

Photosynthesis

Cellulose

Glucose

Respiration

Starch

Oxygen

Water

Roots

Carbon
dioxide

Chloroplasts

Leaves

Soluble

Distribution

Glucose

Temperature

B2.2

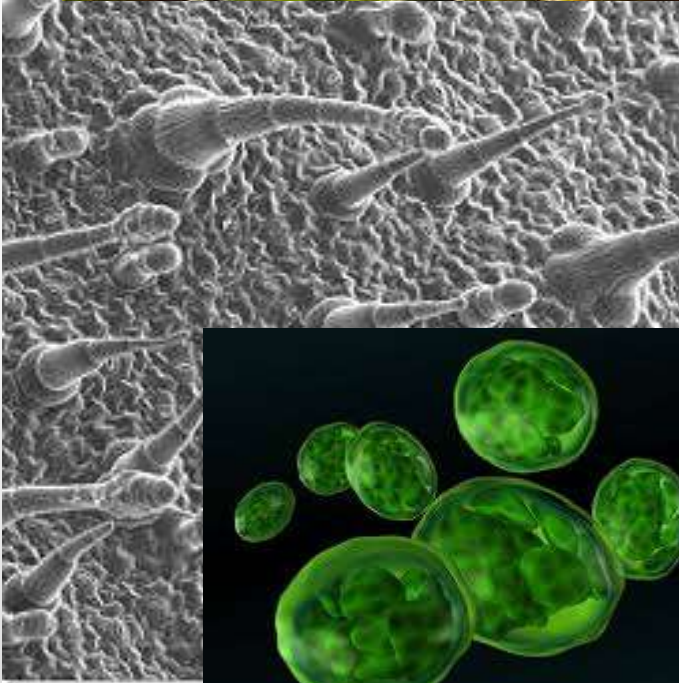
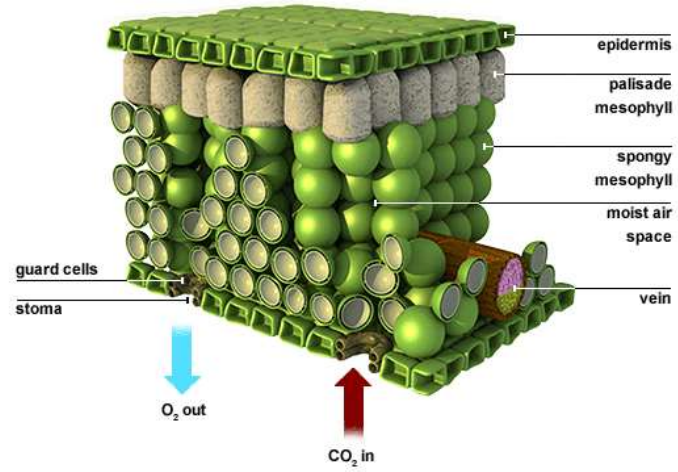
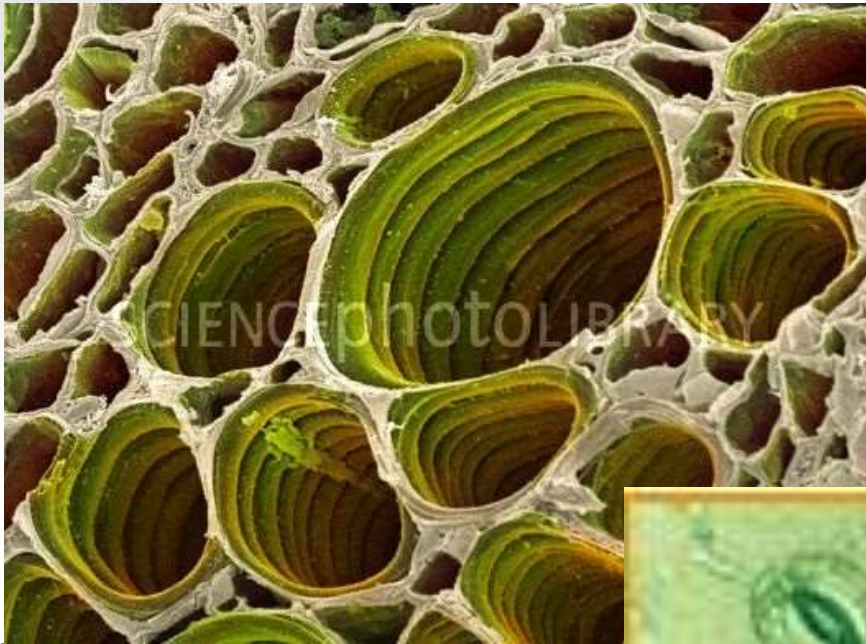
Distribution

Organisms in the environment

Limiting factors

Photosynthesis

Quadrats

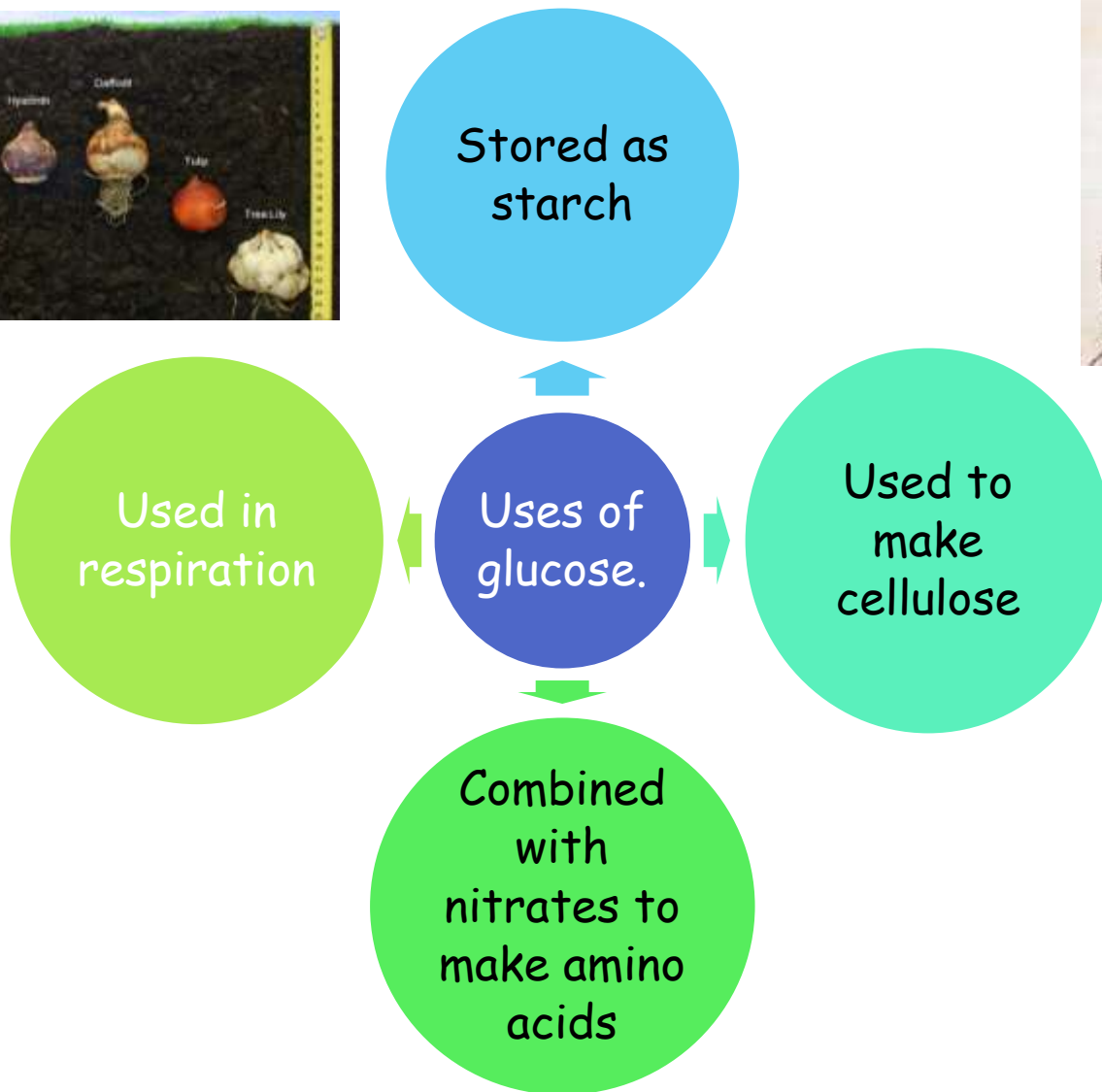


Three factors can affect photosynthesis

- 1. Temperature - the best temperature is about 30°C - anything above 40°C will slow photosynthesis right down*
- 2. CO₂ - if there is more carbon dioxide photosynthesis will happen quicker*
- 3. Light - if there is more light photosynthesis happens faster*



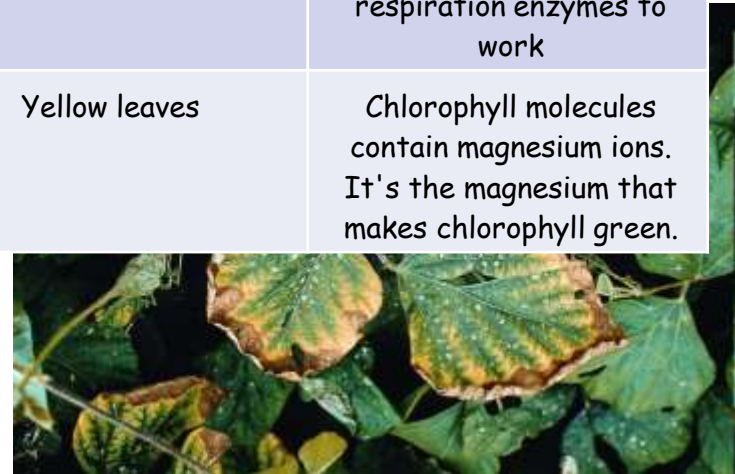
Uses for glucose



Deficiency disease caused by a lack of:



Mineral	Use	Deficiency symptoms	Explanation
Nitrate ions (NO_3^-)	Building proteins and growth	Poor growth and yellow leaves	All amino acids contain nitrogen. Amino acids are the building blocks of protein.
Phosphate ions (PO_4^{3-})	Respiration and growth	Poor root growth and discoloured leaves	A component of DNA molecules and cell membranes
Potassium ions (K^+)	Respiration and photosynthesis	Poor flower and fruit growth, discoloured leaves	Must be present for photosynthesis and respiration enzymes to work
Magnesium ions (Mg^{2+})	Photosynthesis	Yellow leaves	Chlorophyll molecules contain magnesium ions. It's the magnesium that makes chlorophyll green.



Organisms need:

- The correct temperature
- The right nutrients
- The right amount of light
- Water
- Oxygen and carbon dioxide



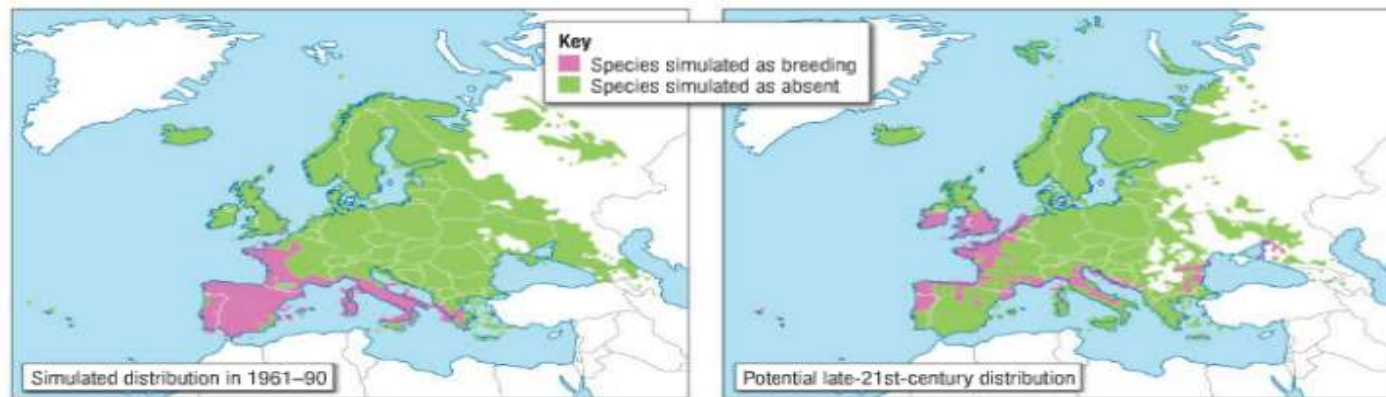
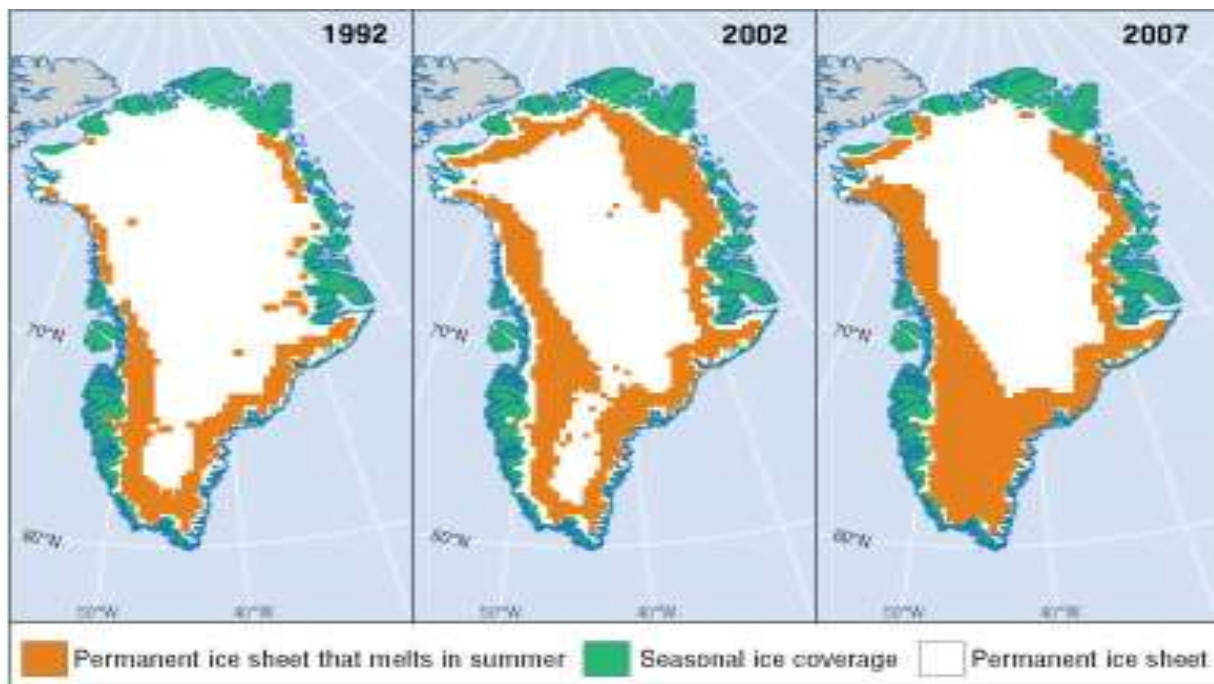


Figure 2 The maps show how scientists think the distribution of these birds might change in the future



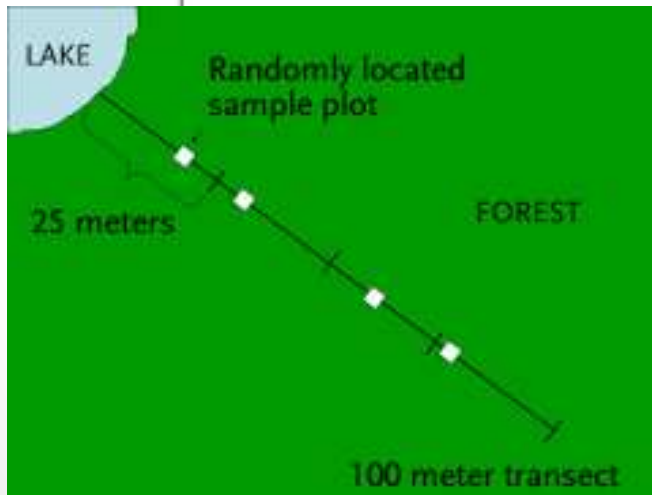
Distribution of species

Word bank:

Reproducible - if **someone else** repeated the practical with the same method the results would still be the same

Repeatable - if the same method is carried out again **by you** the results will be the same

Control variable - everything that needed to be kept the same



Distribution of species

To record the distribution of species you can:

Randomly

- Through quadrats
- Count the number/amount of species within the quadrat

Use a transect:

- Take a reading from equal distances along the transect (e.g. every 5m)
- Measure the amount/number of species within the quadrat
- Repeat these readings to create a **mean**. You can also compare your results to others to determine if they're **reproducible**.
- These readings could be repeated in a **different area**.