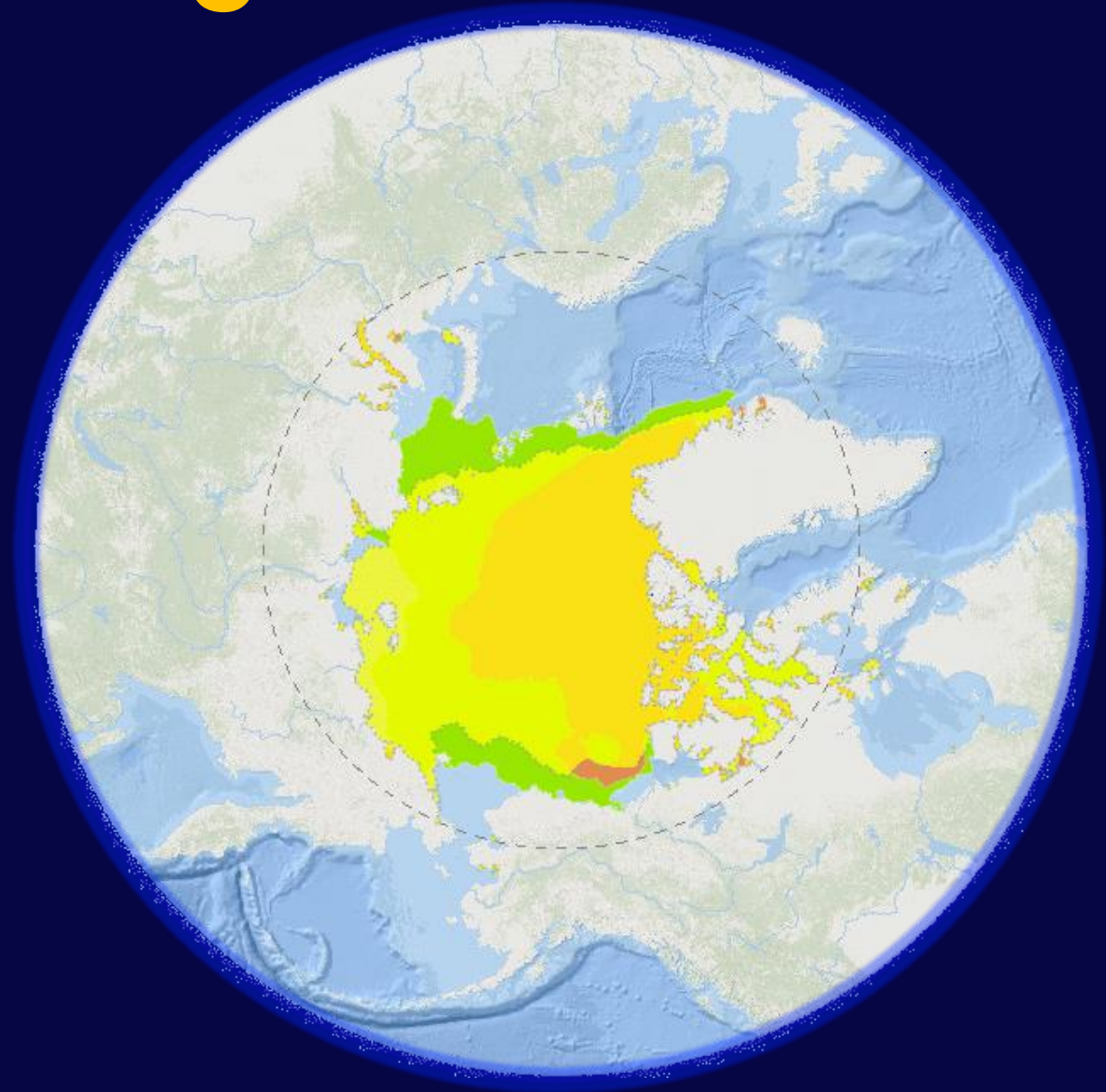


Teaching GIS supercharged by ArcGIS Online

Tom Argles, Phil Wheeler

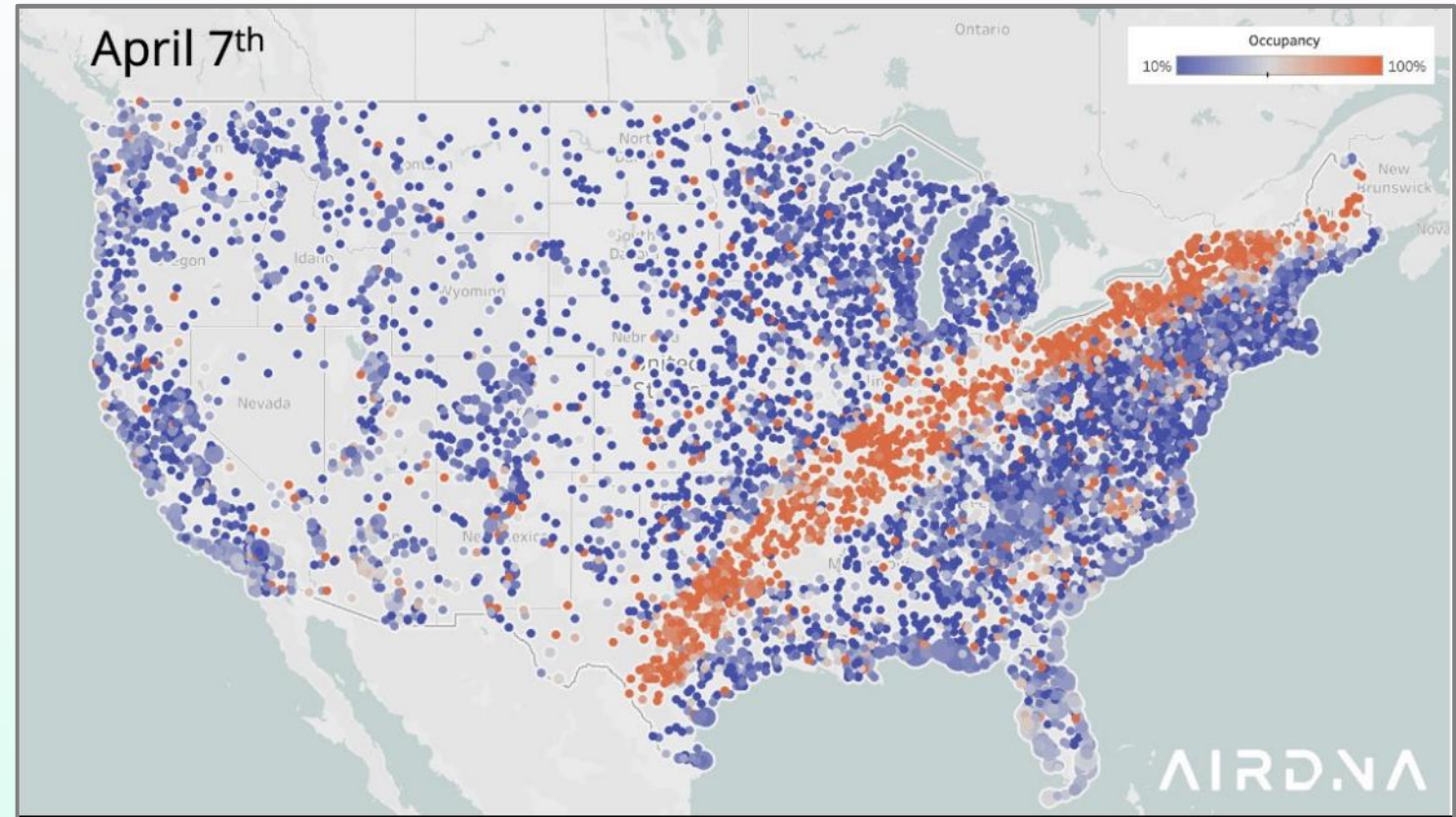
Environment, Earth & Ecosystem Sciences

10th April 2024



Why teach Geographic Information Systems?

- Increasingly **ubiquitous** in modern life
- Key **employability** skill in multiple careers
- Ideal vehicle for **interdisciplinary** learning



AirBnB occupancy in US, April 2024, by @Jamie_Lane

GIS at a distance: the challenges...

| Brick university | Distance education |
|-------------------------------------|---|
| Face-to-face classes | Remote learning |
| Dedicated computer labs | Individual, bespoke IT setups |
| Consistent hardware/software | Huge software download required; frequent conflicts |
| Numerous demonstrators | Sparse specialist technical support |
| On-demand, hands-on troubleshooting | Delayed help; reliance on forums |

GIS at a distance: the challenge

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POSSIBLE

ALMOST IMPOSSIBLE

A solution – web GIS via ArcGIS Online

| FEATURES | COMMENTS |
|----------------|--|
| Browser-based | <ul style="list-style-type: none">• No software download• Consistent student experience• Minimal conflicts |
| ESRI-backed | <ul style="list-style-type: none">• Copious support online – lessons, tutorials, videos, forums...• Wide range of data available• Global reach |
| Market-leading | <ul style="list-style-type: none">• Employability tick! |
| Single sign-on | <ul style="list-style-type: none">• Simple access for students |

Some highlights

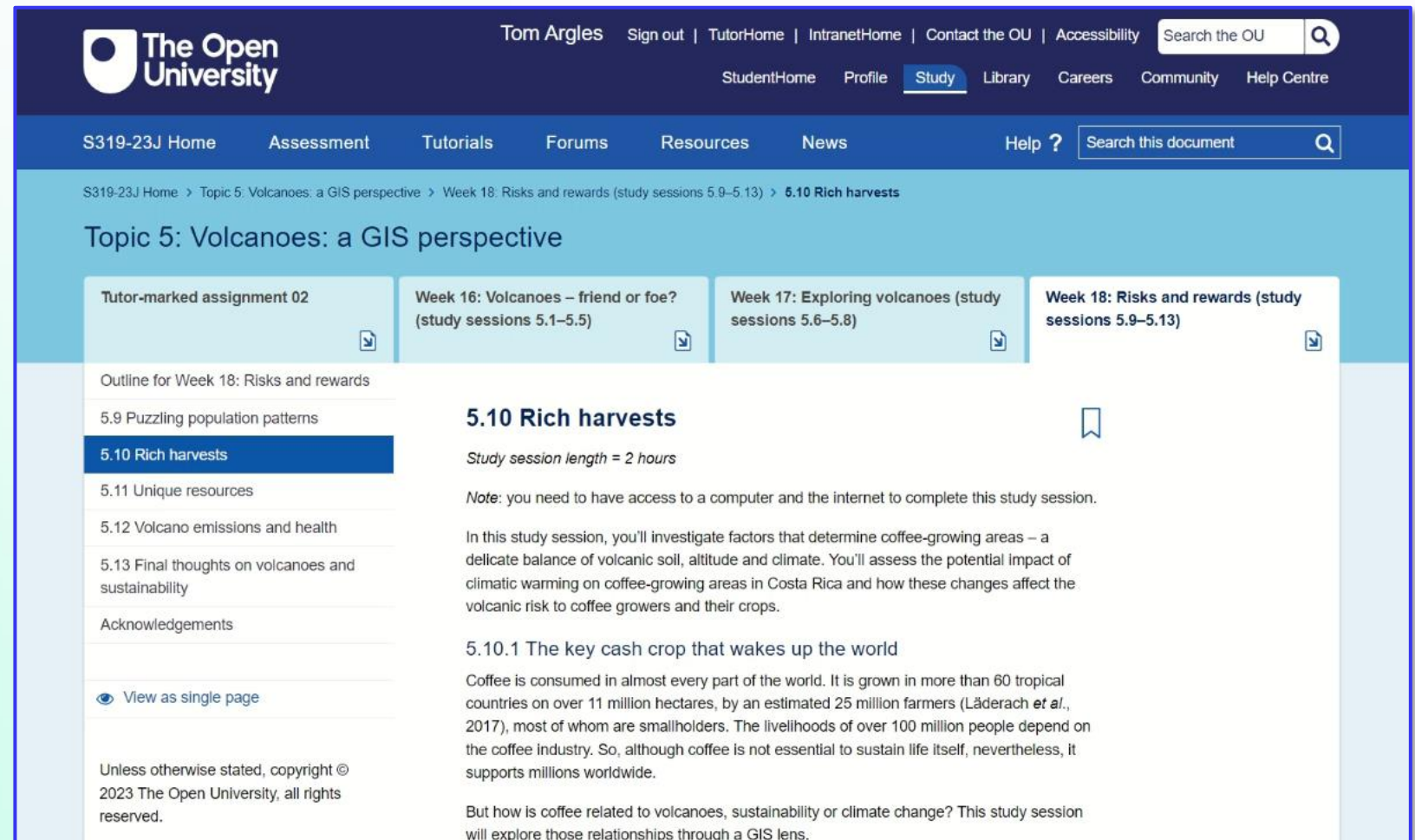
Some highlights

Interactive webmaps

The world according to coffee

- Environmental range
- Exporters, importers
- Elevation control
- Volcanic soils

< Embedded in VLE or accessed via ArcGIS Online >



The screenshot displays the VLE interface for 'S319-23J Home'. The top navigation bar includes 'Tom Argles', 'Sign out', 'TutorHome', 'IntranetHome', 'Contact the OU', 'Accessibility', and a search box. Below this is a secondary navigation bar with 'StudentHome', 'Profile', 'Study' (highlighted), 'Library', 'Careers', 'Community', and 'Help Centre'. The main content area shows a breadcrumb trail: 'S319-23J Home > Topic 5: Volcanoes: a GIS perspective > Week 18: Risks and rewards (study sessions 5.9–5.13) > 5.10 Rich harvests'. The page title is 'Topic 5: Volcanoes: a GIS perspective'. A sidebar on the left lists various resources, with '5.10 Rich harvests' selected. The main content area features a section for '5.10 Rich harvests' with a 'Study session length = 2 hours' and a note: 'Note: you need to have access to a computer and the internet to complete this study session.' The text describes the study session's focus on coffee-growing areas and volcanic soil. A sub-section '5.10.1 The key cash crop that wakes up the world' begins with 'Coffee is consumed in almost every part of the world. It is grown in more than 60 tropical countries on over 11 million hectares, by an estimated 25 million farmers (Läderach *et al.*, 2017), most of whom are smallholders. The livelihoods of over 100 million people depend on the coffee industry. So, although coffee is not essential to sustain life itself, nevertheless, it supports millions worldwide.' The page concludes with 'But how is coffee related to volcanoes, sustainability or climate change? This study session will explore those relationships through a GIS lens.' The footer contains copyright information: 'Unless otherwise stated, copyright © 2023 The Open University, all rights reserved.'

Some highlights

Bespoke storymaps

Assessing bias in citizen science data of Superb Parrot sightings, NSW

- Retrieving data
- Symbolizing map
- Buffers on roads
- Intersect road buffers with sightings data

< Embedded in VLE or as standalone webpages >

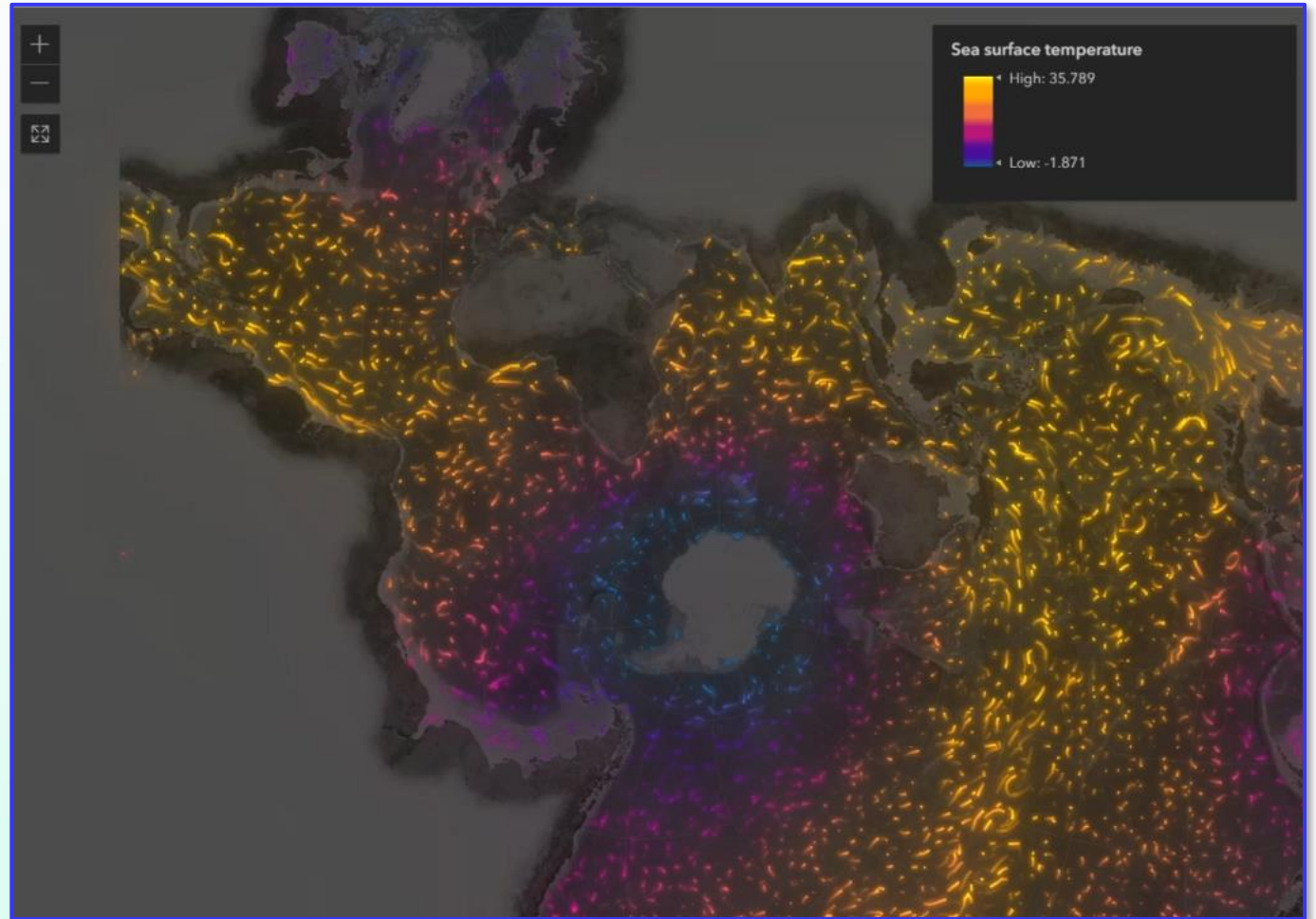


Some highlights

Embedded animations

Animations of data on maps for S226 *Environmental science*

- Visualise real world data
- Spatial context of important concepts
- Explore key Earth processes

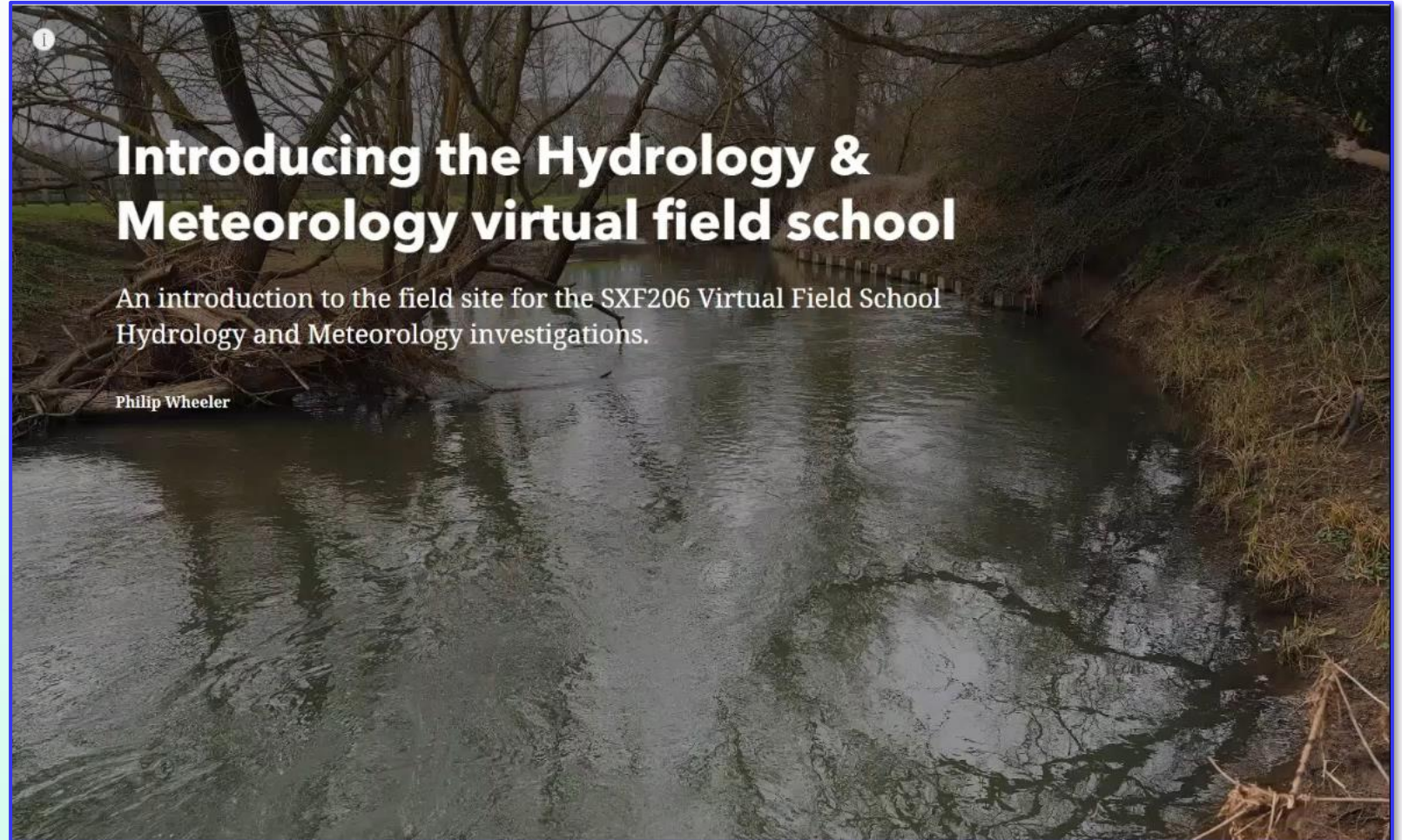


Some highlights

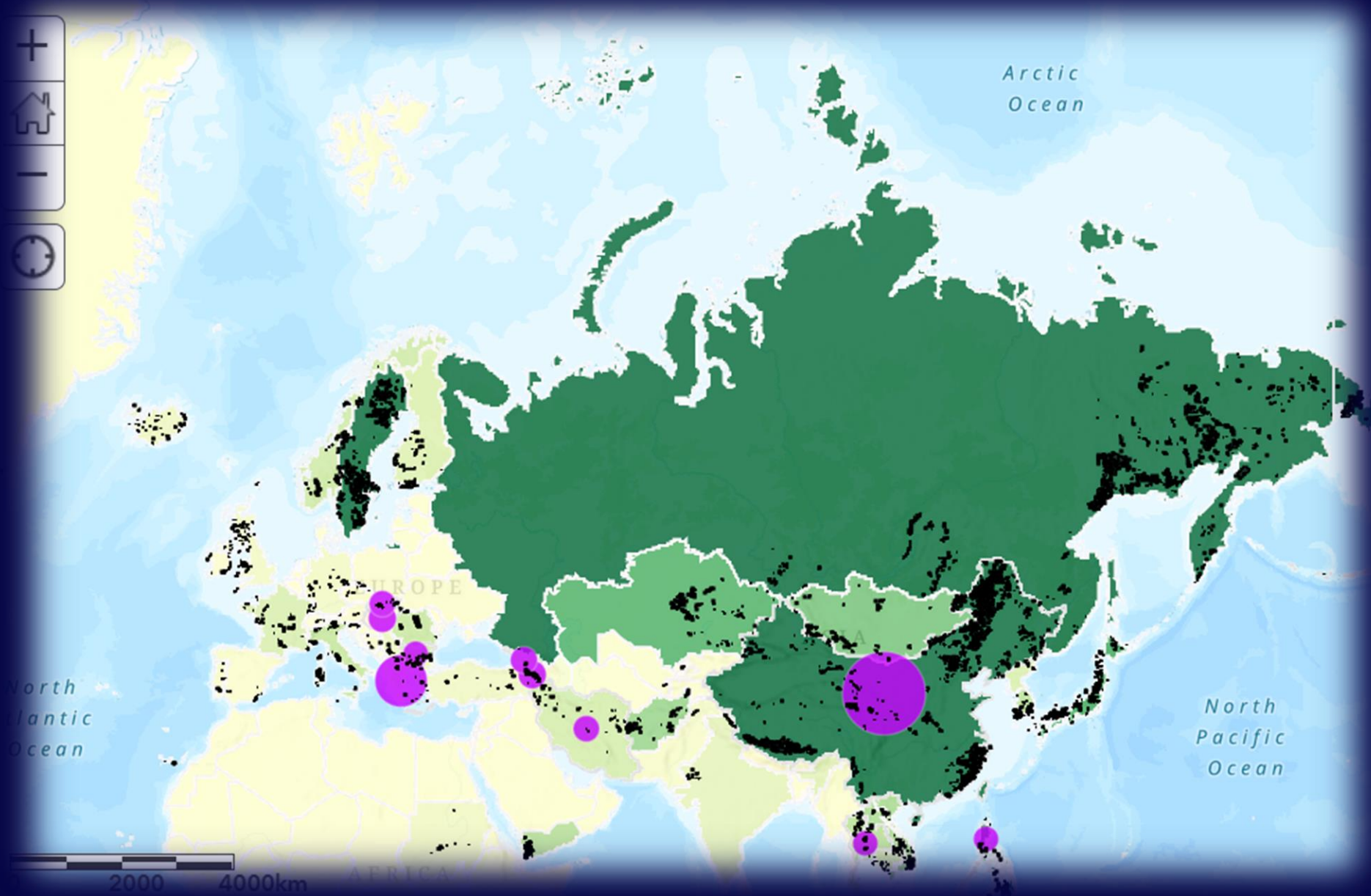
Virtual field trips

Online field school for S206 *Environmental science*

- Developed as ALE prior to Covid
- Expanded and extended for pandemic
- Accessible; widening participation



**THANK
YOU**



Future development

ArcGIS Management Group

Coordinate how ArcGIS accounts are administered and managed at the OU

Provide advice on integrating GIS teaching into modules

Digimap

Potential to integrate data from Digimap service into GIS teaching

Virtual field trips

Potential to create more virtual experiences

S226 – Environmental science (from 25J)
S229 – Earth science (from 26J)

