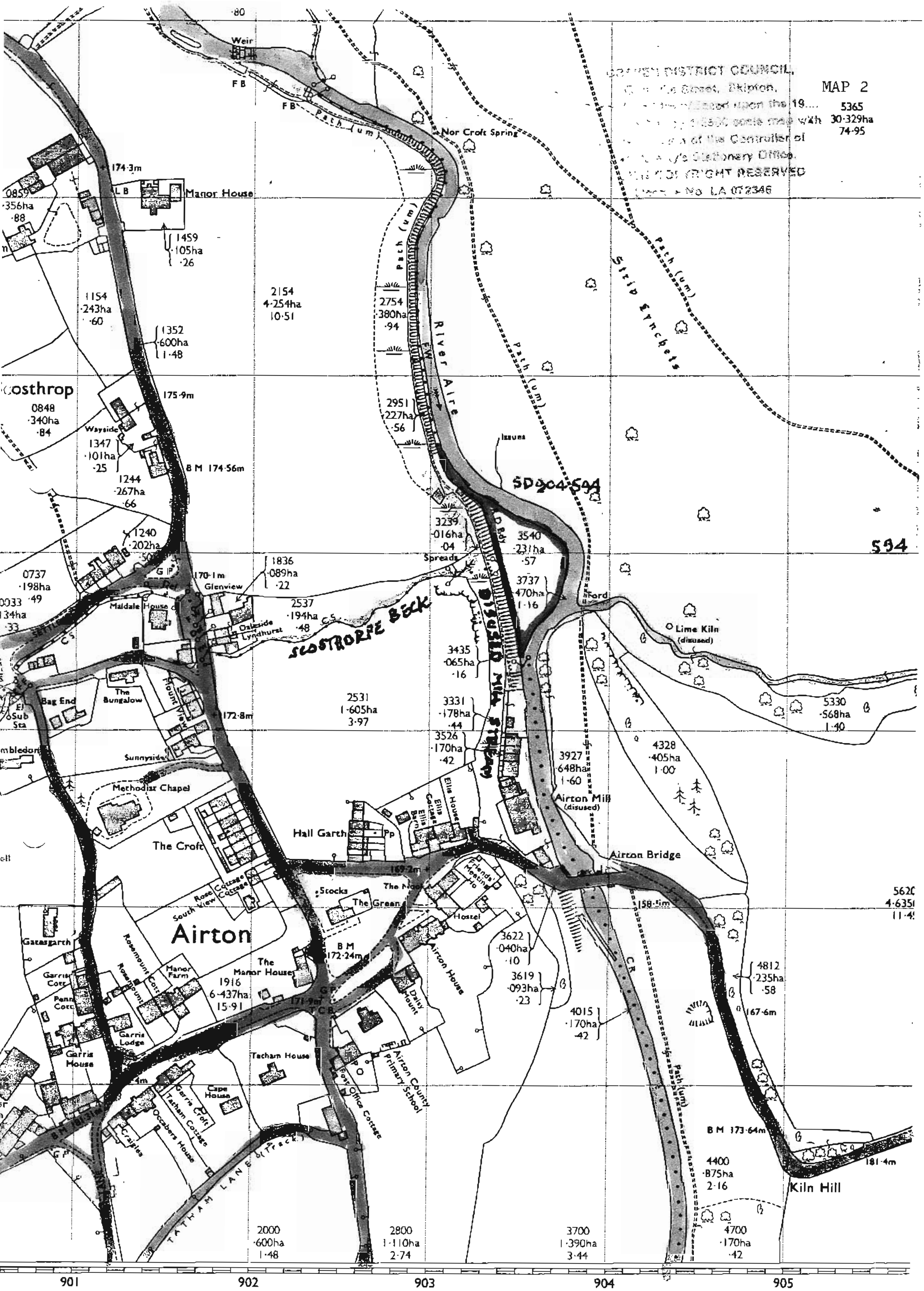
0 5 10 20 30 40 50 M.

SCALE:- 2·3cm to 10M 1:435.

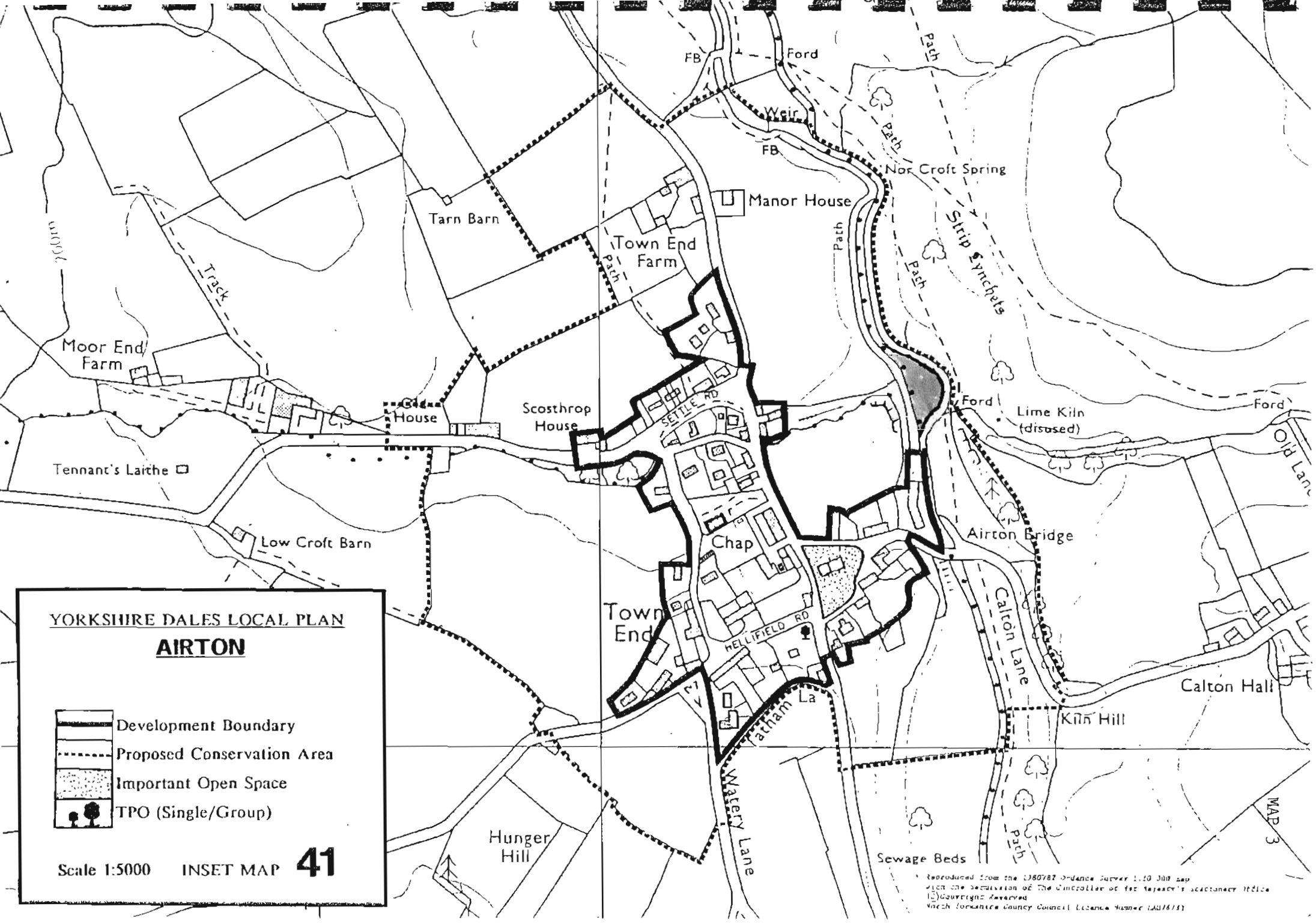
ASH. DOGROSE BOG & WETLANDS

HAWTHORN. ELM. DUG AREA.




MAP 2
CRAVEN DISTRICT COUNCIL
CROWN COPYRIGHT RESERVED
5365
30·329ha
74·95
Weir
F B
Path (um)
Nor Croft Spring
Manor House
L B
174·3m
0859
·356ha
·88
1459
·105ha
·26
Strip Lynchets
1154
·243ha
·60
2154
4·254ha
10·51
2754
·380ha
·94
River Aire
1352
·600ha
1·48
Scosthrop
0848
·340ha
·84
175·9m
2951
·227ha
·56
Wayside
1347
·101ha
·25
B M 174·56m
Issues
1244
·267ha
·66
SD 904 594
1240
·202ha
3239
·016ha
·04
3540
·231ha
·57
594
0737
·198ha
·49
170·1m
Glenview
1836
·089ha
·22
Spreads
3737
·470ha
1·16
Ford
0033
·134ha
·33
Maidale House
2537
·194ha
·48
Oakside
Lyndhurst
SCOSTHROPE BECK
DISUSED MILL STREAM
Lime Kiln (disused)
3435
·065ha
·16
Bag End
The Bungalow
Mount View
2531
1·605ha
3·97
3331
·178ha
·44
5330
·568ha
1·40
El Sub Sta
172·8m
3526
·170ha
·42
4328
·405ha
1·00
Sunnyside
3927
·648ha
1·60
Methodist Chapel
Ellis House
Ellis Cottage
Ellis Barn
Airton Mill (disused)
Hall Garth
Pp
The Croft
169·2m
Airton Bridge
Friends' Meeting Ho
Stocks
The Nook
The Green
158·5m
5620
4·6351
11·4
South View Cottage
Rose Cottage
Hostel
Airton
Gatesgarth
B M 172·24m
The Manor House
Rosemount Cott
Manor Farm
3622
·040ha
·10
Airton House
4812
·235ha
·58
Garris Cott
1916
6·437ha
15·91
3619
·093ha
·23
Penn Cott
Garris Lodge
171·9m
G P
T C B
Daisy Mount
4015
·170ha
·42
167·6m
Garris House
Tatham House
P O
Airton County Primary School
Cape House
Garris Croft
Tatham Cottage
Post Office Cottage
Occabers House
B M 181·31m
Craigles
TATHAM LANE (Track)
B M 173·64m
4400
·875ha
2·16
181·4m
Kiln Hill
2000
·600ha
1·48
2800
1·110ha
2·74
3700
1·390ha
3·44
4700
·170ha
·42
901
902
903
904
905

AIRTON C.P



YORKSHIRE DALES LOCAL PLAN

AIRTON

Development Boundary

Proposed Conservation Area

Important Open Space

TPO (Single/Group)

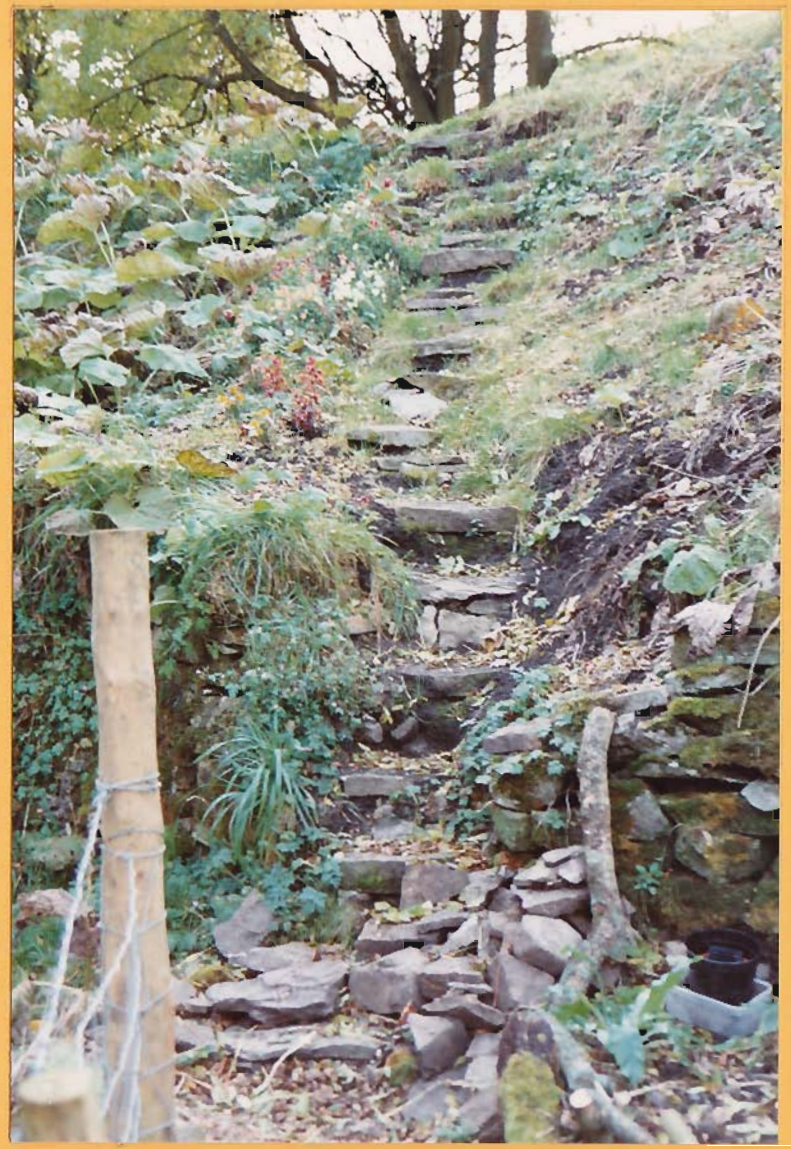
Scale 1:5000 INSET MAP **41**

1. GATE CONSTRUCTION - NORTHGATE.

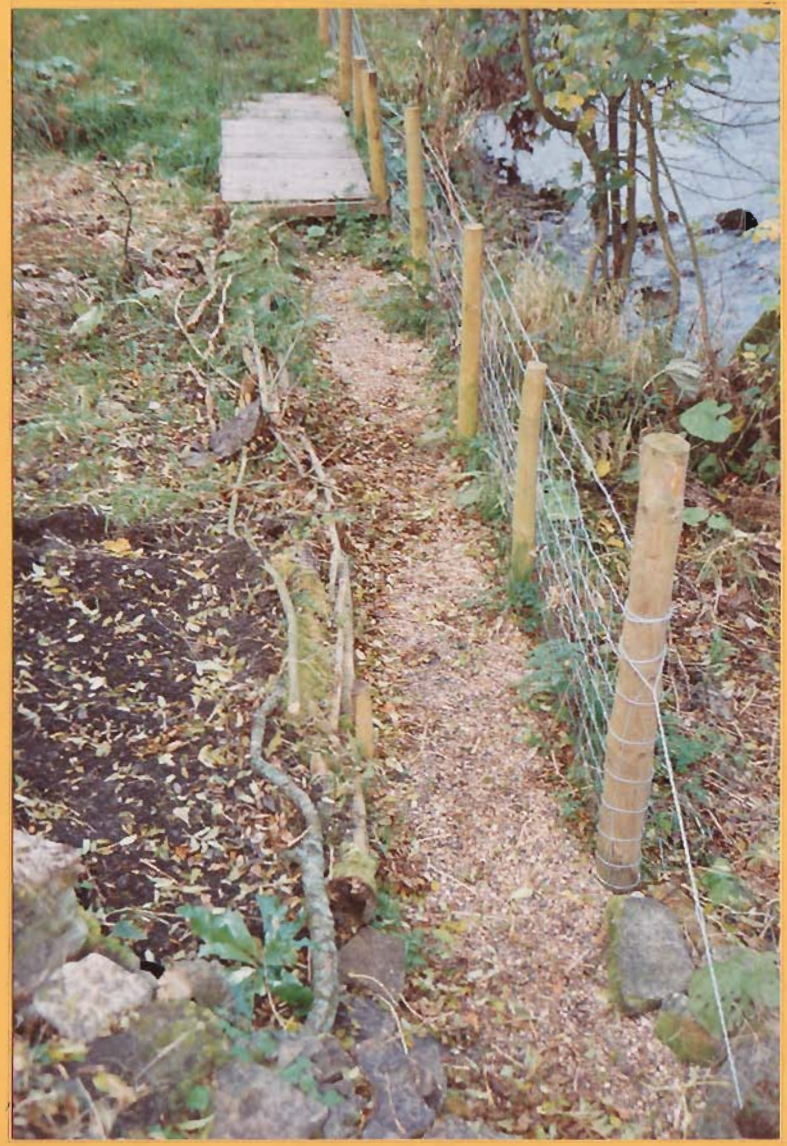
2. GATE CONSTRUCTION - EASTGATE.

3. FENCE CONSTRUCTION - SHOWING STEPPED FENCE.

4. FOOTBRIDGE CONSTRUCTION.



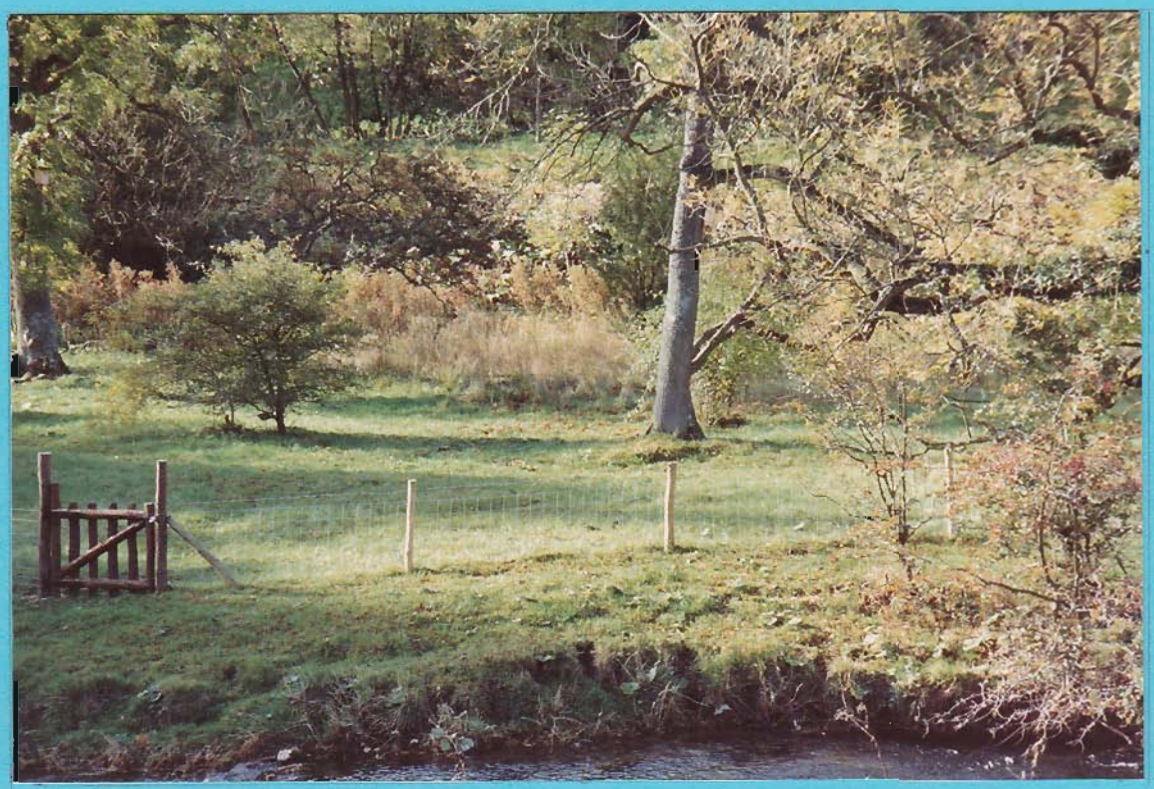
6. STEP-ACCESS CONSTRUCTION.



5. FOOTPATH CONSTRUCTION.

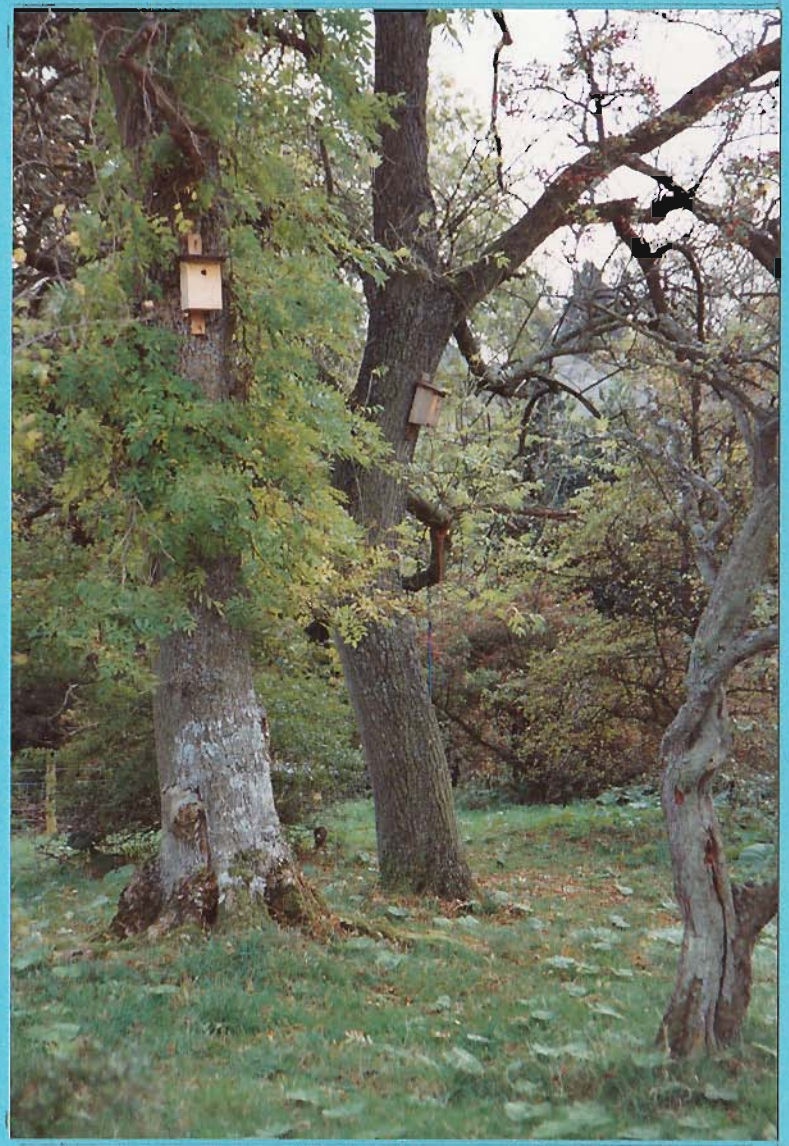
7. PATENT SPECIES LOCATOR.

8. INSTALLED PEW BY WATERFALL.

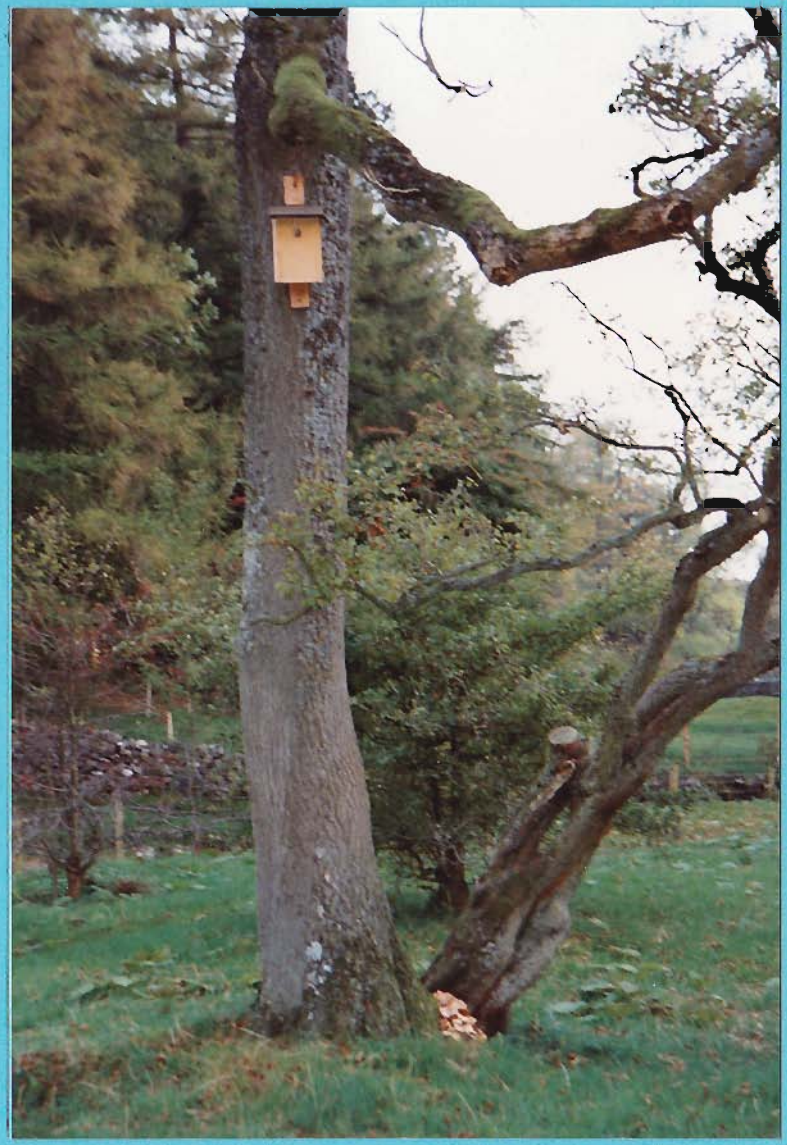


9. RIVERBANK (FOREGROUND), MEADOW (MIDDLE)
WETLAND & BOG. (BACKGROUND)

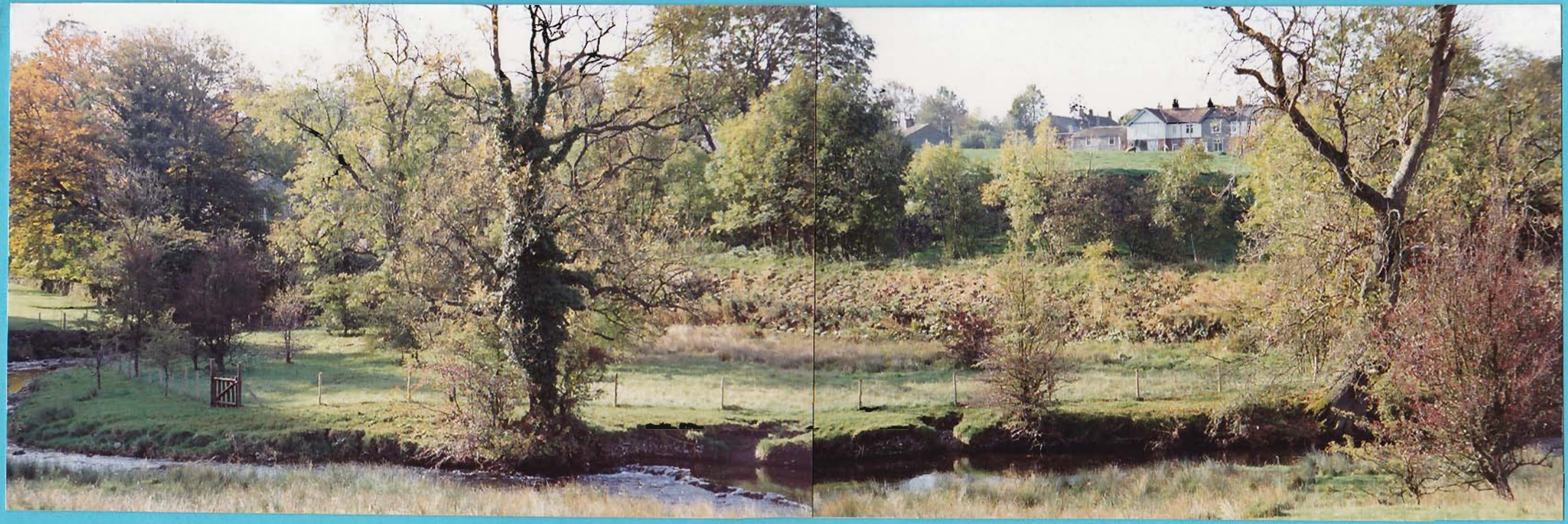
10. RIVERBANK. BEYOND NORTHGATE.



12. ASH TREES Nos 18 & 20 WITH BIRD BOX.



11. ASH TREE No 1 WITH BIRD-BOX.



13. VIEWS OF 'TREASURE ISLAND FROM OPPOSITE BANK.