

Williamson Park Site Management Plan

September 2006

*Give fools their gold, and knaves their power,
Let Fortune's bubbles rise and fall:
Who sows a field or plants a flower,
Or plants a tree, is more than all.*

WHITTIER

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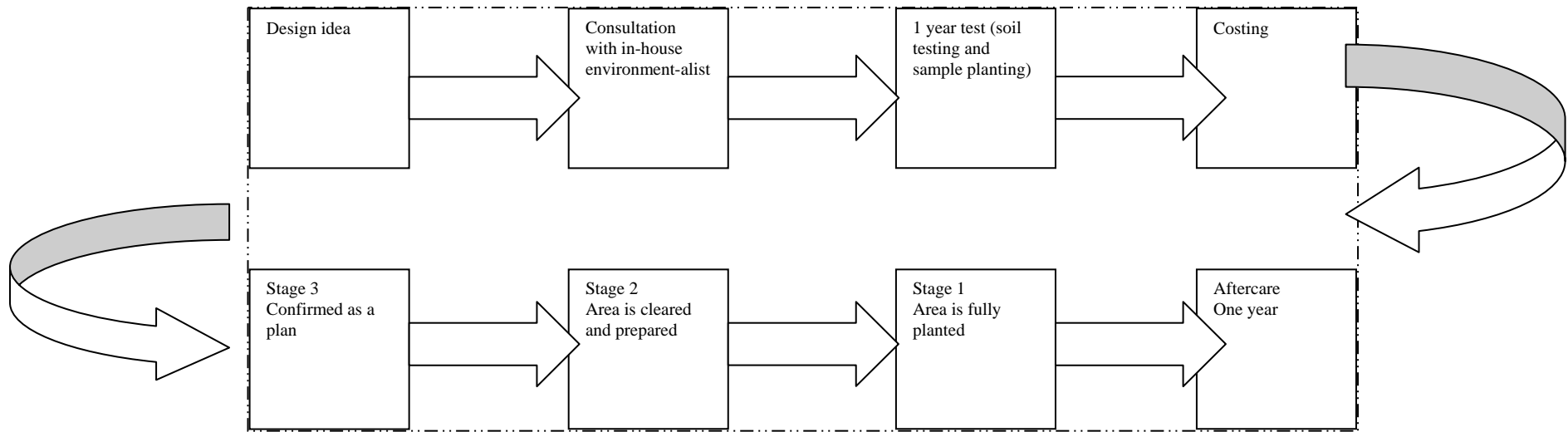
1. Introduction

This is the proposed horticulture and site management section of the Williamson Park Management Plan. The purpose of the plan is to inform staff and stakeholders of the overall vision and objectives for the site, and to provide a framework for its management in the short to medium term over a five year period. Most importantly, it outlines the horticultural and maintenance issues that the park currently faces and provides a set of proposals to resolve them.

Section three of this document covers all projects that are currently underway or in the design/ideas phase. As projects progress from an idea to realisation they progress through a numbered system (three =initial idea, two=preparatory stage and one = approaching conclusion). This plan is to be reviewed yearly in September, in line with horticultural ordering times. From this stage, projects are selected on a priority basis and scheduled into a yearly planner (**Schedule of Work 06-07**). At this time new ideas are fed into the staged numbered system. The system is designed to maximise flexibility so that it remains a working plan rather than abstract document. In addition, the management plan is not just a forward planner but also acts as an historical record as the years pass.

CHART DEMONSTRATING THE FLOW OF PROJECT PHASES

- The boxes flow from left to right.
- The first four boxes take approximately one year to complete during which a number of tests and consultations take place.
- It is not until stage three that a scheme and target area of the park is selected and finalised.
- Stages two and one concern themselves with the preparation of the site such as clearing and soil preparation through to plant sourcing and planting out. The time frame for the two stages is not included since there are so many factors affecting it including overall budget phasing, staffing, equipment, plant sourcing and project size.
- The aftercare phase covers one year during which plants are monitored, schemes amended and plants replaced as necessary. If the scheme is defined as successful, intensive gardening stops and the responsibility for area I passed to the maintenance department under the wardens.



The further section included, Previous Management Plan, refers to the most favourable aspects that the plan highlighted and are fed into this management plan. They have been included in their previous format and referenced accordingly for ease of information retrieval. However, the ideas will be streamlined into this management plan format by being fed into stage three ideas

Section four is concerned with staffing issues. It outlines current staffing status, training and proposed staffing structures.

The following section discussing environmental considerations and the parks interpretation of biodiversity. When the management plan refers to the term biodiversity, we refer the reader to this section for our interpretation of it.

A 'Sustainability for the future' document will be devised in 2007 and integrated into this plan.

2. Evaluation and Assessment of Quality

A major objective of the first year of the new management plan is to develop systems for the evaluation of the work that is undertaken in the park. To ascertain what works effectively and what does not. The aim is to raise the levels of quality throughout all horticultural activities. A secondary benefit of the process of evaluation is that it opens up greater opportunities to take a more proactive approach to horticultural care as opposed to a reactive one. In order to create the right system/s we aim to consult as widely as possible to find ways that work with our staff rather than simply imposing upon them, to research ways that generate improvement and development in a positive way. To this end we aim to devise and try out ideas during 2006 – 2007 period and formalise and integrate them into our management plan review period in September 2007.

Initial ideas are outlined below

- 1 **TARGET SPECIES - identify and create a care programme**
 - eg quercus 3m girth plus 10 identified. Tree care carried out 5 yearly
 - or pairing scheme. 20 mature Pinus sylvestris identified so 20 young Pinus sylvestris planted as new generation
- 2 **TARGET AREAS - identify and create a care programme**
 - Target certain parts of the park as areas where improvements can be made within a certain timescale
 - eg access path glade extended and developed under-story natives planted
- 3 **IDENTIFY HOTSPOTS – identify and maintain**
eg base of signs where weeds grow freely
- 4 **RECORD KEEPING**
 - the management plan is reviewed annually.
 - the yearly planner is reviewed to see if targets have been achieved
 - warden's journal developed to record work and improve planning of in-house grounds maintenance
 - gardener's planner will add a further section to include reflections, review and assessment
- 5 **VISUAL ASSESSMENT –**
 - production of checklist
- 6 **STAFF TRAINING**
 - raising skills raises quality
- 7 **PROGRAMMING MAINTENANCE –**
 - a full programme to be developed - proactive approach. Better and more strategic planning of work improves quality. If planning is more specific the results are more easily measurable
- 8 **TRIALS –**
 - trial plants to assess success prior to commencement of project
- 9 **INDUSTRY STANDARDS-**
 - eg log and brash piles left to Forestry Commission industry standard
 - further industry standards researched

3. Vision, Aims and Principles

“Mosaic of complementary character areas from the formal to the natural for variety of recreational experience”

Restoration, Extension, Improvement

Why:

Based on the notion of the Victorian Eclectic Garden

The mixed design – pockets of differing design but with a holistic coherence, including:-

- Restoring/creating vistas and views
- Creation of secret spaces
- Enlivening skeleton structures
- Creating closed spaces
- Opening up natural features
- Restoring and harmonising pathways
- Development of horticultural diversity
- Horticultural excellence
- Restructuring of existing schemes

Why:

- General design intentions
- Extend seasons with colour/scent via planting
- Restore woodland walks
- Encourage *biodiversity to support educational element of park facilities
- Support park attractions via planting
- Replacement of aging trees for future generations
- Maintenance of all working areas
- Eradication of undesirable plants – 30% *Acer pseudoplatanus*, all *Rhododendron ponticum*/ Japanese knotweed.
- Eradication of hazards where possible.
- To work in a ‘green’ way where possible.
- Raise aesthetic quality of park – hard-standings such as benches and bins

4. Design Projects

KEY

L – Large scale project involving all outdoor staff for over one month

M – Medium scale project involving all outdoor staff lasting up to one month

S – Small scale project involving only the gardeners and lasting less than one week

Year – Estimated year of completion

Stage 3 Projects – Ideas phase, Testing complete, park area identified

Project	Size	Year
1. Bandstand – Bulb display	L	4
2. Lakeside Rear Bank – Semi-formal Swamp-type planting scheme		
3. Memorial west – Birch Army	L	5+
4. Memorial South – Specimen tree display	L	5+
5. Hedges – Remove any without utility – restore the rest	L	3
6.		
7. Bandstand East – Restoration/Formal shrub and tree banking	L	4
8. Wyresdale Border Lodge to Walk-in – Formalise Shelterbelt along road side	L	5+
9. Gorge –Restore, thin, replace. Improve diversity	L	5
10. Observatory – Acer pseudoplatanus reduction and restore native shelterbelt. Improve tree diversity	L	5
11. Fenham Woodland – restore and improve natives	L	5
12. Top Carpark – restore and improve diversity	L	5
13. Access – Woodland Walk – improve native diversity	L	5
14. Temple – South - improve native diversity	L	5
15. North Quarry Gardens – Native Shelterbelt	L	5
16. Quern Lodge – Native Shelterbelt	L	5
17. Dell – Clear, Acer pseudoplatanus, thin and reinstate specimen trees. Extend grass	L	1
18. Access to lake banking – Remove Rhododendron ponticum, Prunus laurocerasus and replant with native under-story shrubs	L	2
19. Wyresdale Main entrance, lodge side – Clear and thin existing planting. Restore grass	L	1
20. Quernmore Road main entrance - Remove Rhododendron ponticum, Prunus laurocerasus and restore woodland	L	1
All new projects are added here during the September update		

Stage Two Projects – Area cleared and ready for planting

Project	Size	Year
Council Chambers – Formal Specimen Tree Display	L	5+
Lake (in) - 3 distinct areas divided by bridge etc – Native, ornamental aquatics, clear area	L	5+
Triangle old playground - new Tulip Bed	S	1
Shrub Collections – Diversification of plants	S	3
Apple project – Grow on and plant apple trees uniquely native to the Northwest	m	5
Bottom Car park ornamental strip – thin, and restore original planting. Transplant specimens		
Bottom border, south triangle – Clear all, including sets and grass. Continue Bottom border scheme		

Stage One Projects – Structural planting complete. Scheme finalised

Project	Size	Year
1. Quarry Gardens – jungle	L	1
2. Maid Marion Shelter – Acer Arc and grassland	M	3
3. Dragon – Spring Bulb Meadow	L	2
4. Birch Grove – new area	L	1
5. Grove – Informal herbaceous bed	S	1
6. Wyresdale Main Entrance – Formal herbaceous beds with 4 specimen acers	M	1
7. Quernmore Main Entrance – Formal traditional Winter/Summer Bedding	S	0
8. Main Drive – Formal Open/Woodland Drive	L	+5
9. Café – Formal Shrubs and Topiary	M	3
10. Bottom Border – Topiary Yew Tree and Spirea Boundary	L	2
11. Triangle/Walk-In entrance – New Vista	L	0
12. New Fern Bed	M	6 mth
13. Japanese Border –restoration and extension	L	6 mth
14. Woodland Shrub Border	M	6 mth
15. Nigra Rises – Large Shrub/Tree Border	M	1
16. Fenham Meadow (3) Naturalised Wild Grassland	L	+5
17. Quarry Gardens West Facing Cliff – Climbers/Ramblers	L	2
18. Memorial North – Formal Shrub Arc	M	1
19. Southern approach to Butterfly House - Apple Tree avenue	L	3
20. Tree Trail – Identify/Clear/Plant	L	1
21. Muncaster Castle specimen Rhododendrons – site and plant		6 mth

The following areas of work are defined separately due to their size, function and aesthetic value. Some may be viewed as individual projects in their own right while others may fall within projects already identified.

Woodland		
Project	Size	Year
21. Temple North – Create vista/Shrub Bank	L	2
22. Quernmore Walk in Entrance Strip – restore, improve, extend formal edge along road side	L	5+
23. Bottom Car Park – Restore, improve	L	5+
24. Bluebell Hill – Create vista plant British Natives	L	3
25. Temple East – Restore, create vista/shrub bank	L	3
26. South Quarry Gardens – Restore, improve, extend with small specimen trees	L	3
27. Main Drive – Restore, improve, extend	L	%+
28. Lakeside Steps leading to Observatory – Restore, extend, improve	L	2

Grassland and turf management

Project	Size	Year
29. Fenham Carr – Maintain three meadows 30. Introduce British natives into sward – restore, improve, extend biodiversity 31. Restore meadow boundaries Biannual mowing		5
On-going work		
Formal side - Formal grassland/turf – restore, improve, extend -Restore edges/boundaries -Improve weed control -Establish mowing routine -Extend – create new space -Outsourced work – mowing only -Outsourced with in-house partnership – slopes -Development of naturalised bulb displays -In-house work – strimming especially around hard-standings, rocks etc. -Restoration – including repair of any damage, wear or desire lines etc. -Improvement via seasonal care – raking, scarifying, top-dressing and re-seeding.	L	Ongoing

Borders and Beds and Hedges – formal and informal	Size	Year
<p>33. To restore improve and extend colour scent and seasonal interest.</p> <p>Traditional bedding schemes Quernmore Road Main Entrance Café borders Lakeside bed Tulip bed (Quarry Gardens) x 2</p> <p>Formal Herbaceous and Shrub Beds Fern bed Wyresdale main entrance Fritillaria bed Hebe bed Euphorbia Bed</p> <p>Informal herbaceous and shrub beds Grove Quarry Gardens mixed beds including Sedum, Hosta and Hellibore beds Fuschia bed Azalea bed Azalea bed 2 Hypericum bed Hypericum bed 2 Lakeside Marginal bed Flay pits as beds Rosa Rugosa bed</p> <p>Management and Maintenance of beds</p> <p>Weed edge prune maintain surroundings plant replace feed water dead head top-dress lift and divide seasonal care of soil.</p>	L	ongoing
<p>34. Borders</p> <p>Bottom border Japanese border Woodland shrub border Nigra rises Bottom car park – road side border Wyresdale main entrance – Hydrangea border Top Car Park – Shrub banking</p> <p>Management and Maintenance of borders</p> <p>Weed edge prune maintain surroundings plant replace</p>	L	ongoing

feed water dead head top-dress lift and divide seasonal care of soil.																	
<p>35. Hedges</p> <p>Remove all redundant hedges ie those without utility. Utility includes public safety and aesthetic quality.</p> <p>For removal Wyresdale main entrance and drive to Memorial to the café –</p> <p>Ligustrum ovalifolium, Lonicera nitida/Ligustrum ovalifolium, Griselinia littoralis, Escallonia ssp, Ligustrum ovalifolium ‘Aureum’</p> <p>Memorial and Butterfly House access – under discussion</p> <p>Main drive to Wyresdale entrance Behind Fagus sylvatica ‘Dawyck’– Ligustrum ovalifolium Behind Fagus sylvatica purpurea - Ligustrum ovalifolium Nigra rise - Ligustrum ovalifolium Cedrus deodara - Ligustrum ovalifolium Bottom car park - Ligustrum ovalifolium (partial) Fenham Carr – Lonicera nitida, replace with old English Layed hedge</p> <p>Hedge restoration, improvement and extension</p> <p>Skimmia walk – Skimmia japonica Old playground triangle – Forsythia x intermedia Bottom of the Memorial - Ligustrum ovalifolium New playground – Lonicera nitida Quarry gardens – Berberis x stenophylla, Berberis julianae Spoon – Berberis thunbergii, Oleria ssp</p> <p>Management and maintenance</p> <table border="1"> <thead> <tr> <th>Work</th> <th>No of times per year</th> </tr> </thead> <tbody> <tr> <td>Clipping</td> <td>4</td> </tr> <tr> <td>Strimming</td> <td>8</td> </tr> <tr> <td>Weeding</td> <td>8</td> </tr> <tr> <td>Feeding</td> <td>2</td> </tr> <tr> <td>Watering</td> <td>as and when</td> </tr> <tr> <td>Top Dressing</td> <td>1</td> </tr> </tbody> </table>		Work	No of times per year	Clipping	4	Strimming	8	Weeding	8	Feeding	2	Watering	as and when	Top Dressing	1	L	ongoing
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Feeding	2																
Watering	as and when																
Top Dressing	1																

36. Trees and Woodland Management

Restore, extend and improve and develop a programme for woodland management. We aim to take on a more proactive approach to tree care and woodland management as opposed to a reactive one. We aim to develop under-story planting throughout woodland areas to replace the pervasive *Rhododendron ponticum* and *Prunus laurocerasus*. We intend to develop the biodiversity of the woodland areas through the planting of shelter and food rich native trees, under-story and ground cover plants. We aim to protect mature trees and secure their future as veteran trees by implementing a plan of paired planting (ie sapling of same species planted for each mature specimen) to ensure the replacement of new for old to secure the next generation of woodland. We intend to incorporate where possible small open areas of woodland to develop into glades to increase biodiversity.

We aim to put into practise a greener approach to the use of wood from tree operations; this involves less burning of material. We aim to:

- Re use where possible for the production of park benches, bins, stakes etc.
- Re use through the use of chipping and mulch production
- Re use through the siting of formal habitat piles
- Remove all invasive species present such as *Rhododendron ponticum*, *Prunus lauroceasus*, *Acer pseudoplatanus** and *Polygonum cuspidatum*

**Acer pseudoplatanus*

Total in park	4080*
Reduction by 30% in 10 years	-1224
No. to be reduced per year	122

**Acer pseudoplatanus* sample taken from approximately ¼ of Old Observatory. *Acer pseudoplatanus* numbered 204. This number was multiplied by 4 to calculate total in the Old Observatory and then multiplied by 5 to give an approximation of the total number of *Acer pseudoplatanus* in the whole of the park. This figure was 4080.

Ongoing Tree Work

Replace ageing trees
Extend diversity of species
Young tree care work
Regular tree inspection for disease
Regular tree inspection for hazard
Tree emergency work
Regular tree inspection for health
To perform any of the following;
Crown clean

Crown raise
 Crown reduction
 Pruning
 Thinning
 Coppicing
 Maintenance of the immediate surroundings
 Epicormic growth
 Watering
 Feeding
 Flaying
 Top dressing
 Planting/ replacing/ staking
 Tree Trail maintenance (involves all of the above)

The above work is carried out by in house staff or outsourced workers. Outsourced work has to date been performed by CCS. We aim to develop links with a range of companies in order to raise work quality and achieve competitive prices. Furthermore we wish to a develop partnership with Myerscough College in which our site is provided as training space for arboriculture students in return for a mutually agreed programme of work.

Further Staff training in woodland management is essential.

37. Specimen shrub collections for colour and scent	Size	Year
We aim to extend restore and improve existing areas and develop new sites in formal satellite groups.	L	ongoing
Proposed collections include -Muncaster castle Rhododendron collection -Philadelphus collection -Buddleia collection -Flat-headed hydrangea collection -Syringia collection -Mixed shrub collections eg Kalmia., Lavatera, Exochordia, Cistus, Euonymous Callicarpa, Chaenomeles, Daphne, Berberis, Ribes, Weigela and Viburnum.		
Management and maintenance of shrub collections Planting/replacing Restructuring Thinning Pruning Strimming Edging Dead heading Weeding		

Watering Feeding Top dressing Maintenance of the surrounding area Seasonal care		
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38. Hard-Standings	Size	Year
Ongoing maintenance of any hard-standings in the park involves their up-keep to maintain their appearance and function. Hard standings include: paths, roads, entrances car parks, terrace, memorial, steps, bins, benches, gates, lights, signs, drains, shelters, café, toilets, original park features such as walls /cobble /sets/stone edging.		
Maintenance involves Edging Sweeping Weeding Strimming Clearing debris Cleaning Repairing Replacing Spraying	L	ongoing

39. Propagation

6 methods of in-house propagation currently employed:	Bought seed Collected seed Vegetative propagation Growing on seedlings Collection of self-seeded specimens Recycled/transplanted specimens
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Current propagation estimate – up to 10% of plants required for the park are propagated in-house.

Aims – propagation and sustainability

1. To increase this figure exponentially over five years, ideally up to 25%.

2. To put a water supply to the propagation facility within one year
3. To improve composting facility over five years
4. Identify a further three sites in the park for composting within one year.
5. To bring in manure from a local source in 6 months
6. To improve stock storage by removal of self-seeded trees in propagation facility.

Previous Management Plan

This section includes those recommendations from the previous management plan that are beneficial. They are to be integrated into the the phased project work.

Project	SourceRef	Area of Park
Management plan must be flexible and bear in mind the historic precedent	1.9	all
Vista and openness characteristic of early planting must be reinstated bearing in mind the maturity of plants	1.17	all
Early skeleton structures such as rock faces and skeleton planting schemes must be restore/revealed unless the character has changed over time	1.18 1.19	all
Hard standings such as the Old Observatory, or boundary walls to be enlivened through tree management	1.22 2.11 1.25 2.35	all
Formal side of the park has limited value as a conservation area and this must be addressed	2.8	all
Tree Preservation Orders in place must be assessed to formulate work schedule	2.10	all
Fenham Carr has some conservation value which could be improved upon	2.11	all
Reinstatement of perimeter railings	A2 p40	Highfield
Removal of shrub screen on bottom border as it is visually disturbing	A5 p40	Highfield
Restoration of Yew arc	A7 p40	Highfield
Remove <i>Chamaecyparis lawsonii</i> as it is visually disturbing to <i>Fagus sylvatica</i> line	A8 p40	Highfield
In the area known as 'the Spoon' consider resolving the poor drainage, the desire lines and erosion	A12 p41	Highfield
Expose the rock facing West in the Quarry Gardens	A13 p41	Highfield
Develop a woodland management programme	A16 p41	Highfield
Remove non-native invasive weeds and restore	A17 p41	Highfield

the native under-story plant woodland species			
Northern entrance to this area is visually uninviting and requires improvement	B1	p42	The Memorial
The memorial courtyard lacks formality and requires improvement	B2	p42	The Memorial
Re-sight the telescopes to an improved location. Recommendation is the new playground	B3	p42	The Memorial
Enliven the triangle adjacent to the old playground sight. Harmonise with the bottom border	B5	p43	The Memorial
Re-design the plant scheme surrounding the memorial. Planning permission required	B7	p43	The Memorial
Open up and develop a glade around the old observatory	C3	p44	Old Observatory
Tackle erosion and open aspect on the steep banking by under-story planting scheme	C5	p44	Old Observatory
Develop a woodland management programme	C8	p45	Old Observatory
Put in a native under-story planting scheme	C9	p45	Old Observatory
Old quarry rock faces enlivened	C10	p45	Old Observatory
Lakeside cliffs unattractive. Reduce unwanted plants, expose face and enliven with a floral rambler display	D1	p46	The Lake
Elevated path leading to lake bridge is overgrown. Clear and open up viewing 'windows'	D3	p46	The Lake
Develop a woodland management programme	D4	p46	The Lake
Harmonise key elements of lakeside with shelter. Emphasize colour and scent	D5	p47	The Lake
Develop a woodland management programme	D7	p47	The Lake
Develop and improve area around the first pavilion retaining it's sense of secrecy	D8	p47	The Lake
Develop a woodland management programme	E3	p48	Bowland View
Develop a programme of care a preservation for veteran trees for now and into the future	E4	p48	Bowland View
Put in a native under-story planting scheme	E5	p48	Bowland View
Continued development of the meadow promoting biodiversity	E6	p48	Bowland View
Planting scheme required to screen the zoo	F2	p49	The Reservoir
Develop a woodland management programme	F3	p49	The Reservoir
Develop a programme of care a preservation for veteran trees for now and into the future	F4	p49	The Reservoir
Maintain rabbit population as they have a beneficial grazing role and wildlife interest	F6	p49	The Reservoir
The reservoir offers opportunities in line with	F7	p50	The

biodiversity, aesthetic and educational value in the form of its development as a wetland feature			Reservoir
Develop a woodland management programme	G2	p51	Fenham Wood
Develop a programme of care a preservation for veteran trees for now and into the future	G3	p51	Fenham Wood
Develop a woodland management programme. Put in a native under-story planting scheme	G4	p51	Fenham Wood
Glade chocked with Japanese Knotweed. This needs to be removed and the glade returned to woodland to prevent the weed from returning	G5	p52	Fenham Wood
Develop a woodland management programme	G6	p52	Fenham Wood

5. Staffing and Staff Development

Current Out-door Staffing

Head Gardener	Fulltime
Assistant Head Gardener	Nearly fulltime
Helper	Part-time
Seasonal	
Rangers x 2	Fulltime

Relevant Training and qualifications

Chris Ingleby – Full Driving Licence, National Diploma Horticulture. National Diploma Arboriculture, NPTC`s Chainsaw License.

Robin Eyre – Full Driving Licence, PGCE (Secondary School), Trained Appropriate Adult for young people, Trained Citizen`s Advice Worker, RHS General Certificate in Horticulture, NPTC`s Chainsaw License, Completed Intro to Tree Hazard awareness, Qualified First Aider.

Simon Allcock – Qualified mechanic, Qualified First Aider

Richard Finch

Peter Kitchen

Matt Hill – Full driving license

Horticultural Duties

In-house propagation
Park survey
Maintenance and repair of the park propagation facility
Planting
Feeding and watering
Weeding
Training
Deadheading
Pruning
Hedge cutting and maintenance
Strimming
All aspects of arboriculture including assessment for outsourcing of work
Young tree maintenance including flaying, mulching, staking and training
Chainsaw operations (license holders only)
Research and design
Sourcing of plant stock and the maintenance of it
Budget management
Risk assessment of work
Training both in-house and external sourcing of training
Tree hazard assessments and procedures
Soil analysis and soil care
Turf maintenance
Pest and disease management
Composting and recycling
Management of volunteers
Tool maintenance, repair and ordering
Planning and supervision of work
Interdepartmental liaison
Partnership work with external organisations
Evaluation of quality
Administration

Rangers' Duties – Housekeepers

Park survey
Litter bins
Litter pick
Sweep, dust, mop shelters
Clear shelter gutters
Security – open gates
 Memorial
 Café
 Office and Close
Empty cash boxes (3 times a week)
Empty dog waste bins
Spot-check key park areas

Remove brash
Remove park obstructions
Maintain path / road ways (sweeping, edges and overhangs)
Survey new plantings
Survey hard standings
 Lights, bins, benches, posts, signs, orienteering posts, bugtrail,
 tree trail, features ie fountains, electric boxes, buildings, gates.
Transport goods
Provide disability access
Preparation for weddings, exhibitions and other events
Security
Public relations

Assist Gardeners

Basic gardening activities -
weeding, stump-work, strimming, pruning, planting, watering, raking, edging
Hard landscaping and maintenance
Lake clearance
Waterfall clearance
Wall repair
Tool maintenance
Chainsaw groundwork operations

Current Staffing Problems and Possible Solutions

What is the problem?	What have we done to Resolve it?	What else can we do in the short-term?	How will this solve the problem?
Unclear work objectives for staff	Duties agreed in JPR Better training	Regular prompts for new ideas Planner to highlight skills	Agreed objectives or roles through project phases 1-3 built into planning and fed to staff.
Unclear division of work between skilled and unskilled workers, resulting in low quality solutions which are not cost effective.	Improved planning	In-house training Strategically pair staff	Greater strategic planning Divide team into 2 departments
Unclear departmental chain of command, leading to: <ul style="list-style-type: none"> • Poor prioritisation • Poor timing • Confusion and resentment amongst staff 	All communication to go through Chris	Maintenance schedule agreed in general meetings	Clear/defined hierarchy via departmentalisation of work.
Little accountability and responsibility amongst staff	Smaller, more specialised roles assigned		Two-way chain of command

What is the problem?	What have we done to Resolve it?	What else can we do in the short-term?	How will this solve the problem?
Responsibility and method of the assessment of work quality	Ad-hoc checks carried out by Chris/Robin	Introduce checklist	Agreed objectives between departmental heads and Site Manager. Greater focus, accountability and responsibility
Continuity- work is interrupted by the demands of other departments. Little planning for this.	Greater notice requested		A primary role of site co-ordinator /manager.
Natural progression of park workloads – CI/RE paperwork Rangers – Events	Improved planning		More trained staff would achieve more and higher quality work.
Volunteers – cost effective? How should they be integrated? How does the park or department benefit	-	Interview and trial for new volunteers	Needs defined and volunteers integrated via site heads.

What is the problem?	What have we done to Resolve it?	What else can we do in the short-term?	How will this solve the problem?
Outsourcing of work -Cost effective? -Contracts and renewals -Task completion status -(ccs + mowers)	Increased checks	Outsource to other companies. Tender jobs to ensure the best deal. Head Gardener to act as client liaison for George Taylor. Prioritise some tree and mowing jobs based on quality.	Cost effective strategic planning/quality control Clear chain of command
Motivation and morale All the above + pay	Harlow Carr– trip for staff	Pay rise by qualification	More trained staff resources this.
Skills/Training	Greater use of staff skills acquired through previous training. Improved planning. Further training.	In house training. Self-assessment forms to be given by C I in Progress reviews. External training.	Hiring of skilled staff.
Essential Park Machinery Chainsaw Vehicle	Licensing for staff		

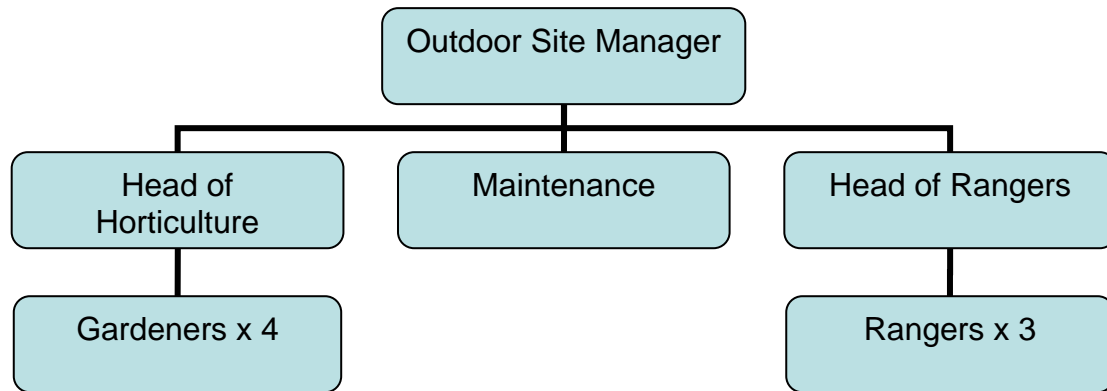
Training

Two thirds of the out-door staff is currently unskilled.

Immediate training required	Who for?	How will the Park benefit?
Management	CI	Improved management skills streamline departments and cohere individual roles. Increase in quality
Woodland Management	RE	In house specialist. Formal proactive approach to work implemented. Work can commence
Spraying	PK	Cost effective, labour saving
Basic Horticulture	SA + all new staff	Increased competence, higher quality work. Reduce likelihood of incomplete projects. Less damage cause to plants due to lack of knowledge
Use of essential park machinery (ie van, chainsaw)	ALL STAFF	Improve safety of staff and visitors Reduce likelihood of staff hours lost to injury, accident, lack of machinery or inadequate equipment.
First Aid	ALL STAFF	Improve safety of staff and visitors

Staffing Required in Five Years

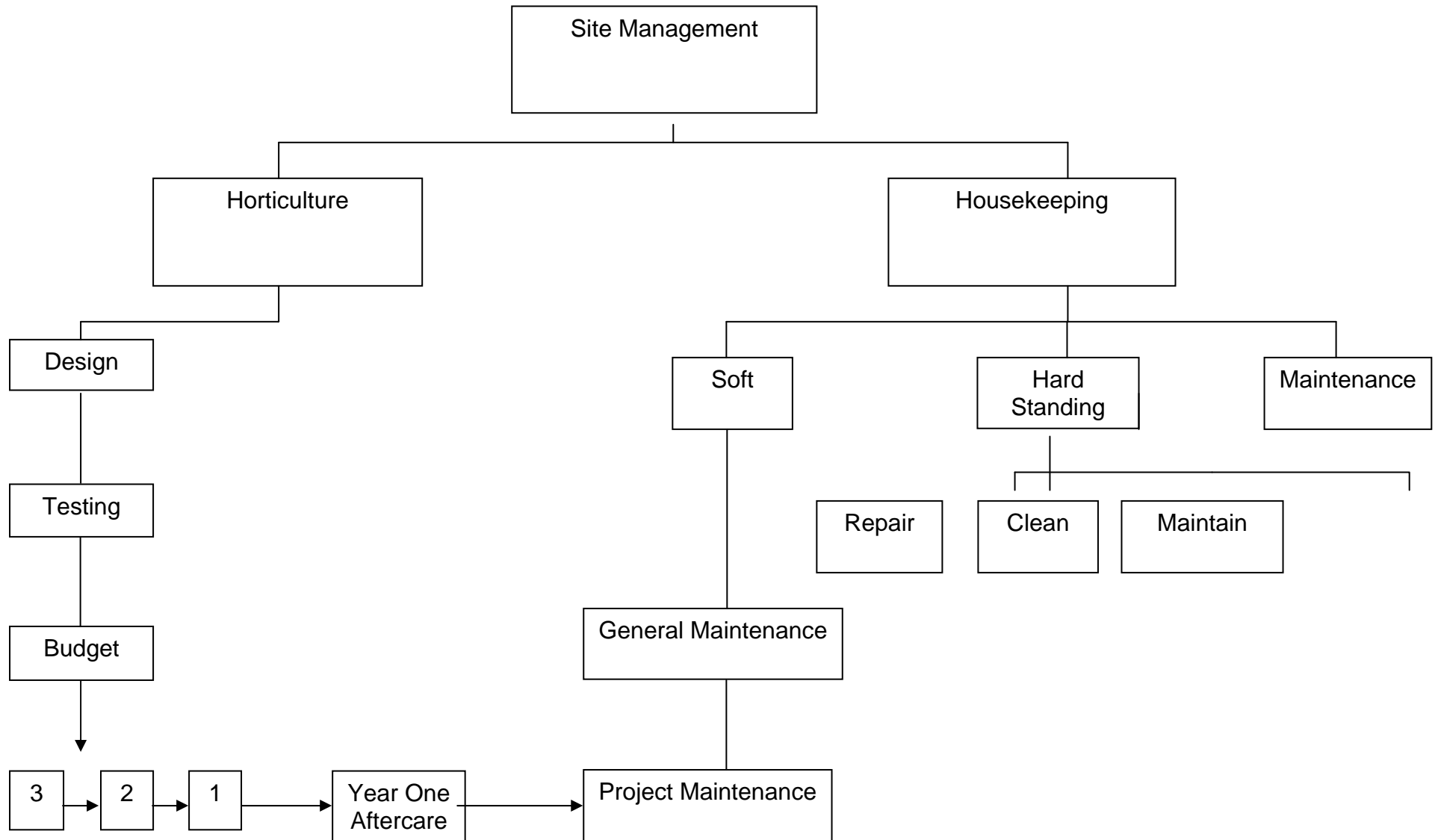
Staff projection over a five-year period in order to achieve aims.



Division of Work

Site Manager	Head of Horticulture	Head of Rangers
Oversee all site operations Oversee all planning strategies Oversee all soft and hard landscaping Oversee in-house/outsourced work Oversee all maintenance of site hard standings Oversee all In-house training and community based work Is responsible for Horticulture, Ranger and Maintenance departments	Co-ordinates all horticultural planning, stock and purchase Oversee all design Co-ordinates all horticulture related community work Co-ordinates in-house and external training Responsible for all gardening staff Is accountable to the Site Manager	Co-ordinate all housekeeping activities and scheduling of work Co-ordinates additional on site events Responsible for the maintenance of site facilities including security Responsible for quality assessment of ranger work Responsible for all ranger staff Is accountable to the Site Manager
	Gardeners	Rangers
	Undertake all gardening activities as directed by Head of Horticulture	Undertake all ranger duties as directed by Head Ranger

Graph demonstrating division of work



6. Schedule of Project Based Work for Sept 06 – Sept 07

Park area	Current project stage/size	Description of work to be carried out	Project stage upon completion of phased work	Completion date	Review date
Quarry Gardens	1 L	Complete planting scheme, replace damaged plants	Aftercare	Spr 06	Sept 07
Acer arc	1 M	Plant specimen Acers and put in informal pathway. Site bench logs	Aftercare	Spr 06	Sept 07
Fern bed	1 M	Replace damaged ferns. Remove Stumps	Aftercare	Spr 06	Sept 07
Dell	3 L	Remove sycamores. Thin trees. Restore permanent trees. Remove Rhododendron ponticum and Prunus laurocerasus	Aftercare	Spr 06	Sept 07
Bank – jnt Access/Lake	3 L	Remove Rhododendron ponticum and Prunus laurocerasus. Plant understory natives	1	Sum 06	Sept 07
Bottom Carpark	2 M	Thin and restore existing planting. Transplant Hamamelis	1	Spr 06	Sept 07
Bottom border-triangle -	1 L	Remove conifers	Aftercare	Spr 06	Sept 07

triangle		including stumps. Dig out Japanese Knotweed. Complete planting scheme			
Birch grove	1 L	Grind out stumps. Repair bald patches of grass	Aftercare	Spr 06	Sept 07
Wyresdale main ent.Lodge side	3 L	Clear, thin and restore original planting	2	Sum 06	Sept 07
Wyresdale main ent. -beds	1 M	Prepare and plant	Aftercare	Spr 06	Sept 07
Quernmore Rd Main ent. – Lodge side	3 L	Clear and thin. Remove Rhododendron ponticum and Prunus laurocerasus	2	Sum 06	Sept 07
Muncaster Rhododendrons	1 M	Plant out	Aftercare	Spr 06	Sept 07
Woodland shrub border	1 L	Thin	Aftercare	Spr 06	Sept 07
Japanese border extension	1 L	Complete planting scheme	Aftercare	Spr 06	Sept 07
Hedge restoration	ongoing	Prioritise and repair	Aftercare	Spr 06	Sept 07
Main Drive woodland	3 L	Thin and restore – crown raise, crown clean and prune to shape	1	Sum 06	Sept 07
Fenham meadows	ongoing	Satellite planting of natives selected in association with the in-house environmentalist	Aftercare	Spr 06	Sept 07
Satellite shrub planting	ongoing	Small satellite groupings of shrubs selected in association with the in-house environmentalist	Aftercare	Sum 06	Sept 07

7. Environmental Considerations - *Biodiversity

When using the term **biodiversity** in this management plan we term it as **the number and variety of different species within a habitat.**

In order to increase biodiversity in the park we aim to

- Consult both in-house and external specialists to help identify habitats within the park
- Consult both in-house and external specialists at the design stage to develop new areas that may be managed for biodiversity
- Identify target species for differing areas of the park or the park as a whole
- Increase current stock species within the park that are beneficial for wildlife
- Remove invasive and unwanted species that suppress biodiversity
- Select plant species beneficial to wildlife as either a food source or habitat (See Appendix 1)

The way in which this is achieved in the woodland areas of the park is

- Create areas of 'woodland edge'
- Create woodland glades by coppicing and seeding with native seed mixes sourced from Landlife
- Replant with habitat/food rich trees (See Appendix 2)
- Retaining where possible a large element of dead and decaying standing wood
- Removal of invasive non-native plant species that are poor for biodiversity such as *Polygonum cuspidatum*
- Restoration of under-story planting of natives (See Appendix 2)
- Preservation of future habitat by the replacement of mature/veteran trees that are species rich.

The way in which bio-diversity is improved in the Fenham Carr meadows is

- Strimming the invasive spread of tall perennials that creep into the meadow (See Appendix 4)
- Mowing broad pathways through the meadows in July and by cutting three quarters of the entire meadow space in September. Both schedules maximise the natural processes seed propagation (See Appendix 4)
- Target species raised in-house are planted out as plugs. Target species are Common Knapweed, Red clover, Ox-eye Daisy and Birds Foot Trefoil (See Appendix 3)

The way in which biodiversity is improved in other areas of the park is

- By diversifying the cutting regime of some parts of the formal grassland
- By the creation of the occasional wildflower borders
- By using flower species that benefit wildlife within design schemes

- By the addition of habitat pile of decaying wood
- By the use of natural organic matter such as in-house leaf mould

Choosing a target species for the park

We aim to select a target species for the park during the period 2006-2007 and upon selection we will choose target areas of the park that we will manage as habitats for the animals.

The benefits of this are:

- It allows us to be strategic in our selection habitat requirements eg nest sites for Woodpeckers (standing dead wood) or habitat piles (log pile) for Hedgehogs
- Visitors can clearly see our objectives since they are specific and visible eg the standing dead wood that is the nest site for Woodpeckers
- It is a specific method of measuring our success eg target species can be counted
- Provides a specific link to the other park departments ie support material provided by education department and initial selection can be jointly made
- More ambitious species such as the Barn Owl offers opportunities to create partnerships with external organisations working with shared aims
- In providing all the necessities for a target animal all the other web/food chain biodiversity will follow

Appendix 1. Butterflies and their Food Plants

Larval Plants

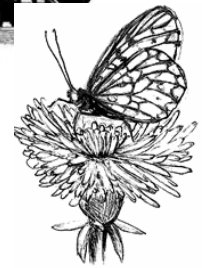
Below is a list of butterflies that you might find in and around the Lancaster and Morecambe Bay area., together with their larval food plant.

Species	Presence in local gardens	Foodplants	Butterfly "flying time"
Brimstone	Occasional in spring	Alder Buckthorn Purging Buckthorn	V early Spring and August
Comma	Becoming more common	Nettles Hops Gooseberries	Early Spring & May/June
Common Blue	An uncommon visitor to gardens but can be locally common.	Birds Foot-Trefoil Clover Rest Harrow	Spring onwards
Fritillary Butterflies	Rare only in Silverdale and Arnside	Violets	Spring to Summer
Gatekeeper	Spreading north into the region	Tall Grasses	Late Spring onwards
Green-veined White	Very common especially in spring.	Mustard Cuckoo Flower Charlock	Spring onwards
Small White	Very common	Cabbage Lettuce Mignonette	April onwards
Large (Cabbage) White	Very Common	Cabbage Nasturtium	April – August
Holly Blue	Common	Holly and Ivy	Spring and August
Meadow Brown	Sometimes wanders in	Grasses	June – September
Orange Tip	Common	Garlic Mustard Cuckoo Flower	Spring
Painted Lady:	A Common butterfly, a strong flyer migrating from Mediterranean areas.	Thistles Mallow Burdock Stinging Nettles	April – August
Peacock	Very common on Buddleia	Nettles Hops	Early Spring & August
Red Admiral	Very common on Buddleia	Nettles	Early to Late Summer
Ringlet	Spreading east into the region	Grasses	June – August
Small Copper	Occasional visitor	Sorrells Knotgrass	Summer to Late Autumn
Small Heath	Rare visitor	Grasses	Spring – Autumn
Small Skipper	Occasional visitor	Grasses	June – August
Large Skipper	Becoming more regular	Grasses	June – August
Small Tortoiseshell	Very common particularly on Buddleia	Nettles	Spring onwards
Speckled Wood	Has become a common visitor	Grasses	Spring onwards
Wall Brown	Regular visitor	Grasses	May/June & August/September



Appendix 1 continued. Popular garden flowers for Butterflies.

Ref. : <http://www.lincstrust.org.uk/factsheets/gardening-for-butterflies.php>



Taken from a leaflet at Williamson Park Butterfly House.

Some Good Nectar Food Plants for Butterflies

Oxeye Daisy	Red Valerian
Cornflower	Mignonette
Campanula	Michaelmas Daisies
Hyssop	Yellow Alyssum
Columbine	Water Mint
Petunia	Thrift (Sea Pink)
Thyme	Honesty
Heliotrope	Phlox
Purple Loosestrife	Primrose
*Buddleia	Sweet William
Polyanthus	Catmint
Sweet Rocket	Wallflowers
Aubretia	Scabious (various)

*Buddleia is a great plant to provide nectar for insects and in particular butterflies. It is possible to extend the range of flowering by spreading the range of pruning times.

Appendix 2. The Value of Tree Species for Invertebrates and Lichens

The table below shows the number of insects and lichens which have been recorded in association with common trees and shrubs in Britain. The figures in brackets include mite species as well as insects.

Tree or Shrub	Associated Insect Species	Associated Lichen Species
Oak (<u>pedunculate</u> & <u>sessile</u>)	284 (423)	324
Willow species	266 (450)	160
Birch (<u>silver</u> & <u>downy</u>)	229 (334)	126
<u>Hawthorn</u>	149	no data
<u>Blackthorn</u>	109	no data
Poplar species (including <u>aspen</u>)	97	no data
Crab Apple	93	no data
<u>Scots Pine</u>	91	132
<u>Alder</u>	90	105
<u>Elm</u>	82	187
<u>Hazel</u>	73	160
<u>Beech</u>	64 (98)	206
<u>Ash</u>	41	255
<u>Spruce*</u>	37	no data
Lime	31	83
<u>Hornbeam</u>	28	44
<u>Rowan</u>	28	125
<u>Field Maple</u>	26 (51)	93
Juniper	20	no data
<u>Larch*</u>	17	no data
<u>Fir*</u>	16	no data
<u>Sycamore*</u>	15	183
<u>Holly</u>	7 (10)	96
<u>Sweet Chestnut*</u>	5	no data
<u>Horse Chestnut*</u>	4	no data
<u>Yew</u>	4	no data
Walnut*	4	no data
<u>Holm Oak*</u>	2	no data
Plane*	1	no data
<u>Rhododendron*</u>	0	no data

*Introduced Species

The table above is a useful tool, although it does not begin to provide the whole picture of the value of different tree species for wildlife. .

Appendix 3. Grassland composition in Fenham Carr.

MG5 type objective for Fenham Carr Grassland Management

Source: Martin Wain ref: Grahame Skelcher (English Nature) June 2004

Suggested Target Species for 2006 and 2007 is to increase numbers of Common Knapweed, Red Clover, Ox-eye Daisy, and Birds Foot Trefoil. These were chosen because of their low abundance in Fenham Carr when compared to the ideal of the MG5a type grassland.

Below is a list of the plant species found in the MG5 grasslands which are in Fenham Carr that were sampled.

MG5a is defined through the NVC system of classifying grassland. Probably the sub-community we should be aiming for is MG5a. (MG5b occurs on more calcareous soils while MG5c is found on more acidic soils in upland margins).

This list should not be viewed as an 'ideal' but rather gives an idea of the range of species which could occur, and their approximate proportions, from which we could pick and choose as we feel is appropriate.

In particular, for example, there is no mention of common spotted orchid on the list below but which occurs in Fenham Carr, where it obviously should be encouraged as part of the sward.

Table for the abundance of plants in an ideal MG5a grassland, compared to our four target species in Fenham Carr(after sampling).











V to I indicates abundance in the sword - from abundant V to rare I.

		MG5a	Occurrence in Fenham Carr grassland
red fescue	<i>Festuca rubra</i>	V	
crested dog's tail	<i>Cynosurus cristatus</i>	V	
bird's foot trefoil	<i>Lotus corniculatus</i>	V	0
ribwort plantain	<i>Plantago lanceolata</i>	V	
Yorkshire fog	<i>Holcus lanatus</i>	IV	
cocks foot	<i>Dactylis glomerata</i>	IV	
white clover	<i>Trifolium repens</i>	IV	
common knapweed	<i>Centaurea nigra</i>	IV	1
common bent	<i>Agrostis capillaris</i>	IV	
sweet vernal grass	<i>Anthoxanthum odoratum</i>	IV	
red clover	<i>Trifolium pratense</i>	IV	1
ryegrass	<i>Lolium perenne</i>	IV	
meadow buttercup	<i>Ranunculus acris</i>	IV	
daisy	<i>Bellis perennis</i>	III	
meadow vetchling	<i>Lathyrus pratensis</i>	III	

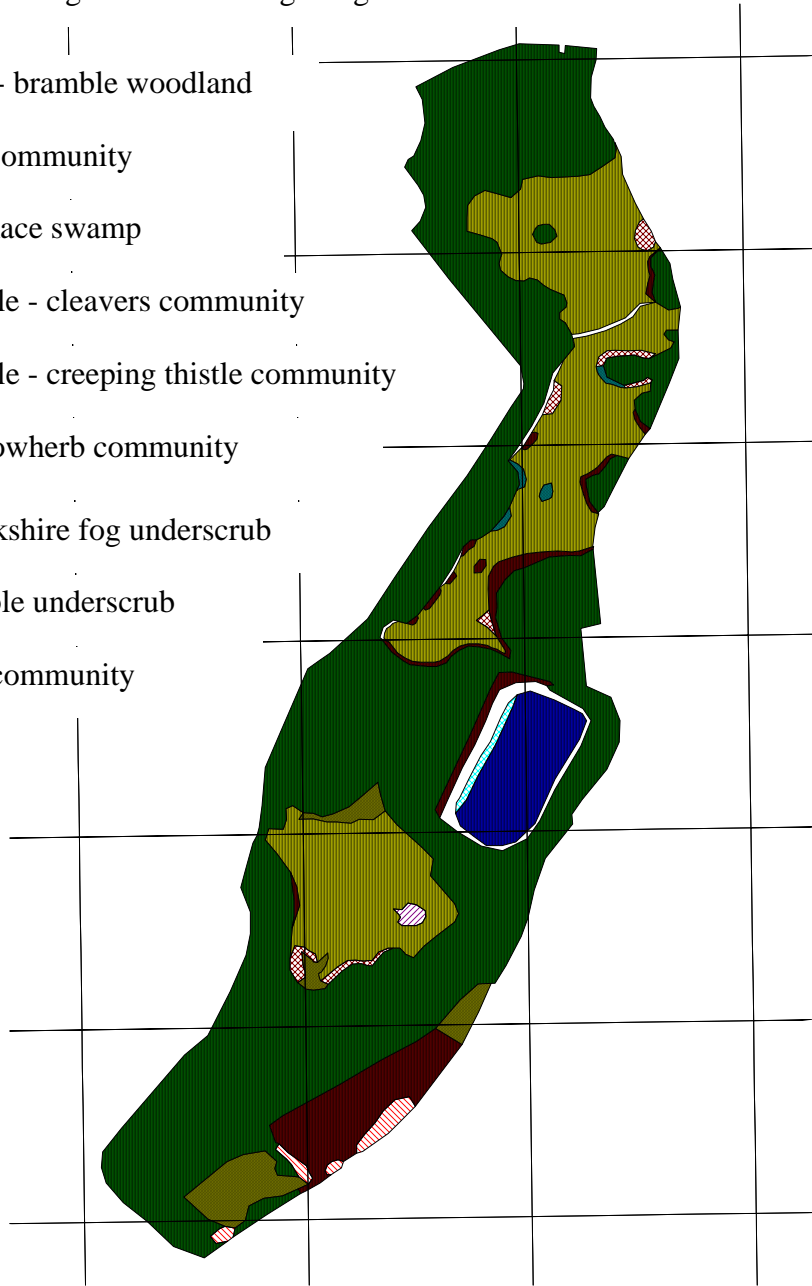
ox eye daisy	<i>Leucanthemum vulgare</i>	III	1
yarrow	<i>Achillea millefolium</i>	III	
self heal	<i>Prunella vulgaris</i>	III	
common sorrel	<i>Rumex acetosa</i>	III	
cat's ear	<i>Hypochoeris radicata</i>	III	
bulbous buttercup	<i>Ranunculus bulbosus</i>	III	
dandelion	<i>Taraxacum officinale</i>	III	
common mouse-ear	<i>Cerastium fontanum</i>	III	
meadow fescue	<i>Festuca pratensis</i>	II	
yellow oat grass	<i>Trisetum flavescens</i>	II	
autumn hawkbit	<i>Leontodon autumnalis</i>	II	
field wood rush	<i>Luzula campestris</i>	II	
moss	<i>Brachythecium rutabulum</i>	II	
rough hawkbit	<i>Leontodon hispidus</i>	II	
hay rattle	<i>Rhinanthus minor</i>	II	
quaking grass	<i>Briza media</i>	II	
hogweed	<i>Heracleum sphondylium</i>	II	
lesser trefoil	<i>Trifolium dubium</i>	II	
cowslip	<i>Primula veris</i>	II	
false oat grass	<i>Arrhenatherum elatius</i>	II	
creeping thistle*	<i>Cirsium arvense</i>	II	
moss	<i>Eurhynchium praelongum</i>	II	
moss	<i>Rhytidiadelphus squarrosus</i>	II	
smooth meadow grass	<i>Poa pratensis</i>	II	
rough meadow grass	<i>Poa trivialis</i>	II	
germander speedwell	<i>Veronica chamaedrys</i>	II	
creeping buttercup	<i>Ranunculus repens</i>	II	
field scabious	<i>Knautia arvensis</i>	I	
hard rush	<i>Juncus inflexus</i>	I	
lady's bedstraw	<i>Galium verum</i>	I	
glaucous sedge	<i>Carex flacca</i>	I	
salad burnet	<i>Sanguisorba minor</i>	I	
crested hair grass	<i>Koeleria macrantha</i>	I	
creeping bent	<i>Agrostis stolonifera</i>	I	
heath grass	<i>Danthonia decumbens</i>	I	
tormentil	<i>Potentilla erecta</i>	I	
devil's bit scabious*	<i>Succisa pratensis</i>	I	
burnet saxifrage	<i>Pimpinella saxifraga</i>	I	
betony	<i>Stachys betonica</i>	I	
spring sedge	<i>Carex caryophyllea</i>	I	
pignut	<i>Conopodium majus</i>	I	
meadow foxtail	<i>Alopecurus pratensis</i>	I	
cuckoo flower*	<i>Cardamine pratensis</i>	I	
tufted vetch	<i>Vicia cracca</i>	I	
soft brome	<i>Bromus hordeaceus</i>	I	
timothy	<i>Phleum pratense pratense</i>	I	
soft rush	<i>Juncus effusus</i>	I	
timothy	<i>Phleum pratense bertolonii</i>	I	
moss	<i>Calliargon cuspidatum</i>	I	
moss	<i>Pseudoscleropodium purum</i>	I	

adderstongue	<i>Ophioglossum vulgatum</i>	I	
pepper saxifrage	<i>Silaum silaus</i>	I	
Agrimony*	<i>Agrimonia eupatoria</i>	I	
downy oat grass	<i>Avenula pubescens</i>	I	
plantain	<i>Plantago media</i>	I	
lady's mantle	<i>Alchemilla glabra</i>	I	
lady's mantle	<i>Alchemilla filicaulis vestita</i>	I	
lady's mantle	<i>Alchemilla xanthochlora</i>	I	
carnation sedge	<i>Carex panicea</i>	I	
meadow saffron	<i>Colchicum autumnale</i>	I	
smooth hawk's beard	<i>Crepis capillaris</i>	I	
tall fescue	<i>Festuca arundinacea</i>	I	
creeping cinquefoil	<i>Potentilla reptans</i>	I	
ragwort	<i>Senecio jacobaea</i>	I	
meadowsweet	<i>Filipendula ulmaria</i>	I	
jointed rush	<i>Juncus articulatus</i>	I	
sheep's fescue	<i>Festuca ovina</i>		

APPENDIX 3: MAP OF FENHAM CARR VEGETATION COMMUNITIES

-  Red fescue - Yorkshire fog - sweet vernal-grass grassland
-  W10 Oak - bracken - bramble woodland
-  A5 Rigid hornwort community
-  S12 Common reedmace swamp
-  OV24 Common nettle - cleavers community
-  OV25 Common nettle - creeping thistle community
-  OV27 Rosebay willowherb community
-  W24 Bramble - Yorkshire fog underscrub
-  W25 Bracken bramble underscrub
-  Japanese knotweed community

Grid lines shown at 100m intervals



Appendix 4. Grassland Management in Fenham Carr.

The areas of grassland is easily split into three sections. Mowing is done twice a year as described below:

Mowing cuts	Type of cut	Justification
July mowing (timed to coincide with the hay cut in farms up the road).	2-3 meter width strips along the 5 un-surfaced footpaths running through all three grass section (see map over). Cuttings left in situ.	This type of management was all that the grassland had in the years before management came into the Park. In this management Meadow Brown Butterflies were very numerous and creeping buttercup dominated.
Mid September mowing	¾ of each main area of grassland cut on a rotation (see map over). Mowings removed from grassland.	Generally accepted cut allowing seeds to develop. ¼ of sword left uncut for the Skipper butterflies that remain as pupae through the winter attached to the grass stems. Also for the small mammal population that is thriving and being surveyed 2004-2006.

All work on mowing done by tractor and mower attachment. Contractor for 2004/5 Mr Andrew Sheering, Quernmore.

Encroachment by Perennial plants such as Nettles and Rose Bay Willow Herb.

Each cut from 2005 to 2008 has to include some degree of trimming of the encroaching tall perennial plants. The cutting undertaken depends on the weather conditions for the tractor and the equipment available. Overall aim during this period is to halt encroachment and begin reducing the overall cover by the plants. Large areas of Perennial plants cut by trimmers by garden staff on rotation of 2 to 3 years.

Appendix 4. Map of Grassland Management in Fenham Carr.

Grassland identified as Yellow areas – Semi-natural MG5 type grassland (National Vegetation Classification Rodwell 1991 *et seq.*).

Un-surfaced foot paths identified as dotted lines.

Grid 100m.

