

STRATFORD PARK.

BIO DIVERSITY and LANDSCAPE ACTION PLAN:

SEPTEMBER 2011- 2020.



Paul Rutter.

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STRATFORD PARK.



Introduction.

I was asked to produce this plan as an independent adviser to assess the environmental asset of Stratford park and to recommend ways of enhancing the biodiversity around Stratford Park; to also make proposals for sustainable management and propose future landscape improvements.

The report identifies projects that can engage the local community to enjoy the park and help to conserve the existing natural assets while understanding more about the natural biodiversity of the park.

This report is written based on my practical experience as a Countryside Manager for protected landscapes and restoring historic places for the National Trust.

This plan is also written to build on the findings of the Biodiversity Survey 2002 and in the context and ambition of the Lawton Report, Sept 2010 "Making Space for Nature" and the Environment White Paper July 2011

Biodiversity: A Definition: *The variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part, this includes diversity within species, between species and ecosystems.*

The term biodiversity is not easily understood but it is the fundamental basis of natural systems and influences how we must manage and conserve our environment in the future.

Management Recommendations of Enhancing Bio- diversity.

Key Objective: To conserve and to enhance the overall naturally occurring species and range of habitats and ecosystems of the Cotswolds.

The guiding key principals should be:

- Broadening the age and diversity of native plant species that occur in the Cotswolds around the park.
- Managing to create a diverse and more natural structure from field level to woodland canopy within the woodland.
- To ensure wild plant provenance is native and as local as possible.
- Retaining deadwood of native species on site.
- Protecting soil from artificial enrichment and erosion.
- To establish and maintain green corridors to enable free movement of plants and wildlife.
- To consider the long term impact of global warming in future planting schemes.
- Implement a slow rate of change to allow ecosystems to adapt to that change.

Guiding Principles of Sustainable Practices:

- The wise use of non renewable resources.
- The conservation of biodiversity requires the care and involvement of individuals and communities as well.
- Conservation practice and policy should be founded on a sound knowledge base.
- The precautionary principle should guide decisions.

Site Maintenance Recommendations.

To retain all felled timber unless diseased, for conversion and used on site and locally.

Use a portable saw mill for wood conversion.

Market timber for local crafts producers.

To use dead stems for sculptures with chain saw carving and for habitat niches in the woodlands.

Use horses to extract timber.

Spot treatment only using Glyphosphate to control weeds.

Use local provenance native trees (not in arboretum).

CHAPTER 1: Brief History and Designations

Location: *Stratford Park, Stroud, Gloucestershire. SO 845059. Post Code: GL5 4AF*

Owner: *Stroud District Council*

Area: *55 acres, C.25 Ha*

Designations: *Within Cotswold AONB.*

Parish: *Stroud.*

STRATFORD PARK is an urban landscaped park and pleasure grounds in Stroud. Originally owned by the Watts family in 1700 then later by G.F. Ormeroyd until the 1930's when it was purchased by Stroud District Council for the benefit and enjoyment of the community of Stroud, who have enjoyed free access to the park since 1830.

The formal grounds were planted in 3 distinct phases through the mid 19th and 20th century's establishing a fine exotic tree collection including Acers, Cedars, and other various Conifers. It is thought these trees were part of a shared order with Mr. Robert Holford the owner of nearby Westonbirt arboretum and reflects the trend at the time by wealthy landowners to obtain newly discovered plants and in establishing fine tree and plant collections.

Today, following significant changes within the park the surrounding grounds are a mixture of open grassland, secondary woodland set within in a sheltered valley with a small stream and artificial fish pond.

A Biodiversity Study was conducted in 2002 by Gloucestershire Wildlife Trust and this report builds on recommendations made in the report .

The findings of that report states:

The following habitats exist around the park are:

The Arboretum which is of national importance.

Lowland mixed deciduous secondary woodland. Importance: BAP Priority Habitat.

Lowland beech woodland. BAP Priority Habitat.

Other habitats include: Hedgerow, semi improved grassland, tall herb, stream.

Protected species that have been recorded in the Park include:

Bats: Whiskered, Daubentons, Noctule, Pipistrelle, Badger, Roe deer.

Wildlife frequenting and breeding in the park which are species of concern include green woodpecker, little owl, pied wagtail, kingfisher, sparrow hawk. (See species list). Appx. I

CHAPTER 2. Survey of Parkland between March and September 2011

Area 1: Perimeter Woodland Fringe .

The northern perimeter edge has some mature and semi mature oak and ash trees with a selection of other various native and exotic tree and shrub species planted over the last 15-25 years to create a long grass fringe with trees. The ground layer mainly comprises of NVC MG1 coarse grassland, nettle (*Urtica dioica*), cleavers (*Gallium aparine*), and other plants that thrive in improved grasslands but is poor in traditional woodland flora. A hedgerow of hawthorn (*Crataegus monogyna*), once laid but now with large gaps still exists along the boundary fence.

As well as some native trees including pedunculate oak, common Lime, alder and birch, the remaining trees are ornamental and include red oak, Norway maple, (*Acer platanoides purpurea*) verigated sycamore, sugar maple, horse chestnut, walnut and a cedar. This is an eclectic mix of trees which has limited wildlife or biodiversity potential . There are good far reaching views to be



enjoyed from this part of the park although no seating is available. The long grass within the woodland belt reverts abruptly to close mown grass .

Due to formative pruning not being carried out, the crown development of the trees is low to the ground and some branches are being damaged while also restricting easy access between the trees.

Area 2: Amenity grassland with veteran oak trees. BAP High; National.

Where the grass is closely mown for informal recreational use it is low in biodiversity. The Pedunculate oaks (*Quercus robur*) scattered around the grassland are however some of the most valuable features in the park for bio diversity. They are probably well over 300 years old and are host to species of lichen, birds, insects and fungi. Most trees are isolated in the mown grass and some abuse around the roots has occurred, e.g. fire lighting. Fungi are present in some of the trees including chicken of the woods, oak bracket fungus and one beef steak fungus was observed.

These trees are, for their age, all in good health at this time and although have been subject to some previous management (some limbs have been removed and concrete used to fill cavities), they will in future require sensitive management to allow natural development and for the trees to decay with minimum intervention. There are no recruit oaks in the open grassland .

Area 3: Secondary Woodland with a dried up pond. BAP. priority Low

The woodland is a mixture of native oak, thorn species mixed with beech, horse chestnut, some larch, hemlock, Corsican pine and other conifers. The shrub layer here is the most natural area in the park and includes bramble, natural regenerating ash and holly.

At the north eastern edge of the park there is a wet flush and dried up pond that could be restored and become a valuable feature within the woodland, broadening its potential biodiversity.

N.B. A SURVEY WILL BE NECESSARY to ensure the presence and use of the woodlands by protected species is known i.e. newts and bats.



Area 4A. Beech Plantation : BAP Priority Local.

A beech plantation approximately 80 years old extends from more mature conifer woodland to the northern edge of the park , along the edge of the amenity grassland and down to the stream. It includes some mature broadleaf trees and conifers. The density of the un-thinned trees here

cast very deep shade which is impeding an under storey from developing resulting in the wood being uninviting to visitors and having low biodiversity, although ramsomes and dogs mercury can be seen in spring. The tall and narrow stems of beech will result in weak and unstable trees with little biodiversity interest.

Footpaths through the wood are informal, in places steep and are unclearly way-marked.

Area 4B. Conifer Plantation with Deciduous woodland edge. BAP priority low



The mixed conifers including some cedars are probably part of the original pleasure grounds and were planted as a pinetum area which have now attained a great height. Most side branches have been lost due to close planting, reducing the visual quality as ornamental trees. Some tall conifer stems are failing because of their narrow girth caused by close planting with little thinning being done. There are however, some fine walnut trees in the wood.

The oak trees along the top edge of the wood are part of the original and much older planting including a Sweet Chestnut. An under storey is developing with ash, holly and some bramble.

The steep slopes are eroded through this section of woodland. The footpaths are indistinct and have a variable gradient. An unoccupied badger set exits in this part of the woodland.

Area 5. EASTERN PERIMETER, Woodland Park. BAP priority low

The eastern edge of the park runs along a main road to Painswick and is thinly vegetated. A line of mature sycamore (*Acer pseudoplatanus*) and some mature Corsican pine trees are widely spaced along the road edge.

There is heavy shading by beech, lime and a hybrid black poplar tree. The grassland is thin under these trees and the soil is compacted from vehicle movements.

There is no pedestrian access connecting this part of the park to the adjacent beech woodlands on the other side of the stream, making easy circulation around the park impossible.

This area includes some significant ornamental Acer trees including Snake bark maple (*Acer Grosseri*) and a Paper bark maple (*Acer griseum*). These are, however, being crowded by adjacent trees. The avenue of closely planted relatively young Lime trees (*Tilia vulgaris*) have been planted along this part of the miniature railway line.

A more formal collection of ornamental trees becomes abundant towards the fish pond. Himalayan Balsam is gradually encroaching up the bank and into the southern corner of this area.

Area 6. Woodland Stream belt; BAP priority Low.

As it enters the park through a long tunnel, the stream splits around a long thin island which is heavily shaded along much of its length by yew and alder trees. Further down stream Giant Hogweed and Himalyan Balsalm are dominant along the banks in summer.

Reed canary grass and Lonicera nitida is established n this area, otherwise the banks are heavily over shaded by alder and are poorly vegetated with some erosion occurring.

There are some medium size elm trees surviving upstream in the park and some very large hybrid Black Poplar along the river valley. Bracket fungi is growing extensively in the base of one poplar near the iron bridge. The Poplar and Willow have now grown out of proportion with the valley and surrounding space and dominate the canopy in this part of the park.

Area 7. Fish Pond; BAP priority LOW.

The larger of the two ponds is heavily engineered with concrete edges and timber revetments. It is populated with coarse fish. These are stocked and fished by the local angling club.

Ducks and a pair of mute swans are residents throughout the year. The pond is approximately 1 metre deep and the surface is colonised with lilies during the summer.

Green algae has also been observed in late summer affecting water quality.

The stream runs along a natural course close to the pond before flowing over a weir and out of the park.

The pond is a focal point for many visitors and is visible from the nearby road.

CHAPTER 3. Proposed Character Areas.

Management Vision and Proposals.

The survey identified a number of distinct spaces (areas) around the park of differing characters but these are currently poorly defined. The areas of the park should have clearer boundaries and become more distinctive. There is also a need to join these spaces seamlessly together to reconnect the landscape, to allow wildlife, plants and people to move more freely around the park.

Defining the Character Areas will also assist in broadening diversity, better management of each area, improve public enjoyment and provide clearer interpretation of the park.

The proposed character areas have been divided into 9 Distinct areas: see Plan 1 . These are used in this report to prescribe management proposals for each area as follows:

Area 1: HEDGEROW AND WOODLAND PERIMETER. Character: Semi natural mixed woodland . Management proposals:

Plant (beat up) hedge boundary using Hawthorn (*Crateagus monygama*) with native species of local provenance and with occasional standard trees field maple, (*acer campestre*) and holly, (*ilex*), guelder rose, spindleberry (*euonymous*) and occasional blackthorn to fill the gaps of the existing hedge to create a continuous thick hedgerow around the perimeter edge.

Within the hedgerow the woodland belt to be planted as a deciduous woodland using native tree and shrub species with the long term aim of establishing a high canopy woodland along the central spine with oak, ash, birch, cherry, lime, rowan.

Along the southern edge of the new woodland a coppice woodland should be established with hazel, ash, birch, willow, alder and occasional sweet chestnut and cut on an 8- 15 year rotation.

The trees should be planted close together to encourage rapid development using mulch maps to reduce competition, approx 1-1.5 metre spacing. Some protection against Roe deer and particularly from squirrels may be necessary as the plants develop.



Area 2. Recreational Grassland. Character : Meadow with Veteran Trees.

While there are good butterfly populations being recorded in the Park (Macrae) these are mainly species relying on the food plant of grass species.



To broaden the habitats for other butterflies, bees, beetles and other insects it is recommended that a calcareous wild flower meadow is established of two to three metre width running along the length of the new woodland/coppice perimeter and around the fringe of the recreation grassland. This will create a wildlife corridor where native flora and fauna can colonise and move freely.

At the northern end of the park the meadow there should be room to widen the meadow and extend it out to replace the amenity grassland and to include the veteran oak standing in that part of the park. See plan 1.

Before establishing the meadow species it may be necessary to strip the turf before plug planting the wild flower seed mix. Removing the top soil will reduce the fertility and competition from other plants.

The new grass meadow mix should include traditional meadow plants i.e. clover, ox-eye daisy, knapweed, goat beard, birds foot trefoil, various vetches and fine grass species such as crested dogs tail, creeping bent and fescues.

Alternatively, a wild flower turf ready seeded can be purchased and used to obtain quicker establishment of a meadow sward.

Annual Management of Wild flower Meadow.

Having planted wild flowers, the new meadow should be cut early in the year (late March or early April) and then again in late July or August. All cuttings must be collected and removed from site.

No fertilisers of any type should be used on or near to the new meadow planting.

Including the veteran trees within the surrounding grassland will enhance their biodiversity potential and will also create valuable wildlife stepping stones in the new grassland corridor for invertebrates and small mammals.

Footpath and Access. A permanent path will be routed through the woodland fringe.

Seating: Locations for informal log seating away from the veteran trees should be considered along the new woodland edge for people to enjoy the developing trees and the surrounding views.

Veteran Tree Management.

To safeguard the long term health of these special trees, the base of the veteran oaks needs to be safeguarded to allow mycorrhizal activity in the soil to thrive as this will improve the availability of nutrients to the trees and their long term survival.

The establishment of a wildflower meadow around the trees and associated management will greatly enhance the biodiversity of the park and public enjoyment.

This can be done in two ways: (a) relaxing the frequency of mowing around the trees through the year and (b) planting the area with a wild flower mix.

If and when limbs fall off the trees they should be retained close to the host tree. This will ensure the habitat is retained for insects and other indigenous species enabling them to move to and from the broken limbs.

Any tree surgery must be carefully considered and clearly justified as any such work can cause the premature death of these trees.

Open grown oak trees pose a low risk to the public having grown over many years to withstand wind damage and they are not renowned for losing dead limbs abruptly. An annual survey of the trees should, however, be carried out to record changes to the tree and consider carefully any need for vital conservation surgery.

New pedunculate oak trees should be planted in small informal groups in cribs around the grassland to maintain continuity of the oak habitat and landscape character.

Area 3: Woodland Pond including northern road edge.

Character: Semi natural woodland with wetland and pond.

The small pond shown on old maps should be opened up to allow more light on the eastern side by removing poor specimens and closely grown trees.

The adjacent wet flush is a valuable part of a woodland structure and should be encouraged to develop into a wetland area within the woodland.

This work will include the fallen horse chestnut and coppicing of the willow. Shallow scrapes can be excavated in late autumn following a check for newts. The area should be allowed to develop slowly as a wetland habitat by opening up the wet flush. Any large dominant plant species should be cut back each year.

Some potentially good specimen conifers should be retained for landscape and habitat diversity around the pond.

Retain felled native trees where practicable.

Adjacent woodland around the pond to be thinned by 50%. Consider pollarding the oak.

To reduce both visual and noise intrusion from the nearby road, plant shrubs along the perimeter including hawthorn, holly and box.

Coppice the elm on an 8 year rotation to reduce casting heavy shade in the medium term. While the Elm survive and grow here some could be retained, even when dead or dying.

Access.

To connect both parts of the park currently split by the river and to improve the pedestrian access, removing existing desire routes, a new footpath could be created along the lower side of the pond and through the beech woodland down to the river.

There are two possible locations to span a wooden bridge across the stream and to improve pedestrian access and circulation around the park.

One location is adjacent to the road bridge using the island to give central support to the bridge span. The other location is adjacent to the small tunnel under the miniature railway where the river bends sharply .

The bridges can be made from locally sourced timber and would improve the access at this end of the park by connecting both sides of the park and improving access around the property.

Area 4A: Beech Plantation. Character: Beech woodland

The Beech plantation woodland along the edge of the mown grassland should have the crowns lifted to allow more light to the ground, promoting woodland plants and in preparation for the establishment of the wildflower meadow fringe.



The beech woodland to be thinned gradually (5% each year) over the next 8 years. This will allow the remaining trees to develop their crowns and roots and increase light levels to the field and shrub layer which should then develop naturally.

The long term affect of this work will be a traditional widely spaced beech woodland with spreading branches and broad crowns

Some dead wood of native trees in the wood should be retained as tall stumps or in large sections of fallen timber. Other extracted beech timber can be sold.

To improve the choice of circular routes around the park a new and level path could be established along the upper side of the beech woodland returning towards Stratford house joining an existing path and skirting a mature oak. See Plan 1.

The new routes around the park will remove access to the middle of the woodland but will enhance its conservation potential reducing risk to the public from falling limbs and erosion of the steeper banks.

Area 4B: Conifer woodland. Character: Pinetum

This section has enormous potential for rejuvenation and to become a dramatic collection of conifers. The existing trees have grown closely together and need thinning. Removing “wolf” trees by gradually and carefully thinning over the next 4 years will allow space for the development of the best remaining trees and for new planting of replacement conifers.

New conifers planted here would retain and enhance the fine majestic pinetum character. This should include giant Sequoia and coast redwood, western hemlock, Serbian and blue spruce on the sheltered slopes where their survival chances will be improved in a changing climate and be nursed by the existing trees. The new trees will eventually replace the maturing conifers that will fail in time and retain a dramatic backdrop to the north western side of the arboretum.

A fine view from the house lawn and from the lower arboretum would be created. See illustrations. over...

The large hybrid black poplar and yellow stemmed willow are dominating this part of the valley and have heavy and weak crowns. The black poplar is affected by fungal attack in its base.

These trees should be removed or reduced substantially over the next five years to open up light to the woodland and stream and to reduce the risk of failure or crowding other trees from growing.

Over the next 10 years acers, birch and other specimen trees suited to dappled shade should replace the large hybrid poplar and willow growing along the stream in the valley bottom. This will restore a better sense of proportion to the tree collection in this part of the park.

Along the top edge of the compartment are mature deciduous trees. Some of these suppressed trees including the oak could be pollarded and space made for the other trees to develop larger crowns.

Ivy has the potential to threaten tree stability if it smothers the upper part of the crown but ivy should be retained as ground cover and on stout tree stems because it is an important nectar and food source and a good nesting habitat.

Mistletoe is another important plant found in the trees in the park and although sacrophytic, it lives in harmony with its host and should also be retained.



Area 5: Road Perimeter Strip, East.

Character : Formal Woodland and Shrubbery.

The perimeter edge of the park needs to be filled out with new screen planting using hawthorn, blackthorn, holly, box, viburnum, cotoneaster and berberis shrubs. In front of the new screening, some ornamental conifers to be planted in small groups of 3 and 5 to create an attractive backdrop for other ornamental trees and shrubs along the edge of the lower arboretum.

Before this work begins, formative pruning of the crowns will increase light for existing and new plants.

The existing conifers (Corsican pine) and the large hybrid Black poplar trees should be gradually removed over the next 10 years. Lime, plane and robinia trees are well suited to roadside planting being wind firm.

A tree survey to assess the condition of all roadside trees is recommended to plan the management and removal when necessary of roadside trees.

Small but significant acer specimens in this compartment need some careful pruning around them to give them space to grow unimpeded from overhanging trees .

The Lime trees along the miniature railway could be pollarded to keep the trees in proportion to the space available to them and to increase light in this deeply shaded part of the park.

Once opened up more to light, low shrub planting and some specimen trees would enhance this “non- descript” part of the park.

Area 6. Character: Woodland stream and valley bottom. (Upper Stream Section).

The Painswick stream enters the park in the north east corner and dissects the park in two creating a barrier to visitors wishing to enjoy each part of the park from the northern end.

As mentioned earlier, a timber bridge using larch timber from the woodland could be constructed across the river, near to the road or further downstream at the southern end of the narrow island.

Increasing public access to this less accessible part of the park should reduce abuse by displacing those using it as a hideaway area, as more people are able to enjoy this shaded and wilder part of the park. Offering a more attractive route will also deflect visitors from the middle of the woodland.

The impact of the road dominates this upper end of the park so to reduce this noise intrusion, placing a weir or cascade of stones in the river at this point to increase the sound of tumbling water would dampen the sound of traffic noise while also oxygenating the river as it enters the park.

Working with adjacent landowners could find solutions of further improving the water habitat up stream.

N.B. The Environment Agency would need to be consulted in advance of any works in the river.

Along the length of the stream bank in the park alder trees have become very large and cast shade over the stream. Most of these trees should be coppiced on an 8 - 12 year rotation while a few are retained to broaden the age range of the trees and to enhance the waterside habitat.

Giant Hogweed should be managed or removed as it can dominate the river bank, it can be a noxious irritant and can cause blisters if handled. **N.B. Staff and volunteers to be aware.** Himalayan balsam is also becoming dominant along the river and further afield and should be removed despite its nectar source. Alternative and less invasive plants can then colonise or be planted along the river bank.

As more light and space become available in time along the river bank, this should allow natural regeneration of waterside plants although some particular plants should be encouraged or planted and these include: willow, bramble, marsh marigold, water dock, wild iris, reed canary grass, rushes and pendulous sedge.

Lower stream section. As the river flows closer towards the arboretum below the wooden railway bridge there is scope to thin the trees along the banks. In so doing views will be opened up to and from the arboretum and there is potential to establish more ornamental planting along the stream side below the pinetum .

vegetation with the more cosmetic and planned landscape character of the arboretum.

Plants that are suitable could include bamboo, gunnera- manicata ,ornamental rhubarb and brambles. These plants will create dense and defensive cover for nesting birds and insects.

The planting of thorn and dogwood around the east side of the small dipping pond will help protect this area from abuse.

Area 7. Character: Proposed New Orchard. BAP Priority High

Having lost 90% of orchards over the last 50 years, it is proposed to add a new and valuable orchard habitat to the park. Orchards are threatened throughout the country so new orchards are needed to maintain the bee and other insect populations as well as being a valuable educational resource for schools wishing to learn about growing fruit and the benefits of local food production.

To optimise biodiversity, the orchard needs to connect and integrate with the surrounding landscape within a natural green corridor which will connect it to the rest of the park and the adjacent walled garden. See Plan 1.

(The nearby slope along the astra turf playing surface is a good example of the value of such naturalised vegetation and its attraction to insects).

Medium standard rootstock apples and other fruit trees should be planted in pairs to ensure pollination.

Local Groups can visit and maintain the orchard. A low cleft fence would help define the space more clearly.

The grassland can be mown or perhaps occasionally grazed once or twice a year.

Area 8. Fish Pond. Character: Ornamental Pond.

To enhance the biodiversity and to soften the harsh edge around the pond, the length of the eastern bank should be restored to a vegetated bank. This can be done by removing the wooden revetment in places and/or fix pre- planted geo textile rolls with a range suitable water marginal plants.

A more natural edge will create a green buffer and reduce easy access to the pond.

A floating island could also be introduced to offer a safe nesting site for birds.

Planting large leafed vegetation and dogwood on the island would enhance cover and landscape.

The creation of a reed bed at the inflow end of the pond using phragmites will further enhance the wetland habitat and water quality.

When necessary, barley straw should be used in August to reduce blue green algae blooms.



CHAPTER 3. Area 9 . The ARBORETUM BAP National :

Character; Formal Pleasure Grounds and Arboretum. (See Plan 2).

The arboretum is a valuable and important historical landscape created by previous owners of Stratford park over nearly two centuries . There is potential to enhance further the tree collection and for it to become a destination for those with an interest in trees and to become an important educational resource ,as well as a place for quiet enjoyment and reflection.

The changes in ownership, lack of resources and a long term plan for the management of the arboretum has meant the maintenance of the tree collection is in need of investment towards a future landscape to ensure a vibrant and inspiring tree collection survives . Many of the existing trees are at a similar stage of maturity but few specimens have been under planted to replace dead or dying trees and shrubs.

Although many of the trees in the arboretum are not native to Britain they broaden habitat niches as well as the visual richness of the park. The variety of trees is a living and valuable example of diversity in the plant world.

The wide variety of exotic trees has created a beautiful park for people to relax and walk around. Many of the trees are mature with the oldest being on the slope east of the house . These are in a location that could be at increasing risk of drought stress and premature death. The loss of any large tree here will have a dramatic impact on the arboretum over the next 20- 25 years.

In some parts of the arboretum there are however probably too many trees competing for light and preventing an under storey of grass or shrubs to grow beneath the trees. In particular at the lower corner of the arboretum by the pond and along the road perimeter where yews and beech dominate these parts of the park.



The arboretum is mature with trees that were planted around 1850's and it is in need of some phased rejuvenation to ensure the existing tree collection continues to be a key feature of the park.

Two trees have died recently, an Atlantic Cedar in the avenue and an Auracaria (Chile Pine) on the house lawn. Some trees have shown signs of stress during late summer following a dry spring in 2011, and other trees have butt decay in the stem and canker damage .



The Arboretum :

Future Considerations and Recommendations.

Many of the trees in the arboretum should continue to be generally in good health for another 30 to 50 years at least, the soil however is compacted and this will reduce the micorryzial activity in the soil,

exposing the trees to disease and drought stress. It is unlikely that these threats will reduce. Cherry and birch trees are relatively short lived trees so these, with the most mature trees may be lost over the next 30 years. It would therefore be prudent to replace these and other of species found in the arboretum slowly, reflecting the original collection but also include new tree specimens that are well suited to a dryer climate.

- The type and planting position of some trees should also be considered to maximise their visual impact and reduce risk of drought stress by planting on the lower slope of the valley sides. i.e. Sequoia and Coast Redwood.
- Consider using Terraventing process to aerate and improve soil conditions for tree growth.
- New tree species such as Serbian Spruce and Eucalyptus could be introduced for their ability to resist drought together with nut and fruit trees near to the kitchen garden.
- Thickening the shrubbery screen of deciduous and evergreen shrubs should be a priority and to lay existing holly and thorn to fill gaps, raise some crowns to encourage new growth and to remove dead and dying trees close to the road edge such as cherry and larch. New perimeter plants to include Holly, Box, Cherry, Laurel, Privet, Berberis, Viburnum and Cotoneaster.



- New planting along the perimeter up to the Salmon Springs gate will reduce the impact of the adjacent road. This should also be a priority. Plants should include holly, hawthorn, box, cherry laurel, hazel and viburnum. The perimeter planting will also provide a backdrop for more ornamental and dramatic trees and shrubs that can be enjoyed when walking through the park.
- The pinetum area to become integrated within the upper and lower arboretum. For recommendations, see pinetum character area.
- Recreating the view across the lake from the southern end should be considered.

- A planting scheme to be agreed to maintain a screen from the road and retain an attractive view across the lake from the house.
- Cedar and Wellingtonia Avenue. If more trees are lost over the next five years it may be necessary to begin to under plant a new avenue to replace the mature trees when they have died. Reducing soil compaction here could be tried here to improve the conditions for the existing trees.
- Some Poplars in the lower arboretum should be removed over the next 10 years in favour of giving space for new and less dominant trees.
- There are some specimen trees being over shaded by larger trees in the lower arboretum i.e. paper bark maple(acer griseum) and a snake bark maple (acer grosseri). Careful crown raising of the surrounding trees is recommended. All cutting equipment should be sterilised during and after pruning is carried out to prevent spreading disease.
- Tree stumps can be a source of pathogens including honey fungus which will infect many tree species. Stumps and roots should be ground out in the arboretum.
- A tree planting scheme is needed to ensure new trees are introduced and maintained. The park continues to be a place where a wide variety of trees are accessible and can be seen and enjoyed by the people of Stroud. It also raises awareness and knowledge of trees.



The fine avenue of Wellingtonias and Cedars along the original main drive to the house.

Arboretum Management Summary:

The park is an ideal location for the community of Stroud and for visitors from further afield to enjoy an inspiring and informative stroll around a wide selection of fine exotic specimens trees and shrubs that cannot be found without travelling some distance. .

Before new trees are planted in future, appropriate species need to be carefully considered that can survive the impact of climate change and in particular to new trees planted on well drained slopes. Soil aeration is also recommended before any planting is done.

Trees around the perimeter need annual inspection and assessment to ensure appropriate silvicultural management is carried out as early as possible as the trees develop.

Replacement trees around the perimeter should be wind firm and types that are at low risk of disease, losing limbs or wind throw. i.e. oak, lime, plane, Corsican and Scots pine.

The thinning of some trees and coppicing of shrubs will improve light levels and the effectiveness of the natural screen around the perimeter.

Although the bulk of the trees are in good condition, over the next 30-50 years many will become less vigorous and begin to decline. Where there is space the introduction of new recruit trees to replace the larger trees will lessen the impact of any losses when they occur in the arboretum.

An annual survey is recommended to assess the condition of each tree in the arboretum and carried out during Spring, late Summer and Autumn to obtain a condition history .

Grey squirrels have become a severe threat to deciduous hardwoods through their habit of stripping trees with thin bark ,resulting in damage and the loss of trees. Squirrels also predate many birds species having a negative effect on bio diversity. Control measures can be effective if carried out professionally and at the right time of year.

It is however, a serious problem that needs to be tackled nationally .

Maintenance Summary.

- 1. Remove crowded and diseased trees, raising crowns will improve the tree stock and create more favourable growing conditions to the surrounding vegetation.**
- 2. Establish replacement trees/shrubs in existing plantings to give early protection.**
- 3. Aerate soils around key trees and before new trees are planted**
- 4. Early formative pruning carried out.**
- 5. Gradual replacements should be made using various size trees depending on location, i.e whips or standards.**
- 6. Robust tree cribs for protection may be necessary in vulnerable locations.**
- 7. Protect all trees from mower damage at the base of the stems.**
- 8. Species suitable to drier conditions to be included in the tree collection.**
- 9. Retain and re establish new views.**

10. Control /Eradicate Grey squirrels.
11. Control ivy on specimen trees.
12. Large stumps should be ground out to reduce threat from Honey fungus.
13. Explore the use of exotic timbers locally.

CHAPTER 5. Beyond the Park Boundary :



The adjacent countryside around Stratford Park has fortunately not all been lost to development for housing or industry. Housing development appears however continues to be a potential threat to the green space around Stroud.

Because the adjacent green spaces to Stratford park have become increasingly reduced, fragmented and isolated, the remaining surrounding green landscape in and around Stroud should be considered in the context of this plan.

The land use surrounding the park should not be overlooked or under estimated in the important role it plays to sustain a rich and diverse environment in the park. Such areas need to be conserved to provide green corridors and stepping stones for wildlife.

These connections may also have the potential to enable people to move freely on foot to other parts of Stroud such as linking the restored canal which is another key component to reconnecting the landscape around Stroud.

Influence over the future use and planning the management of these adjacent areas : see Plan 3. should be exercised by the community through the planning process.

Chapter 4. Involving People and the Local Community.



The park is a popular place for people of all ages.

The park is ideally situated to give the local community access to the natural world and to encourage everyone to learn more about their environment, in particular about trees and their relevance and importance in everyone's lives.

It is a place where the community can enhance their quality of life and well being .

There are many schools and colleges within walking distance of the park and they should all be encouraged to use the park for informal education and to experiences the natural world.

To gain offer ways to better understand the park and the environment will ensure the park will continue to be relevant to everyone in future.

Getting the community of all ages involved in its management should be encouraged by staging events and developing a tree warden team to ensure the trees are safeguarded and develop well .

The nature festival focuses on the natural history of the park and this could be broadened to the tree and wood interests which will open up an enormous range of related aspects connected with growing plants, food, wood crafts and art in nature.

Developing a Young Friends of Stratford Park under a "Young Ranger" banner could enable young people to become involved. Make it COOL and FUN!

To offer opportunities to learn skills and crafts related to wood and woodlands.

A permanent Wood and Nature exhibition would be very appropriate in the park, situated around the leisure centre to be seen by a wide audience and raise the awareness and special qualities of the park.

Projects : How the community can get involved; see Community Project list (page 24).

Current Trends 2011.

Localism, getting communities involved and taking responsibility for their environment.

Reconnecting the landscape r. Wildlife corridors and broadening biodiversity. (Environment Paper: July 2011).

Space for people to relax and enjoy green spaces (Lawton Report: 2010).

Re connecting people with nature and the countryside.

Understanding how and where food is produced.

Rustic skills, permaculture

Outdoor education and an interest in trees, wood and woodcraft.

Health and Wellbeing

Current Threats

Vandalism/Nocturnal activities

Global warming

Squirrels

Himalayan Balsalm. Hogweed

Adjacent developments /Loss of green space

Tree diseases . Soil compaction

Grant Support Sources.

Earnest Cook Trust

Woodlands Trust

Heritage Lottery Fund (BBC Villages SOS)

The Big Tree Plant

Forestry Commission

Sylvanus Trust

Groundwork Trust

Acknowledgements.

Mike McCrea, Rozelle Jachowicz, Steve Roberts, Claire Cheshire,

Bio Diversity Study 2002, Gloucestershire Wildlife Trust . Bio diversity Action Plan 2002.

Community Project List.

Tree Planting and pruning.

Establishing Tree Warden Team

Pond Clearing

Recording the tree stock

Woodland thinning support

Path Creation.

Tree woodcarving

Woodland pond restoration

Balsalm removal

Hogweed removal.

Conifer planting in Pinetum.

Streamside Planting

Fish pond and bank restoration



APPENDIX 3 SPECIES LIST

Incorporates records* from a Nature Conservancy Council survey (1990) and Site Monitoring surveys by GWM/SDC (1990 & 1991), a survey+ of the Painswick Stream (GTNC 1978) and a Tree survey** (SDC 1999). All other records made 2001/02 by GWM.

Flora

Trees & Shrubs

Field Maple (<i>Acer campestre</i>)	Red Snake-bark Maple** (<i>Acer capillipes</i>)
David's Maple** (<i>Acer davidii</i>)	
Variiegated Box-elder** (<i>Acer negundo</i> 'variegatum')	Norway Maple** (<i>Acer platanoides</i>)
Sycamore (<i>Acer pseudoplatanus</i>)	Silver Maple** (<i>Acer saccharinum</i>)
Horse-chestnut (<i>Aesculus hippocastanum</i>)	Tree of Heaven** (<i>Ailanthus altissima</i>)
Alder (<i>Alnus glutinosa</i>)	Monkey-puzzle** (<i>Araucaria araucana</i>)
Paper Birch** (<i>Betula papyrifera</i>)	Silver Birch (<i>Betula pendula</i>)
Downy Birch* (<i>Betula pubescens</i>)	Himalayan Birch** (<i>Betula utilis</i>)
Box (<i>Buxus sempervirens</i>)	Hornbeam (<i>Carpinus betulus</i>)
Indian Bean Tree** (<i>Catalpa bignonioides</i>)	Deodar Cedar** (<i>Cedrus deodara</i>)
Blue Atlas Cedar** (<i>Cedrus atlantica</i> var. <i>glauca</i>)	Katsura Tree** (<i>Cercidiphyllum japonicum</i>)
Lawson Cypress** (<i>Chamaecyparis lawsoniana</i>)	Hazel (<i>Corylus avellana</i>)
Dogwood (<i>Cornus sanguinea</i>)	Venetian Sumac** (<i>Cotinus coggygria</i>)
Himalayan Tree-cotoneaster** (<i>Cotoneaster frigidus</i>)	a Hawthorn** (<i>Crataegus grignonensis</i>)
Hawthorn (<i>Crataegus monogyna</i>)	Beech (<i>Fagus sylvatica</i>)
Beech** (<i>Fagus sylvatica</i> 'albovariegata')	Narrow-leaf Ash** (<i>Fraxinus angustifolia</i>)
Ash (<i>Fraxinus excelsior</i>)	Maidenhair Tree** (<i>Ginkgo biloba</i>)
Highclere Holly** (<i>Ilex x altaclerensis</i> 'hodginsii')	Holly (<i>Ilex aquifolium</i>)
Holly (<i>Ilex aquifolium</i> 'albomarginata')	Walnut** (<i>Juglans regia</i>)
Juniper** (<i>Juniperus</i> sp)	Common Laburnum** (<i>Laburnum anagyroides</i>)
European Larch (<i>Larix decidua</i>)	Sweet Gum** (<i>Liquidambar styraciflua</i>)
Tulip Tree** (<i>Liriodendron tulipifera</i>)	Saucer Magnolia** (<i>Magnolia x soulangiana</i>)
Dawn Redwood** (<i>Metasequoia glyptostroboides</i>)	Persian Ironwood** (<i>Parrotia persica</i>)
Norway Spruce* (<i>Picea abies</i>)	Dragon Spruce** (<i>Picea asperata</i>)
Oriental Spruce** (<i>Picea orientalis</i>)	Monterey Pine** (<i>Pinus radiata</i>)
Scots Pine (<i>Pinus sylvestris</i>)	White Poplar** (<i>Populus alba</i>)
Hybrid Black-poplar (<i>Populus x canadensis</i>)	Wild Cherry (<i>Prunus avium</i>)
Cherry Plum** (<i>Prunus cerasifera</i>)	Cherry Laurel** (<i>Prunus laurocerasus</i>)
Portugal Laurel** (<i>Prunus lusitanica</i>)	Blackthorn (<i>Prunus spinosa</i>)
Scarlet Oak** (<i>Quercus coccinea</i>)	Evergreen Oak** (<i>Quercus ilex</i>)
Pedunculate Oak (<i>Quercus robur</i>)	Red Oak** (<i>Quercus rubra</i>)
Red Currant (<i>Ribes rubrum</i>)	False-acacia** (<i>Robinia pseudoacacia</i> 'Frisia')
Field Rose (<i>Rosa arvensis</i>)	Dog Rose (<i>Rosa canina</i> agg.)
Bramble (<i>Rubus fruticosus</i> agg.)	Raspberry* (<i>Rubus idaeus</i>)
White Willow** (<i>Salix alba</i> 'tristis')	Goat Willow* (<i>Salix caprea</i>)
Grey Willow (<i>Salix cinerea</i>)	Crack Willow (<i>Salix fragilis</i>)
Bay Willow** (<i>Salix pentandra</i>)	Elder (<i>Sambucus nigra</i>)
Giant Sequoia** (<i>Sequoiadendron giganteum</i>)	Whitebeam** (<i>Sorbus aria</i>)
Rowan** (<i>Sorbus aucuparia</i>)	Vilmorin's Rowan** (<i>Sorbus vilmorinii</i>)
Swamp Cypress** (<i>Taxodium distichum</i>)	Yew (<i>Taxus baccata</i>)
Caucasian Lime** (<i>Tilia euchlora</i>)	Small-leaved Lime** (<i>Tilia cordata</i>)

Lime (*Tilia x vulgaris*)
English Elm (*Ulmus procera*)

Wych Elm (*Ulmus glabra*)
Mistletoe (*Viscum album*)

Ferns & Horsetails

Broad Buckler-fern (*Dryopteris dilatata*)
Hart's-tongue (*Phyllitis scolopendrium*)

Male Fern (*Dryopteris filix-mas* agg.)
Field Horsetail (*Equisetum arvense*)

Grasses, Sedges and Rushes

Creeping Bent (*Agrostis stolonifera*)
Meadow Foxtail (*Alopecurus pratensis*)
False-brome (*Brachypodium sylvaticum*)
Hairy Sedge* (*Carex hirta*)
Spiked Sedge* (*Carex spicata*)
Crested Dog's-tail* (*Cynosurus cristatus*)
Tufted Hair-grass (*Deschampsia cespitosa*)
Giant Fescue (*Festuca gigantea*)
Yorkshire-fog (*Holcus lanatus*)
Perennial Rye-grass (*Lolium perenne*)
Reed Canary-grass* (*Phalaris arundinacea*)
Annual Meadow-grass* (*Poa annua*)
Branched Bur-reed* (*Sparganium erectum*)

Sweet Vernal Grass (*Anthoxanthum odoratum*)
False Oat-grass (*Arrhenatherum elatius*)
Hairy Brome (*Bromopsis ramosa*)
Pendulous Sedge (*Carex pendula*)
Wood-sedge* (*Carex sylvatica*)
Cock's-foot (*Dactylis glomerata*)
Common Couch (*Elytrigia repens*)
Red Fescue (*Festuca rubra* agg.)
Soft Rush* (*Juncus effusus*)
Wood Melick (*Melica uniflora*)
Timothy* (*Phleum pratense*)
Rough Meadow-grass* (*Poa trivialis*)
Yellow Oat-grass* (*Trisetum flavescens*)

Forbs

Yarrow (*Achillea millefolium*)
Garlic Mustard (*Alliaria petiolata*)
Wild Angelica (*Angelica sylvestris*)
Cow Parsley (*Anthriscus sylvestris*)
Mugwort* (*Artemisia vulgaris*)
Daisy* (*Bellis perennis*)
Hedge Bindweed* (*Calystegia sepium*)
Wavy Bitter-cress (*Cardamine flexuosa*)
Common Knapweed* (*Centaurea nigra*)
Rosebay Willowherb* (*Chamerion angustifolium*)
Alternate-leaved Golden-saxifrage* (*Chrysosplenium alternifolium*)
Opposite-leaved Golden-saxifrage (*Chrysosplenium oppositifolium*)
Enchanter's-nightshade (*Circaea lutetiana*)
Marsh Thistle* (*Cirsium palustre*)
Smooth Hawk's-beard* (*Crepis capillaris*)
Broad-leaved Willowherb* (*Epilobium montanum*)
Meadowsweet (*Filipendula ulmaria*)
Cleavers (*Galium aparine*)
Dove's-foot Crane's-bill (*Geranium molle*)
Wood Avens (*Geum urbanum*)
Ivy (*Hedera helix*)
Hogweed (*Heracleum sphondylium*)
Indian Balsam (*Impatiens glandulifera*)
White Dead-nettle (*Lamium album*)
Nipplewort (*Lapsana communis*)
Oxeye Daisy* (*Leucanthemum vulgare*)
Black Medick* (*Medicago lupulina*)

Ground-elder (*Aegopodium podagraria*)
Ramsons (*Allium ursinum*)
Wood Anemone (*Anemone nemorosa*)
Lesser Burdock (*Arctium minus*)
Lords-and-ladies (*Arum maculatum*)
White Bryony* (*Bryonia dioica*)
Shepherd's-purse* (*Capsella bursa-pastoris*)
Cuckoo-flower (*Cardamine pratensis*)
Common Mouse-ear* (*Cerastium fontanum*)
Greater Celandine* (*Chelidonium majus*)
Creeping Thistle (*Cirsium arvense*)
Spear Thistle* (*Cirsium vulgare*)
Great Willowherb (*Epilobium hirsutum*)
Petty Spurge* (*Euphorbia peplus*)
Snowdrop (*Galanthus nivalis*)
Cut-leaved Crane's-bill* (*Geranium dissectum*)
Herb-robert (*Geranium robertianum*)
Ground-ivy (*Glechoma hederacea*)
Cat's-ear* (*Hypochaeris radicata*)
Yellow Archangel (*Lamiastrum galeobdolon*)
Red Dead-nettle* (*Lamium purpureum*)
Meadow Vetchling* (*Lathyrus pratensis*)
Pineappleweed* (*Matricaria discoidea*)
a mint* (*Mentha* sp.)

Dog's Mercury (<i>Mercurialis perennis</i>)	Common Poppy* (<i>Papaver rhoeas</i>)
Ribwort Plantain (<i>Plantago lanceolata</i>)	Greater Plantain* (<i>Plantago major</i>)
Creeping Cinquefoil* (<i>Potentilla reptans</i>)	Barren Strawberry* (<i>Potentilla sterilis</i>)
Selfheal* (<i>Prunella vulgaris</i>)	Meadow Buttercup* (<i>Ranunculus acris</i>)
Goldilocks Buttercup* (<i>Ranunculus auricomus</i>)	Lesser Celandine (<i>Ranunculus ficaria</i>)
Creeping Buttercup (<i>Ranunculus repens</i>)	Sorrel (<i>Rumex acetosa</i>)
Clustered Dock* (<i>Rumex conglomeratus</i>)	Broad-leaved Dock* (<i>Rumex obtusifolius</i>)
Water Figwort (<i>Scrophularia auriculata</i>)	Common Ragwort* (<i>Senecio jacobaea</i>)
Groundsel (<i>Senecio vulgaris</i>)	Red Campion (<i>Silene dioica</i>)
Hedge Mustard* (<i>Sisymbrium officinale</i>)	Bittersweet (<i>Solanum dulcamara</i>)
Prickly Sow-thistle* (<i>Sonchus asper</i>)	Smooth Sow-thistle* (<i>Sonchus oleraceus</i>)
Hedge Woundwort (<i>Stachys sylvatica</i>)	Lesser Stitchwort* (<i>Stellaria graminea</i>)
Chickweed (<i>Stellaria media</i> agg.)	Common Comfrey (<i>Symphytum officinale</i>)
Russian Comfrey* (<i>Symphytum x uplandicum</i>)	Dandelion agg. (<i>Taraxacum</i> sp.)
Lesser Trefoil* (<i>Trifolium dubium</i>)	Red Clover* (<i>Trifolium pratense</i>)
White Clover* (<i>Trifolium repens</i>)	Common Nettle (<i>Urtica dioica</i>)
Germander Speedwell (<i>Veronica chamaedrys</i>)	Slender Speedwell* (<i>Veronica filiformis</i>)
Ivy-leaved Speedwell (<i>Veronica hederifolia</i>)	Wood Speedwell* (<i>Veronica montana</i>)
Common Field-speedwell (<i>Veronica persica</i>)	
Thyme-leaved Speedwell* (<i>Veronica serpyllifolia</i>)	Common Vetch* (<i>Vicia sativa</i>)
Bush Vetch (<i>Vicia sepium</i>)	Sweet Violet (<i>Viola odorata</i>)
Early Dog-violet* (<i>Viola reichenbachiana</i>)	Common Dog-violet (<i>Viola riviniana</i>)

Fauna

Lepidoptera

Speckled Wood	Small Tortoiseshell
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Orthoptera

Oak Bush Cricket

Birds

Blackbird*	Black-headed Gull*	Carolina Wood Duck+	Carrion Crow*	Chaffinch*
Green Woodpecker		Grey Wagtail+	Little Owl*	Magpie
Mallard*	Mandarin+	Moorhen*	Pied Wagtail*	Starling*
Woodpigeon	Wren	Jay		

Mammals

Badger	Grey Squirrel	Rabbit	Mole*
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RECOMMENDED 'PLUGS', BULBS, MEADOW SEEDS

Meadow Grasses

Sweet Vernal Grass (<i>Anthoxanthum odoratum</i>)	Meadow Foxtail (<i>Alopecurus pratensis</i>)
Quaking-grass (<i>Briza media</i>)	Crested Dog's-tail (<i>Cynosurus cristatus</i>)
Smaller Cat's-tail (<i>Phleum bertolonii</i>)	Yellow Oat-grass (<i>Trisetum flavescens</i>)

Flowers

Woodland Edge & Hedgerows

Bugle (<i>Ajuga reptans</i>)	Ramsons (<i>Allium ursinum</i>)
Wood Anemone (<i>Anemone nemorosa</i>)	Wood Spurge (<i>Euphorbia amygdaloides</i>)
Nettle-leaved Bellflower (<i>Campanula trachelium</i>)	Snowdrop (<i>Galanthus nivalis</i>)
Wild Strawberry (<i>Fragaria vesca</i>)	Bluebell (<i>Hyacinthoides non-scripta</i>)
Woodruff (<i>Galium odoratum</i>)	Dog's Mercury (<i>Mercurialis perennis</i>)
Yellow Archangel (<i>Lamiastrum galeobdolon</i>)	Primrose (<i>Primula vulgaris</i>)
Barren Strawberry (<i>Potentilla sterilis</i>)	Sanicle (<i>Sanicula europaea</i>)
Lesser Celandine (<i>Ranunculus ficaria</i>)	Sweet Violet (<i>Viola odorata</i>)
Greater Stitchwort (<i>Stellaria holostea</i>)	Common Dog-violet (<i>Viola riviniana</i>)
Early Dog-violet (<i>Viola reichenbachiana</i>)	

Meadow

Agrimony (<i>Agrimonia eupatoria</i>)	Cuckoo-flower (<i>Cardamine pratensis</i>)
Common Knapweed (<i>Centaurea nigra</i>)	Pignut (<i>Conopodium majus</i>)
Lady's Bedstraw (<i>Galium verum</i>)	Meadow Crane's-bill (<i>Geranium pratense</i>)
Field Scabious (<i>Knautia arvensis</i>)	Meadow Vetchling (<i>Lathyrus pratensis</i>)
Rough Hawkbit (<i>Leontodon hispidus</i>)	Oxeye Daisy (<i>Leucanthemum vulgare</i>)
Common Bird's-foot-trefoil (<i>Lotus corniculatus</i>)	Common Restharrow (<i>Ononis repens</i>)
Cowslip (<i>Primula veris</i>)	Bulbous Buttercup (<i>Ranunculus bulbosus</i>)
Yellow-rattle (<i>Rhinanthus minor</i>)	

STRATFORD PARK ARBORETUM TREE LIST 2011

TREE NUMBER	COMMON NAME	SPECIES NAME	NOTES	NUMBER	COMMON NAME	SPECIES	NOTES
1	DEODAR CEDAR	CEDRUS DEODARA		187	YEW		
2	CEDAR LEBANON	CEDRUS LEBIANII		188	TULIP TREE	Liriodendron tulipifera	
3	MAIDENHAIR	Ginkgo biloba		189	DOUGLAS FIR	Pseudotsuga menziesii	
4	WSTN RED CEDAR	Cryptomeria japonica		190	HOLLY Lawsonia		
5	WSTN RED CEDAR	Cryptomeria japonica		191	HOLLY Pyramidal		
6	WSTN RED CEDAR	Cryptomeria japonica		192	YEW	Taxus Bacatta	
7	LAWSONSCYPRESS			193	CHERRY	Prunus	
8	CHERRY	Prunus	Stem rot	194	MAGNOLIA		
9	CUPRSS. SEPIVIREN	Italian Cypress		195	HOLLY Golden King		
10	CUPRSS. SEPIVIREN	Italian Cypress		196			
11	CHAMACYPRESS	Lawsons cypress		197	GOLDEN IRISH YEW	Taxus bacatta fastgt. aurea	
12	CHAMACYPRESS	Lawsons cypress		198	BEAN TREE	Catalpa bignoides	
13	CUPRESSUS	Monterey		199	HOLLY Highclere		
14	Cupressus (various)			200	??????????		
15	" " "			201	IRISH YEW		
16	" " "			202	IRISH YEW		
17	" " "			203	RED OAK		
18	" " "			204	HOLLY Golden King		
19	" " "			205	CHERRY Sergentii		
20	" "" "			206	HOLLY Golden King		
21	" " "			207	HOLLY		
22	THUYA PLICATUM	Western Red Cedar		208	BAMBOO		
23	CUPRESSUS			209	ATLANTIC CEDAR	Cedrus atlantica	
24	ALNUS	Alder		210	HOLLY		
25	COTONEASTER	Frigida		211	IRISH YEW	Taxus bacatta fastgt.	
26	SWAMP CYPRESS	Taxodium distichum		212	??????		
27	TREE OF HEAVEN	Ailanthus altissima		213	YEW		
28	PERSIAN IRONWOOD	PAROTIA PERSICA		214	YEW		
29	CYPRESS			215	YEW		
30	CYPRESS			216	YEW		
31-39	YEW			217	HOLLY Golden King		
37	PERNYS HOLLY	Ilex pernyi		218	SCOTS PINE	Pinus sylvestris	
40	HOLM OAK	Quercus Ilex		219	COMMON LIME	Tilia vulgaris	
41	OAK	Quercus robur		220	SEQUOIA	Sequoia giganteum	
42	YEW	Taxus bacata		221	SEQUOIA	Sequoia giganteum	
43	YEW	Taxus bacata		222	FALSE ACACIA	Robinia pseudoacacia	
44	SUGAR MAPLE	Acer Saccharinum		223	RED SNAKEBARK MAPLE		
45	HINOKI CPRESS	Chmcprs Obtusa		224	HOLLY spineless		
46	HINOKI CPRESS	Chmcprs Obtusa		225	ATLAS BLUE CEDAR	Cedrus atlantica glauca	
47	HOLM OAK	Quecus Ilex		226	SEQUOIA	Sequoia giganteum	
48	CYPRESS			227	ATLAS BLUE CEDAR	Cedrus atlantica glauca	
49	ORIENTAL SPRUCE	Picea Orientalis		228	BREWERS WEEPING SPRUCE	Picea breweriana	
50	ORIENTAL SPRUCE	Picea Orientalis		229	SPRUCE?		
51	KATSURA TREE	Cecidiphylum japonicum		230	ACER		
52	Picea	Picea Orientalis		231	PINE		
53	SAWARA CYPRESS	Cupressus macrocarpa		232	PINE		
54	ORIENTAL SPRUCE	Picea Orientalis		233	SWAMP CYPRESS	Taxodium	
55	ORIENTAL SPRUCE	Picea Orientalis		234	SWAMP CYPRESS	Taxodium	
56	LAWSONS CYPRESS	Chamaecyparis		235	Hybrid POPLAR	Populus canadensis	
57	THUYA PLICATUM	Western Red Cedar		236	ALDER	Alnus Glutinosa	
58	CHAMACYPRESS	Nootkakensis		237	BIRCH	Betulus Utilis	
59	ATLAS CEDAR	Cedrus Atlantica		238	SEA BUCKTHORN	Hippophae rhamnoides	
60	ITALIAN CYPRESS	Blue crown		239	Hybrid POPLAR		
61	SMOKE BUSH	Cotinus Cogyria		240	ACER		
62	MOUNTAIN PINE	Pinus Mugo		241	ACER		
63	BUCKEYE	Aesculus californica		242	DOWNY BIRCH		
64	CUPRESSUS STEWARTII			243	CHERRY		
65	CRAB APPLE	Malus		244	CYPRESS FASTIGIATE AUREA		
66	HAWTHORN	Crataegus		245	RED OAK	Quercus rubra	
67	HOLLY GOLDEN KING			246	BEAN TREE	Catalpa bignoides	
68	FRUIT			247	COAST REDWOOD	Sequoia Sempivirens	
69	JAPANESE CHERRY	Prunus Serulata		248	COAST REDWOOD	Sequoia Sempivirens	
70	DAWN REDWOOD	Metasquoia Glyptostroboides		249	CORSICAN PNE	Pinus Nigra	
71	ATLAS BLUE CEDAR	Cedrus atlantica glauca		250	CORSICAN PNE	Pinus Nigra	
72	ATLAS BLUE CEDAR	Cedrus atlantica glauca		251	CORSICAN PNE	Pinus Nigra	
73	SEQUOIA	Sequoia Giganteum		252	BEECH	Fagus Sylvatica	
74	BUCKEYE	Aesculus californica		253	BEECH	Fagus Sylvatica	
75	HOLLY	Ilex		254	HOLM OAK	Quercus Ilex	
76	YEW	Taxus bacata		255	CHERRY	Prunus	
77	CUPRESSUS			256	SNAKE BARK ACER	Grosseri	
78	YEW	Taxus bacata		257	COAST REDWOOD	Sequoia Sempivirens	
79	ATLAS BLUE CEDAR	Cedrus atlantica glauca		258	PAPERBARK MAPLE	Acesr Griseum	
80		Ilex alterclarensis		259	CHERRY	Prunus	
81	HOLLY CRISPA PICTA	Ilex		260	ATLAS BLUE CEDAR	Cedrus atlantica	
82	CORSICAN PINE	Pinus nigra		261	CHILE PINE	Aurucaria	
83	YEW	Taxus bacata		262	OAK	Quercus	
84	ATLAS CEDAR	Cedrus atlantica		263	YEW	Taxis Bacattta	
85	ATLAS BLUE CEDAR	Cedrus atlantica glauca		264	PINE	Pinus Nigra	
86	ATLAS BLUE CEDAR	Cedrus atlantica glauca		265	PINE		
87	SEQUOIA	Sequoia Giganteum		266	ALDER		
88	LIQUIDAMBER			267	WEEPING WILLOW	Salix chrysocoma	
89	PSDOSUGO menziesii	Douglas fir		268	WEEPING WILLOW	Salix chrysocoma	
90	CHAMACYPRESS			269	CHILE PINE	Aurucaria	
91	IRISH YEW	Taxus bacata fastgt.		270	CEDRUS ATLAS	Cedrus atlantica	
92	HOLLY			271	BLACK MULBERRY	Morus Nigra	

TREE NUMBER	COMMON NAME	SPECIES NAME	NOTES
	93 IRISH YEW	Taxus bacatta fastigiata	
	94 PAPERBARK BIRCH	Betula papyfera	
	95 HOLLY	Ilex crispa picta	
	96 RED OAK	Quercus rubra	
	97 RED OAK	Quercus rubra	
	98 RED OAK	Quercus rubra	
	99 COPPER BEECH	Fagus Purpurea	
	100 COMMON LIME	Tilia vulgaris	
	101 SCARLET OAK	Quercus coccinea	
	102 SWEET GUM	Liquidamber stryaciflua	
	103		
	104		
	105 Cypress /Cupressus(Various)		
	106		
	107		
	108 CHERRY		
	109 CYPRESS		
	110 BEECH	Fagus sylvatica	
	111 PURPLE OAK LEAVED BEECH Rohanii		
	112 BEECH	Fagus sylvatica	
	113 ACER		
	114 WALNUT	Juglans regia	
115-117	WALNUT	Juglans regia	
	118 DRAGON SPRUCE	Picea aspirata	
	119 ACER		
	120 COAST REDWOOD	Sequoia sempivirens	
	121 WALNUT	Juglans regia	Dying (canker)
	122 SAWARA CYPRESS	Chamaecyparis pisifera	
	123 DOUGLAS FIR	Pseudotsuga Menziesii	
	124 DOUGLAS FIR	Pseudotsuga Menziesii	
	125 DOUGLAS FIR	Pseudotsuga Menziesii	
	126 DOUGLAS FIR	Pseudotsuga	
	127 SEQUOIA	Sequoia giganteum	
	128 SEQUOIA	Sequoia giganteum	
	129 DEODAR CEDAR	Cedrus deodara	
	130 DEODAR CEDAR	Cedrus deodara	
	131 DEODAR CEDAR	Cedrus deodara	
	132 DEODAR CEDAR	Cedrus deodara	dying bleeding canker
	133 SEQUOIA	Sequoia giganteum	
	134 DEODAR CEDAR	Cedrus deodara	
	135 DEODAR CEDAR	Cedrus deodara	
	136 DEODAR CEDAR	Cedrus deodara	
	137 CORSICAN PINE	Pinus Nigra	
	138 CORSICAN PINE	Pinus Nigra	
	139 CORSICAN PINE	Pinus Nigra	
	140 CORSICAN PINE	Pinus Nigra	
	142 SEQUOIA	Sequoia giganteum	
143-146	DEODAR CEDAR	Cedrus deodara	
	147 OAK	Quercus	
	148 SEQUOIA	Sequoia Giganteum	
	149 ACER		
	150 STONE PINE??	Pinus pinea	
	151 YEW	Taxus Bacatta	
	152		
	153 MIRBECKS OAK	Quercus caneriansis	
	154 BLUE SPRUCE	Picea pungens glauca	
	155 HOLLY		
	156 ROWAN	Sorbus aucuparia	
	157 HORSE CHESTNUT	Aesculus hippocastanum	
	158 LAUREL LEAF HOLLY	Ilex laurifolia	
	159 HOLLY	Ilexalterclarensis	
	160 OAK	Quercus robur	
	161 COAST REDWOOD	Sequoia sempivirens	
162-164	BEECH	Fagus sylvatica	
	165 COAST REDWOOD	Sequoia sempivirens	
	166 HOLLY Highclere	Ilex alterclarensis	
	167 HOLLY	Ilex	
	168 LARCH	Larix decidua	
	169 IRISH YEW	Taxus bacatta fastigiata	
	170 CHERRY	Prunus avian	
	171 CHERRY	Prunus	
	172 NORWAY SPRUCE	Picea abies	
	173 HOLLY	Ilex	
	174 YEW	Taxus bacatta	
	175 BIRD CHERRY	Prunus	
	176 HOLLYx3	Ilex	
	177 BIRD CHERRY	Prunus	
	178 DOUGLAS FIR	Pseudotsuga Menziesii	
	179 CHERRY	Prunus	
	180 YEW	Taxus bacatta	
	181 BEECH	Fagus sylvatica	
	182 LARCH	Larix decidua	
	183 DOUGLAS FIR	Pseudotsuga menziesis	
	184 YEW	Taxus bacatta	
	185 HOLLY	Ilex	
	186 Laurel	Prunus	

STRATFORD PARK WORK PROGRAM 2011-2021				
YEAR	CHARACTER AREA	TASK DESCRIPTION	TYPE OF WORK	
2011/ 12		APPLY FOR GRANT SUPPORT FOR PROJECTS BELOW		APPX. II
2011/12 WINTER	WOODLAND BELT	CROWN RAISING OF TREES THROUGH THE CENTRE	STAFF/VOLUNTEERS	
2011/12 WINTER	WOODLAND BELT	TREE AND SHRUB PLANTING	STAFF/VOLUNTEERS	
2011/12 WINTER	ARBORETUM PERIMETER	REMOVE POOR CHERY AND LARCH	STAFF CONTRACTORS	
2011/12 WINTER	LOWER ARBORETUM	SCREEN PLANTING EVERGREEN SHRUBS OPPOSITE HOU	STAFF	
2011/12 WINTER	WOODLAND BELT	LAY HAWTHORN HEDGE 30%	STAFF VOLUNTEERS	
2011/12AUTMN WINTER	PERIMETER SHRUBBERY	THINNING AND LAYERING TREES AND SHRUBS	STAFF/VOLUNTEERS	
2011/12 WINTER	PERIMETER SHRUBBERY	PLANT NEW TREES AND SHRUBS	STAFF/VOLUNTEERS	
2011/12 WINTER	ARBORETUM	HIGH PRUNE CROWNS OF YEWS AT TESCOE ENTRANCE	STAFF.	
2011/12 WINTER	ARBORETUM	FORMATIVE PRUNING OF LOW/DAMAGED BRANCHES	STAFF /CONTRACTORS	
2011/12 WINTER	BEECH PLANTATION	RAISE CROWNS ALONG GRASSLAND EDGE	STAFF/VOLUNTEERS	
2011/12 WINTER	BEECH PLANTATION	RELEASE OAK FROM BEECH PLANTATION	STAFF/CONTRACTORS	
2011/12 WINTER	BEECH PLANTATION	5% THINNING OR POOREST SPECIMENS	STAFF/ CONTRACTORS	
2011 WINTER	VETERAN OAK	PROPOGATE ACORNS FROM PREVIOUS AUTUMN MAS	STAFF	
2011/12 WINTER	PINETUM	REMOVE POOREST SPECIMENS	CONTRACTORS	
2011/12 WINTER	WOODLAND POND	THINNING AND COPPICING OF TREES AROUND POND	STAFF/VOLUNTEERS	
2011/12	STREAM BELT	CLEAR BACK VEGETATION AND OVERHANGING TREES		
2011/12 WINTER	STREAM BELT	COPPICE ALDER 30% ALONG FULL LENGTH	STAFF CONTRACTORS	
2012 SPRING	GRASSLAND FRINGE	ESTABLISH WILD FLOWER STRIP	STAFF CONTRACTORS	
2012 SPRING	ALL AREAS	CHECK NEW PLANTING AND STAKES ON ALL TREES	VOLUNTEERS /STAFF	
2011/12 WINTER/ SPRING	ARBORETUM	COPPICE DOGWOOD BELOW HOUSE	VOLUNTEERS /STAFF	
2011-12	STREAM BELT	TEMPORARY BRIDGE INSTALLED ACROSS STREAM	CONTRACTOR	
	2012	INSTALL INTERPRETATION ABOUT PARK MANAGEMENT AND DESIGN		

