

Earth Blox:

no-code

access to

Google Earth Engine

Dashboard

Display

Analyse

Scan now to see
Earth Blox in action!



Earth Blox: Code-Free Access to Google Earth Engine

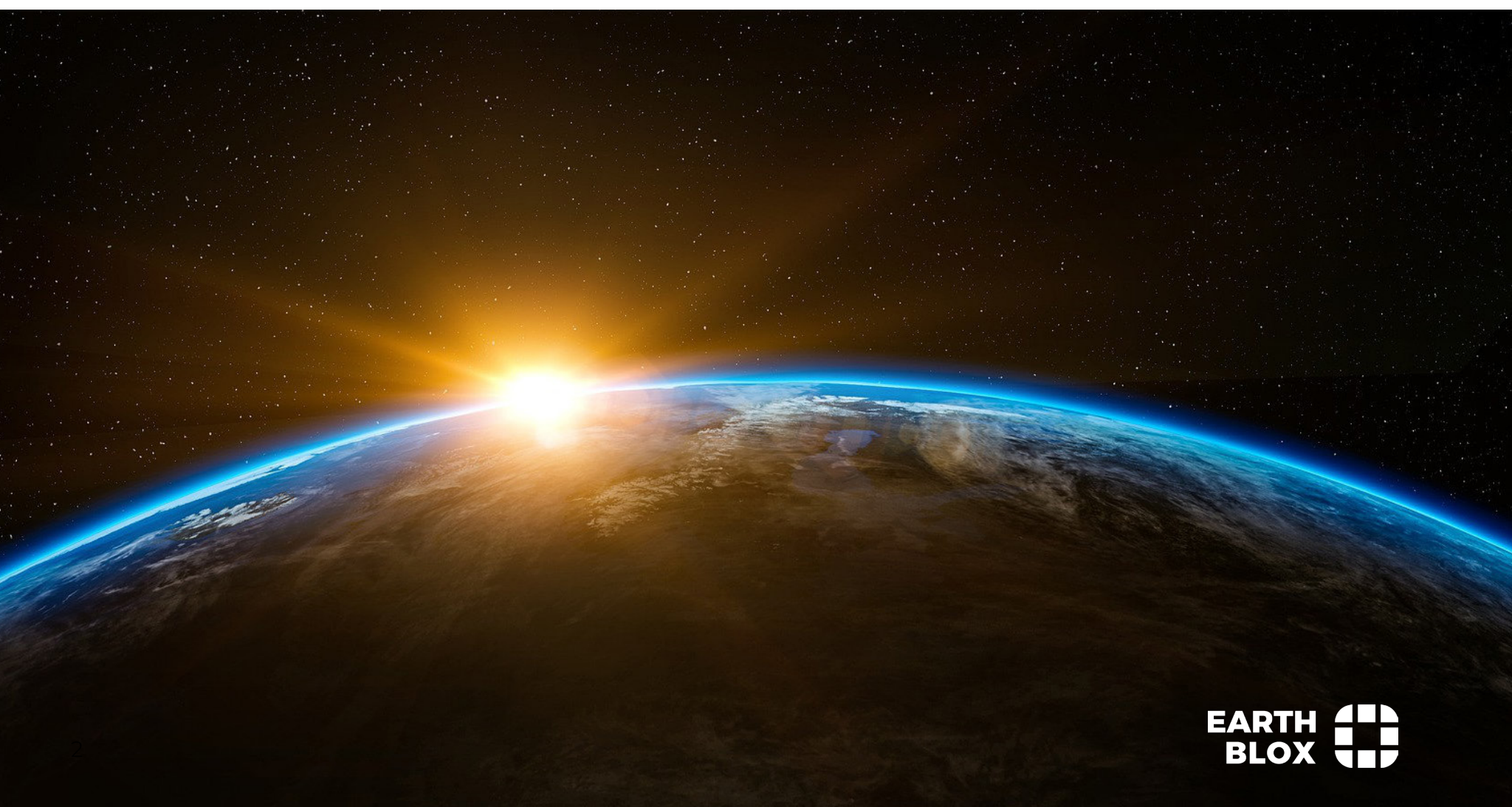
Earth Blox offers a code-free interface to Google Earth Engine, a multi-petabyte catalogue of satellite imagery and geospatial datasets with planetary-scale analysis capabilities to detect changes, map trends, and quantify differences on the Earth's surface.

Users access and analyse these data without writing a single line of code. Earth Blox's cloud-computing architecture enables access to satellite intelligence anywhere: students, researchers and teachers can work from the comfort of their home or while at work in the field, the office or the classroom.

“Earth Blox is a paradigm shift for teaching Earth observation skills to everyone, from school children to university students and professionals, in the post-Covid world.”

*Prof Simon Kelley
School of Earth and Environment
Leeds University*

Watch a short video of Earth Blox in action: <https://tinyurl.com/earthbloxintro>



Examples of Earth Observation (EO) Applications Across Disciplines



Arts, Humanities and Social Sciences

“Satellite data for the social sciences: measuring rural electrification with night-time lights”. (2018) [DOI](#)

“Earth Observation for the World Cultural and Natural Heritage.” (2015) [DOI](#)

“Measuring Economic Growth from Outer Space.” (2012) [DOI](#)

“Satellite Remote Sensing as a Tool in Disaster Management and Sustainable Development”. (2014) [DOI](#)

Sciences and Engineering

“Half a century of satellite remote sensing of sea-surface temperature.” (2019) [DOI](#)

“Classification of sea ice types in Sentinel-1 synthetic aperture radar images.” (2020) [DOI](#)

“Reconstructing long term annual deforestation dynamics in Pará and Mato Grosso using the Landsat archive.” (2018) [DOI](#)

Medicine and Veterinary medicine

“Estimating environmental variables that influence the transmission of mosquito-borne diseases.” (2019) [DOI](#)

“COVID-19 Lockdowns Improve Air Quality in the South-East Asian Regions, as Seen by the Remote Sensing Satellites.” (2020) [DOI](#)

“Earth Observation: Investigating Noncommunicable Diseases from Space.” (2019) [DOI](#)

Benefits



...to researchers & teachers

- No need for downloading local archives.
- Engagement of non-STEM students in EO use.
- No programming skills barriers to the power of EO intelligence.
- No waste of storage space.
- Supports hybrid learning in the lab and at home.
- Rapid results: rapidly prototype ideas, quickly evaluate data, simply demonstrate examples to classes, or generate images of data for slides or reports.

“In this last year under Covid restrictions, this has been invaluable - all the students need is a web browser and a half-decent internet.”

Iain Woodhouse, Professor in Applied Earth Observation, University of Edinburgh

“With cross-faculty modules, students come with different levels of programming expertise. The aim of my course is not to teach programming, but to teach them to understand, interpret and process satellite data. Earth Blox enabled me to make sure that there was no ‘programming block’ on achieving that objective”.

Dr Anna Hogg, Associate Professor, EO of polar regions, University of Leeds.

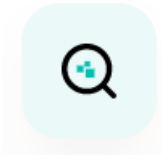
...to students

- No steep learning curve.
- Code-free:
 - Complete beginners engage with Earth Observation, without the steep learning curve involved in writing code. This can stimulate an interest in learning to code.
 - Intermediate and advanced students use Earth Blox as stepping stone to more advanced tools, or Earth Engine via the JavaScript coding interface.
- Accessible anywhere, anytime.
- No need for expensive hardware or software.

“The beauty of Earth Blox is that it gave me the freedom to focus on what remote sensing could do without the initial trouble of learning to code. The thought of having to learn coding had been a daunting idea that had put me off using satellite imagery for my research.”

Stephen Roberts, Undergraduate Student: [read his blog about Earth Blox](#)

Benefits



...to institutions:

- No need to cap the numbers on class sizes.
- No need for computer labs.
- No need for expensive hardware and storage.
- No need for software install.
- Works on tablets, computers, laptops and across different browsers.
- No need for high bandwidth: an internet connection is needed, but only for sending instructions and downloading the final results. Ultrafast broadband and powerful computers are not required.

“Earth Blox allowed us to uncap module sizes. We went from 65 students to 180 in one year: a huge increase. We are no longer limited by the number of computers in a lab”.

Dr Anna Hogg, Associate Professor, EO of polar regions, University of Leeds.

“I am quite impressed with the speed at which you can do things in Earth Blox”.

Gail Scott, Royal Botanic Gardens Edinburgh.

Earth Blox in the Classroom

You can see Earth Blox in action for teaching in this webinar presented by Prof Iain Woodhouse, University of Edinburgh: <https://youtu.be/VPAWwYIMkIQ>

As a demonstration of how Earth Blox can be integrated into teaching programmes, you can visit this free online course, Observing Earth From Space, co-funded by the UK Space Agency and ESA, and featuring Earth Blox as the tool for practical exploration of the data.

<https://www.futurelearn.com/courses/observing-earth-from-space/1>

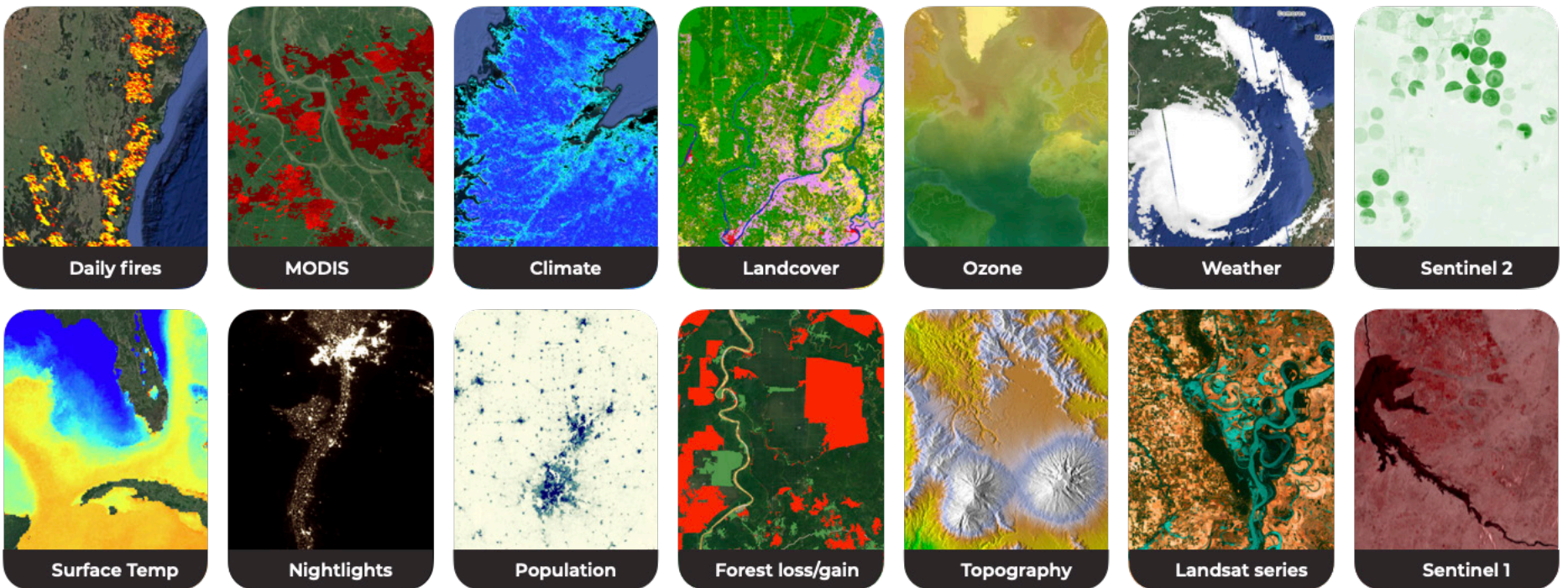
This is an introductory level course explaining the role of Earth observing satellites in the study of Earth and its changing environment.

Product Description

Datasets

Earth Blox offers code-free, accessible and immediate access to Terabytes of global data via Google's Earth Engine. This is soon to grow to encompass access to all 35 Petabytes of data and 700 datasets. These data are updated frequently, with more than 5 million new pixels added every day. Earth Blox currently supports access to the following data sets (summarised below):

- Global image data sets from Landsat, Sentinels 1 & 2, PALSAR, TOMS, and VIIRS nightlights.
- A wide variety of global derived data products, including Terra, Aqua, MODIS (daily fire product).
- Terrain elevation (GMTED, SRTM-30m, ALOS-30m).
- Several land cover and land cover change (e.g. forest loss/gain) products (including Hansen).



Product Description

Analyses

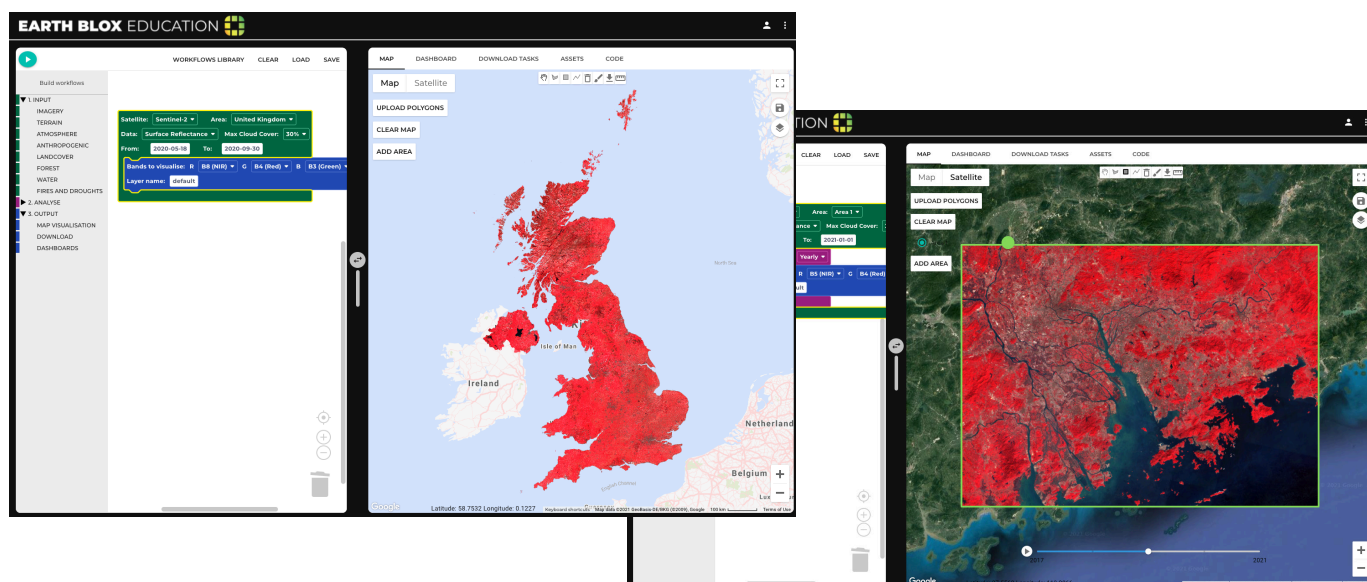
Earth Blox allows:

- Visualisation of data and false colour composites;
- Measurement of objects via the ruler tool;
- Classification (including exporting statistics);
- Creation of time series;
- Comparison to land classes;
- Computation of preset indices;
- Computation of histograms and image stats;
- Computation of band maths.

Interface

Earth Blox operates through a visual programming environment that allows students and researchers to assemble workflows by dragging and dropping “blocks” of analysis instructions in guided combinations to create complex map layers and quantitative outputs. Users can store workflows to make repeat analyses easy for research, and educators can share workflows with the class to facilitate quick engagement with the topic.

GeoTIFF export enables researchers and advanced users to conduct further analysis offline. By providing a collection of Example Workflows Earth Blox allows users to start analysing global data with the click of a single button. All of these features ensure that lecturers save preparation time by offering a clear starting point to demonstrate the value of EO and its different applications.



Product Description

User Management

Earth Blox can be managed via LTI, so that institutions that use Blackboard Learn, Moodle or FutureLearn, can automatically authenticate class members via the course enrollment on the learning platform.

Ongoing development

Development of Earth Blox for Education was supported by the UK Space Agency and ESA. We continue to add new functionality every month, and continue to work with the UN, ESA, and a select group of UK and European academic institutions to further develop our service.

Interested in learning more about Earth Blox?

Please contact team@earthblox.io

