

# THE CHALLENGES OF CLIMATE CHANGE

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## IN HISTORIC LANDSCAPES

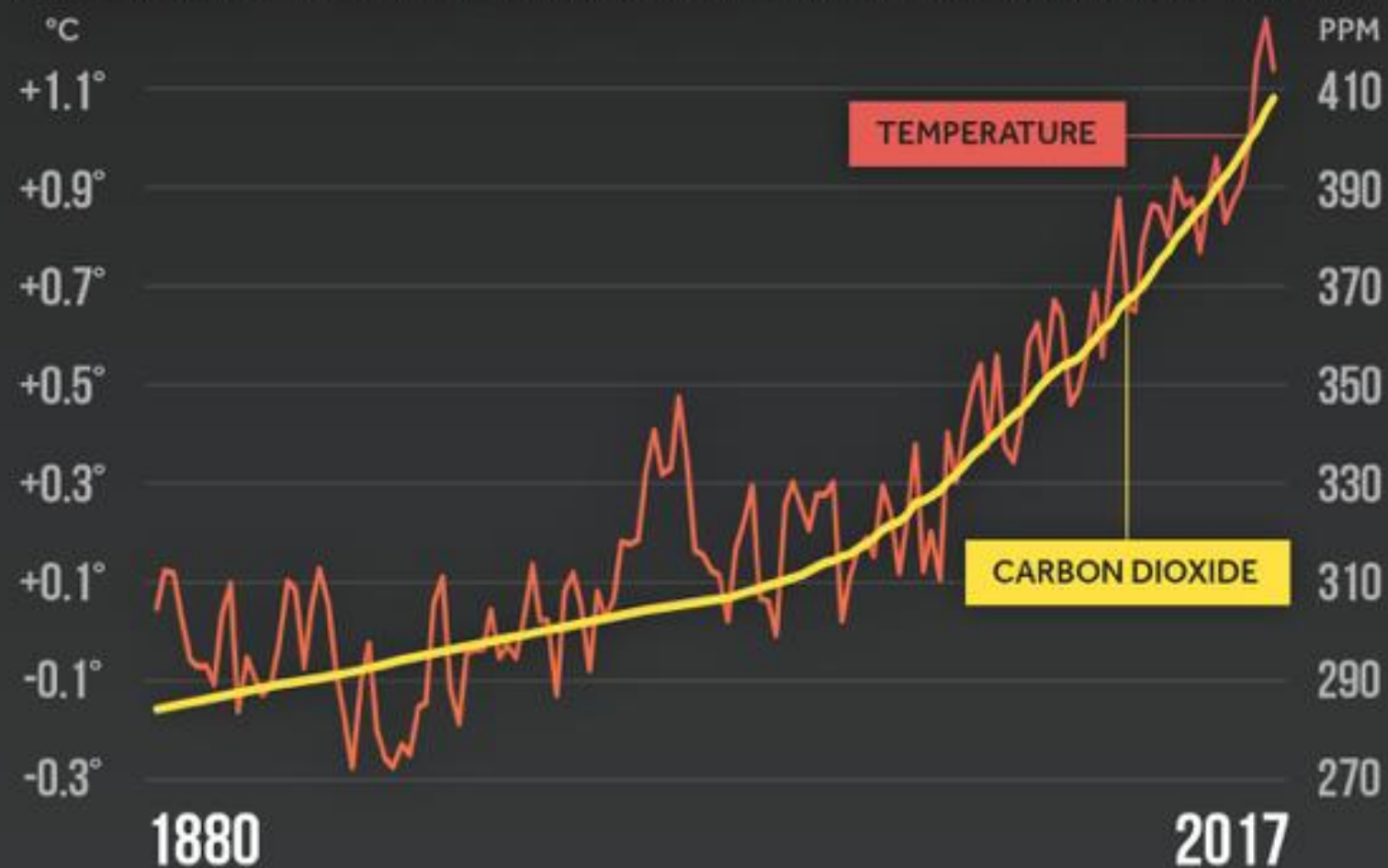
JO BARNES, GARDENS TRUST CONSERVATION COMMITTEE







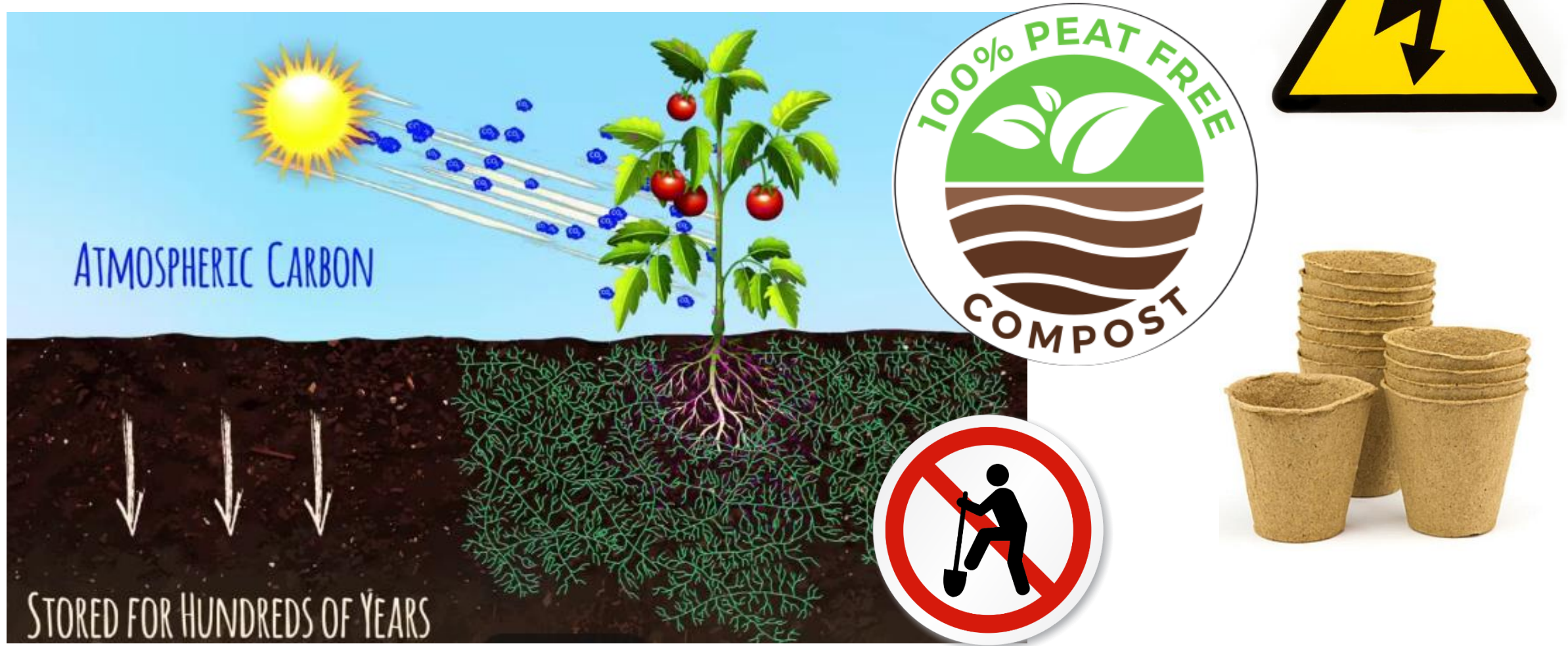
# GLOBAL TEMPERATURE & CARBON DIOXIDE



Global temperature anomalies averaged and adjusted to early industrial baseline (1881-1910)  
Source: NASA GISS, NOAA NCEI, ESRL

CLIMATE  CENTRAL

# Reduce our carbon footprint



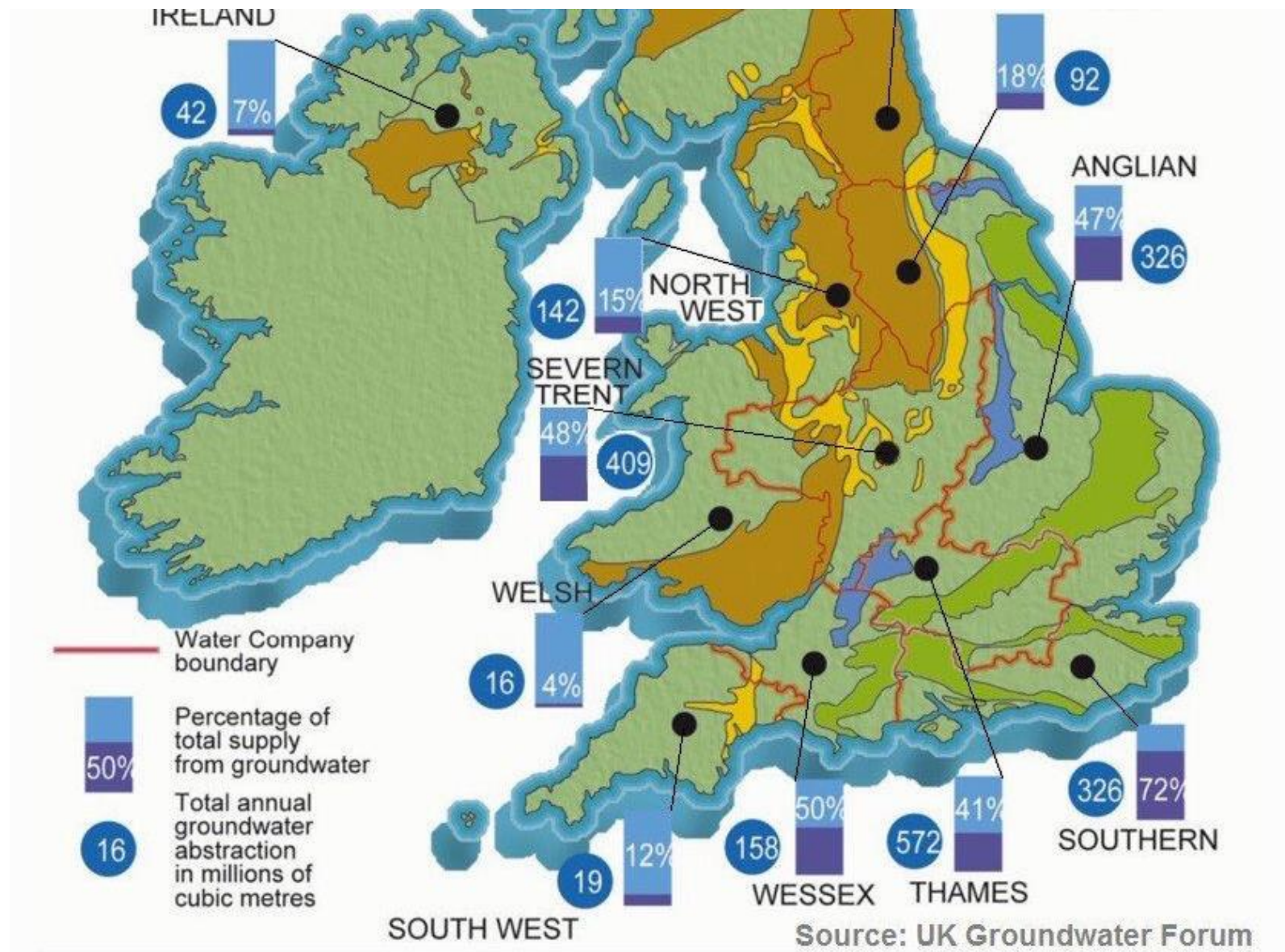


# Challenge - Water Scarcity





# Water sources in England and Wales



*The use of groundwater. Most groundwater is abstracted in central, eastern and south-eastern England*

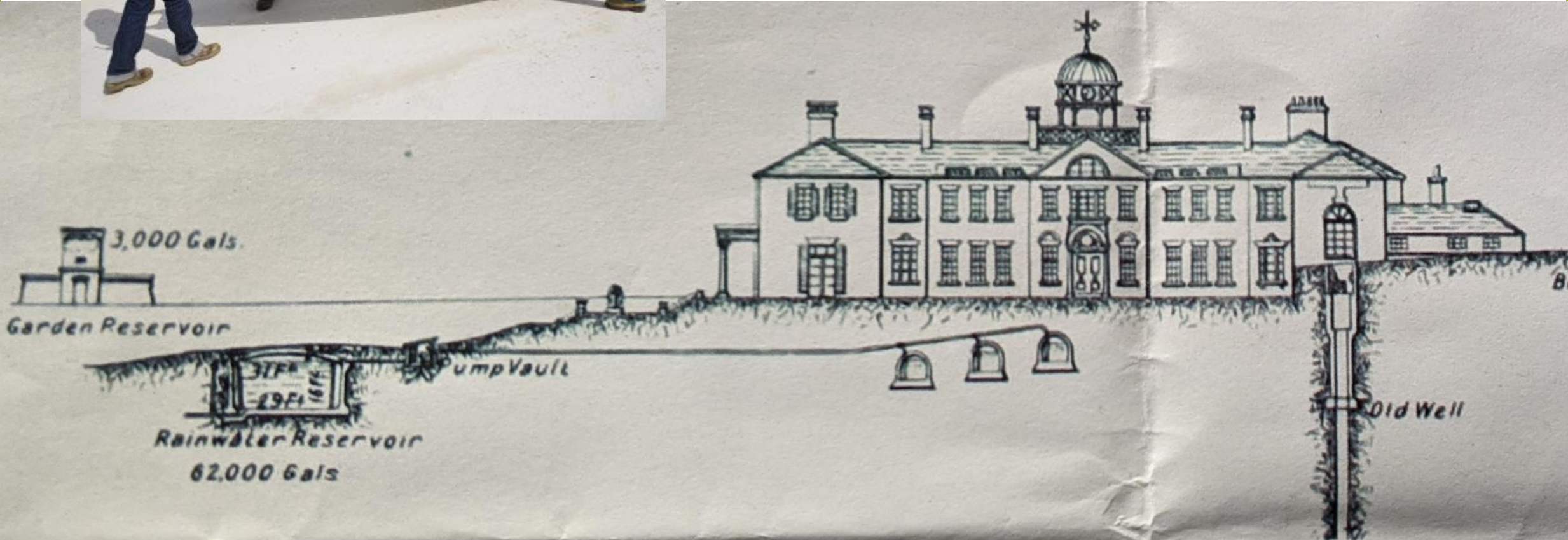


**Adopt sustainable water practices**



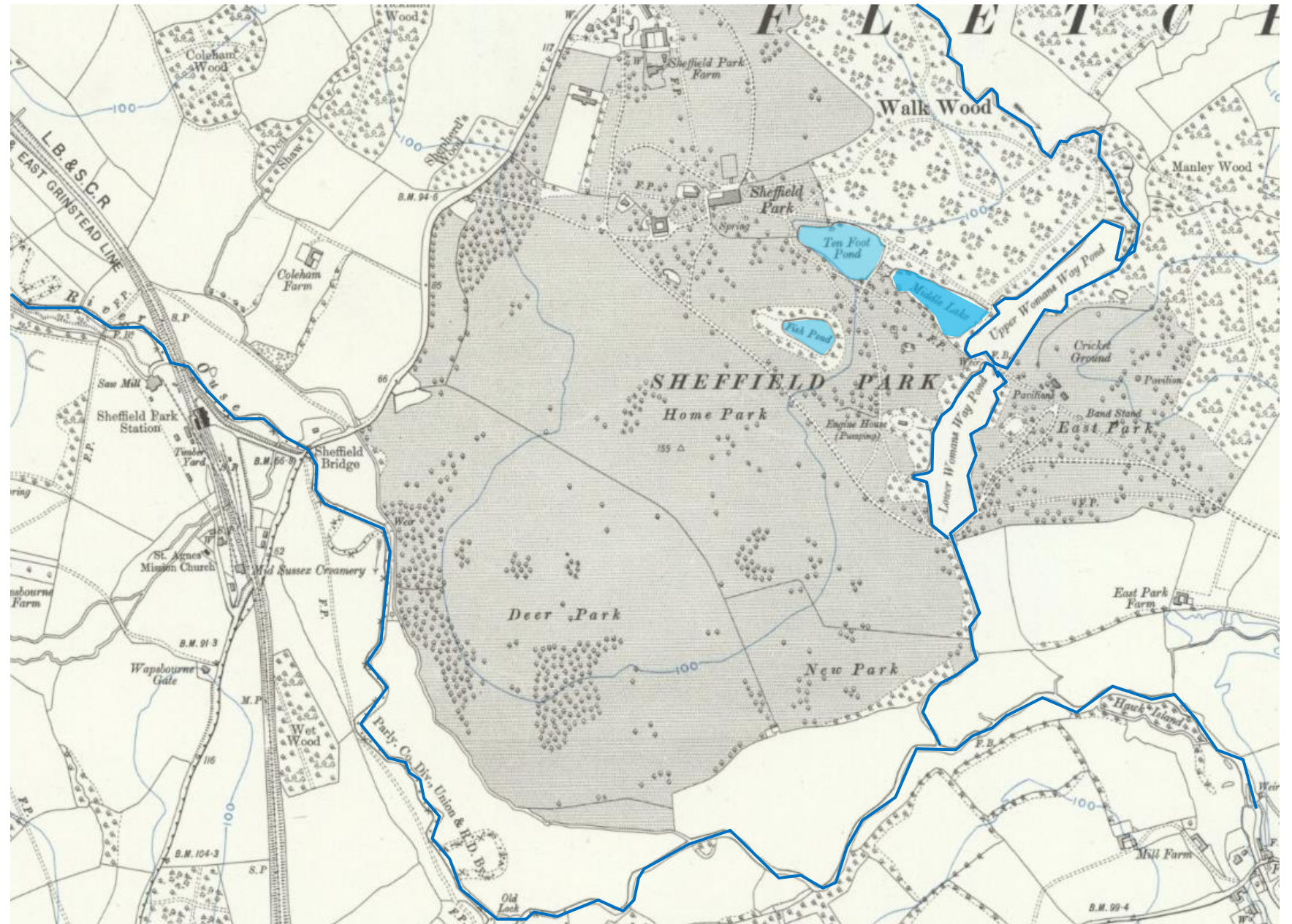


# Water harvesting and Abstraction





# Water feature water sources





# Water feature adaptation





# Plant adaptation





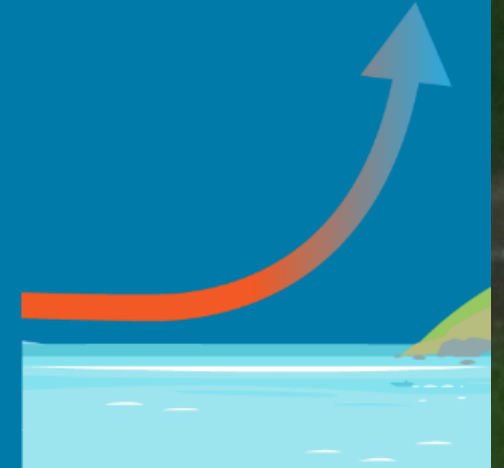
# Loss of key species







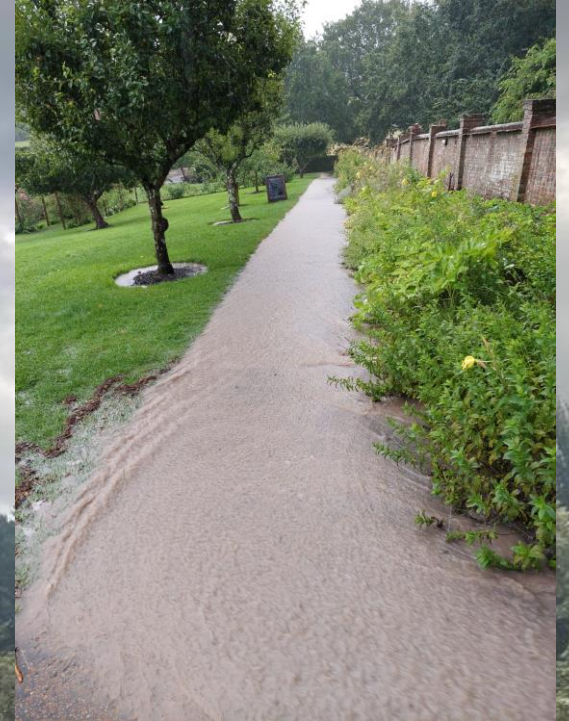
For every 1°C more that  
the air warms, it can hold  
about 7% more water...



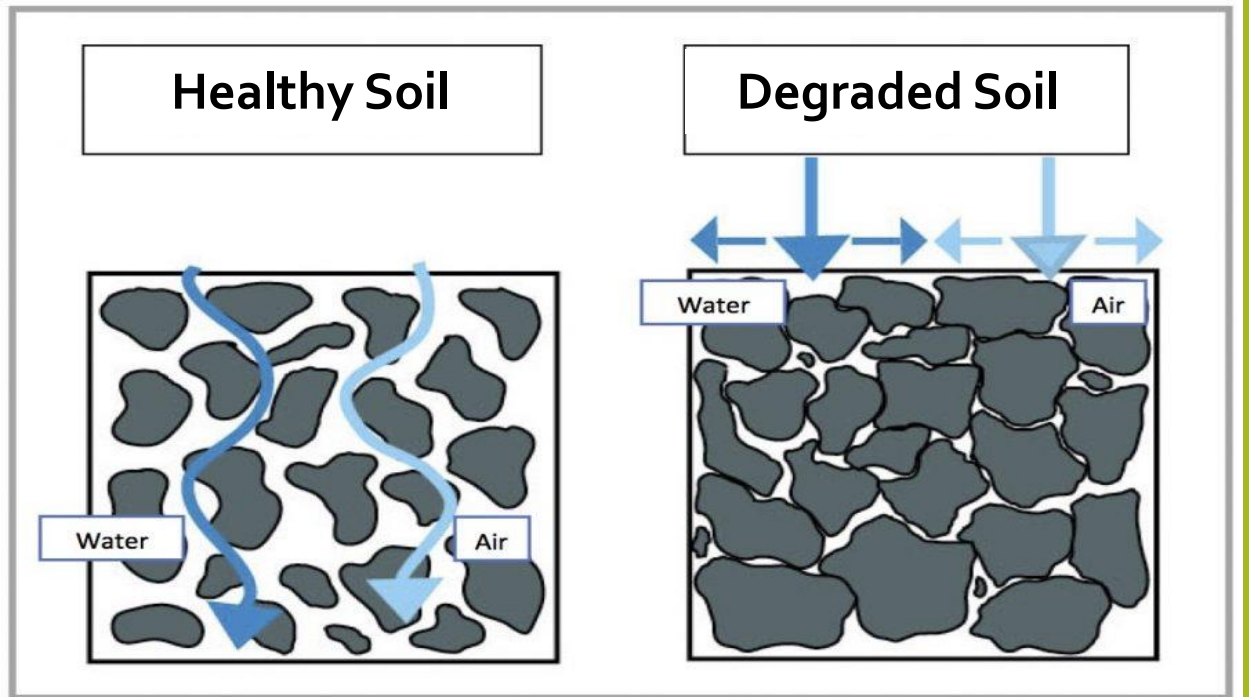
**Challenge - Higher humidity**



# Managing floods and waterlogging







Improve  
surface  
water  
absorption





Create water storage

Mersey Rivers Trust - WRF Interventions





# Reducing Eutrophication







Limiting soil erosion, nitrates and  
fertilisers

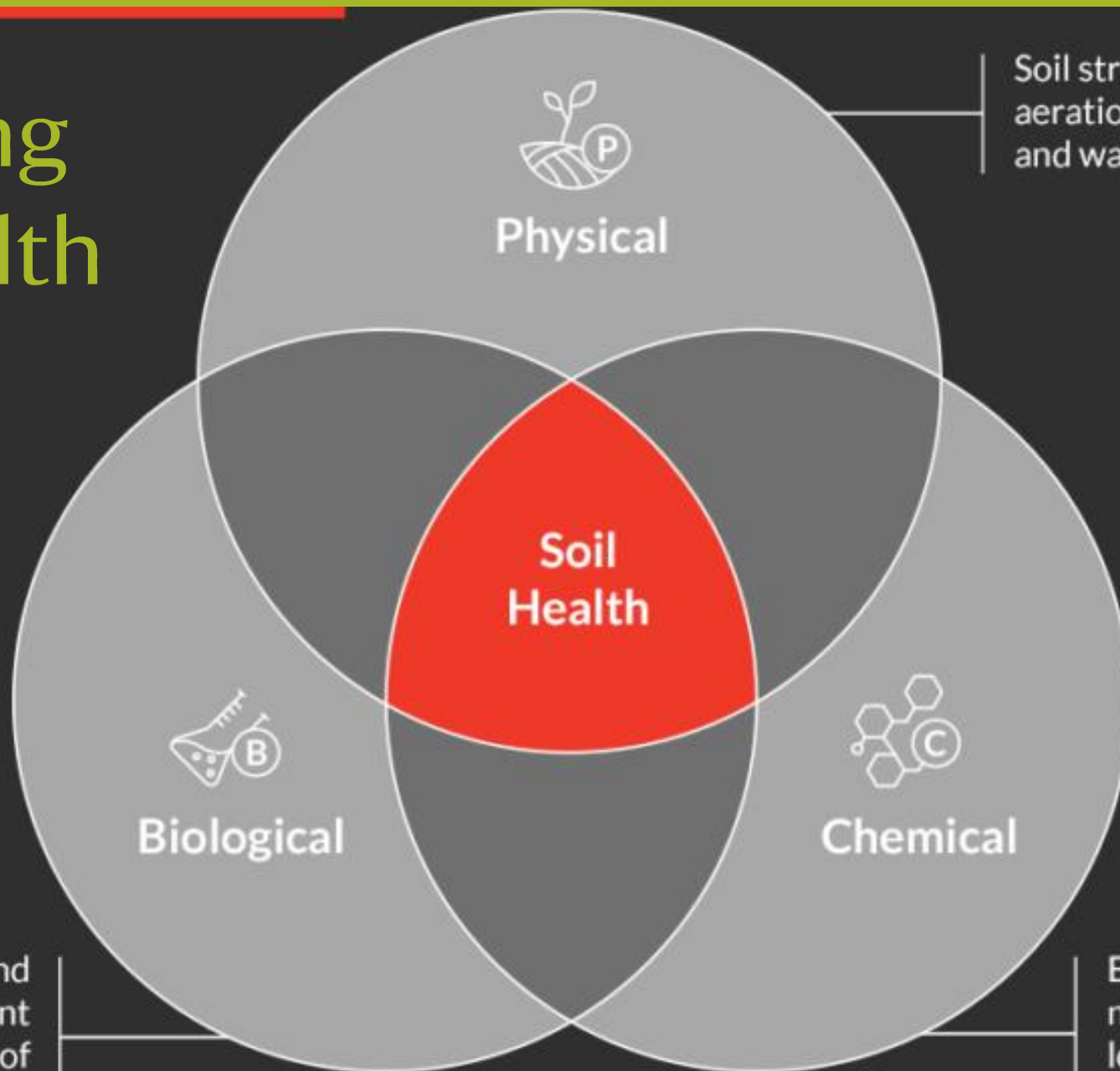




Managing more intense storms and high winds



# Optimising plant health



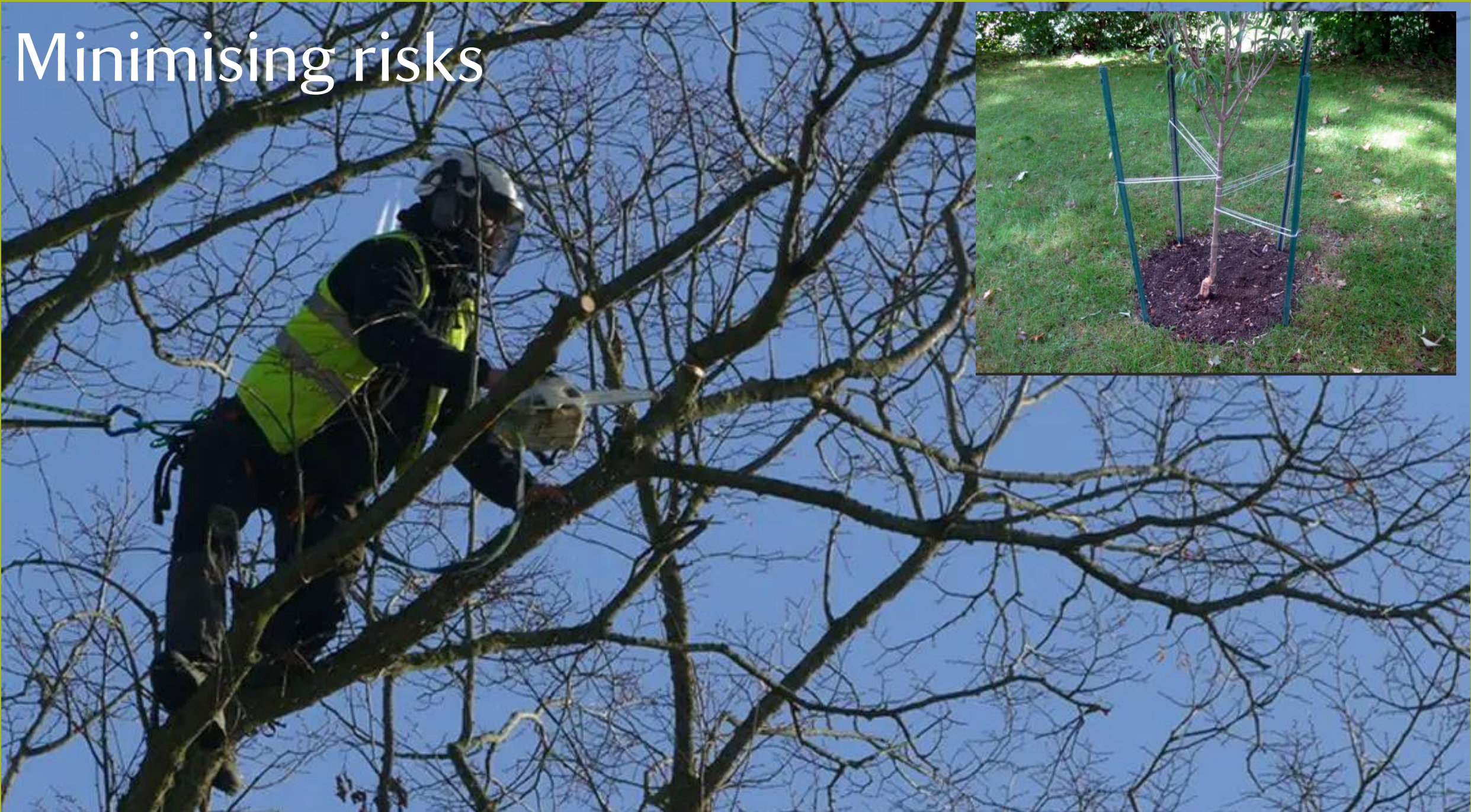
Soil structure impacts aeration, water infiltration and water retention.

Microbial diversity and activity allows for nutrient cycling and low rates of pests and diseases.

Ensuring there are available nutrients, optimal pH, low salinity and good levels of organic matter.



# Minimising risks



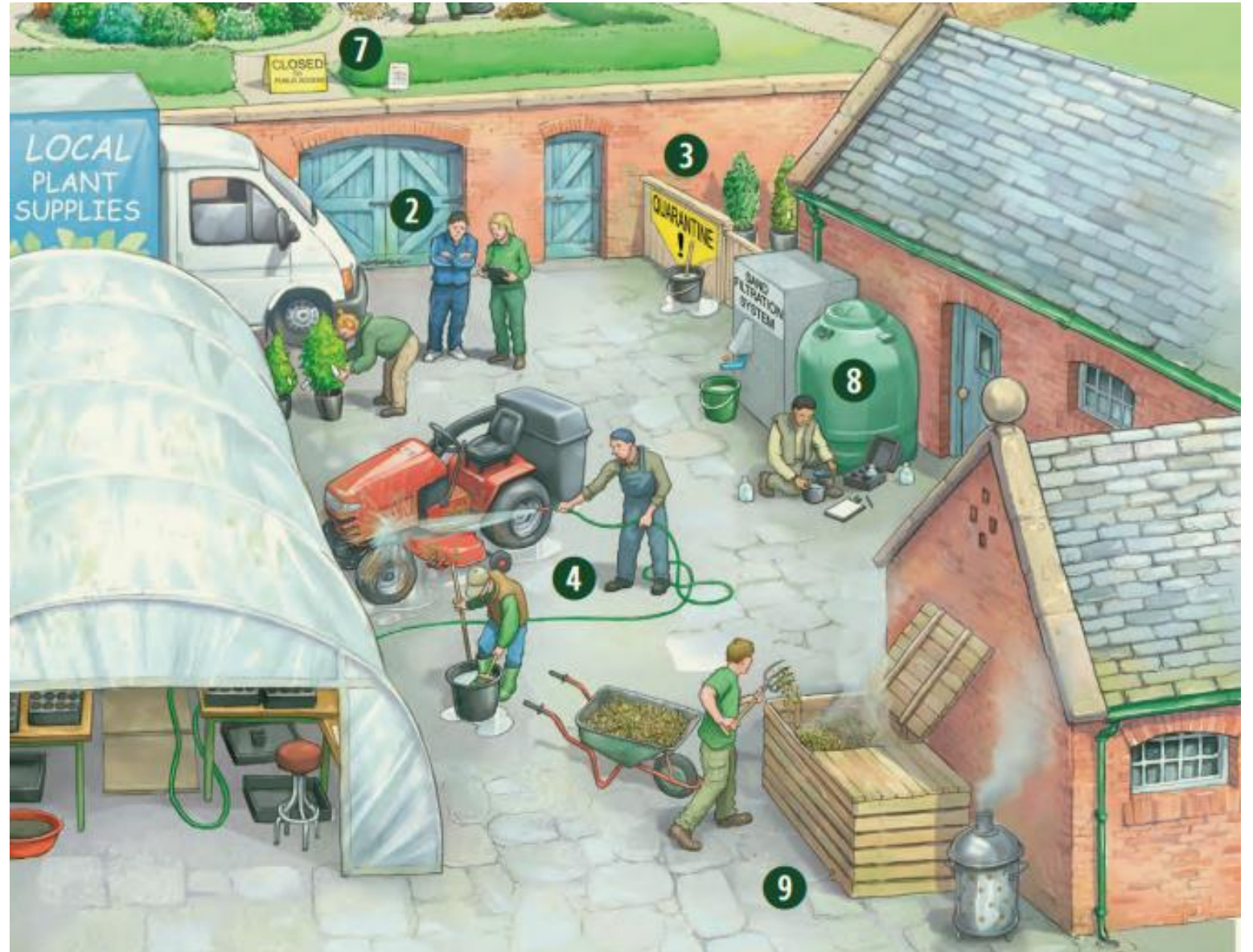


# Managing pests and disease





# Adopting high environmental standards





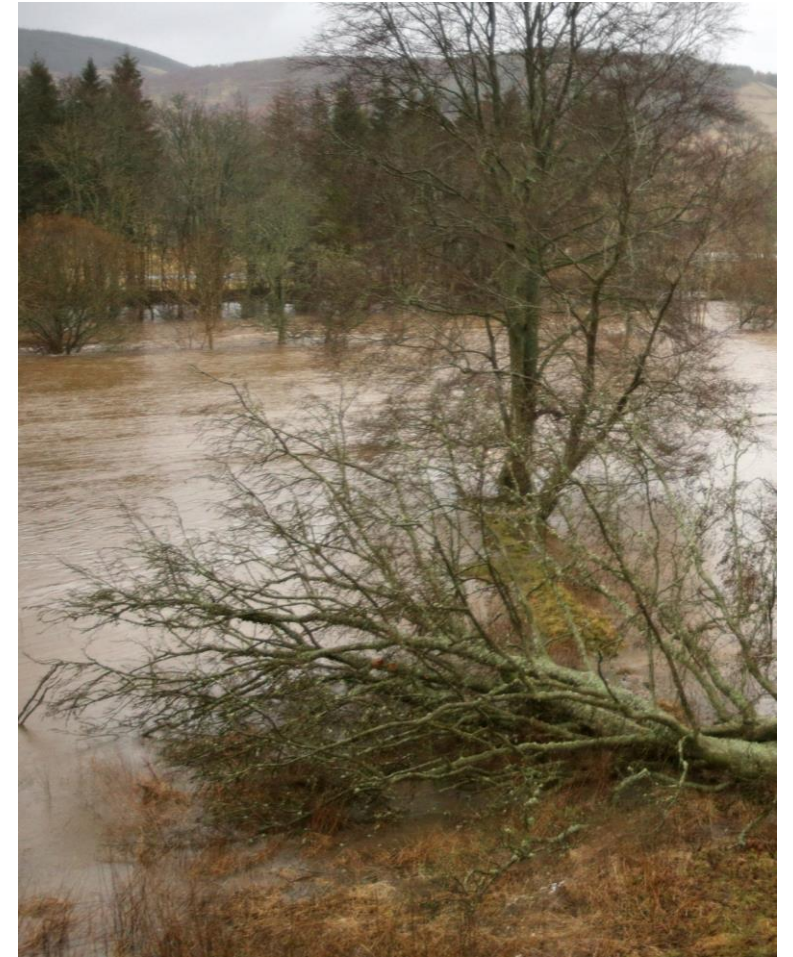
# Challenge -Seasonal extremes



February 2018 - Beast from the East



February 2019 - hottest on record



February 2020 - Storm Ciara



Adapting to varying seasons and  
pollinator and pest phenology







Improving plant diversity and creating habitats



# Managing heave and subsidence on clay geologies





- Reduce carbon emissions
- Conserve water
- Encourage diversity
- Maintain soil and plant health

*‘The one thing we need more than hope is action. Once we start to act, hope is everywhere.’*

*Greta Thunberg*