Blenheim Estate

- Unique 12,000-acre estate
- Sited in an historic landscape with high biodiversity
- Home to thousands of species
- Complexity and scale of the site pose great challenges

- We must adapt to climate change
- We aim to be Net Zero by 2027
- We must protect our **natural water resource**

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Lake Dredge

- Dredging needs to happen every 100 years
- Believed to be one of the largest civil engineering projects ever undertaken at a UK heritage site
- £6 million project
- 70% of the lake was only 30cm deep or less
- Sediment impacting the lake's water quality
- 14,000 cubic metres of silt accumulated from between 2017 and 2022 surveys
- Extracting 300,000 cubic metres of silt
- Flood events driven by climate change are the primary cause of sedimentation

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Flood Plain Restoration

- Restore the historic river and floodplain landscape to a pre-agricultural state
- Natural trapping of sediment
- Increase soil carbon content
- Increases the quality of habitat
- Improve water quality
- Reduce flood peaks

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Innovation

- Sensor network
- Provides regular measurement
- Flexible and scalable
- Proven benefits
- Extending the network to include wetland restorations

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Water Quality

- Automated dissolved oxygen, turbidity, electrical conductivity, temperature and water level
- Measuring Nitrate, Ammonium, Phosphate weekly
- Long-term: Identify source of nutrients
- Once we know, we aim to reduce the nutrient level

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