Big data sets, spatial distribution and source to sink modelling

An ALLIANCE-NERIS topical workshop

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Session 2 - *Combination of model predictions and measurements (big data sets) in various situations*

Scene setting: ??????????????????

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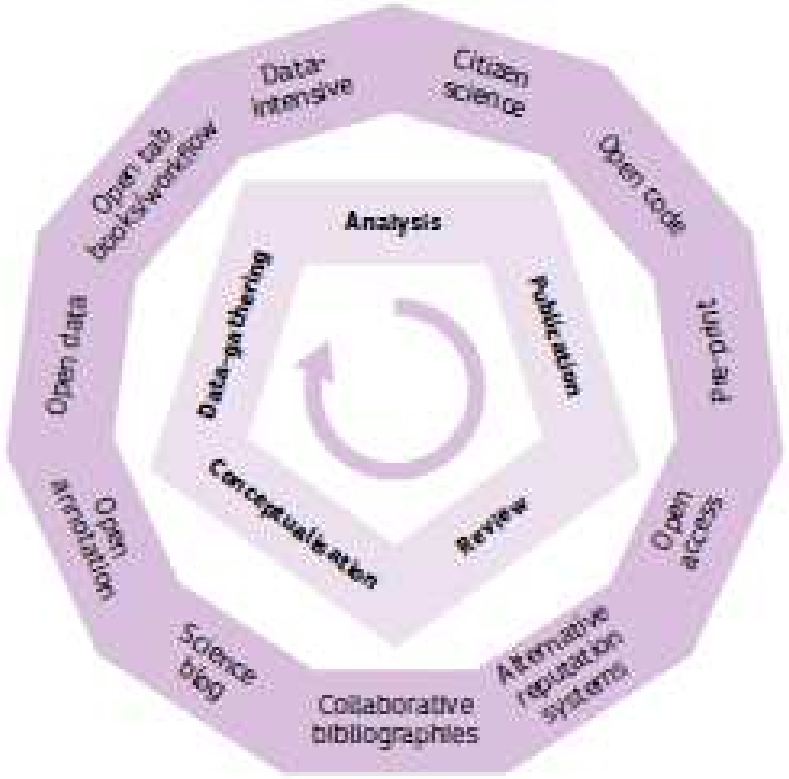
Think and act to improve the « 3 Os» - Open data / science ; Open innovation (EIC) ; Open to the world
Europe's Future : Open Innovation, Open Science, Open to the World, Reflections of the Research, Innovation and Science Policy Experts (RISE), High Level Group, March 20



Source: http://ec.europa.eu/research/consultations/science-2.0/background.pdf

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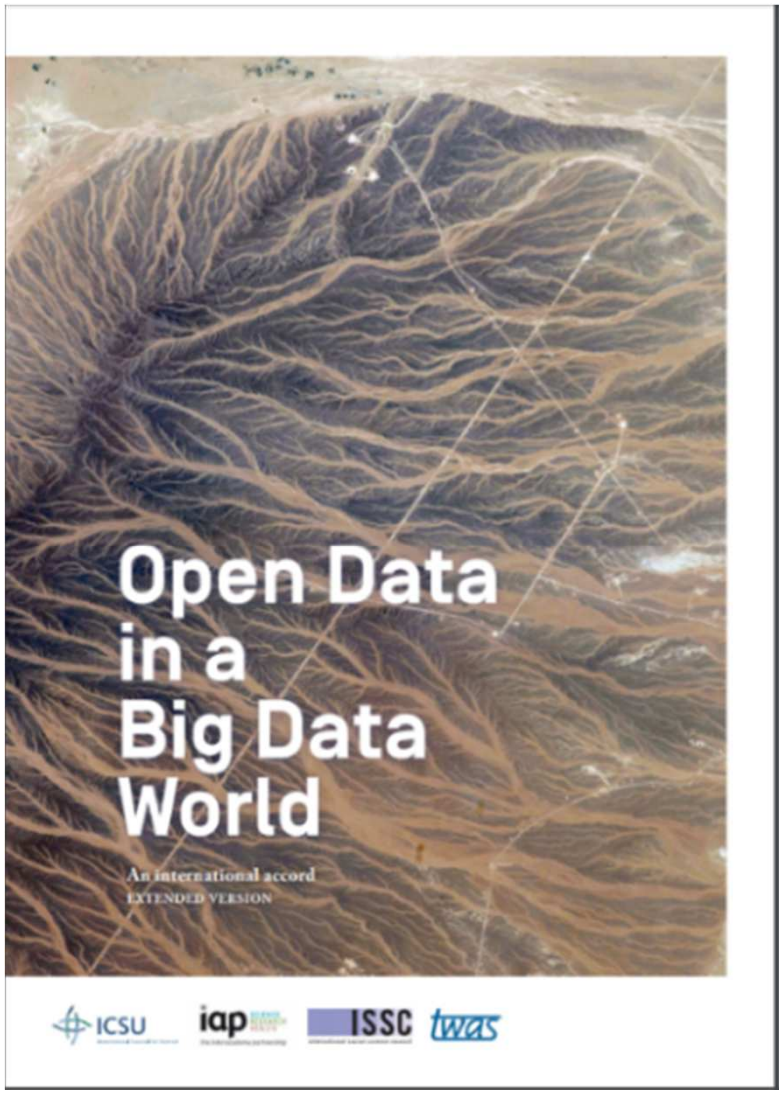

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Background - where did it all start…….

On June 2013 the Royal Society hosted
the first ever G8 joint Science Ministers and national science academies meeting in London

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NERC SCIENCE OF THE ENVIRONMENT

G8 joint Science Ministers meeting (1)

At that meeting Ministers approved a statement for the G8 to consider new areas for collaboration and agreement on:

1. global challenges
2. global research infrastructure
3. open scientific research data
4. increasing access to the peer-reviewed, published results of scientific research

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https://www.gov.uk/government/news/g8-science-ministers-statement

(Japanese representative at meeting: Yuko Harayama
Executive member, Council for Science and Technology Policy, Japan)

G8 Open data Charter

‘Access to data allows individuals and organisations to develop new insights and innovations…. While governments and businesses collect a wide range of data, **they do not always share these data in ways that are easily discoverable, useable, or understandable by the public**’

‘This is a missed opportunity’

Policy paper

G8 Open Data Charter and Technical Annex

Published 18 June 2013

G8 governments agreed to follow a set of principles that will be the foundation for access to data They are:

- Open data by default
- (ensure) Quality and quantity
- Useable by all (e.g. easy to find)
- Releasing data for improved governance
- Releasing data for innovation

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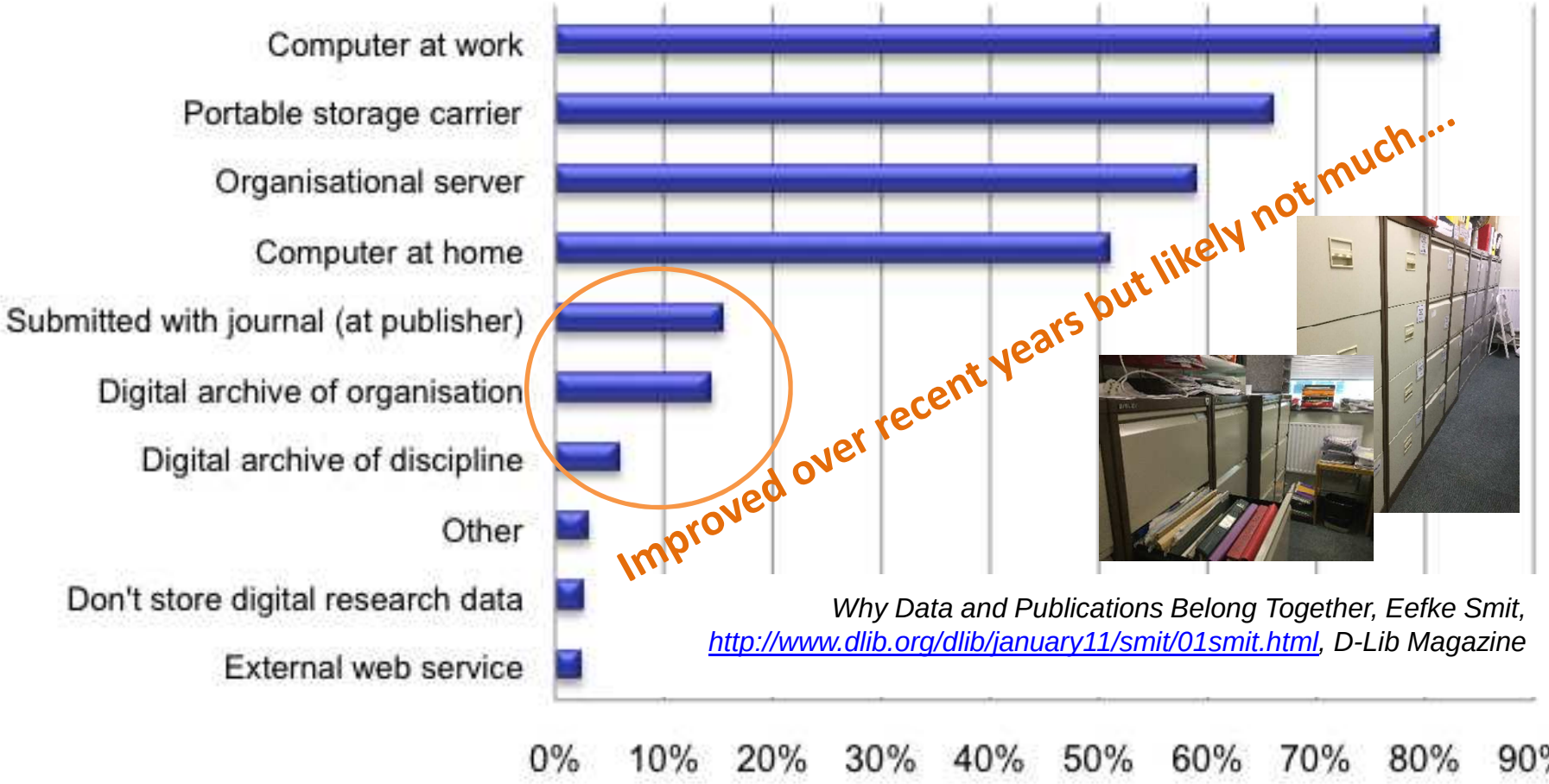
https://www.gov.uk/government/publications/open-data-charter/g8-open-data-charter-and-technical-annex

Do we take opportunity to publish data?

A few years ago 1202 US Researchers were asked …..
Where do you currently store your research data?

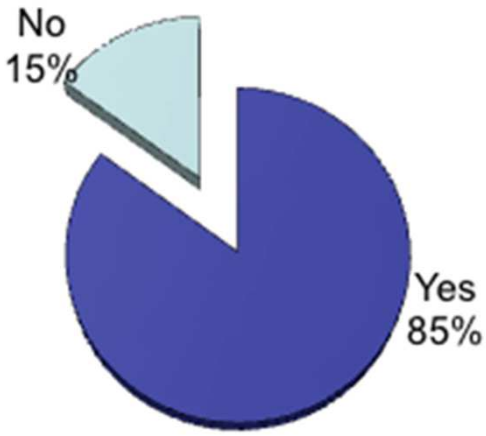


Why Data and Publications Belong Together, Eefke Smit, http://www.dlib.org/dlib/january11/smit/01smit.html, D-Lib Magazine

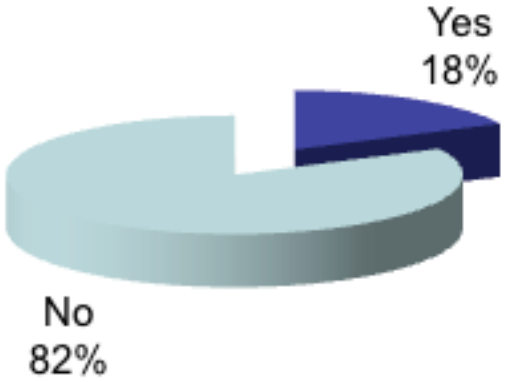
Attitudes towards sharing research data (1)

The same 1202 Researchers were also asked …..

Do you think it is useful to link underlying research data with formal literature (i.e. journal articles) ?



Do the journals to which you typically submit your work to require you to include the data used to create your tables, figures, etc.?



Almost the exact opposite response was received !

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Why Data and Publications Belong Together, Eefke Smit, http://www.dlib.org/dlib/january11/smit/01smit.html, D-Lib Magazine

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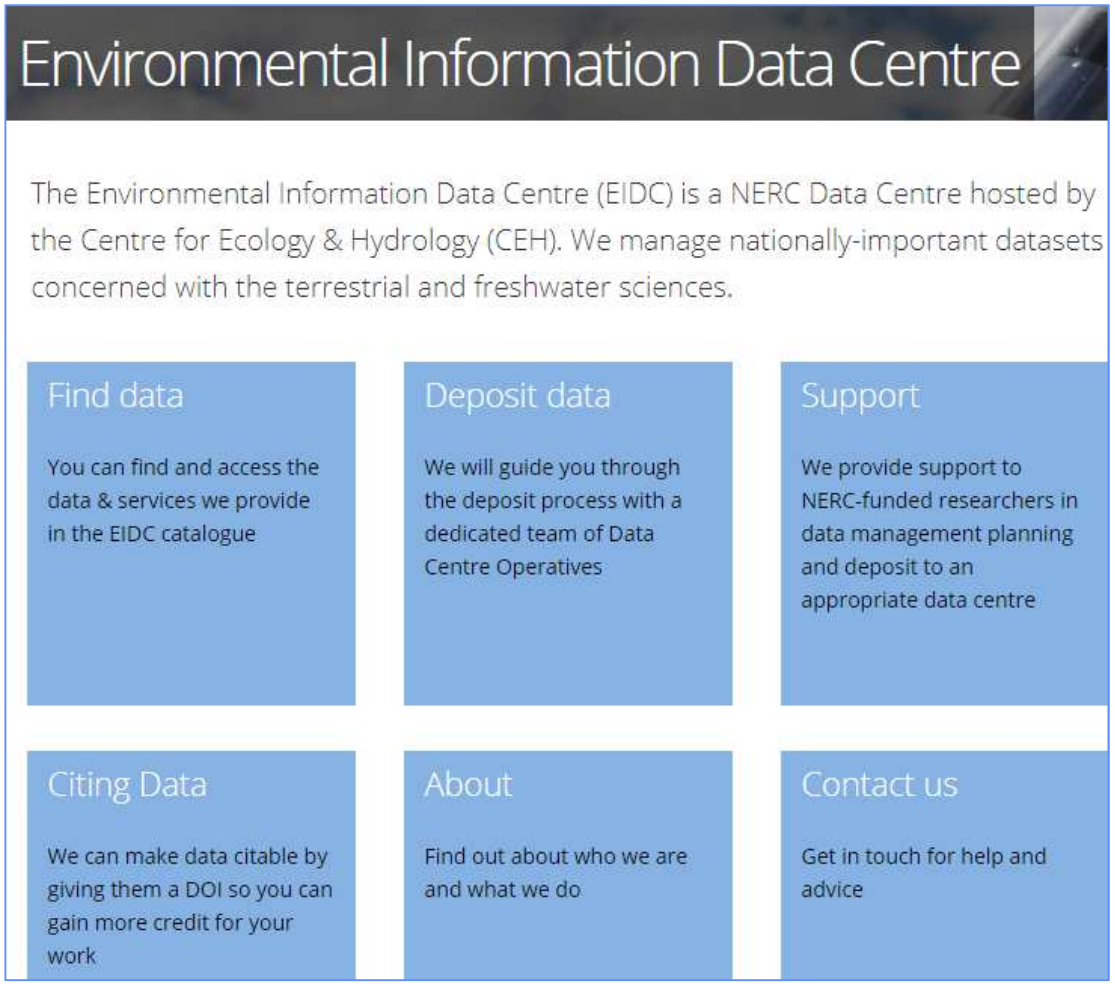
INSPIRE compliant catalogues



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DATA.GOV.UK Beta
Opening up Government

Spatial datasets of radionuclide contamination in the Ukrainian Chernobyl Exclusion Zone

Centre for Ecology & Hydrology
Data comprise radionuclide deposition, radioactivity dose measurements, radioactive particle activity and physical characteristic information from soil samples collected within and around...

Post Chernobyl surveys of radiocaesium in soil, vegetation, wildlife and fungi in Great Britain

Centre for Ecology & Hydrology
Data comprise radiocaesium concentrations in soil, vegetation, wildlife and fungi analysed from samples collected from throughout Great Britain after the 1986 Chernobyl accident by the...

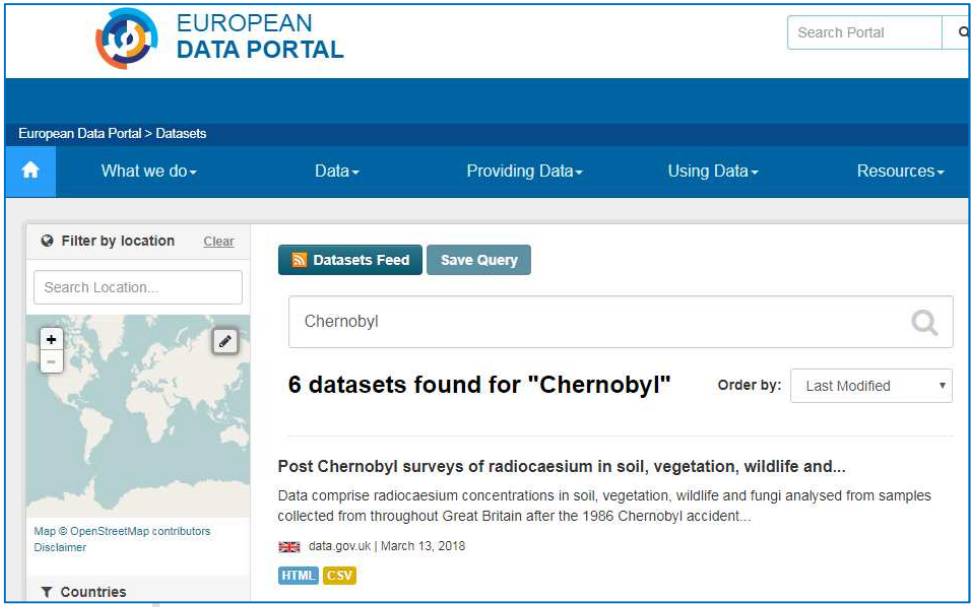
Observations of Fukushima fallout in Great Britain

Centre for Ecology & Hydrology
Following the Fukushima accident in March 2011, grass samples were collected from 42 sites around Great Britain during April 2011. Iodine-131 was measurable in grass samples...

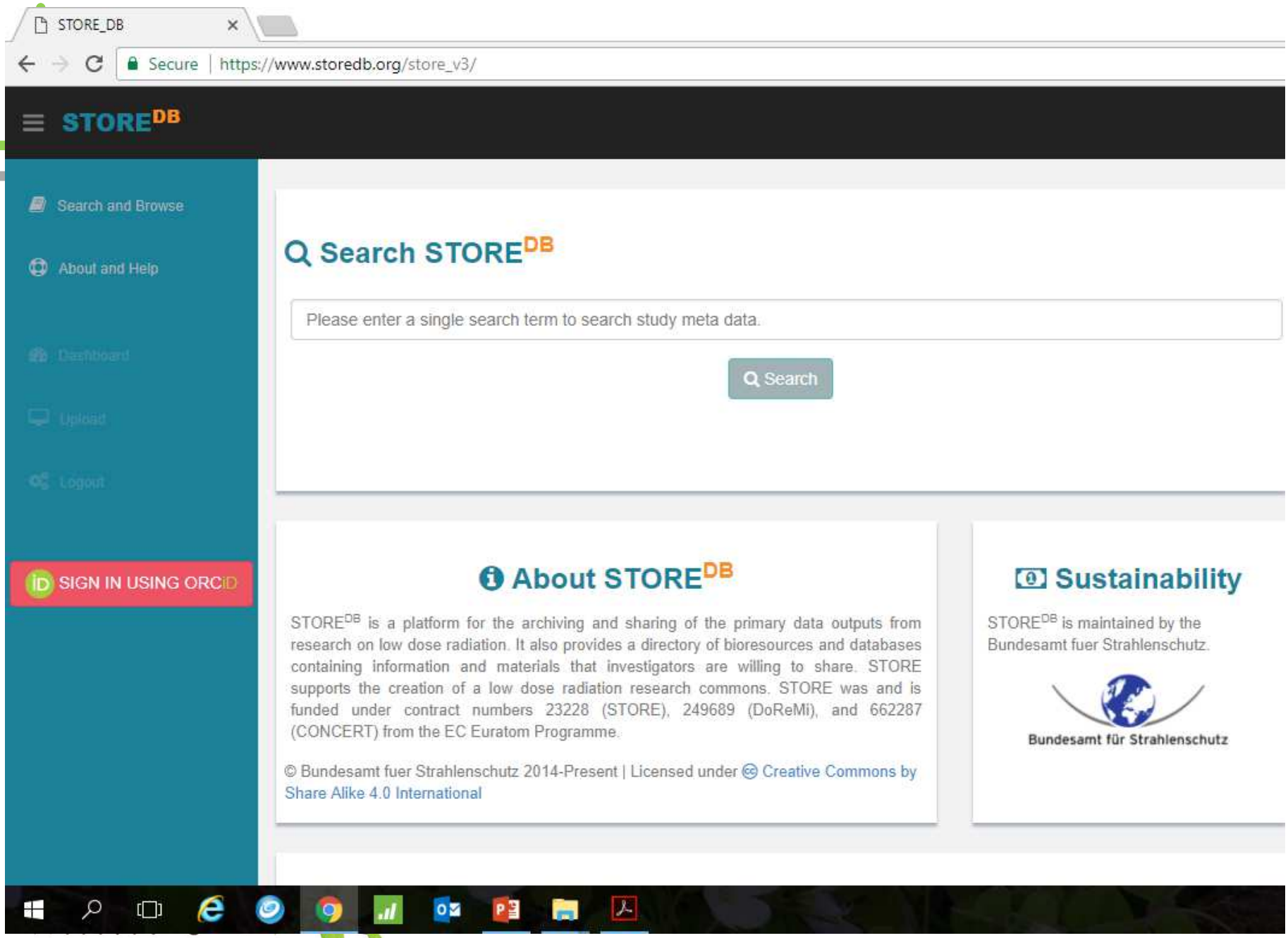
Predicted Caesium-137 deposition from atmospheric nuclear weapons tests

Centre for Ecology & Hydrology
Prediction of Caesium-137 (Cs-137) deposition from atmospheric nuclear weapons tests. The methodology uses a ratio of Cs-137 deposition and precipitation measured at Milford Haven...

Environment



https://data.gov.uk/ and *https://www.europeandataportal.eu/*

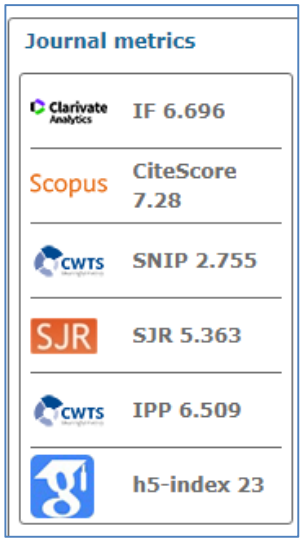


Reasons for publishing data

- **Making data openly accessible a requirement of funding agencies and journals**
- Data journal mechanism of publishing data (e.g. Nature Scientific Data, Earth System Science Data, Data, Data in Brief, Chemical data collections)

https://www.nature.com/sdata/, https://www.earth-system-science-data.net/, http://www.mdpi.com/journal/data , https://www.journals.elsevier.com/data-in-brief, https://www.journals.elsevier.com/chemical-data-collections

Data papers - opportunity to fully describe data



26 Feb 2018
Spatial datasets of radionuclide contamination in the Ukrainian Chernobyl Exclusion Zone
Valery Kashparov, Sviatoslav Levchuk, Marina Zhurba, Valentyn Protsak, Yuri Khomutinin, Nicholas A. Beresford, and Jacqueline S. **Chaplow**
Earth Syst. Sci. Data, 10, 339-353, https://doi.org/10.5194/essd-10-339-2018, 2018
Summary

20 Aug 2015
Post-Chernobyl surveys of radiocaesium in soil, vegetation, wildlife and fungi in Great Britain
J. S. **Chaplow**, N. A. Beresford, and C. L. Barnett
Earth Syst. Sci. Data, 7, 215-221, https://doi.org/10.5194/essd-7-215-2015, 2015
Summary

Journal of Environmental Radioactivity 114 (2012) 48–53

Contents lists available at SciVerse ScienceDirect

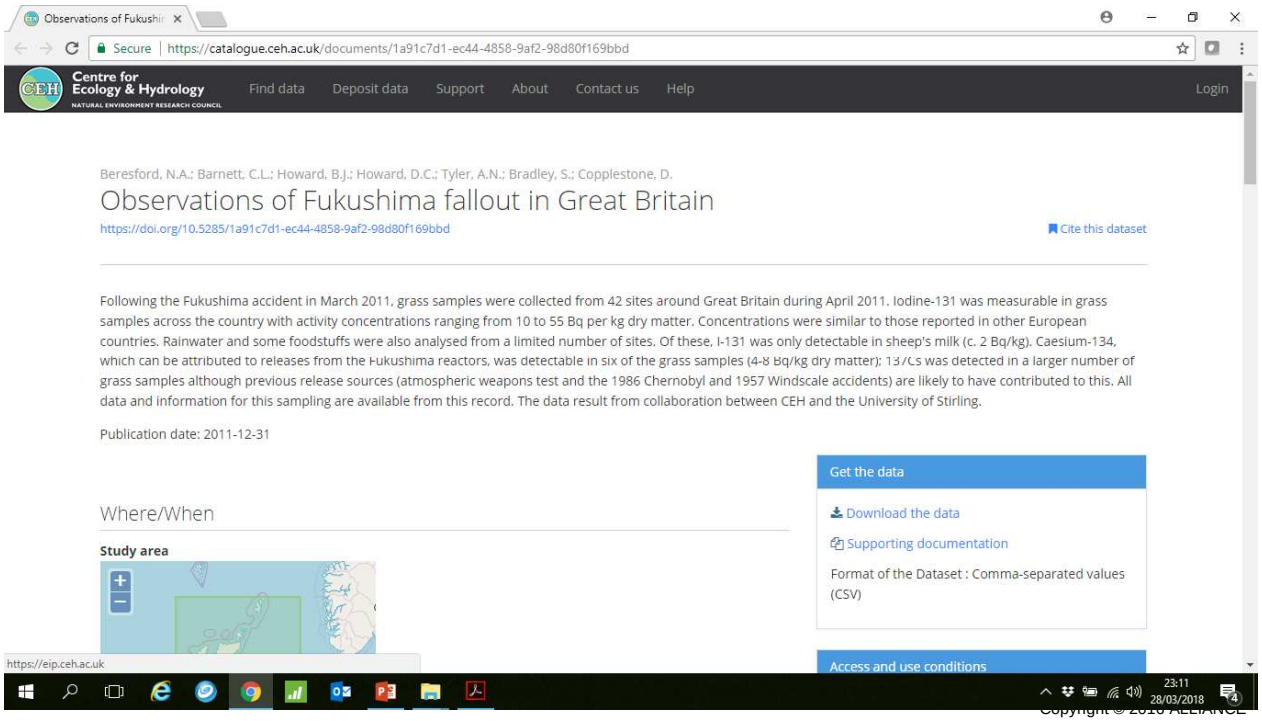
Journal of Environmental Radioactivity

journal homepage: www.elsevier.com/locate/jenvrad

Observations of Fukushima fallout in Great Britain

N.A. Beresford [a,*], C.L. Barnett [a], B.J. Howard [a], D.C. Howard [a], C. Wells [a], A.N. Tyler [b], S. Bradley [b], D. Copplestone [b]

[a] Centre for Ecology & Hydrology, Lancaster Environment Centre, Library Av., Bailrigg, Lancaster LA1 4AP, United Kingdom
[b] Institute of Biological and Environmental Sciences, School of Natural Sciences, University of Stirling, Stirling FK9 4LA, United Kingdom



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Why do I bother?

extensively throughout our careers. In contrast, we note that Beresford et al. have not published any of their Chernobyl data. At

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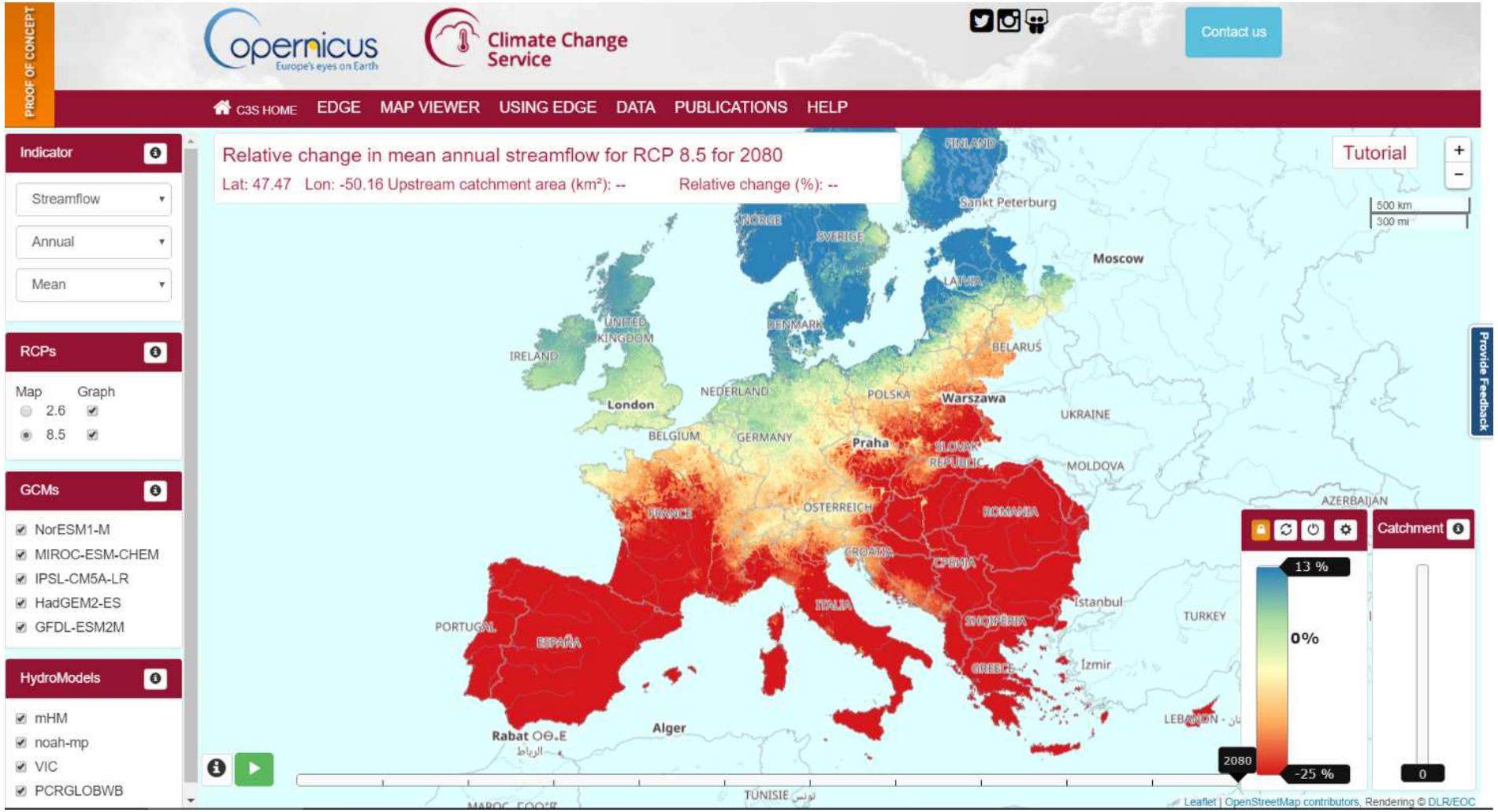
Using data = data needs to be available



https://edge.climate.copernicus.eu