Introducing the RHS peat-free Fellowship

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Royal Horticultural Society

14 September 2023

RHS & HTA Workshop

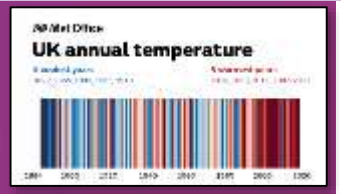
Hereford

Royal Horticultural Society

- RHS is a gardening charity - Founded in 1804.
- Founding Purpose: To improve the Science, Art and Practice of Horticulture.
- Member / visitor funded (members = 635 000+)
- 5 RHS Gardens across the UK (2.7m visitors annually)
- 1000+ staff and 1300+ volunteers.
- Science (>100 staff: scientists / advisors / technicians).
- Supporting ~28 million UK gardeners.

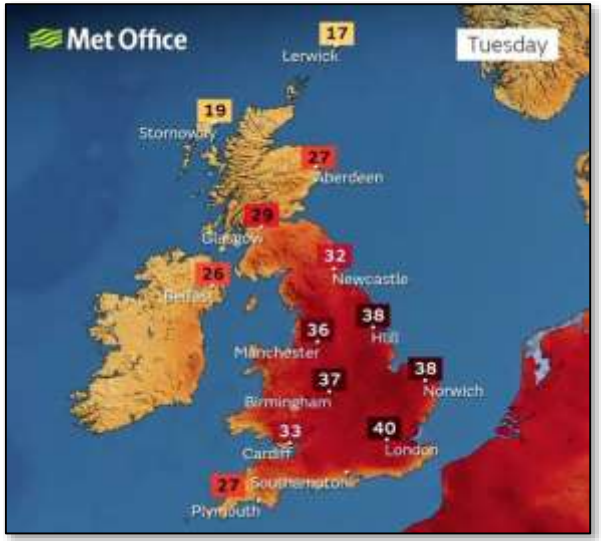
www.rhs.org.uk

Climate Context

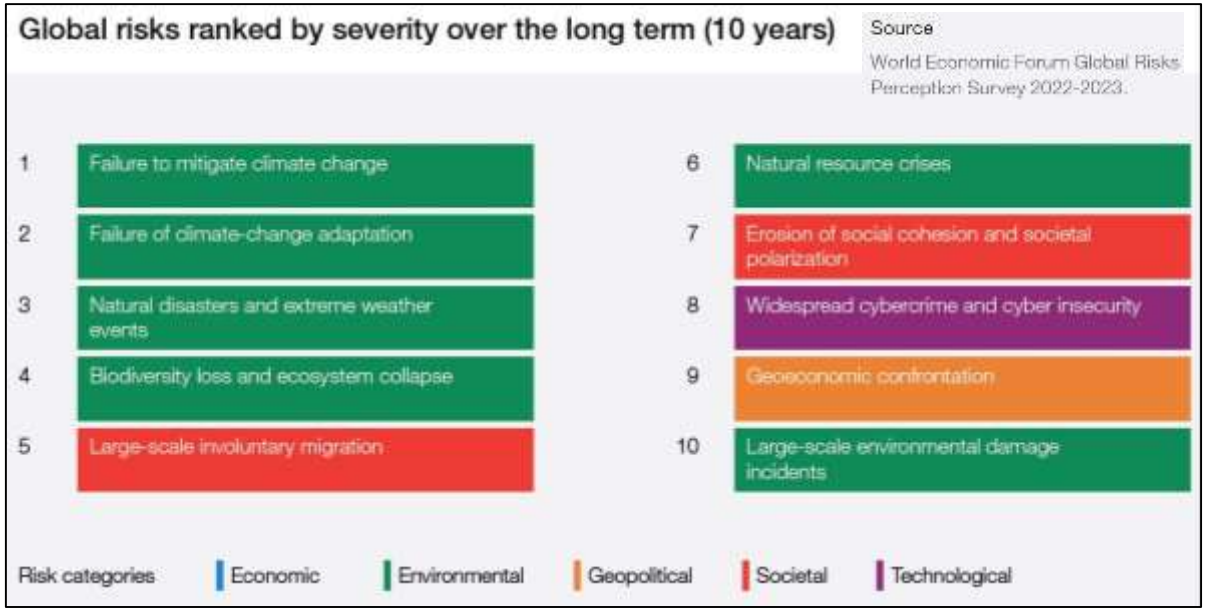


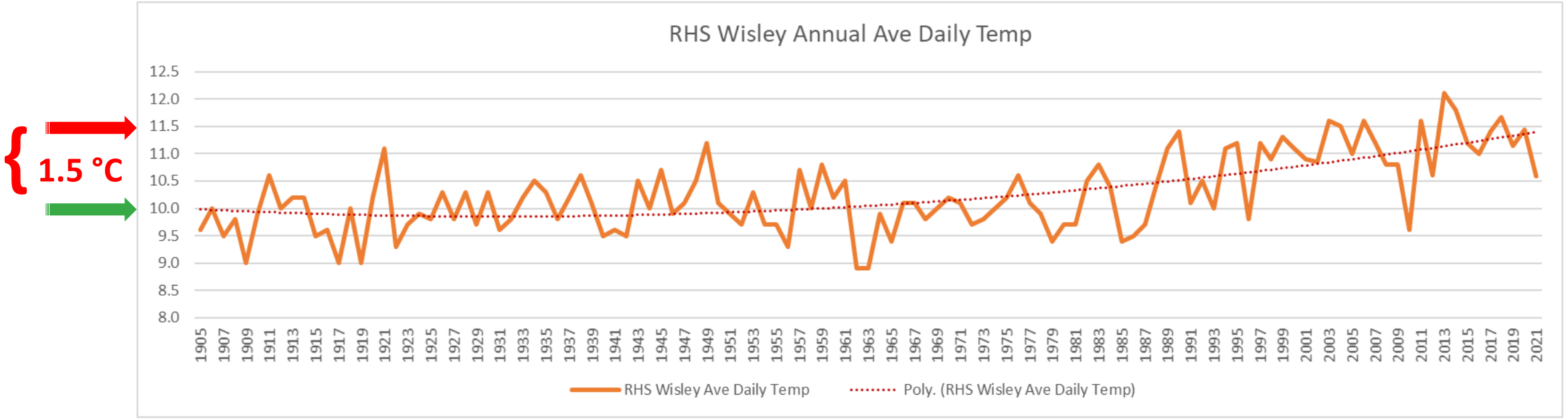
- Anthropogenically increased GHGs, population growth, urbanisation & increasing competition for resources, including water.
- Impacts on climate, hydrological cycle, biodiversity, environmental & human health.
- Increase in extreme weather events: rainfall intensity, record UK temps, heatwaves, drought.
- Risks associated with these.

https://www.metoffice.gov.uk/

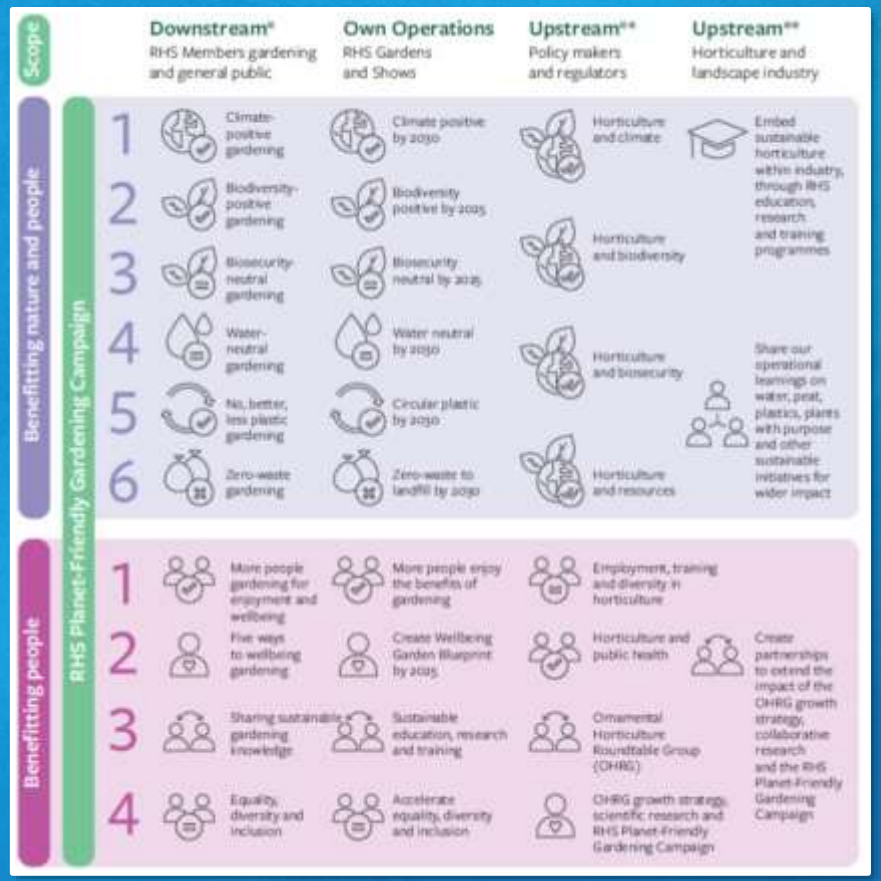


https://www.bbc.co.uk/news/science-environment-62382703




RHS Wisley Annual Ave Daily Temp
1.5 °C
12.5
12.0
11.5
11.0
10.5
10.0
9.5
9.0
8.5
8.0
1905 1907 1909 1911 1913 1915 1917 1919 1921 1923 1925 1927 1929 1931 1933 1935 1937 1939 1941 1943 1945 1947 1949 1951 1953 1955 1957 1959 1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021
RHS Wisley Ave Daily Temp
Poly. (RHS Wisley Ave Daily Temp)

RHS Sustainability Strategy



https://www.rhs.org.uk/about-the-rhs/sustainability

RHS Planet-friendly Gardening Campaign

https://www.rhs.org.uk/gardening-for-the-environment/planet-friendly-gardening-tips

Gardens: an important land-use type

- Up to 30% of UK urban area = domestic gardens[1].
- Estimated to cover 521 872 ha in total[1].
- Including domestic gardens beyond urban areas = 728 891 ha for Great Britain[2].
- Represents 3.5% of Great Britain, but a land-use type that 87.5% of UK residents have access to[3].
- Significance of gardens to urban areas, landscapes, catchments.
- Need science research / evidence-based guidance.

[1] Office for National Statistics (ONS). (2019). UK natural capital: urban accounts: Private Outdoor Space. https://www.ons.gov.uk/economy/environmentalaccounts/bulletins/uknaturalcapital/urbanaccounts.
[2] Office for National Statistics (ONS). (2020a). Access to gardens and public green space in Great Britain. https://www.ons.gov.uk/economy/environmentalaccounts/datasets/accesstogardensandpublicgreenspaceingreatbritain.
[3] Office for National Statistics (ONS). (2020b). One in eight British households has no garden. https://www.ons.gov.uk/economy/environmentalaccounts/articles/oneineightbritishhouseholdshasnogarden/2020-05-14.

Environmental Horticulture: Team

Head of Environmental Horticulture
Mark Gush

Principal Horticultural Scientist
Tijana Blanusa

Post-doctoral Fellow (Well-being)
Lauriane Chalmin-Pui

Senior Soil & Climate Change Scientist
Marc Redmile-Gordon

Post-doctoral Fellow (Tree traits & ES)
Elisabeth Larsen

Water Specialist
Nicholas Cryer

Post-doctoral Fellow (Sustainable Horticulture)
Chloe Sutcliffe

Research Technician
Joe Barker

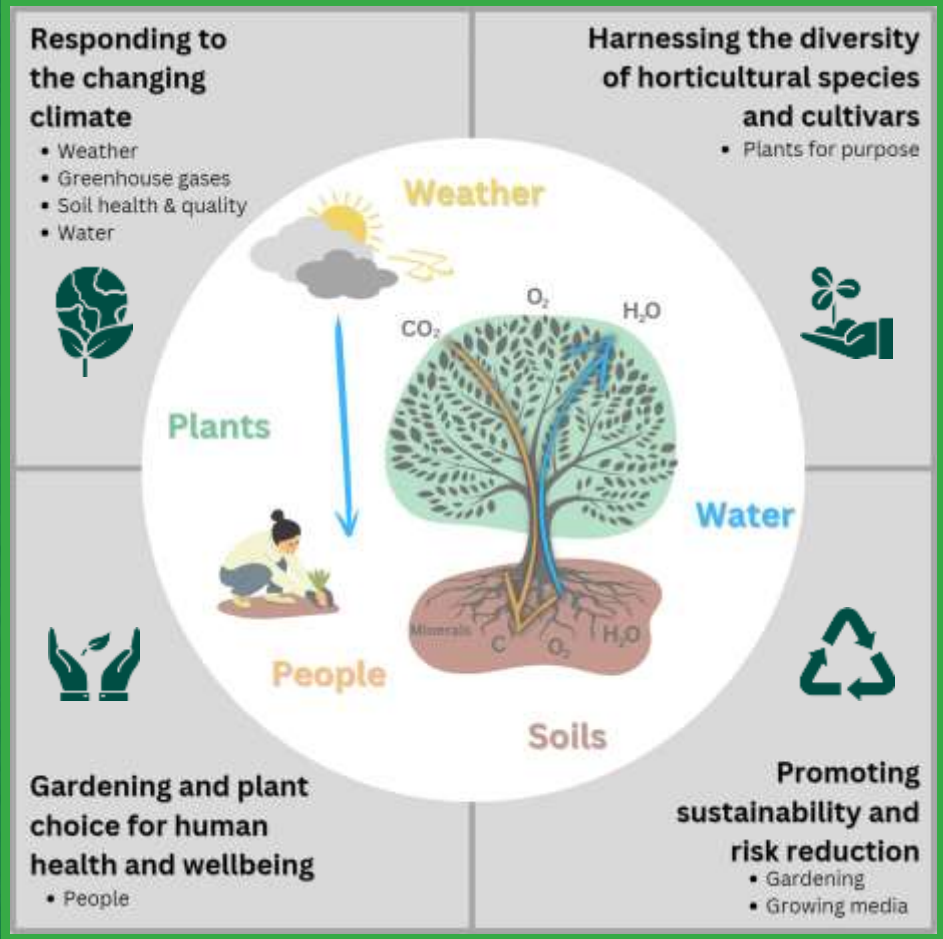
Research Assistant
Rachael Tanner

Post-doctoral Fellow (Transition to Peat-free)
Raghavendra Prasad

Research Assistant
Amanda Seemungal

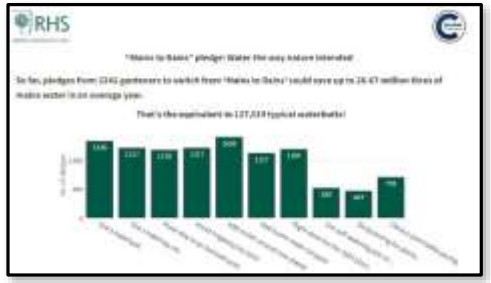
https://www.rhs.org.uk/science/meet-the-team/environmental-horticulture-team

Research Focus Areas

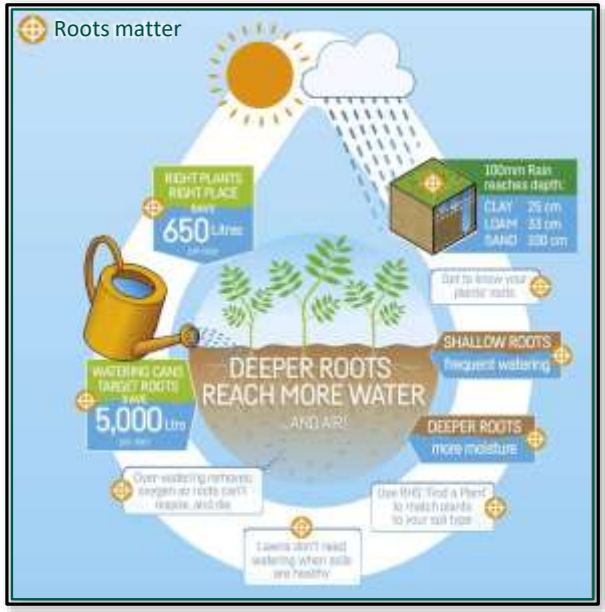


Water Management in Gardens

Promoting more effective & efficient use of water in RHS gardens & the wider horticultural community) – KTP project



https://www.Mains2Rains.uk
3365 Pledges, potentially saving
40.6 million litres of mains water



Soil and Climate Science at the RHS

- **Soil Health:** Its ability to act as a carbon sink and store carbon from plants. Its delicate balance of solids, air and water impacting gas exchange, hydrology and biodiversity. The staggering levels of biotic life and biodiversity it contains.
- **Peat-Free Carnivores:** Wild carnivorous plants depend on peatland habitats. Propagated carnivores have a reputation for also depending on peat. Horticultural exploitation of peatlands is problematic for biodiversity and climate. ***Aim:*** *to demonstrate that even these challenging plants can do equally well (or better) in peat-free media.*

Fellowship: Transition to Peat-Free
Why Peat-Free?

Peat bogs:

- Act as vital **Carbon sinks**
- Regulate landscape **Hydrology**
- Support unique & abundant **Biodiversity**

✓Mitigate the **climate and biodiversity crises**

✓Contribute towards meting the **net zero 2050 target** of the UK

Specific challenges: Transition to Peat-Free

1. Peat-free plant propagation and plug production
2. New / novel growing media raw materials (replacing 950 000 m^3 (2022) of peat)
3. Grower protocols for peat-free horticulture
4. Solutions for Challenging Plant Groups – Carnivorous, Ericaceous and Proteaceous
5. Public / Industry engagement – facilitating the transition to peat-free horticulture

Fellowship objectives

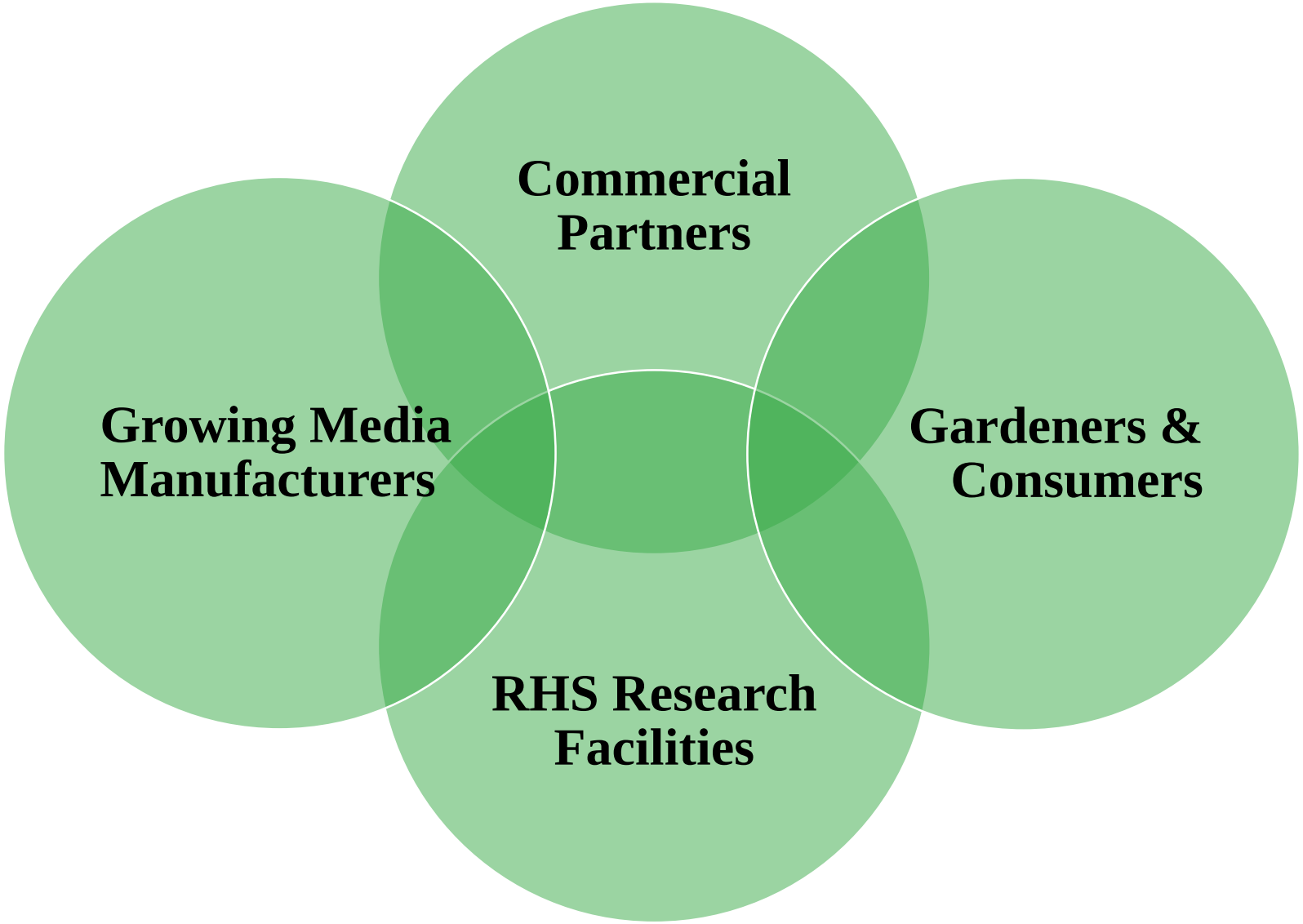
- Supporting the horticulture industry, domestic gardeners and RHS **transition to peat free growing**
- Promoting environmentally sustainable, economically viable, and effective **growing media solutions**
- Guiding on efficient and effective use of resources - **substrates, water and nutrients**
- Contributing towards delivery of the RHS Sustainability strategy Nature target 1: Climate Positive by 2030, through the RHS Peat-Free Pledge: **100% Peat-Free in all RHS operations by 2025**

Project Partners and Collaborators

Department for Environment Food & Rural Affairs

fargro

GROWING MEDIA association



Allensmore Nurseries Ltd.

the farplants group

JOHNSONS OF WHIXLEY PROFESSIONAL NURSERYMEN

hills

VITACRESS

Hillier NURSERIES

Volmary

Lovania NURSERIES LTD

Research Trials

Field Trials | Greenhouse | Laboratory | Phytotrons

- Collaborative trials between RHS and commercial partners
- Outdoor and indoor
- Aim: to meet the practical requirements of the production system in which peat-free substrates are being utilized

RHS resources to support the UK Transition to Peat-Free

Science – Research Studies

Post Doctoral Fellowship

Dr. Raghavendra Prasad

PhD's

- Food Safety (Sep 2023)
- Peat-Free Propagation (Jan 2024)
- Behavioural Science (Jan 2024)

Technical support, communication and dissemination

- Peat Free Transition Technician – Nikki Barker
- Peat Free Campaign Manager – Claire Thorpe
- Peat Free Research assistant – To recruit
- HTA and RHS collaborative workshops to assist growers.

Knowledge and technology transfer : Key stake holders Communication and Dissemination

RHS

- Project Reports
- RHS web-pages
- RHS Shows
- Workshops / Field visits
- Media communications

Government

- Reports
- Press related queries

Professional and amateur horticulturists

- Technical advice on adaptation & practical management of peat-free growing medias
- Grower protocols
- Advice on sustainable use of substrates, water and nutrients

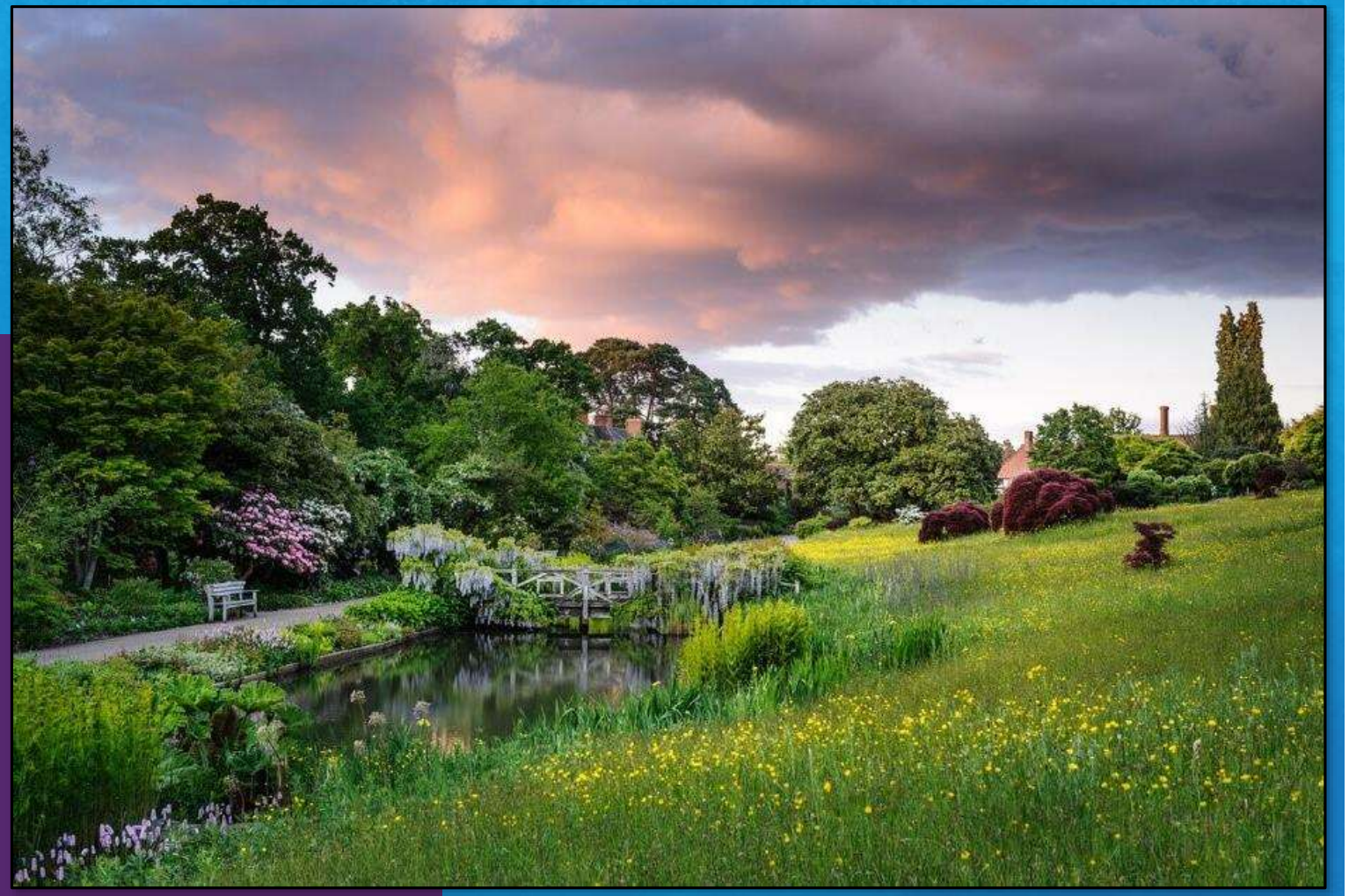
Non-scientific audience

- Online content & advice
- Popular articles

Scientific audience

- Peer-reviewed journal publications
- Conferences / Presentations
- Post-Doc, PhD & MSc supervision.

Conclusions



Solutions for a successful transition to peat-free horticulture

- ✓ Support growers through research: Evidence-based guidance required
- ✓ Alleviate pressure from domestic gardeners on supplies of peat-free grow media:
  - ✓ Educate and advise on appropriate use of bagged growing media
  - ✓ Encourage home composting for soil improvement
- ✓ Lobby government for increased industry support during transition
- ✓ Continue industry engagement, collaboration, communication and leading by example.
- ✓ Perception change + evidence = behaviour change
- ✓ Further the SCIENCE, ART & PRACTICE of horticulture.

Thank you!