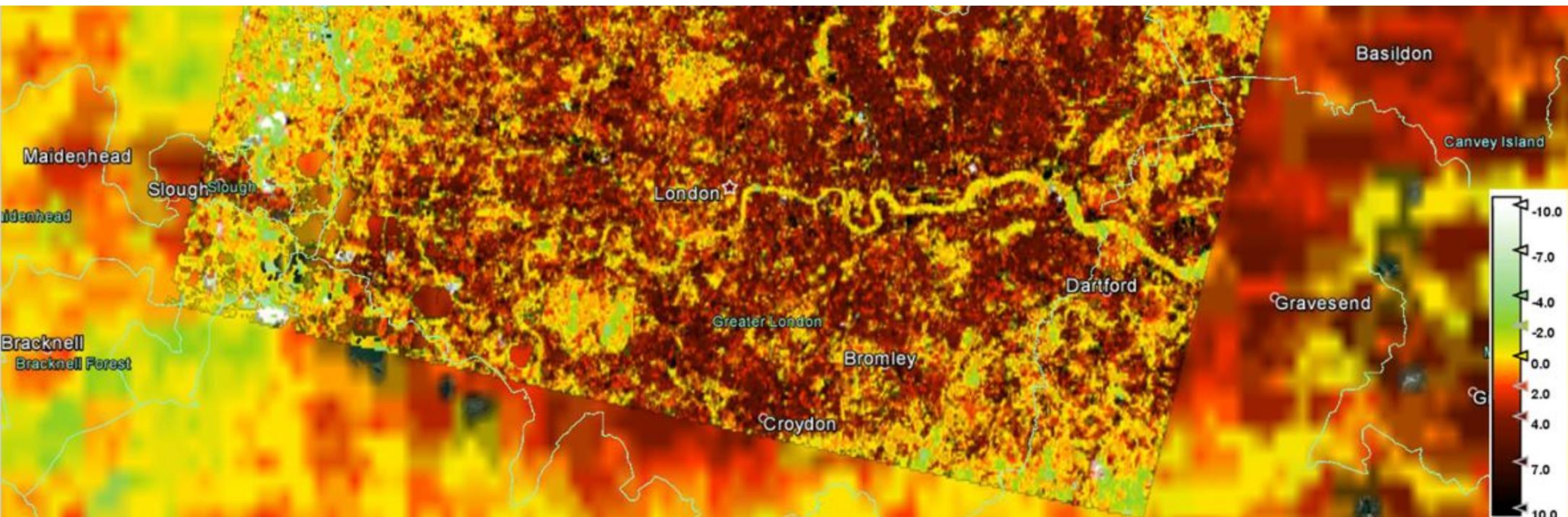


VEGETATION HEALTH INDEX

Enhanced Green Infrastructure Monitoring & Management under a Changing Climate



ABOUT US

Uniting UK space-enabled climate expertise and services

Who we are

Chaired by the UK Space Agency, Space4Climate spans government, industry and academia, uniting those with expertise in the development of satellites, analysis and exploitation of data they gather, and production of quality assured global data and climate services.

Trusted services

Our mission is to ensure a seamless supply of trusted climate intelligence from space so that the UK offers a thriving, supportive environment for the development of quality assured products and services enabling climate-smart decisions, disclosures and climate-sensitive planning.

What we do

We connect UK producers and global users of trusted Earth observation data and actionable space-enabled climate analytics and services. We respond rapidly to emerging needs and develop new opportunities and collaborations. Discover more about our membership activities.

NETWORKS WE HOST

Not secure | meshclimate.net

MESH Networking for the UK Climate Services Community

HOME ABOUT MESH MEMBERSHIP EVENTS



Mesh is a UK community of individuals involved in climate service provision who network locally.

Each event is run by volunteers, who love to bring people together to share knowledge and grow professional networks.

Leeds: 27 November 2019

We'll be exploring ethical questions in climate services from a diverse range of speakers with governmental, non-profit, academic, and private climate service perspectives.

Events | 27 November, 2019

About us

The network provides a platform to share achievements and learning, and find other UK-based organisations.

[Find out about Mesh](#)

Join Mesh

We welcome everyone with climate expertise who is UK-based – we're run by the community for the community.

[Join the network](#)

space4climate.com/aqnuk/

SPACE CLIMATE

ABOUT SPACE4CLIMATE UK COMMUNITY S4C PARTNERS CLIMATE SHOWCASE NEWS & EVENTS



AQNUK

20 April, 2020 | Reading time: 6 minutes

Air Quality Network UK

AQNUK is a community of individuals from academia and practice involved in researching and disseminating information on air quality challenges in the UK.

AQN UK helps connect researchers from research, policy, industry and the third sector in the UK and abroad with expertise on **outdoor and indoor air quality challenges in the UK** and impacts on, and from, people, buildings, objects, infrastructure, flora and fauna.

Space4Climate co-founded and helps coordinate AQNUK, issuing quarterly the e-directory to members to help members from different pockets of air quality expertise, including those with expertise in use of emissions data from satellites, across research and practice, find each other.

- [Join the community](#)
- [Satellite related activities](#)
- [History](#)

Join the community

We welcome researchers and practitioners across all sectors, career stages and locations, keen to be part of an evolving knowledge-based community who, with respect to air quality challenges in the UK:

AQNUK

Air quality researchers, [sign up for AQNUK](#)

Related resources:

[SAQN](#)
[DARE-UK](#)

Find out more on the role of satellite data: [Pope et al. 2019. High resolution satellite observations give new view of UK air quality.](#)



Urban vegetation health and climate resilience Task Group

Index idea established by Space4Climate working with London Climate change Partnership as an outcome of the [Heat data and vulnerability](#) + [Mapping and Monitoring GI in London using Satellite Data](#) events.

Proposal developed by Associate Professor Alejandro Dussailant, Middlesex University with support from scientists and industry experts in the Space4Climate group and the London Climate Change Partnership.

CONTEXT

Trees, open spaces including squares as well as pocket and larger parks, rain gardens, green roofs and green walls (Green Infrastructure, GI) can provide climate resilience services providing direct & indirect benefits including:

- Reducing heat related stress -during hot weather GI can provide ambient cooling of surroundings, community cool spots (through shading, solar radiation deflection and release of moisture into atmosphere)
- Reduction of surface water flood risk - during/preceding flooding, water attenuation and retention, slowing water flow, helping to reduce surface water flooding and its impacts
- Human health - directly (reducing impacts from excess heat and flooding and likelihood of occurrence) and indirectly providing places for social interaction, solitude, places of sensory delight and respite.

Vegetation starts to suffer from water stress before the root-soil moisture lowers to wilting point. Stomata in leaves start to close to protect the plant, reducing Evapo-Transpiration. This affects the energy budget of the plant and particularly foliage, increasing the surface temperature of the foliage surface. These effects can provide indicators that can be used to monitor plant water stress.



The proposed index will be designed to address user requirements of green space landowners, managers and portfolio holders. An open source version will be created, capable of functioning across the UK, with pilot testing with London land owners, such as public sports (golf, cricket) and leisure iconic venues e.g. Hyde Park, Olympic Park, Kew Gardens, Wimbledon, Lord's, Wembley. Technical scoping and supply chain mapping will be produced for add-on components that require commercial data and/or further scientific development. The index will make use of existing, mainly open Earth observation (EO) derived datasets, and the UKCP18 projections.



What the Space4Climate group are doing to support this –we've set up an urban vegetation health and climate resilience Task Group



Purpose

Foster use of EO data to monitor urban vegetation health, climate risks posed and support land managers in climate resilience and optimisation of GI ecosystem and urban climate services

Objective

Objective of the task group: Map existing and future capability to provide data, algorithms and tools to help monitor, assess and manage vegetation in urban and rural areas

Task 1 –scope and map current and emerging relevant climate EO capability for GI health and resilience

Task 2 development of a prototype vegetation health index.



YOUR INVOLVEMENT

Do you manage land in London with vegetation? Perhaps you are a sports facility, a heritage visitor attraction, management company of public or private spaces. Could you see potential benefit from having access to this type of index?

In the early stages of this project prospective beneficiaries will be by consulted, surveys issued, to understand what operational activities this index could help to inform, what bespoke requirements there are and what operating systems would be used to either draw from this index or need to have the index outputs embedded into if have in-house platforms. There might also be existing products that would require compatibility and, or, could be evolved through integration.

During development of this prototype, there will also be scoping of additional functionality including:

- (i) Location of SUDS for optimal GI ecosystem services, considering reducing risks of subsurface contaminant mobilisation and whether GI can provide a service to reduce indoor exposure to hazardous ground gasses from ex-landfill sites
- (ii) Upscale to UK for those with national portfolios and globally for those with international portfolios



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NEWS & EVENTS

Find out about our next events and share our news

EVENTS

NEWS



Photo credit | Zosia Korca on Unsplash

VEGETATION HEALTH FOR VISITOR & LEISURE ATTRACTIONS IN A CHANGING CLIMATE

Events, LCCP | 05 July, 2020 | Reading time: 1 minute

03 July 15:00–16:00 BST | Online event

How to ensure that our green spaces thrive in a changing climate

Green space is increasingly recognised and promoted for its social and environmental benefits - including health and well-being, as a sanctuary for habitats and species, and for its ability to keep us cool and mitigate flooding.

However, as our climate changes and we see higher temperatures and more potential for water restrictions, how can we make sure that our greening strategies are resilient?

This discussion will bring together colleagues from policy, data science, and the environment sector to showcase what satellite data can tell us about the state of our green spaces, the risks posed under different climate scenarios, and how to keep them robust. Colleagues from the leisure industry will talk about their strategies to manage green attractions. And we'll also hear about policies and programmes to promote greening in London.

Register through Eventbrite

Related content

Climate risk disclosure with Chartered Banking Institute

Green Infrastructure for health, wellbeing, and climate resilience

Global open heat data -talk to the scientists

Co-ordinating Research Action, Air Quality & CV-19

MESH networking reception at Futurebuild



Photo credit |

CLIMATE RISK DISCLOSURE WITH CHARTERED BANKING INSTITUTE

Events, LCCP | 03 July, 2020 | Reading time: 2 minutes

03 July 12:00–13:00 BST | Online event

In response to a call from G20 leaders, the Financial Stability Board established the Task Force on Climate-Related Financial Disclosures (TCFD) to enhance transparency on the financial risks to investors from climate change which have subsequently published guidelines for voluntary, consistent climate-related financial risk disclosures covering the physical, liability and transition risks associated with climate change.

Scenario analysis is being recommended as an important tool to assess the potential implications of these climate related risks and opportunities. However, a TCFD survey found that companies find scenario analysis the most challenging aspect of TCFD, due to a lack of data, and a lack of standardised metrics and targets. As such, companies have often avoided disclosing the results of scenario analysis, and the assumptions that have fed into the process.

With data gaps acting as a barrier to better climate-related scenario analysis and disclosure, financial services firms have been seeking alternative sources. The ability of satellites to deliver global data on the Earth system, providing long-term and consistent Earth Observation (EO) datasets enable identification of significant trends and patterns. The talk will cover the range of space-enabled climate datasets and tools, often used in combination with other data sources, that can support quantitative scenario analyses and thus enable financial services firms to better analyse their climate risk, disclose their exposure and assess impact of green investment in a more robust and meaningful way.

Register through Chartered Banker

Register through Chartered Banker

Related content

Vegetation health for visitor & leisure attractions in a changing climate

Green Infrastructure for health, wellbeing, and climate resilience

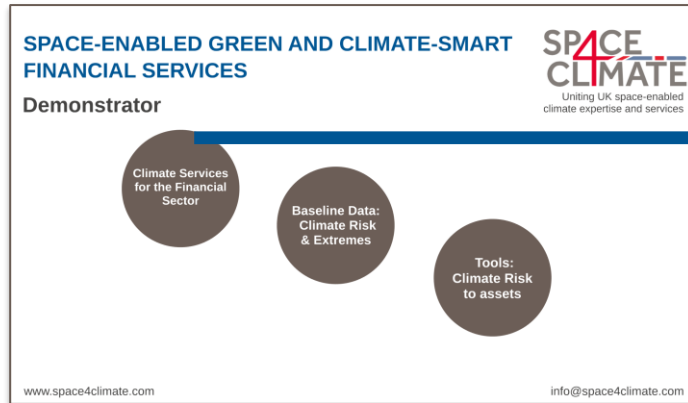
Global open heat data -talk to the scientists

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FIND OUT MORE ABOUT SPACE-ENABLED CLIMATE SERVICES

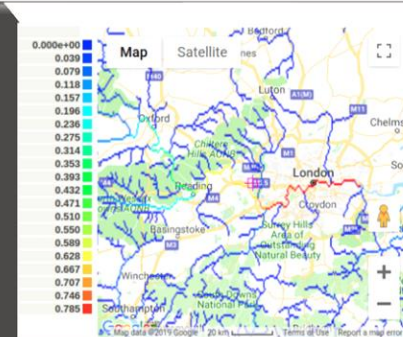
Click here to explore climate satellite data and tools:



Green Investment in Flooding Nature Based Solutions

Eco:Actuary combines global climate data, a flooding catastrophe model, socio-economic data and a global assets database. Allows green infrastructure investors to:

- Examine impacts of Natural Flood Management strategies in reducing risk and loss to assets downstream
- Examine impact of climate change adaptation strategies on losses, using multi-GCM climate change scenarios at various RCPs alongside increased extremes
- Examine downstream influence of specific interventions on risk and loss



Eco:Actuary modelled scenario of tree planting in UK protected areas showing change in accumulated maximum total flood storage capacity for rivers (Km³/yr).

The change is greatest for the River Thames, which being a catchment with many protected areas and little tree cover reaches an increase of 0.81 Km³/yr.



Uniting UK space-enabled climate
expertise and services

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www.space4climate.com

