RHS



RHS Science and Collections Plan 2026–2031

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CITATION: Royal Horticultural Society (2026) RHS Science and Collections Plan 2026–2031. London: Royal Horticultural Society.



FOREWORD

The mission of the Royal Horticultural Society is to be there for everyone on their lifelong adventure with gardening. This RHS Science and Collections Plan sets out how, from 2025 to 2031, we are bringing together research, advice, libraries, heritage and scientific collections, gardens, data and partnerships to create trusted knowledge and turn it into practical action for people, gardens and nature.

Gardening is one of the UK's most important connections with nature. More than 41 million people garden, and the nation's gardens form one of its largest and most accessible green spaces. At a time of climate change, biodiversity loss, new pests and diseases, pressure on water and resources, and growing misinformation, gardeners need evidence they can trust and practical advice. The RHS is uniquely placed to meet that need.

Five questions from the public shape this plan: how can we make RHS collections, information and data easier to find and use; how might cultivated plant diversity support beautiful, resilient gardens; how do we protect plants, soils, wildlife and people through better garden health and biosecurity; how can we garden regeneratively, in a climate-positive way, while using resources wisely; and how does the RHS provide trusted, personalised advice in an AI-enabled world. These questions are translated into five integrated themes that connect science, collections, advice, communities, education and learning, public engagement and practice.

Across the plan, we are building the Global Gardening Knowledge Bank; safeguarding and using cultivated plant diversity; strengthening biodiversity, plant health and biosecurity; advancing environmental horticulture for people and planet; and reimagining RHS advice for tomorrow's gardeners. Our nationally important scientific, heritage and library collections connect horticultural science with history, art, literature, data, AI and gardening and plant humanities. Our UK gardens, laboratories, field research facilities, advice services and digital platforms help translate this knowledge into action.



Professor Alistair Griffiths

RHS Director of Science and Collections

The plan's delivery depends on collaboration across the RHS and with gardeners, communities, universities, research institutes, industry, government, cultural and data institutions, charities and donors. By investing in people, technical capability, digital systems, collections and partnerships, we can strengthen the evidence base for environmental horticulture, support future environmental horticultural scientists and collections specialists, and ensure our work reaches people wherever they garden, learn, visit, work, make policy or seek trusted advice.

Above all, this plan reflects our confidence in the enduring value of gardens and gardening. Gardens improve health and happiness, support biodiversity, enrich communities, celebrate culture and heritage, and help address urgent environmental challenges. By 2031, RHS science and collections will be outward-facing, integrated and impactful, giving gardeners, partners, policymakers and RHS teams the evidence, tools, skills and confidence to help gardens thrive in a changing world.



Gardens are national infrastructure for nature, health, climate resilience and community

GARDENING IS A NATIONAL ASSET

41 million people – 60% of the population – garden in the UK

Environmental horticulture is a climate resilience and health creation sector

Gardens cover 4.6% of Great Britain – 3.1x more than all the National Nature Reserves

Gardens support around half of all UK birds, mammals, butterflies, reptiles and amphibians

Environmental horticulture contributes £38 billion to UK GDP with great growth potential

WHY RHS SCIENCE AND COLLECTIONS ARE MISSION-CRITICAL

Environmental horticultural science is a national asset that benefits people, places and nature, and the RHS offers unparalleled insights into gardener behaviour on which to base its research priorities

Gardening is one of the nation's most important connections with nature. The *RHS State of Gardening Report* (2025) shows that more than 41 million people (60% of the UK population) garden, while gardens cover 4.6% of UK land, making them one of the country's largest and most accessible green spaces. Yet despite this reach and impact, the House of Lords Horticultural Sector Committee's 2024 report, *Sowing the Seeds: A Blooming English Horticultural Sector*, described horticultural science as an "orphan science" that is vital to national wellbeing, climate resilience and economic productivity, but lacks strategic investment and recognition.

To realise environmental horticulture's potential, research must remain closely connected to the needs, experiences and aspirations of gardeners and the environmental horticultural industry. Gardeners, members of the RHS, representatives from the industry and other stakeholders strongly supported a focus on public-facing research questions. Respondents also highlighted the unique opportunity the RHS has to draw on its unparalleled insight into gardener behaviour, member interests, industry priorities and gardening advice enquiries when setting research priorities. By strengthening the links between research, collections, gardening advice, member engagement and industry partnerships, the RHS can ensure that scientific discovery remains relevant, practical and impactful.



£38B

contributed to UK GDP by environmental horticulture

Harnessing the collective power of the nation's gardens and gardeners generates new knowledge that can help deliver healthier lives, richer biodiversity, greater climate resilience and a more sustainable future. In doing so, the RHS can show that environmental horticultural science is not an orphan science, but a national asset benefiting people, places and nature.

DELIVERING RHS SCIENCE AND COLLECTIONS FOR PEOPLE, GARDENS AND NATURE

Over the next five years, RHS teams will be working together with other partners, researchers and policymakers to deliver science-based solutions that help people, gardens and nature thrive

By working across many different RHS teams – from science to gardens, collections, libraries, advice, sustainability, learning, public engagement, communities, digital and communications – and joining with gardeners, policymakers, researchers and partners in the horticultural industry, we can generate and share trusted knowledge that supports gardeners, enhances biodiversity and advances regenerative, climate-postive gardening.

Partnering with different RHS teams and wider partnerships, while using RHS Hilltop – The Home of Gardening Science, RHS and UK gardens, the RHS Field Research Facility, Lindley Library and Herbarium, ensures our research informs plant selection, garden management, biosecurity, biodiversity enhancement, regenerative sustainability practices and visitor experiences. In addition, our RHS gardens provide living collections, practical expertise and real-world living laboratories as testing environments.

Science communication and public engagement are central to this mission. Through RHS gardens, libraries, exhibitions, shows, publications, campaigns and advice services, and by giving evidence to the government, the media, community and education programmes, we are translating research, collections and heritage into accessible advice, compelling stories and practical action.

By combining our scientific evidence with the cultural, artistic and historical stories held in our collections, we are seeking to inspire curiosity, build trust and help more people understand the role played by gardens and gardening in creating a healthier, more sustainable future.

The trusted evidence and expert insight we generate will help support local, national and international policy and decision-making, which will ensure that gardening, environmental horticulture, plant health, biodiversity sustainability and regenerative gardening are recognised as critical contributors to society, the economy and the environment.





We continually gain expert knowledge from RHS scientists, horticulturists, specialist nurseries and gardeners

FIVE QUESTIONS FROM THE PUBLIC AND FIVE INTERCONNECTED THEMES

Shaping the RHS Science and Collections Plan are five questions, translated into five interconnected themes

Evidence from the RHS advice services, digital engagement, citizen observations, garden visits, horticultural industry insights and national datasets has shaped five questions from the public that guide this Plan.

1 How can we make RHS collections, information and data easy to find, use and learn from?
The UK's rich horticultural heritage, reflected in RHS collections, data and expertise, should be discoverable, accessible and inspiring to enable scientific, gardening and plant humanities research, learning and creativity for all.

2 What will a beautiful, diverse, garden of the future look like that can cope with climate change?
As climate change reshapes what we can grow, gardeners need to know how to choose, conserve and use different cultivated plants to create resilient, biodiverse, culturally rich gardens.

3 How do we protect the health of plants, soils, wildlife and people and strengthen biosecurity?
As climate change increases pest and disease risks, gardeners and industry need trusted, practical guidance to protect plant health, soil, biodiversity and habitats, and benefit our health.

4 How do we create regenerative, climate-positive, healthy, resilient, resource-efficient gardens?
As water scarcity, peat reduction, resource use, emissions and waste become critical issues, people want evidence-based ways to regenerate nature without losing joy or creativity.

5 How can the RHS provide trusted, personalised advice in an AI-enabled world?
As misinformation and digital change accelerate, gardeners need to be able to access reliable, science-based guidance that is personalised and supported by trusted human expertise.

THE FIVE INTERCONNECTED THEMES

The RHS Science and Collections Plan turns these five public questions into five interconnected themes, each with outputs, outcomes and impacts to guide delivery to 2031. Together, they connect RHS scientific expertise, gardens, shows, libraries, heritage and scientific collections with gardeners, communities, industry and government into one coherent plan.

THEME 1

The Global Gardening Knowledge Bank
Caring for, developing, digitising, interpreting and integrating our collections, developing tools and APIs, enhancing the Lindley Library, and improving access to horticultural advice and knowledge for gardeners, industry and policymakers.

THEME 2

Cultivated Plant Diversity for Healthy People and Nature
Expanding and digitising the Herbarium; RHS Plants for Purpose, producing trait-based plant-selection tools; safeguarding cultivated plant diversity and the other natural diversity it supports.

THEME 3

Biodiversity and Plant Health Resilience Strengthening diagnostics, biosecurity behaviours, biodiversity monitoring including soils, and inputs into the UK Plant Health Risk Register.

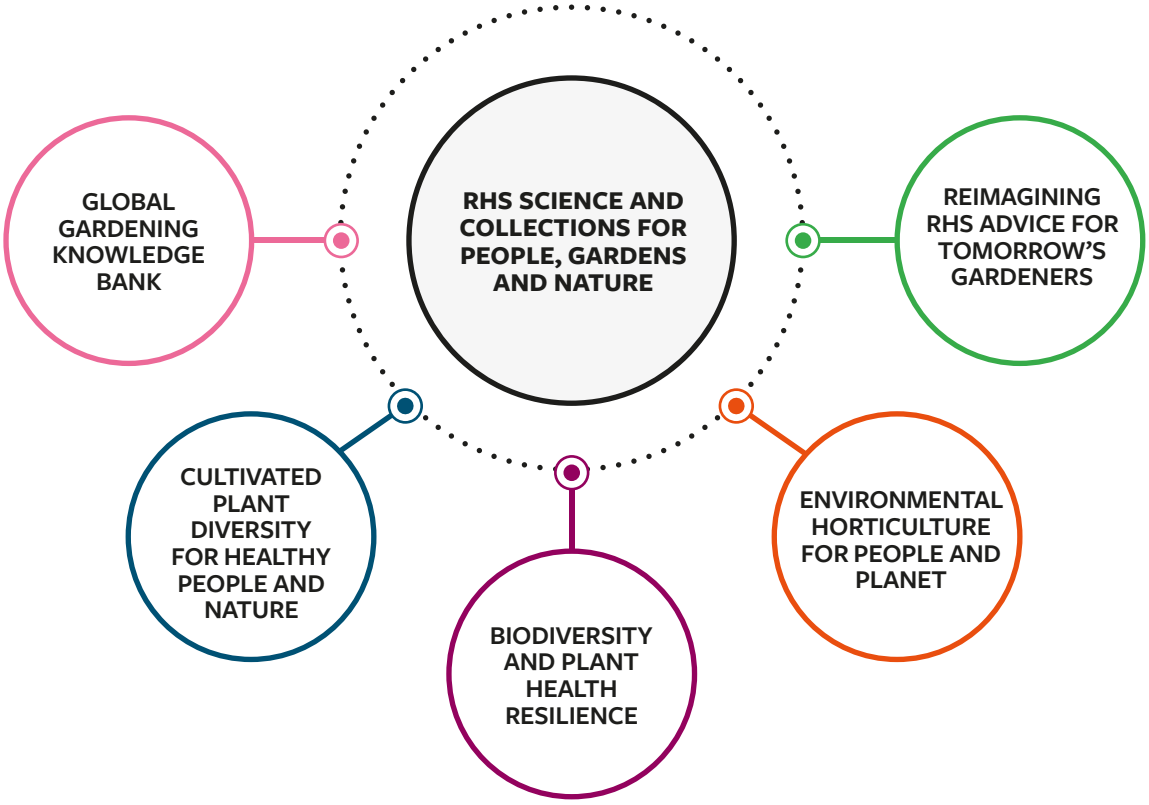
THEME 4

Environmental Horticulture for People and Planet
Delivering peat-free adoption, water-wise horticulture, climate-positive metrics, ecosystem services and wellbeing evidence for gardens.

THEME 5

Reimagining RHS Advice for Tomorrow's Gardeners
A unified advice service and primary authority in cultivated plant names, with responsible AI, updated governance and personalised guidance, linked directly to science and collections.





WHAT THIS PLAN WILL ACHIEVE BY 2031

By amalgamating many areas of research and improving how we share this trusted knowledge, we are helping to equip gardeners for the future

TRUSTED KNOWLEDGE AND ADVICE

RHS collections, data, advice and expertise will be easier to find, trust and use, helping gardeners, professionals, researchers, industry and policymakers make better decisions.

RESILIENT PLANTS AND GARDENS

Cultivated plant diversity, RHS Plants for Purpose and plant-trait evidence will support beautiful, biodiverse, climate-adapted gardens that deliver ecosystem services, garden food systems, health and wellbeing.

HEALTHY PLANTS, PEOPLE, SOILS AND BIODIVERSITY

Stronger diagnostics, biosecurity, biodiversity monitoring and garden health research will help protect plants, soils, wildlife, gardeners and the wider environmental horticultural sector.

REGENERATIVE AND CLIMATE-POSITIVE HORTICULTURE

Evidence on plants, soils, water, climate and people will help gardens and cultivated landscapes use resources wisely, reduce environmental impacts and become more regenerative and resilient.

COLLECTIONS, CULTURE AND PLANT HUMANITIES

RHS scientific, heritage and library collections will be better cared for, digitised, shared and used for research, education, public engagement and to Grow Our Story.

SKILLS, PARTNERSHIPS AND PUBLIC BENEFIT

Investment in people, technical capability, partnerships and communication will strengthen environmental horticultural science and ensure RHS knowledge reaches people wherever they garden, learn, visit, work or seek advice.

THEME 1: THE GLOBAL GARDENING KNOWLEDGE BANK

How can we make RHS collections, information and data easy to find, use and learn from?

The UK's rich horticultural heritage, reflected in RHS collections, gardening advice insight, information, data and expertise, should be discoverable, accessible and inspiring to enable scientific, gardening and plant humanities research, learning and creativity for eveyone.

THE GLOBAL GARDENING KNOWLEDGE BANK

The RHS is a knowledge-driven organisation. Its collections, libraries, advice services, cultivated plant information, research data, environmental evidence, horticultural information and gardener and industry insights form an invaluable knowledge bank. This theme seeks to care for, develop, preserve, digitise and connect these assets so they can be discovered, trusted and used by gardeners, RHS teams, researchers, students, industry, government and the public.

TRUSTED ADVICE, LIBRARIES AND KNOWLEDGE EXCHANGE

RHS advice services, libraries, horticultural information and collections are among the most accessible public-facing elements of RHS science and collections. RHS advice connects science, diagnostics, plant information and environmental evidence directly with gardeners' needs. They turn more than 100,000 enquiries each year, from shows, gardens, digital advice and member interactions, into practical, trusted guidance. Researchers, academics, gardeners, students, children, apprentices, curatorial teams and lifelong learners all access the RHS expertise held in our libraries by in-person visits, digital services, events and international enquiries. Together, these services share knowledge, support lifelong learning, extend the reach of RHS science and reveal emerging issues, evidence gaps and research priorities.

COLLECTIONS, LIBRARIES, HERITAGE AND PLANT HUMANITIES

RHS scientific, heritage and library collections are nationally important living resources that help us understand gardens, gardening and their past, present and future role in society. They provide unique evidence on cultivated plant diversity, plant health, biodiversity, climate change, garden history and the relationship between people, gardens and plants. By connecting historic and contemporary collections, we can generate new knowledge, inform horticultural practice and policy, and deepen public understanding of how gardens contribute to healthier, more resilient and sustainable futures. Through national and international collaborations we are working to develop, manage, preserve and share these nationally important assets as a platform for research across horticultural science, data science, artificial intelligence, history, geography, literature, art, environmental studies and garden and plant humanities.

41m

gardeners equipped for a greener future via the Global Gardening Knowledge Bank



INTEGRATED DATA, DIGITAL ACCESS AND RESPONSIBLE AI

We are improving data infrastructure so collections and scientific, environmental, curatorial, operational and gardening advice datasets can be discovered, linked and used more effectively. Better digitisation, standards, governance and responsible AI will help to strengthen research, decision-making, sustainability reporting, personalised advice and public engagement.

RENEWING AND SHARING RHS KNOWLEDGE

RHS knowledge is one of the Society's greatest assets and must be continually renewed, refreshed and shared to retain its value. Our collections, horticultural information and library services support research that delivers science solutions for people, gardens and nature, while RHS advice services translate this research into actionable advice that helps gardeners garden sustainably with confidence. The horticultural information team ensures the accuracy of RHS information, underpinning our status as a trusted authority on gardening. By managing knowledge, collections and data with awareness of new AI opportunities and risks, we will ensure they remain secure, accessible and capable of supporting gardeners, the horticultural industry, researchers, RHS teams and government both now and in the future.





OUTPUTS BY 2031

Develop, preserve, digitise and connect RHS knowledge assets across scientific, heritage, library, advice and cultivated plants.

Deliver a shared data and knowledge ecosystem with better discovery tools, standards, governance across research, collections, advice, sustainability and insight datasets.

Strengthen advice, libraries and horticultural information as core public-facing knowledge services for research, guidance, learning and development.

Expand public engagement and interpretation with RHS science, advice, collections and heritage via exhibitions, events, shows, digital content, interpretation, publications and learning.

Increase research and partnership use of RHS collections, data and knowledge across horticultural science, plant humanities, AI, sustainability, policy and cultivated plants.

OUTCOMES BY 2031

RHS collections, advice, libraries, information and data are easier to find, trust and use by gardeners, RHS teams, researchers, students, industry, government and the public.

Gardeners and professionals receive timely, trusted guidance through stronger links between RHS teams and collections, plant information and digital systems.

The RHS has a single connected evidence base across science, collections, gardens, advice, sustainability, digital, learning and public engagement.

RHS advice, library, collection and data insights shape research, engagement and policy influence around gardeners' and industry needs.

More people use RHS knowledge services as gateways to trusted horticultural knowledge about gardening science, heritage, sustainability and climate resilience.

IMPACTS BY 2031

The RHS is recognised as a global leader in trusted gardening knowledge and advice, through the Global Gardening Knowledge Bank.

Gardeners, professionals, researchers, industry and policymakers make better decisions, improving horticultural practice, plant health, sustainability and resilience.

RHS knowledge services drive science, engagement, learning and behaviour change, ensuring gardener and industry experience shapes research and advice.

RHS heritage, scientific, library, advice and data assets are better protected and used for education, creativity, learning, research and Grow Our Story.

Integrated data, responsible AI, partnerships and human expertise unlock opportunities for advice, research, innovation and environmental horticulture.

THEME 2: CULTIVATED PLANT DIVERSITY FOR HEALTHY PEOPLE AND NATURE

What will a beautiful, diverse, garden of the future look like that can cope with climate change?

As climate change reshapes what gardeners can grow, people need reliable advice to help them choose, conserve and enjoy growing a range of different cultivated plants while also creating resilient, biodiverse and culturally rich gardens.

CULTIVATED PLANT DIVERSITY

The RHS is the UK's leading authority on cultivated plant names, identification and garden plant diversity. By building a knowledge bank of cultivated plants, developing RHS Plants for Purpose and a Garden Climate Adaption Tool, and nurturing herbarium and living collections, the RHS records and conserves different garden plants. This second theme will document, conserve and unlock the value of cultivated plant diversity for gardeners, the horticultural industry, government and policymakers through RHS Plant Finder, International Cultivar Registers and national and international partnerships, to help people choose, grow and conserve plants that support resilient gardens, biodiversity, garden food and ecosystems as well as improving their own health and wellbeing.

RHS PLANTS FOR PURPOSE, CLIMATE ADAPTATION AND CONSERVATION

We are helping gardeners and industry choose the right plants for the right places and purposes, using traits, climate evidence, living collections and partnerships to support resilience, biodiversity, food and ecosystems and conservation.

> **We are helping gardeners choose the right plants for the right purposes**

CULTIVATED PLANT COLLECTIONS AND DATA

The RHS 1851 Royal Commission Herbarium and living collections are nationally important resources for understanding garden plants and cultivated plant diversity. As we collect, document, digitise and share herbarium specimens, living collections and cultivated plant data, we are focusing on climate-resilient garden plants, plant traits, provenance, availability and conservation value and establishing links between cultivated plants, the National Cultivated 1851 Royal Commission Herbarium, ecosystem services, biodiversity, human health and cultural values.

PLANT NAMES, IDENTIFICATION AND INTERNATIONAL STANDARDS

Correct identification unlocks knowledge about cultivation, conservation, plant health, ecosystem services, garden heritage and plant availability. We are strengthening the RHS as the authoritative source for cultivated plant names, descriptions and identifications; supporting RHS members, gardens, shows, trials, retail, media, biosecurity and plant health diagnostics and digital information; and working with International Cultivar Registration Authorities (ICRAs), the International Society for Horticultural Science (ISHS), the International Code of Nomenclature for Cultivated Plants and specialist societies.

RHS 1851 ROYAL COMMISSION HERBARIUM

The 1851 Royal Commission Herbarium at RHS Garden Wisley is the UK's foremost collection dedicated to cultivated plants. The collection currently holds over 103,000 specimens. We aim to collect each of the estimated 400,000 cultivated plants by 2050 to preserve the rich cultural heritage of British gardening and provide valuable data for taxonomy, conservation, climate resilience and ecosystem service research.





OUTPUTS BY 2031

Expand, document and digitise the RHS Herbarium, living collections and cultivated plant data, linking cultivated plants with plant traits, provenance, availability, conservation value and ecosystem-service evidence.

Publish RHS Plants for Purpose, a Garden Climate Adaptation Tool and cultivated plant specification information to help with plant selection for climate resilience, biodiversity, ecosystem services, garden food systems, health and wellbeing.

Strengthen RHS authority in cultivated plant names, descriptions and identification, supporting members, gardens, shows, trials, retail, publications, plant health diagnostics and digital plant information.

Increase international leadership in taxonomy, nomenclature and cultivar registration, working with ICRAs, ISHS, botanic gardens and societies to support cultivated plant knowledge and stable names.

Expand cultivated plant conservation and research partnerships, including Plant Heritage, UK botanic gardens, nurseries, plant breeders and research partners to safeguard and use threatened, valuable and climate-resilient cultivated plants.

OUTCOMES BY 2031

RHS cultivated plant collections and data are more discoverable and useful for research, conservation, identification, climate adaptation, plant health and engagement.

Gardeners, RHS teams, industry and policymakers use trusted plant evidence to design resilient, biodiverse and healthy gardens and landscapes.

Accurate plant names and identifications underpin RHS advice, science, trials, diagnostics, retail, gardens and digital information.

National and international partnerships improve stability, consistency and access in cultivated plant taxonomy, nomenclature, registration and information.

Cultivated plant diversity is better conserved, selected and used, supporting resilient, biodiverse and culturally rich gardens and green infrastructure.

IMPACTS BY 2031

The UK has a stronger evidence base for cultivated plant diversity, supporting climate adaptation, conservation, plant health and garden resilience.

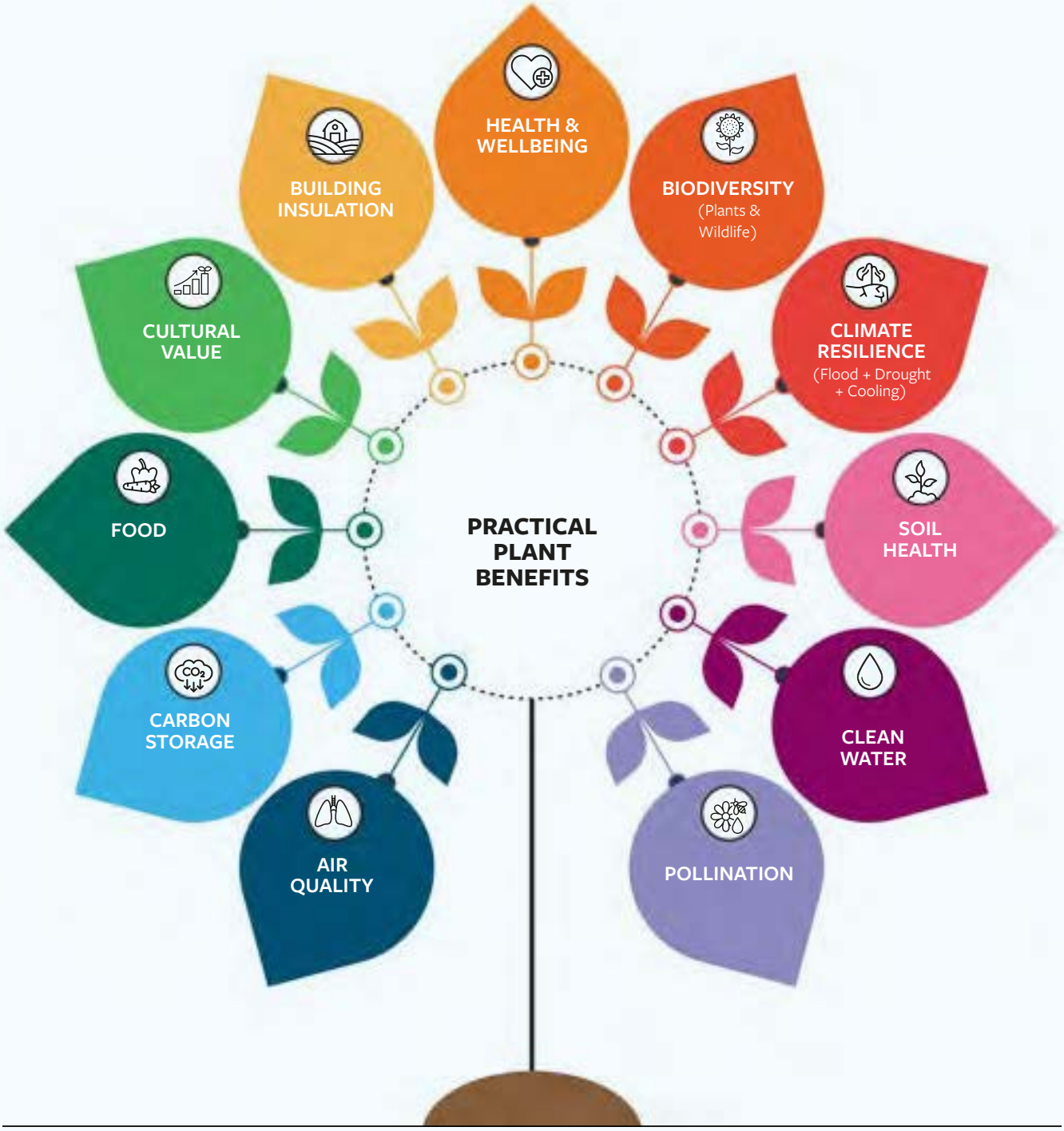
Gardens and landscapes deliver greater environmental, health, wellbeing and economic value through better plant choices and ecosystem services.

RHS advice, science and practice are more trusted and effective, grounded in accurate plant names, identification and evidence.

The RHS strengthens global leadership in cultivated plant knowledge, supporting stable names, standards, registration and trusted information.

Threatened and high-performing cultivated plants are conserved and used, safeguarding heritage, biodiversity and future garden diversity.

RHS PLANTS FOR PURPOSE



Cultivated plants provide many different environmental benefits including pollution capture, temperature moderation, noise filtering and flood reduction. The RHS Plants for Purpose project is working in collaboration with the University of Nottingham to develop a deep learning tool that identifies characteristics among the UK's more than 400,000 different garden plants.

By identifying which plants are beneficial for biodiversity, climate resilience, improving air or water quality, helping with thermal regulation or carbon capture, for example, they can be linked to ecosystem services that help gardeners and developers select the right plants for the right places and purposes.

THEME 3: BIODIVERSITY AND PLANT HEALTH RESILIENCE

How do we protect the health of plants, soils, wildlife and people and strengthen biosecurity?

As climate change increases pest and disease risks, gardeners need trusted, practical guidance to protect plant health, soil life, biodiversity and local habitats, while enabling gardens to positively affect the health of people and communities.

GARDEN AND PLANT HEALTH

The RHS is a trusted leader in garden and plant health diagnostics, research and advice. Working with gardeners, academia, industry, the Animal and Plant Health Agency (APHA), government agencies and policymakers, we are strengthening the UK's capacity to protect healthy plants, soils and garden ecosystems through the new virtual National Centre for Environmental Horticulture and Plant Health. This third theme connects RHS diagnostics, horizon scanning, risk evidence, biodiversity monitoring, biosecurity, research, advice and industry, government and public engagement. It focuses on biosecurity; biodiversity; and plant and garden health, research and advice. Together they provide the evidence and partnerships needed to deliver the following outputs, outcomes and impacts.

1,400

organisms pose a threat to our environment, so our research helps strengthen input to the UK Plant Health Risk Register

BIOSECURITY

Biosecurity underpins healthy gardens and industry and protects UK plants, landscapes and livelihoods. The plant health team leads RHS biosecurity, supports policy and practice across UK environmental horticulture, working with APHA, government, industry and gardeners to reduce the risk of pest and disease introduction and spread. Guided by the six RHS plant health principles (p14), the team supports annual re-certification of all five RHS gardens and retail sites as Plant Healthy assured and promotes the Plant Healthy approach across >



Biodiversity research is generating evidence on how garden habitats support wildlife and respond to change



Good biosecurity practices mean plants destined for RHS Gardens are inspected

RHS shows, environmental horticulture, suppliers, landscapers and the wider horticulture supply chain. This provides the foundation for stronger assurance, better practice and fewer biosecurity breaches.

BIODIVERSITY

Garden habitats are vital for biodiversity, the plant diversity providing the base for a wide range of animals and fungi, from soil life, through pollinators and many other invertebrates to birds, reptiles, amphibians and mammals. Baseline and ongoing monitoring across RHS estates and wider cultivated spaces helps demonstrate how garden ecosystems function, how they are responding to change and how sensitive management can improve their biodiversity value. This evidence informs RHS science such as RHS Plants for Purpose and RHS Plants for Pollinators, garden management, advice and public engagement, while supporting policy and championing the role of gardens in biodiversity gain. It also provides evidence to gardeners on how they can manage their habitats in ways that maximise their gardens' biodiversity value.

PLANT AND GARDEN HEALTH RESEARCH AND ADVICE

Our collaborative plant health research programme is helping establish the new virtual National Centre for Environmental Horticulture and Plant Health (NCEH) and developing evidence-based, sustainable approaches to preventing, detecting and managing the pests and diseases that matter most to gardeners and industry. Priorities include slugs and snails, aphids, mildews, rose black spot, vine weevil and honey fungus, alongside horizon scanning for current, new and emerging threats linked to climate change and international trade. Data from the RHS Gardening Advice service, diagnostics, garden and industry surveillance, and partner intelligence is shaping research priorities and strengthening input to the UK Plant Health Risk Register. Findings feed directly into diagnostics, advice, outreach, training and improved management tools and guidance, ensuring the programme remains environmental, practical, relevant and useful for UK gardeners, RHS teams, the horticultural industry and policymakers.

> **Gardens support around half of all UK birds, mammals, butterflies and reptiles**

THE SIX RHS PLANT HEALTH PRINCIPLES

1	2	3	4	5	6
Provide guidance on plant health issues to protect the sustainability of gardens and horticulture in the UK.	Assess plant health risks prior to undertaking activities that are likely to have phytosanitary implications and identify what mitigations are required.	Adopt practices across RHS activities that minimise plant health risk, while balancing that risk with horticultural benefit.	Prioritise and undertake research to generate the necessary knowledge to manage plant health risks to UK horticulture.	Communicate and exchange knowledge to enable informed decisions to be made to manage plant health risks to UK horticulture.	Work collaboratively, internally and with external organisations to contribute to the management of plant health risks to the UK and to help develop the necessary skills to manage such risks.



Plant health research improves the prevention, detection and management of priority pests and diseases

OUTPUTS BY 2031

Establish and deliver virtual National Centre for Environmental Horticulture and Plant Health with government, APHA, industry and gardeners.

Deliver and promote the Environmental Horticulture Plant Healthy assurance scheme across RHS gardens and shows, suppliers, gardeners and the wider industry supply chain.

Develop a whole-supply-chain plant pest pathways programme that links a national pathways report, RHS diagnostics, horizon scanning, climate-change evidence, surveillance priorities and UK Plant Health Risk Register.

Strengthen plant health innovation, diagnostics and management of current and emerging pests through improved identification capacity, skills training, rapid detection technologies, pest-resistant plant lines, innovative plant protection methods and integrated tools.

Deliver a national plant health, biodiversity and behaviour-change programme that empowers gardeners and stakeholders to monitor garden health, adopt biosecurity practices, manage habitats sustainably and support biodiversity gain.

OUTCOMES BY 2031

A coordinated UK plant health partnership provides trusted evidence, advice and training for gardeners, RHS teams, industry, government and policymakers.

Biosecurity practice is embedded across RHS operations and increasingly adopted by the horticulture and landscape supply chain, with stronger Plant Healthy assurance and gardener awareness.

Plant pest pathways and climate-driven risks are better understood, with evidence routinely used to strengthen the UK Plant Health Risk Register and prevention planning.

Gardeners, RHS teams, industry and the supply chain can detect, diagnose and manage priority pests more effectively using new technologies, skilled practitioners, resistant plant lines, sustainable plant protection products and integrated tools.

Gardeners and stakeholders are mobilised to protect plant health and biodiversity, using evidence-based advice to monitor, protect and enhance gardens, manage habitats sustainably and support healthy and biodiverse soils, plantings and garden ecosystems.

IMPACTS BY 2031

UK plant health leadership is strengthened, improving national capability, policy influence and confidence in evidence-based decisions for healthy plants and gardens.

UK biosecurity is improved, with fewer pest and disease introductions and establishments, reduced costs for government and industry, and better protection for gardens, landscapes and livelihoods.

Future pest and disease risks are reduced, safeguarding UK natural capital, biodiversity, climate resilience and environmental ecosystem services.

UK horticulture becomes more productive, innovative and resilient, producing high-quality, healthy plants while reducing reliance on conventional pesticides.

More gardens become thriving, biodiverse and resilient ecosystems, supporting healthier soils, plants, wildlife and people through informed gardener action.



THEME 4: ENVIRONMENTAL HORTICULTURE FOR PEOPLE AND PLANET

How do we create regenerative, climate-positive, healthy, resilient, resource-efficient gardens?

As pressures increase from extreme weather and limited resources, gardeners need trusted, evidence-based guidance on how to choose plants, manage soils and water, reduce waste and create resilient gardens that benefit people and nature.

ENVIRONMENTAL HORTICULTURE

The RHS aims to be the UK's leading authority in the science of environmental horticulture. Working at the interface of plants, soils, water, climate and people, this fourth theme is generating practical, evidence-based solutions that help gardeners, RHS teams, industry and government create regenerative, climate-positive, healthy and resilient gardens and cultivated landscapes. Closely aligned with the RHS Sustainability Plan, the work is being delivered by RHS sustainability, gardens, curatorial, advice, communities, learning and public engagement teams and industry partners, translating research into action across RHS operations, gardens, shows and the wider environmental horticulture sector. The following five focus areas provide clearer routes from research to advice, tools, demonstrations and measurable impact.

PLANTS

We are researching the structure, function and ecosystem services of garden plants, linking RHS Plants for Purpose, plant trait evidence, garden food systems and green infrastructure to practical guidance for resilient, biodiverse and beautiful gardens. This work is showing how the right plants, in the right places and for the right purposes, can support cooling, rainfall interception, pollution capture, biodiversity, food production, carbon storage, human wellbeing and thriving communities.



4.6%

of Great Britain is covered by gardens – that's 3.1x more than all the National Nature Reserves

SOILS

We are building the evidence base for climate-positive, biodiverse and healthy soils in gardens and cultivated spaces. Research is focusing on soil health, carbon, biodiversity, nutrition, growing media and regenerative management, using the Environmental Horticulture Laboratory, John MacLeod Field Research Facility, RHS Soil Analysis Service, RHS and UK gardens and industry as testing grounds and demonstration sites.

WATER

We are developing evidence and guidance for efficient and effective water management in gardens, supporting resilience to drought, flooding and peak demand. This includes smart-meter and behavioural research, plant water-use trials, soil moisture monitoring, grey-water use, rain gardens, blue-green (water and vegetation) infrastructure, Sustainable Drainage Systems (SuDS) and practical advice to help gardeners and professionals store, reuse and manage water more wisely.

CLIMATE

We are helping gardens and horticulture adapt to climate change and mitigate their environmental impact. Research is monitoring weather and examining the effects of climate change and extreme events on plants, soils, water and garden



WATER OFWAT

The Ofwat-funded Helping Homes Save Water Outdoors project brings the RHS and 10 water industry partners together to use smart-meter data, behavioural insight and expert analysis to understand outdoor water demand. The findings will support targeted advice, improve peak-demand management and help create more water-resilient gardens and communities.



management, while developing practical solutions for resilience, peat-free horticulture, carbon balances, sustainable resource use, waste reduction and regenerative gardening.

PEOPLE

We are researching which behaviours, motivations and barriers shape sustainable gardening practice, and promoting the health benefits of environmental horticulture. By connecting gardens and gardening with mental, physical and social wellbeing, we can inform our advice, interpretation, education and community engagement teams and promote behaviour changes that help more people adopt regenerative, climate-positive and wellbeing-supportive horticulture. >

> **The RHS is helping gardeners to store, reuse and manage water more wisely**

TRANSITION TO PEAT-FREE FELLOWSHIP

Launched in 2022, the Transition to Peat-Free Fellowship is a collaboration between the RHS, DEFRA, environmental nurseries and UK growing-media manufacturers to support the horticulture sector's move away from peat. Sustainable growing media is being tested in commercial nurseries across a wide range of plant groups including alpines, bulbs, bedding plants, herbs, houseplants, shrubs, trees and ericaceous plants. As it develops practical, cost-effective and sustainable peat-free solutions, the project is helping inform industry practice, scientific understanding and future policy.



Smart-meter and behavioural research is helping households save water outdoors while keeping gardens healthy and resilient



OUTPUTS BY 2031

Plants
Produce evidence, tools and guidance on plant traits, ecosystem services, RHS Plants for Purpose, garden food systems and green infrastructure to support resilient, biodiverse and climate-adapted gardens.

Soils
Generate soil-health, soil-carbon, soil-biodiversity, nutrition and growing-media evidence through RHS laboratories, the Soil Analysis Service, Field Research Facility and RHS gardens.

Water
Develop guidance and tools for water-efficient gardens, including smart-meter and behavioural research, plant water-use trials, soil-moisture monitoring, grey-water use, rain gardens, SuDS and blue-green infrastructure.

Climate
Monitor weather and develop adaptation and mitigation evidence covering climate extremes, peat-free horticulture, carbon balances, regenerative gardening, sustainable resource use and waste reduction.

People
Translate behavioural and wellbeing research into advice, interpretation, education, training and public engagement to support regenerative gardening action.

OUTCOMES BY 2031

Plants
Gardeners, RHS teams, industry and policymakers use trusted plant evidence to select and manage plants that deliver resilience, biodiversity, ecosystem services and wellbeing.

Soils
RHS teams, gardeners, growers and industry adopt healthier soil and growing-media practices that improve soil life, carbon storage, nutrition, water dynamics and plant health.

Water
Gardens and horticultural businesses use water more efficiently, reducing drought, flood and supply risks while improving plant vigour and resilience.

Climate
Climate adaptation and mitigation are embedded in RHS operations, advice, garden management, industry practice and policy.

People
More people understand, value and adopt regenerative, climate-positive and wellbeing-supporting gardening behaviours.

IMPACTS BY 2031

Plants
Gardens and green infrastructure deliver greater environmental, health, wellbeing and economic value through better plant choices and ecosystem services.

Soils
Soil health, biodiversity, carbon storage and sustainable growing-media use improve in gardens, RHS operations and the environmental horticultural sector.

Water
UK gardens and cultivated landscapes become more water-resilient, reducing water-supply, flood and drought risks while supporting catchment water balance and local cooling.

Climate
Peat dependency, waste, emissions and environmental impacts are reduced, supporting climate-positive and regenerative horticulture.

People
More people and communities benefit from sustainable, regenerative and wellbeing-supporting gardens that improve lives and local environments.

THEME 5: REIMAGINING RHS ADVICE FOR TOMORROW'S GARDENERS

How can the RHS provide trusted, personalised advice in an AI-enabled world?

As misinformation and digital change accelerate, gardeners need reliable, science-based guidance that is easy to access, personalised to their circumstances and supported by trusted human expertise.

REIMAGINING RHS ADVICE

The RHS Gardening Advice service is one of the Society's most distinctive and valued assets, connecting directly with gardeners via enquiries, face-to-face consultations, gardens, shows, media, digital channels and member services. Over the next five years, this theme is strengthening advice as a core connector across all RHS science and collections themes, using enquiry trends, member insight and emerging gardening challenges to shape research priorities and translate RHS evidence into practical action. AI will complement, not replace, human expertise: trusted RHS advisors oversee interpretation, judgement, quality assurance and personalised support.

100k

The RHS Gardening Advice service addresses more than 100,000 queries per year

PERSONALISED ADVICE

We are developing advice services that are faster, more accessible and more tailored to gardeners' needs, combining RHS expertise with member insight, enquiry history, plant information, local conditions and science-based recommendations.

INTEGRATED KNOWLEDGE AND RESPONSIBLE AI

We are improving the advice portal and knowledge platform so RHS advisors, gardeners and digital tools draw on current, consistent and governed information. We are developing AI with clear standards for quality, >





transparency, data protection, inclusivity and human oversight.

ADVICE INSIGHT, RESEARCH AND OUTREACH

We are using advice enquiries, face-to-face consultations, shows, media activity and digital interactions to provide a continuous feedback loop between gardeners, advisors, scientists and collections teams. This helps identify emerging issues, evidence gaps and behaviour-change opportunities, ensuring RHS research, advice and public engagement remain relevant, trusted and useful.

Trusted experts are building our RHS knowledge systems

> **AI is extending RHS reach, but trusted human expertise remains central to judgement, quality and assurance**

OUTPUTS BY 2031

Personalised digital advice tools developed that combine RHS expertise, plant information, member and industry insight and local context.

Integrated advice and knowledge platform delivered so advisors, gardeners and digital services share trusted, consistent and current RHS evidence.

Responsible AI governance framework established covering quality assurance, data protection, transparency, inclusivity and human oversight.

Expanded garden advice service delivered through gardens, shows, digital channels, media, member services and face-to-face consultations.

Advice insight system strengthened to analyse enquiry trends, member needs and emerging gardening challenges across all science and collections themes.

OUTCOMES BY 2031

Gardeners receive faster, more relevant and personalised advice that helps them make confident, evidence-based decisions.

RHS advisors and digital services work from one trusted knowledge base, improving consistency, quality and speed of advice.

AI-enabled advice is trusted and safe, with human expertise, scientific rigour and RHS values embedded in every recommendation.

More gardeners access RHS expertise where and when they need it, increasing satisfaction, confidence and engagement with the RHS.

Advice data increasingly shapes RHS research, outreach and decision-making, ensuring science responds to real gardener and industry needs and emerging issues.

IMPACTS BY 2031

Gardeners are more confident and successful, using trusted RHS guidance to grow healthier plants and more resilient gardens.

The RHS strengthens its position as the world's most trusted gardening advice service, with advice clearly connected to science, collections and evidence.

Responsible AI extends RHS reach without compromising trust, ensuring technology enhances human expertise and supports inclusive access.

RHS advice reaches more people across more channels, supporting lifelong gardening, member value, public engagement and positive behaviour change.

Gardener insight drives better science, policy and practice, helping the RHS respond quickly to changing needs, risks and opportunities in UK gardens.

DELIVERING THE PLAN

Our people, partnerships, facilities and annual priorities are all key to ensure this plan is delivered according to defined priorities, resources, milestones and measures of success

This RHS Science and Collections Plan sets our strategic direction to 2031 and is being delivered through annual and three-year operational and budget plans. These define priorities, resources, milestones and measures of success, ensuring our efforts are focused on the activities that deliver greatest impact for gardeners, the RHS and the wider environmental horticulture sector.

INTEGRATED DELIVERY

Its delivery depends on close collaboration across RHS science and other teams including gardens, curatorial, sustainability, libraries, heritage collections, gardening advice, communities, learning and public engagement, shows, digital, publications and communications. By working closely together, we can maximise the value of our collective expertise, facilities, collections, data and partnerships.



Yvette Harvey is responsible for the extensive RHS herbarium

RESEARCH, PARTNERSHIPS AND FUNDING

Research is being delivered through RHS Hilltop, RHS gardens, field research facilities, research partners and real-world cultivated landscapes, working with growers, landscapers, gardeners, academics, industry, government, cultural and data institutions, community organisations and large-garden partners. These partnerships ensure science informs practice, while practical experience shapes future research, collections, gardening and plant humanities questions. Core RHS funding is being complemented by philanthropy, grants, universities, charities, donors and strategic partnerships.

EMBEDDING THE FIVE THEMES

Across the RHS, the five themes are informing sustainable operations, advice, education, plant selection, garden displays, shows, advocacy, policy and decision-making, while helping shape national conversations on plant health, biodiversity, sustainability, environmental horticulture, human health, culture and gardening.

COMMUNICATION AND PUBLIC ENGAGEMENT

Science communication and public engagement is transforming collections, research and heritage into advice, exhibitions, publications, events, garden interpretation, digital content and learning experiences.

Technical expertise, state-of-the-art facilities and quality systems all play a part



By turning knowledge into practical action, we can help gardeners make better decisions, adopt sustainable practices and contribute to healthier plants, soils and garden ecosystems.

RESEARCH LEADERSHIP AND PLANT HUMANITIES

This plan positions the RHS as a connector to the National Centre for Environmental Horticulture and Plant Health and plant humanities. Through the Lindley Library and heritage collections, the RHS supports research, builds partnerships and generates insights into the cultural and societal importance of plants, gardens and gardening, directly supporting Grow Our Story.

SUSTAINABILITY AND SCIENCE-LED SOLUTIONS

RHS science and collections are helping to deliver the RHS Sustainability Plan through research on peat-free growing, biodiversity, water stewardship, soil health, climate adaptation, carbon storage and sustainable resource management.
The RHS gardens, laboratories, operations and field research facilities provide places to test, demonstrate and communicate science-led solutions.

PEOPLE, INFRASTRUCTURE AND TECHNICAL CAPABILITY

This plan's success depends on continued investment in people, infrastructure, collections, laboratories, digital systems and data capability. Delivery relies on researchers and collaborators, and on the laboratory manager, research technicians, information specialists and technical teams across advice, libraries, scientific collections, plant diversity, plant health, environmental horticulture, diagnostics and collections care. These teams provide the equipment, quality systems and technical expertise that enable research, biosecurity, diagnostics, collection care and reproducible scientific discovery.

STUDENTSHIPS AND RESEARCH LEADERSHIP

The RHS is continuing to support summer studentships, MSc, PhD and post-doctoral fellowships aligned to the priorities of this plan, offering funding, facilities, supervision, links to RHS gardens and collections, and opportunities to share research through RHS media, shows, learning and public engagement. As this work grows, we will invest in postgraduate supervision, mentoring, project leadership and research management so staff can support the next generation of horticultural scientists, collections specialists and plant humanities researchers. We are aiming to grow to 35 studentships by 2031.

> **By turning knowledge into action we help gardeners make better decisions**

OVERSIGHT AND REVIEW

Strategic oversight is being provided by the RHS Science and Collections Group, working with RHS Leadership to bring external expertise, independent challenge and scientific rigour to prioritisation, partnerships, collections management, research delivery and knowledge curation. Progress is being reviewed annually through a balanced framework of outputs, outcomes and impacts covering scientific excellence, collections development, public engagement, gardening advice, environmental impact, partnership development, policy influence, technical capability and organisational resilience.

By 2031, RHS science and collections will be outward-facing, impactful and fully integrated, giving gardeners, partners, industry, policymakers and RHS teams the evidence, tools, skills and confidence to help gardens thrive in a changing world.

GROWING UK ENVIRONMENTAL HORTICULTURAL SCIENCE AND COLLECTIONS IN THE FUTURE

To grow a strong future for UK environmental horticultural science and collections, our commitment must be to train and develop a future workforce with skills and knowledge

If this plan is to make a lasting difference, our commitment must extend beyond today's priorities and equip the UK with the people, skills and knowledge needed for a sustainable, healthy future. Commitments made by the RHS, industry and government to develop environmental horticulturists and environmental horticultural scientists remain central to inspiring more people to choose horticulture and environmental horticultural science as rewarding, purposeful careers.

Working with RHS Education, universities, colleges, schools and horticultural institutions, we are improving the visibility and accessibility of horticultural science careers and creating more opportunities for learning, placements and professional development.

Our libraries, collections, gardens, laboratories and gardening advice services are able to provide distinctive resources for students, apprentices, researchers, practitioners and future professional gardeners.

Growing a stronger skills pipeline in horticultural science is key











INSPIRING FUTURE ENVIRONMENTAL HORTICULTURAL SCIENTISTS

Work experience and placements: We are providing structured opportunities for young people and students to experience environmental horticultural science careers through secondary school work experience, degree placements and links with RHS gardens, laboratories, collections, advice services and research teams.

STEM ambassadors: We are seeking better engagement with primary and secondary schoolchildren at RHS gardens and shows by investing in RHS science, technology, engineering and mathematics ambassadors to share the diversity, creativity and societal value of environmental horticultural science.

Horticultural students: We are embedding new science, practical know-how and research insight into the RHS School of Horticulture curriculum, RHS qualifications and learning delivered through colleges across the country.

Education in environmental horticulture: We are communicating environmental and wellbeing insights through RHS learning, from school visits and RHS qualifications to degree-level learning, professional development and sector-facing training. By working with education partners, professional bodies and sector organisations, we are developing high-level environmental horticultural skills to create learning opportunities for students, practitioners, professionals and future leaders in the horticultural sector.

STAFF DEVELOPMENT AND CAPABILITY

The success of this plan depends on the expertise, skills and continual development of our people. As we expand scientific research, collections, diagnostics, biosecurity, advice and public engagement activity, we will invest in the knowledge, capability and leadership of staff across all RHS science and collections teams. This includes specialist technical training, professional accreditation, leadership development, mentoring, research supervision skills and opportunities to learn from both national and international experts.

We are strengthening expertise in diagnostics, collection management, taxonomy, biosecurity, plant health, environmental horticulture, data science, experimental design, statistics, science communication and knowledge exchange. Through workshops, placements, conference participation, professional networks and cross-team learning, RHS staff can remain at the forefront of their disciplines and be equipped to deliver world-leading science, advice, collections and public engagement.

> **This plan's success depends on investing in our people**

As the RHS increases its support for MSc, PhD and post-doctoral researchers, we will also develop the supervisory and research leadership skills of our staff, ensuring we have the capability to support the next generation of environmental horticultural scientists and collections specialists. By investing in our people, we will maintain high professional standards, support career progression, strengthen succession planning and ensure the RHS remains a global leader in environmental horticultural science and collections excellence.



A stronger skills pipeline will help the UK address climate change, biodiversity loss, plant health, biosecurity and public wellbeing through horticultural science

OUTPUTS BY 2031

Promote clear pathways into environmental horticultural science via work experience, student placements, STEM ambassadors and stronger links with schools, colleges, universities, professional bodies and sector partners.

Embed environmental horticulture learning content across RHS education, the School of Horticulture, RHS qualifications, professional learning, public engagement and digital content.

Establish a science and collections professional development programme covering technical skills, leadership, mentoring, research supervision, specialist training and knowledge exchange.

Deliver regular specialist training in diagnostics, biosecurity, collections management, taxonomy, environmental horticulture, soil science, data science, experimental design, statistics and science communication.

Develop training for gardeners, horticulturists, scientists, practitioners, schools and community gardeners including exploration of an environmental horticultural science masterclass with sector partners.

OUTCOMES BY 2031

Young people, students and early-career professionals understand environmental horticultural science as an exciting, purposeful and socially valuable career pathway.

Science and collections staff are more skilled, confident and future-ready, with stronger capability in technical practice, leadership, supervision, communication and public engagement.

RHS research and collections knowledge is embedded more effectively across education, qualifications, advice, professional learning, public engagement and gardener-facing content.

Links are strengthened between science, gardens, advice, libraries, collections, education, learning and public engagement through greater integration and knowledge exchange across RHS teams.

The RHS is better able to attract, support and develop students, apprentices, fellows, researchers and future leaders in environmental horticulture and collections.

IMPACTS BY 2031

The UK environmental horticulture sector has a stronger pipeline of skilled people able to address climate change, biodiversity loss, plant health, biosecurity, resource use and public wellbeing.

The RHS is recognised as a leading national hub for environmental horticultural science, skills and professional development, supporting learners, practitioners, researchers, partners and policymakers.

RHS staff, students and partners are better equipped to turn science, collections and advice into practical action for gardeners, industry, communities and decision-makers.

More people understand the value of environmental horticultural science and are inspired to contribute to greener, healthier, more biodiverse and more resilient places.

Gardens and cultivated landscapes deliver greater benefits for people, plants and the planet through improved skills, confidence and knowledge.

RHS SPACES FOR RESEARCH, EXHIBITION AND LEARNING

State-of-the-art facilities including licensed laboratories, an environmentally controlled herbarium, extensive libraries and scientific collections enhance our diagnostic and taxonomic capabilities



RHS Hilltop houses the **Plant Health Laboratories**, which are supported by a skilled laboratory management team and include diagnostics, molecular, biosecurity and collections spaces. These licensed laboratories meet requirements for research on specified organisms, equipped with stereo and compound microscopy, and advanced molecular techniques such as Real-Time PCR. They enhance our diagnostic and taxonomic capabilities for garden plants.

The collections room preserves world-class entomology collections with environmental controls, handling and storage, and provides space for developing reference and training collections.

The laboratories also host training activities and visiting students.

RHS HILLTOP – HOME OF GARDENING SCIENCE

RHS Hilltop – Home of Gardening Science, at RHS Garden Wisley, was opened by Sir Nicholas Bacon on 24 June 2021. It houses research laboratories, the Wisley library, the herbarium, seed store, offices for horticulture, science, library and gardening advice teams, a 400-people capacity auditorium (The Garden Room), exhibition and public engagement space (The Atrium), learning studios, the World Food Café and the Sky Terrace. Encircling the building are three signature experimental gardens: the Wildlife Garden, Wellbeing Garden and World Food Garden. They reflect the latest research and connect environmental horticultural science, sustainable growing and food with public engagement, while the Learning Garden focuses on secondary school pupils and leisure learners. With the wider RHS gardens, these spaces provide living laboratories where visitors can see and participate in science through experimentation, demonstration planting, trials, interpretation and garden management. They allow gardeners to experience regenerative solutions and understand the science that underpins RHS advice and recommendations. Designed with sustainability in mind, the Hilltop building achieved

300k
visitors are welcomed to RHS Hilltop each year

a BREEAM certification of Very Good and incorporates rainwater harvesting and My Green Lab certification. Annually, it attracts around 300,000 visitors, 48,000 visitors to the library, and 22,000 attendees at Hilltop Live talks. Large RHS events also utilise the Hilltop Garden Room Auditorium.

THE 1851 ROYAL COMMISSION HERBARIUM

Based at RHS Wisley, the herbarium serves as the UK's reference collection and research resource for garden plants. A National Resource for Cultivated Plant Conservation, it supports taxonomic and heritage research, cultivar registration and specimen conservation. The environmentally controlled herbarium at RHS Hilltop aims to hold and preserve all UK garden plants – up to 400,000 specimens. It provides workspace for researchers, volunteers and students to use the collections for research and studies. The herbarium team continues to collect new plant cultivars and digitise specimens, sharing them with international audiences via an online platform.

THE ENVIRONMENTAL HORTICULTURE LABORATORY

Supported by skilled laboratory technicians, the Hilltop laboratory complements the Field Research Facility (FRF) by providing state-of-the-art analyses at the interface between plants, water, soils and growing media. Equipped with advanced tools such as phytotrons,



RHS diagnostics and research help identify, understand and manage plants

luminometer and vario-scan plate reader, it elucidates soil microbial characteristics, which drive nutrient cycling, environmental quality, carbon storage and soil health. The RHS Soil Analysis Service (SAS) is also administered from this lab.

THE JOHN MACLEOD FIELD RESEARCH FACILITY (FRF)

This facility in Wisley Village is supported by skilled technicians and offers a secure experimental site for environmental horticulture and plant health research trials, both indoors under controlled environments and outdoors exposed to ambient weather. The 70,000m² site includes grow rooms with precise control over light, daylength, temperature and humidity, and houses specialist equipment and technologies. Outdoor spaces enable research with replicated trials, invertebrate enclosures, regulated water supplies and plant management strategies. Managed with biosecurity and integrated pest management (IPM), the site features a fully automatic weather station, rainwater harvesting, an acid dosing system for irrigation, and photovoltaic panels for energy.



RHS LIBRARIES

Located at Wisley, Harlow Carr, and London, these libraries hold the world's finest collection of gardening and horticultural literature, serving researchers, academics, gardeners, students and children. The modern Wisley and Harlow Carr libraries are well-suited to high-footfall gardens. The RHS Lindley Library at Vincent Square, despite needing investment for accessibility and a welcoming environment, has the potential to reach new audiences due to its central London location, good transport links and international reputation. Our libraries and collections serve as repositories of knowledge and as gateways to discovery, helping people of all ages engage with the humanities of gardening,

>



The history of science and learning at RHS Wisley is documented in the Old Laboratory

gardeners, heritage, culture and science through events, exhibitions, learning programmes and digital content that connect with both hearts and minds.

The restored **Old Laboratory** at Wisley features permanent displays on the history of RHS science and learning at Wisley and hosts exhibitions showcasing scientific and heritage collections.

DIGITAL INFRASTRUCTURE

We have also invested heavily in digital infrastructure, storing over 110,000 digital files on a specialist preservation system. Since 2023, we have published digitised records under a Creative Commons licence, making them freely available for non-commercial, educational purposes worldwide.

This provides searchable access to digitised images of library, heritage and herbarium items, and serves as a platform for curated content. Expanding and enriching this content will increase public engagement with our collections and knowledge.

THE LIVING COLLECTIONS

Based in RHS gardens, the Living Collections are used for research and collaboration, with trials and surveys conducted in the Wildlife, Wellbeing and World Food Gardens at Hilltop, as well as in the wider gardens. Trials fields assess plant cultivars for the RHS Recommended: Award of Garden Merit candidates and monitor soil moisture, photosynthetic activity and plant physiology.

Collaborative experiments between science, horticulture, learning and estates teams focus on Sustainable Drainage Systems (SuDS), biodiversity, garden food systems and ecosystem services of tree stock and cultivated plants across all gardens. RHS scientists, horticulturists and RHS-supported students work together on climate assessments, sequestration, greenhouse gas and land emissions, and storage.

Beyond the RHS we work with industry, government and gardeners on scientific experimentation in a 'real-time' garden, plant nurseries and landscape environments across the UK with over 20 UK and overseas research institutes.

RHS SCIENTIFIC, HERITAGE AND LIBRARY COLLECTIONS

Built over more than 220 years, the RHS scientific, heritage and library collections are the UK's pre-eminent resource for studying garden plants, gardens and gardening practices, and are internationally significant.

> **Over 110,000 digital files are preserved on a specialist system**

Awarded Designated Status by Arts Council England in 2011, the RHS library and heritage collections deepen understanding of the history, culture, science, art and practice of horticulture.

They include books, archives, manuscripts, photographs, artworks and ephemera dating back more than 500 years. The RHS 1851 Royal Commission Herbarium serves as the UK's reference collection for garden plants, supporting cultivated plant naming, identification, conservation and research. The RHS UK garden entomology collections are invaluable for identifying invertebrates and include voucher specimens from experimental work and first UK records for some species.

RHS COLLECTIONS PLAN

The RHS Science, Library and Heritage Collections Plan sets out priorities for developing, caring for and sharing our collections over the next five years, ensuring they continue to provide a lasting record of gardening in the UK. Key priorities include pursuing Museum Accreditation for the scientific collections at RHS Wisley and the heritage collections at the RHS Lindley Library; strengthening strategic acquisition, review, care and documentation; expanding digital access; developing collection-focused exhibitions and events; and building research partnerships that unlock new discoveries across horticultural science, heritage, data, AI and plant humanities.

OVERVIEW OF RHS SCIENTIFIC, HERITAGE AND LIBRARY COLLECTIONS



HERBARIUM SPECIMENS

103,000

Dried and pressed ornamental plant specimens mounted on archival paper and specimens bound in books (exsiccatae)



ENTOMOLOGY SPECIMENS

c46,000

24,000 dry invertebrates (5,000+ spp); 21,000 preserved slugs (40 spp); 300 other specimens (150 spp); 300 microscope slides (200 spp)



BOOKS AND JOURNALS

c100,000

70,000+ books, 3,200+ journal titles, 500+ ebooks, audiobook titles and subscription services from the 15th century to today



ARCHIVES

c130,000

RHS official archive and record; notes/journals from RHS-sponsored plant-collecting trips; gardening/horticultural archives



ARTEFACTS

c3,000

Objects relating to RHS activity such as horticultural science and herbarium; Northern Horticultural Society garden tools collection



PHOTOGRAPHS

c300,000

Dating from mid-19th c, including history of RHS, works by notable garden photographers and 45,000 plant portraits in the herbarium



ARTWORKS

c33,500

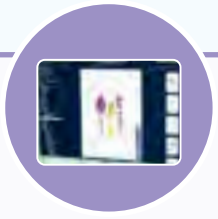
One of UK's largest collections of original botanical drawings, dating from 17th c. Many are the only image record of a cultivar



EPHEMERA

c35,000

UK's largest collection of nursery catalogues; postcards of British and European gardens; pamphlets; garden guides; paper toys/games



DIGITAL COLLECTIONS

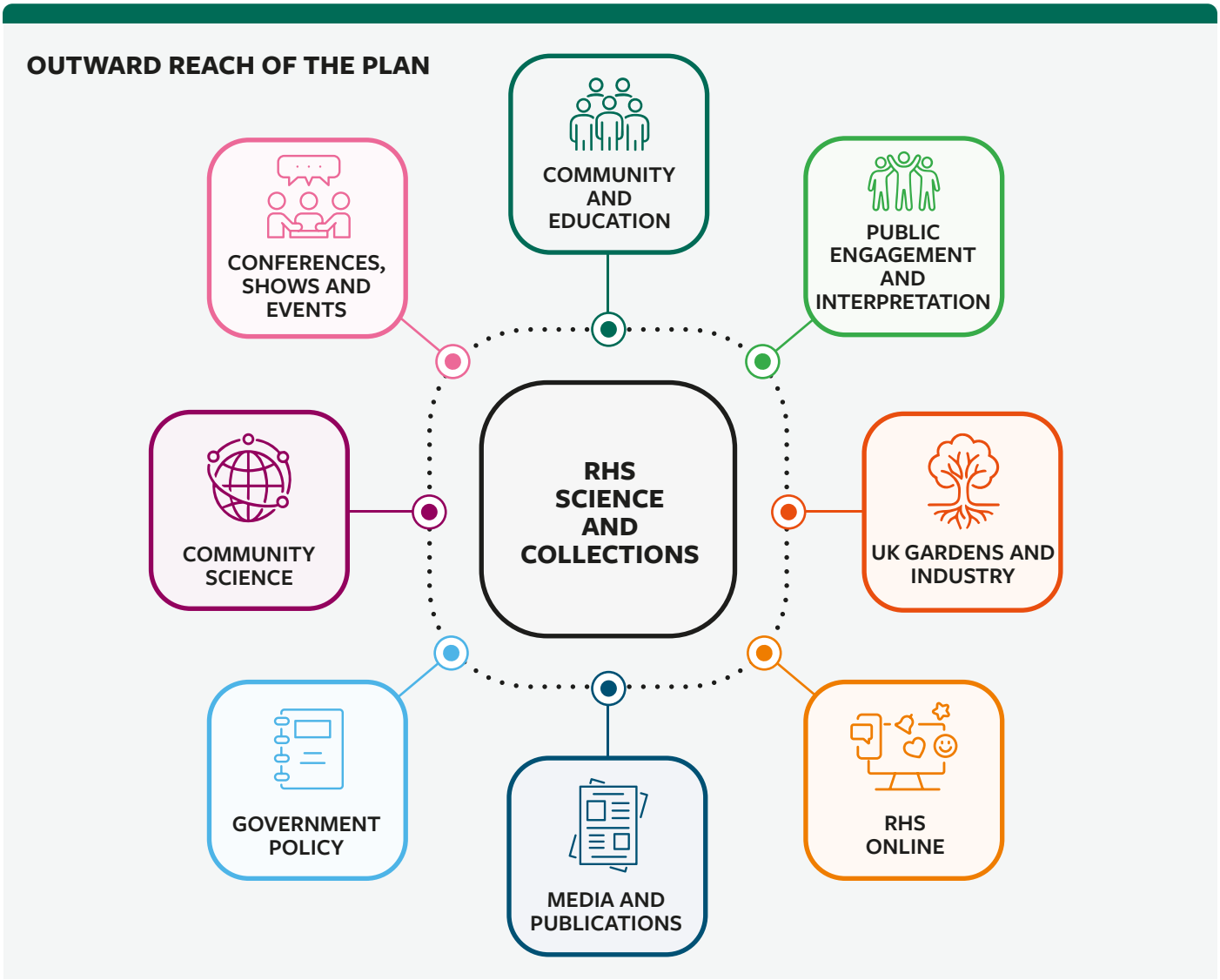
c12,000

Digital donations: facsimiles of physical items loaned by donors
Born digital collections: small but anticipated to grow rapidly

WHERE YOU WILL SEE THE RESULTS

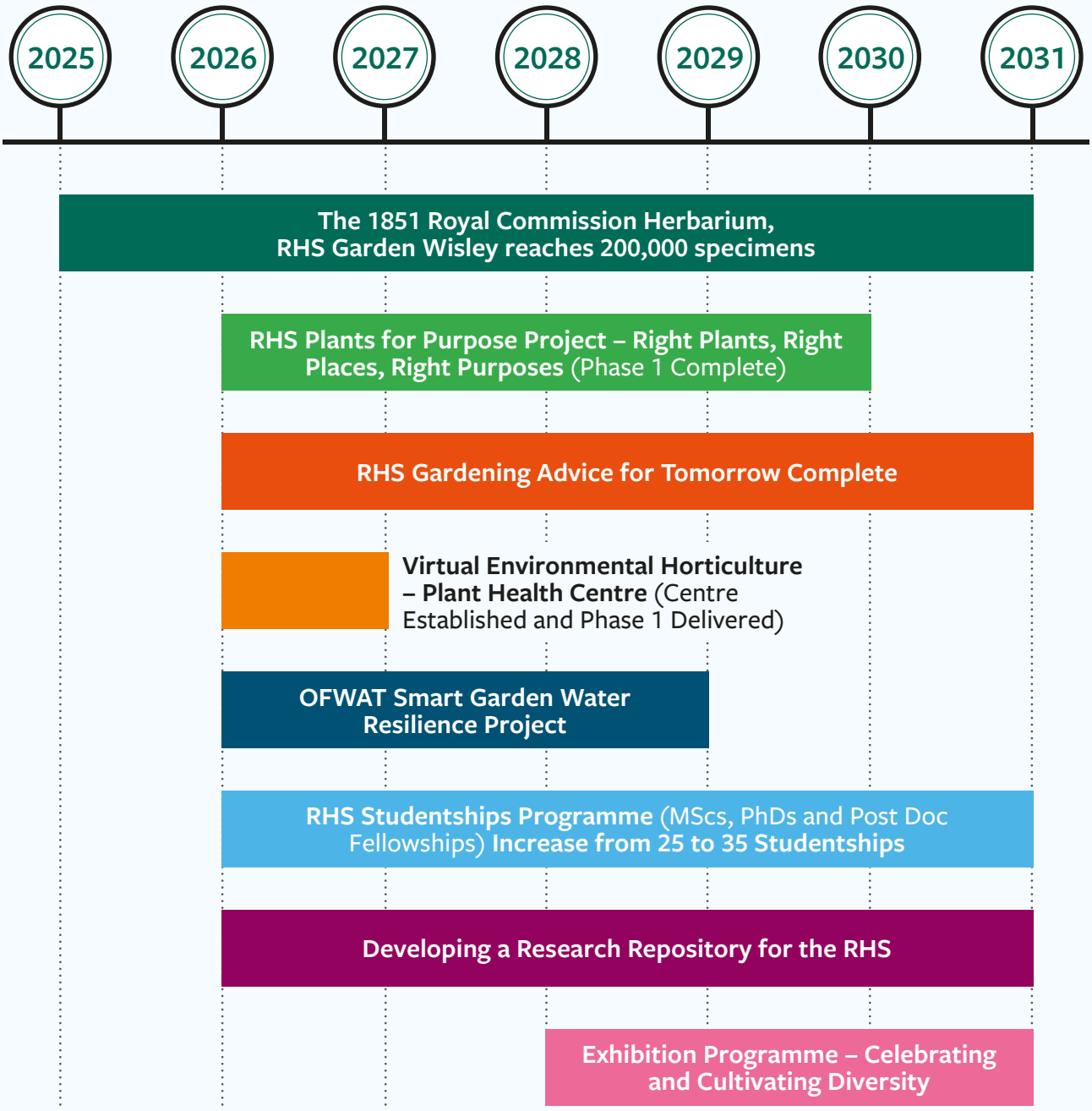
How the RHS plans to turn evidence, collections and advice into action for people, gardens and nature





Community and Education Embedding RHS science and advice into education resources and community outreach so benefits reach across the UK.
Public Engagement and Interpretation: Bringing research and collections to life through exhibitions, talks, interpretation, libraries, shows, publications, digital storytelling and learning programmes.
UK Gardens: Working with gardeners, industry and government to help make the UK greener, more beautiful, more biodiverse and more resilient.
RHS Online: Improving access to RHS research, advice, events, horticultural data and collections through rhs.org.uk, digital advice and information products.
Media and Publications: Communicating the "what" and "why" of RHS research via media, books, scientific papers, RHS Plant Finder and publications.

TIMELINE FOR IMPLEMENTATION



Government Policy: Providing trusted evidence, expert advice and scientific leadership on plant health, biosecurity, biodiversity, climate resilience and sustainable gardening.
Community Science: Mobilising millions of UK gardeners as potential garden scientists to improve understanding of gardens and inspire environmental action.
Conferences, Shows and Events: Sharing RHS science through conferences, shows, events, the John MacLeod Lecture, PhD Symposium and international scientific meetings.

By 2031, RHS science and collections will reach people wherever they garden, learn, visit, work, make policy or seek trusted advice



RHS

rhs.org.uk
Royal Horticultural Society
RHS Garden Wisley, Woking, Surrey GU23 6QB

RHS Registered Charity Number 222879 / SC038262

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