

### **Topic 3: Horticulture and society**

#### **Topic overview: from the RHS syllabus**

The role that horticulture plays in enhancing health and wellbeing is receiving increasing recognition. Horticulture, at its best, connects people, builds communities, creates beauty and improves the lives of all.

The green spaces horticulturists create positively impact on peoples' lives. These spaces change behaviours, they improve both physical and mental health, they support environmental resilience, they build stronger communities and can reinforce cultural identity.

The importance of horticulture in wellness, therapy, social inclusion and community cohesion is one of the most exciting horticultural developments in recent years.

The content for each topic in the qualification is set out in a series of Assessment Outcomes. An outcome is what you should know after studying a specific part of the syllabus.

There are four overarching qualification wide outcomes that need to be considered for all topics, these are:

- **Health and safety**
- **Sustainability**
- **Best practice**
- **Equality and diversity**

These will be signposted as appropriate throughout your course notes.

This topic consists of four Elements. There are three Assessment Outcomes within this element, A01, A02 and A03.

A01 is the basic knowledge, A02 how it is used and A03 looks at how this element relates to other areas of horticulture and in particular to other areas of the syllabus. These are what you should know once you have studied this element. They have been set out in the table on the next page, along with the RHS commentary.



## Element 1: Wellbeing

AO1: Knowledge	AO2: Application	AO3: Integration
<p>The social benefits of gardening, to include:</p> <ul style="list-style-type: none"> <li>• Physical health</li> <li>• Mental health</li> <li>• Social inclusion</li> <li>• Antisocial behaviour</li> <li>•</li> </ul> <p>The social benefits of:</p> <ul style="list-style-type: none"> <li>• Urban greening</li> <li>• Allotments</li> <li>• Domestic gardens, parks, botanical and heritage gardens</li> </ul>	<p>The design of gardens to include:</p> <ul style="list-style-type: none"> <li>• health</li> <li>• mindfulness</li> <li>• wellbeing</li> </ul>	<p>The historic role of horticulture in improving the lives of people.</p> <p>Historical contexts e.g. the development of movements such as the Arts and Crafts movement, the development of parks.</p> <p>Links between horticulture and nature. The development of nature therapy.</p>

## Commentary

Published work from a variety of organisations (including the RHS) highlights the significant benefit green spaces have on people, their behaviour and their health and wellbeing.

AO1 investigates the measurable impact plants and gardens have on health and wellbeing.

AO2 applies this knowledge by investigating the impact of horticulture on health, wellbeing and the design on gardens.

AO3 links to topics such as planting styles to take a historical perspective on horticulture, health and wellbeing.

## Element 1: Wellbeing

### Physical health

In 2016 the Kings Fund produced a report commissioned by the National Garden Scheme on the physical and mental benefits of gardening, with a view to having gardening included in a national health strategy.

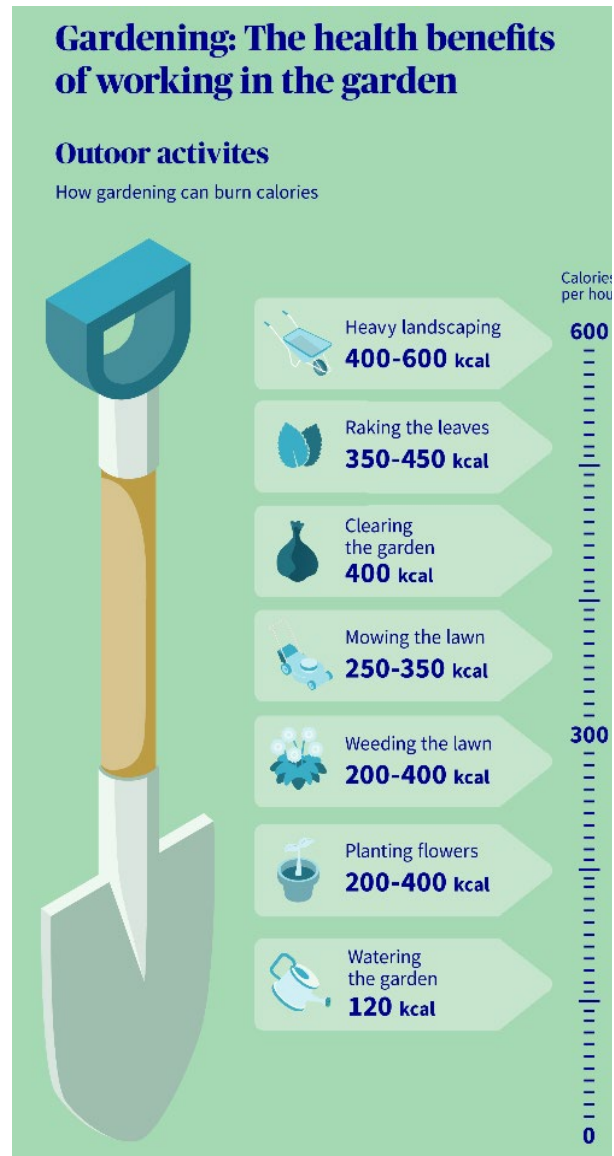
Professor Sir Muir Gray, a leading public health specialist famously said that everyone needs a 'Natural Health Service' as well as a National Health Service: outdoor activities not only promote mental wellbeing but also work to prevent health problems related to ageing and a sedentary lifestyle.

Since January 2019, the NHS has officially included 'social prescribing' in its long term strategy for healthcare – prescribing involvement in community gardens and outdoor activities. Gardening is one part of a preventative strategy to improve public health by getting the public to be more active throughout their lives - the aim is to prescribe activities now to help to avoid prescribing drugs and surgical interventions later.

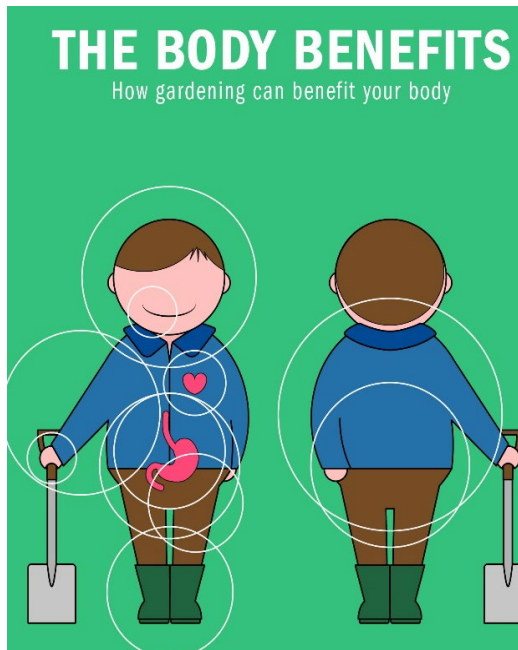
A UK Government Report (*Green Space and Health*, 2016) stated that

'Being physically active for 30 minutes a day can directly reduce the risk of strokes, cardiovascular disease, obesity, some cancers and type 2 diabetes. It is estimated that 1 in 4 women and 1 in 5 men in the UK are less active than this and 1 in 4 children spend less than 30 minutes playing outside per week. Physical inactivity is the fourth largest cause of disease and mortality in the UK, contributing to 37,000 premature deaths in England every year.'

Gardening in particular promotes continued physical activity in later life, and studies show that while moderate gardening activities do not burn up a massive number of calories, they do contribute to overall physical health in the same way that walking, yoga or tai chi would do – while increasing balance, grip and stamina.



Gardeners generally garden for pleasure, or work, not as exercise ('Why Garden? Attitudes and the perceived health benefits of home gardening' RHS-sponsored research paper in the journal *Cities*, May 2021) but these are significant physical health benefits, not least because gardening demands regular activity.



**Back:** Raking and bagging leaves means constant bending, twisting, lifting and carrying—all these strengthen muscles. Just remember to bend at the knees to prevent back strain.

**Arms:** Cutting hedges with hand-held shears not only strengthens your triceps and biceps but also your core as you reach up and stretch. Raking and carrying leaves can also tone the upper arms and increase flexibility and strength.

**Abdominals:** Weeding on hands and knees, raking, strimming and starting a mower all help strengthen abdominal muscles and build a strong core.

**Bottom:** Squatting while weeding helps to build and tone gluteal muscles.

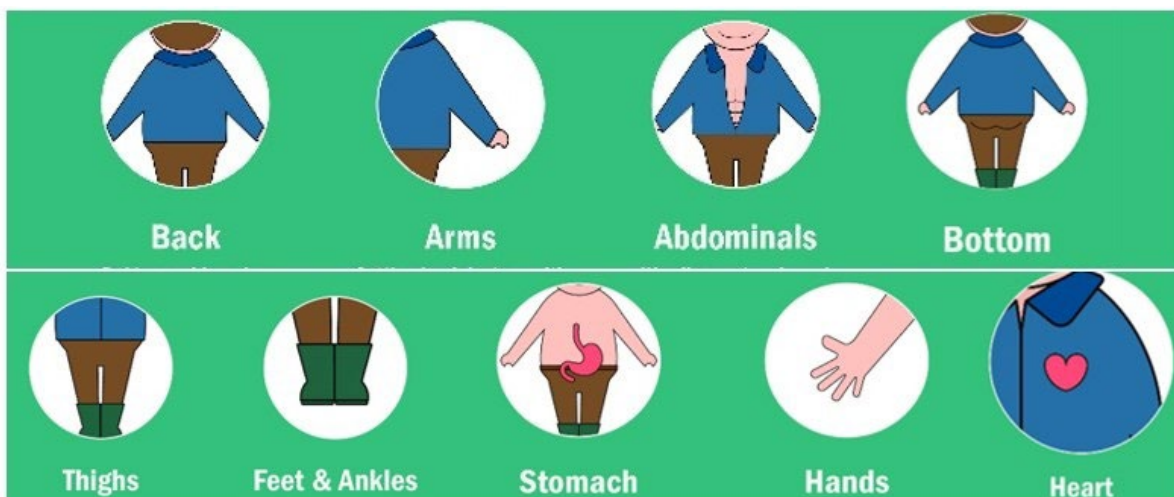
**Thighs:** pushing a wheelbarrow and squatting to weed flowerbeds helps strengthen quads and hamstrings.

**Feet and ankles:** Balance and flexibility are improved, helping to prevent falls

**Stomach:** a greater exposure to soil bacteria means gardeners have a stronger immune system.

**Hands:** gardening can help increase hand strength, pinch force and nimbleness.

**Heart:** as a physical activity, gardening naturally helps strengthen the heart, building endurance and increasing stamina, meaning a reduced risk of heart attack and stroke.



## Mental health

### Gardening

Many studies have shown that gardening is very effective in relieving stress. A study in the journal of Clinical Psychology in 2011 showed that:

‘Stress-relieving effects of gardening were hypothesized and tested in a field experiment. Thirty allotment gardeners performed a stressful Stroop task and were then randomly assigned to 30 minutes of outdoor gardening or indoor reading on their own allotment plot. Salivary cortisol levels and self-reported mood were repeatedly measured. Gardening and reading each led to decreases in cortisol during the recovery period, but decreases were significantly stronger in the gardening group. Positive mood was fully restored after gardening, but further deteriorated during reading.

These findings provide the first experimental evidence that gardening can promote relief from acute stress.’

More recent studies have confirmed that gardening can be helpful in reducing stress and anxiety, alleviating depression and even calming symptoms such as agitation and aggression in dementia patients. It can also give a sense of satisfaction and empowerment when goals are achieved, improving self-esteem and confidence.

A meta-analysis (analysis of various studies) undertaken in 2016 concluded ‘This study has provided robust evidence for the positive effects of gardening on health. A regular dose of gardening can improve public health.’

### Green space

A great deal of research has also shown that access to green space is important for mental health; the RHS reports a study from 2014 by researchers from the University of Exeter Medical School, which analysed mental health data from 1,000 urban residents and used high-resolution mapping to track where the subjects had lived over 18 years. They found that people living near to green space reported less mental distress even after adjusting for income, education, and employment.

In 2009, a team of Dutch researchers found a lower incidence of 15 illnesses – including depression, anxiety, heart disease, diabetes, asthma, and migraines – in people who lived within half a mile of green space.



*Figure from [Improving Access to Greenspace: a New Review for 2020](#) by Public Health England.*

## Social inclusion

Studies have shown that community horticulture benefits those with anxiety who often live isolated lives on the margins of society. It fosters friendships, relationships a sense of place and belonging.

After the Coronavirus pandemic, which allowed some parts of the community to spent more time outdoors with demonstrable health benefits, but where isolation led to increased anxiety in other groups, the concept of 'green social prescribing' is being investigated by the government, with funding announced at the end of 2020 for several pilot sites in the UK to test how 'connecting people with nature can improve mental health'.

Community gardening projects – whether they are allotments to grow food or urban greening projects to improve and look after the local environment – can have a positive effect on social inclusion. The RHS is at the forefront of community gardening initiatives, from the established 'Britain in Bloom' competitions and school gardens to newer ideas such as 'It's your Neighbourhood', promoting community food gardens and events with [support](#) for those setting up local schemes from its Community Outreach team.

Community gardens and allotments can be used for horticultural therapy, helping groups who do not normally get an opportunity to spend time in green spaces to get positive benefits from being outdoors. 'Green prescribing' can be used to involve the lonely and isolated in these community schemes.

For example, the [Natural Health Service](#) (NaHS) is a consortium of charities and local organisations in the north of England that uses the natural environment to improve the health and wellbeing of individuals and communities across Merseyside and North Cheshire, offering its programmes of outdoor activities to local health authorities.

'By bringing together the skills, expertise and assets of our partners, NaHS provides commissioning bodies a single point of access to evidence based 'products' that can be purchased as part of a holistic approach to health and social care reducing pressure on NHS and local authority resources in the medium term.'



## Antisocial behaviour

Another benefit of greater community involvement in green spaces is the sense of responsibility it can bring, reducing incidents of antisocial behaviours from littering to vandalism by engaging with those who might otherwise be involved in these destructive behaviours.

A report by CABE in 2004 ([Decent Parks? Decent Behaviour?](#)) showed how the quality of public open spaces had a direct effect upon user behaviour, so that well-maintained spaces – and especially those where communities were involved in decisions about use – were subject to less vandalism, and were perceived as safer spaces by members of the local community and used more freely.

In 2004 James Hitchmough and Ken Fieldhouse's *Plant User Handbook* described how using decorative but low maintenance perennial plantings on areas previously considered 'waste ground' meant that the spaces were appreciated rather than used for dumping refuse, shopping trolleys etc.

## The social benefits of green spaces

Greening the urban environment by developing neglected areas or using front gardens for plants rather than just car parking can help to foster a sense of community and let people engage socially with their neighbours – the simple act of cultivating a front garden inevitably brings the gardener into contact with passers-by.

Community gardens or orchards, where people meet with a common purpose, can also foster social inclusivity – growing food together involves tasks for a wide range of ages and abilities, bringing groups together for events like community picnics and suppers.

Allotments offer not just the opportunity to grow food but the chance to learn from experienced gardeners, and also for individuals from different cultural traditions to share their experiences of growing and preparing foods. Allotment societies can make the process of food growing more affordable by bulk buying to reduce costs for their members, and offer the enjoyment and rivalry of produce shows.



During the lockdowns associated with the Covid-19 pandemic, the social benefits of access to public green spaces such as botanical and heritage gardens and parks were made clear as soon as they were restricted, as were differences in wellbeing between those with private gardens and those with no easy access to green space.

A study published in the journal [Landscape and Urban Planning](#) in July 2021 by Welsh academics showed that

'People living a five-to-10-minute walk or more than a 10-minute walk away from public green space had lower levels of subjective wellbeing than those living less than a five-minute walk away, whilst those with access to a private garden had higher levels of subjective wellbeing than those without a private garden.'

The results further show that, during the first peak of the pandemic, access to green space was particularly important for households without private gardens. Being close to a public green space or private garden had a greater health protective effect for those who did not have access to a private garden.'

### Gardens for health and wellbeing

Many organisations have taken up the challenge to improve physical and mental health through horticulture and the natural world: from the RHS's demonstration and show gardens to Maggie's Centres, the legacy of designer Maggie Keswick Jencks to provide calm and supportive spaces alongside NHS hospitals to help cope with a diagnosis of cancer.

Another national charity is Horatio's Garden, which uses leading landscape designers to create gardens in NHS spinal injury centres to support everyone affected by spinal injury - patients, their families and friends - facing long stays in NHS hospitals as they adjust to, or care for someone with, a life-changing injury.



'Spinal cord injuries are traumatic events. Patients often have little or no access to the outside world during their hospital stay. However, research shows that being in contact with a natural environment contributes to an improved sense of wellbeing, which can have a positive impact on people's rehabilitation.'

The charity Thrive describes itself as

'The gardening for health charity: We use gardening to bring about positive changes in the lives of people living with disabilities or ill health, or who are isolated, disadvantaged or vulnerable.'

It defines social and therapeutic horticulture as:

**The process of using plants and gardens to improve physical and mental health, as well as communication and thinking skills.**

'Gardening is a wonderfully flexible medium that can transform lives and Thrive sees first-hand how gardening can help everyone, regardless of age or disability. Social and



therapeutic horticulture uses the garden as a safe and secure place to develop someone's ability to mix socially, make friends and learn practical skills that will help them to be more independent.

Using gardening tasks and the garden itself, Thrive's horticultural therapists build a set of activities for each gardener to improve their particular health needs and to work on certain goals they want to achieve.

The benefits of a sustained and active interest in gardening include:

- Better physical health through exercise and learning how to use or strengthen muscles to improve mobility
- Improved mental health through a sense of purpose and achievement
- The opportunity to connect with others – reducing feelings of isolation or exclusion
- Acquiring new skills to improve the chances of finding employment
- Just feeling better for being outside, in touch with nature and in the 'great outdoors'

The diagram shows the many benefits of social and therapeutic horticulture with overall health and wellbeing at the centre.



## Therapy and rehabilitation

Social and therapeutic horticulture (STH) can benefit people in a number of ways:

- It can be part of a person's rehabilitation process, to help them recover and 'find their feet again' after an illness or a difficult time in their lives
- It can help people recover from a wide range of conditions
- It can help people to learn new skills
- It can help slow down the deterioration seen when someone has a degenerative illness.

Social and therapeutic horticultural also benefits people with many different disabilities, including those recovering from stroke and heart disease, blind and partially sighted people, those in the early stages of dementia and people with physical and learning disabilities.

### People can benefit from horticultural therapy:

- 'At a garden project, where they are referred and funded by their doctor, social worker or care professional. Others start at a project through their own initiative and their place may be funded by their family and friends.
- Through gardening at home, perhaps by starting with a simple idea like planting a small container or window box, or growing some herbs on a sunny window sill.

**Garden projects** Garden projects can be small informal places, perhaps organised and run by volunteers, or they can be more formal, larger organisations and charities, run by permanent staff. Projects may have their own site or they may share facilities, perhaps within a garden centre or nursery. Garden projects are also found in the grounds of prisons or hospitals.'

*The Well Gardened Mind* by Sue Stuart Smith offers a psychiatrist's insight (with underpinning science and case studies) into how nature and gardening in particular can affect the brain: promoting healing after trauma (like PTSD) and counteracting the feelings of low self-worth which can help to break the repeat cycle of reoffending in prison gardening schemes. She suggests gardening helps give children and adults a sense that they can achieve something, but also introduces them to the reality of a natural world they cannot fully control: depression and low self-esteem leave the mind constantly focussing inward on perceived failures, but if a seed fails to germinate, or a slug eats a lettuce, the problem does not lie within them. Nature shows that in time, other seeds will germinate and lettuces survive.

### Designing sensory gardens

There are some key points to consider in designing a garden to promote wellbeing, health and mindfulness (based on a post by designer Richard Rogers):

Researchers have investigated how nature can reduce stress by creating a 'positive distraction' from the normal focussed attention we need to get things done and which creates mental fatigue. The term 'soft fascination' has been coined for this restorative state and can be produced by any sort of 'nearby nature' – every type of garden, whether big or small, acres wide or a roof top, country park or hanging basket can offer us a sense of peace and harmony.

### Create an interesting route and division of space

Create a sense of journey and discovery in the garden by setting a route through the garden that does not allow you to see all the garden at once, but reveals new views and experiences as you move through the space.

Introduce features, focal points and different materials to attract attention and create emotional connection with the garden. This helps to reduce the habitual thinking which the mind naturally reverts towards.

## Create something of beauty

A beautiful garden that inspires and engages can help can distract from the everyday stresses of life. A well designed garden can take us 'out of ourselves' and evokes a simple feeling of gratitude for our immediate surroundings.

## Engage all the senses: sight ,smell, touch and hearing

Scent can be very powerful, often evoking strong memories or simply stopping you in your tracks as you appreciate the beautiful smell of flowers like *Daphne* or *Viburnum*. Scent can also be from foliage and herbs are a classic example, where thymes or lemon balm can be planted near paths to release their scent when you brush past them or pick the leaves.

Some plants, such as *Stachys byzantina* are very tactile and are especially valuable for someone who may have poor eyesight or for children to relate to the plants easily.



Grasses and airy perennials like bamboos move and rustle in the wind and bring us closer to this natural element through their sound. The trickle of water from a pebble fountain can be another audible stimulus.

## Think about attracting wildlife

Having any form of water also dramatically increases the biodiversity in the garden. Seed heads to add structural interest over the winter, but also to provide food for birds. The presence of wildlife in the garden - birds, insects, amphibia around ponds, and even bats or hedgehogs for evening walks – can create 'soft fascination'.

## Think about colour

Cool toned whites, pinks, blues and purples have been found to have a calming and relaxing effect on people's state of mind, so incorporate those colours into the planting. It has been shown that green requires the least amount of adaptation in the eye for us to see it, and so is naturally relaxing.

## Gardens for mindfulness

These gardens are often quiet refuges supporting wellbeing, concentration, and calm. The RHS has produced a book, *Gardening for Mindfulness*, which can suggest more ways of creating a garden sanctuary from the distractions of everyday life.

## Horticulture and Health 2022

The RHS also hosted its second Horticulture and Health Conference in March 2022, with a mix of presentations online and at Wisley. The aim was 'to positively impact health and wellbeing and to tackle the decline in green space and gardens in the UK... and to promote specific actions that support healthcare professionals and the Government to increase the use of horticulturally-based health interventions.

Videos of all the presentations can be viewed on [Youtube](#).

## **Integration: how does this knowledge help you in other areas of horticulture?**

### **Integration: How can you apply this knowledge to other areas of horticulture?**

#### **The historical context:**

#### **The role of urban parks and the creation by philanthropists of urban green space for the benefit of the wider population**

In the nineteenth century the wretched living conditions of workers in large manufacturing cities became a cause for public concern. A view that exposure to green space to promote 'rational recreation' would inevitably produce social, educational and moral improvement, preventing drunkenness and antisocial behaviour, led to a report in 1833 recommending the purchase of land for 'Public Walks and Places of Exercise'. It took some years but many public parks were laid out in the nineteenth century funded by public subscription, starting with Birkenhead (designed by Joseph Paxton) in 1847; Derby Arboretum was a subscription park, with free access on two days of the week.

London has always been well provided with green space (nearly 47% of greater London is green space, 40% of it public spaces like Hampstead Heath, local parks and the Royal Parks which were opened to the general public in the 1850s. Free public parks in London replaced the subscription pleasure gardens such as Vauxhall and Ranelagh which offered entertainment as well as green space but had become disreputable and unsafe places for 'respectable' users.

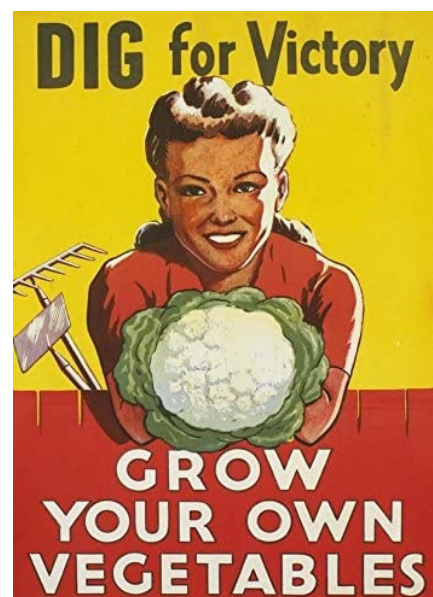
#### **The philosophical aims of the Arts and Crafts movement**

The Arts and Crafts movement was a reaction against the industrialisation of the nineteenth century. Its emphasis on the craft of gardening, on creativity and individual workmanship rather than repetition and mindless labour prefigure concepts of mindfulness and wellbeing, though perhaps it was confined more to the better-off elements of the middle class.

#### **Dig for Victory**

During the Second World War a blockade of shipping led to food rationing, and a campaign to grow more food at home, not only to support the war effort but to improve the quality of life for civilians.

Women were conscripted into a Land Army of agricultural workers. Working to grow food in allotments created from London Parks and city squares was a healthy occupation but also presumably had an effect on the wellbeing of civilians by giving them a sense of agency and purpose in chaotic times.



## Qualification wide topics – equality and diversity

In Victorian and Edwardian England middle class women were not generally offered an academic education or a practical one: the study of flowers, plants and fungi was however considered a 'seemly' pursuit as a hobby, and a number of women used this opportunity to research and study plants – for example in the nineteenth century Margaret Gatty published a study *British Seaweeds*, which sparked a craze among women for collecting seaweeds.

Collecting and pressing wildflowers was socially acceptable, but academic studies like Beatrix Potter's paper on fungi were not given serious consideration in her lifetime.

### *Timescale for the acceptance of women in horticulture*

In Scotland Annie Morrison and Lina Barker set up the Edinburgh School of Gardening for Women in 1902 (horticultural colleges were then male-only) after Barker worked at Edinburgh Botanic Gardens in 1894 and was made to wear a boy's uniform and referred to as a boy while at work.

Kew Gardens started admitting women trainees in 1901. Beatrix Havergal, who founded and ran the Waterperry School of Horticulture for women gardeners from 1932 until it closed in 1971, had trained in the 1920s and achieved the RHS Certificate with honours.

The WFGA (Women's Farm and Garden Association) was founded in 1899 by women concerned about the lack of education and employment opportunities for women working on the land. Many of the founder members were professional women working in education, gardening, farming and small holdings. The Association set about establishing training courses and examinations, with an Employment Bureau offering a service for both employers and employees. In the First World War it initiated the movement that became the Women's Land Army, and in the Second World War set up its first training scheme in practical horticultural skills.

In 1993 it started a very successful scheme to give 'returners' who were considering a career in horticulture a practical training in private and public gardens throughout the United Kingdom. In 2014 the name was changed to reflect the change in the type of applicants applying – Work and Retrain As a Gardener Scheme.

The female garden owners, plant collectors and designers of the late nineteenth and twentieth century were all from a small and relatively wealthy section of society to be able to pursue what was seen generally as a hobby not a career.

Further down the social ladder, women working in gardens were paid less than men (at Brodsworth Hall, South Yorkshire, in 1829 the under gardener was paid £36 8s per year, and in comparison the wage for 'two women or boys to work in the gardens' was £20 18s each) and opportunities for career advancement were effectively nil. A woman was promoted to deputy head gardener at Eltham Palace in London only during the Second World War, when there were no men available to take the job.