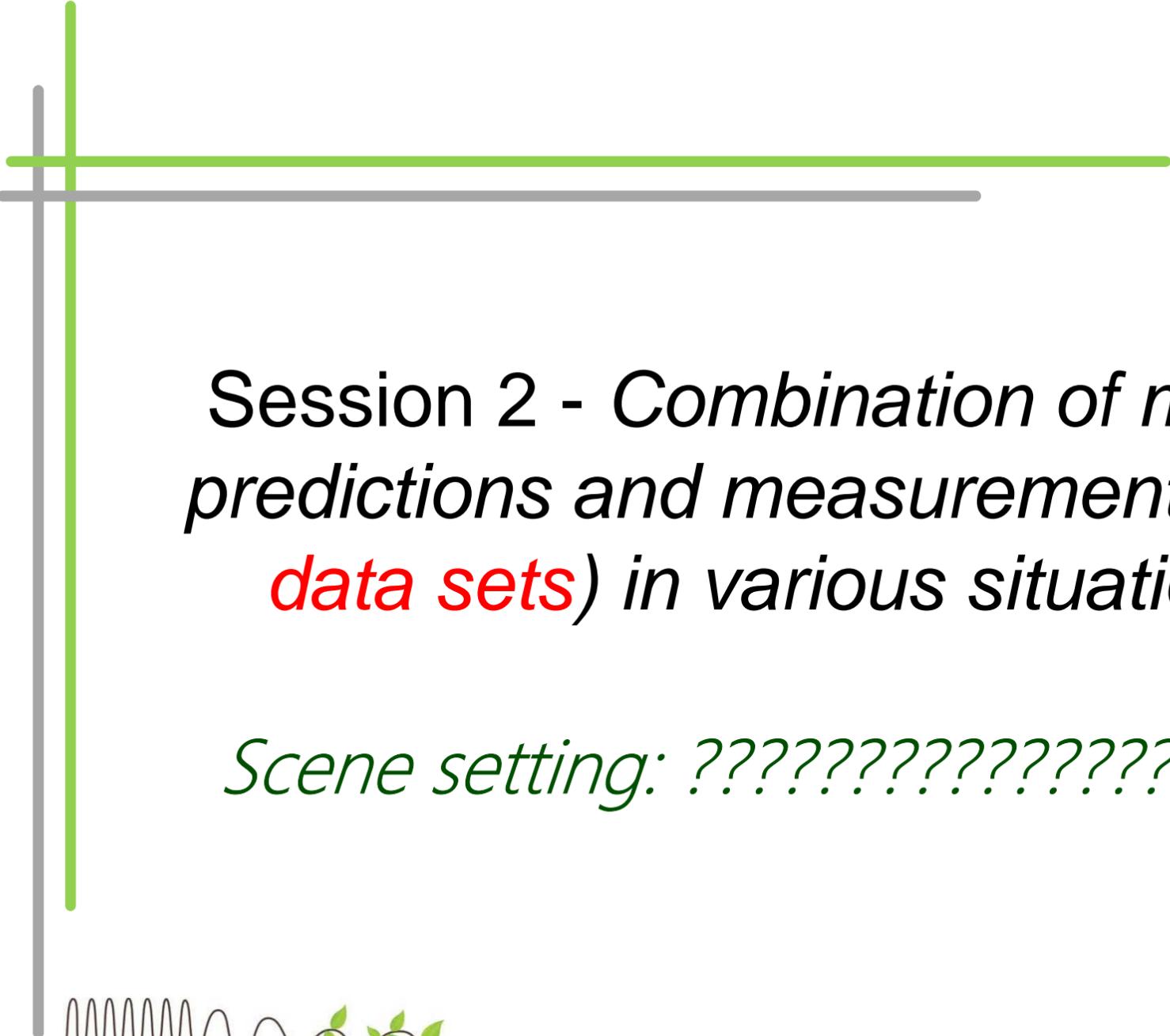




Big data sets, spatial distribution and source to sink modelling

An ALLIANCE-NERIS topical workshop

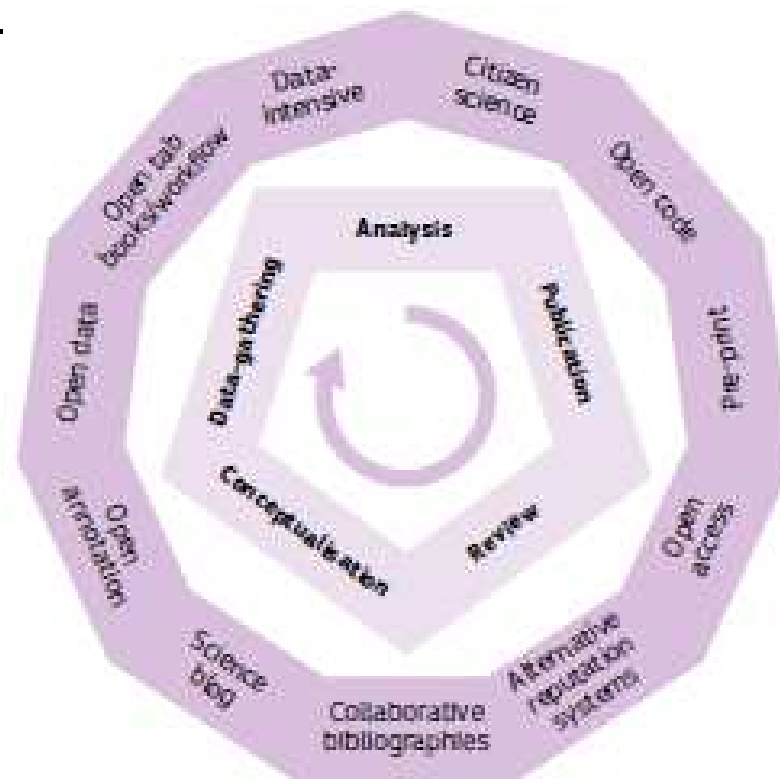
Nick Beresford
nab@ceh.ac.uk
@Radioecology



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

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

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>



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



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**



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

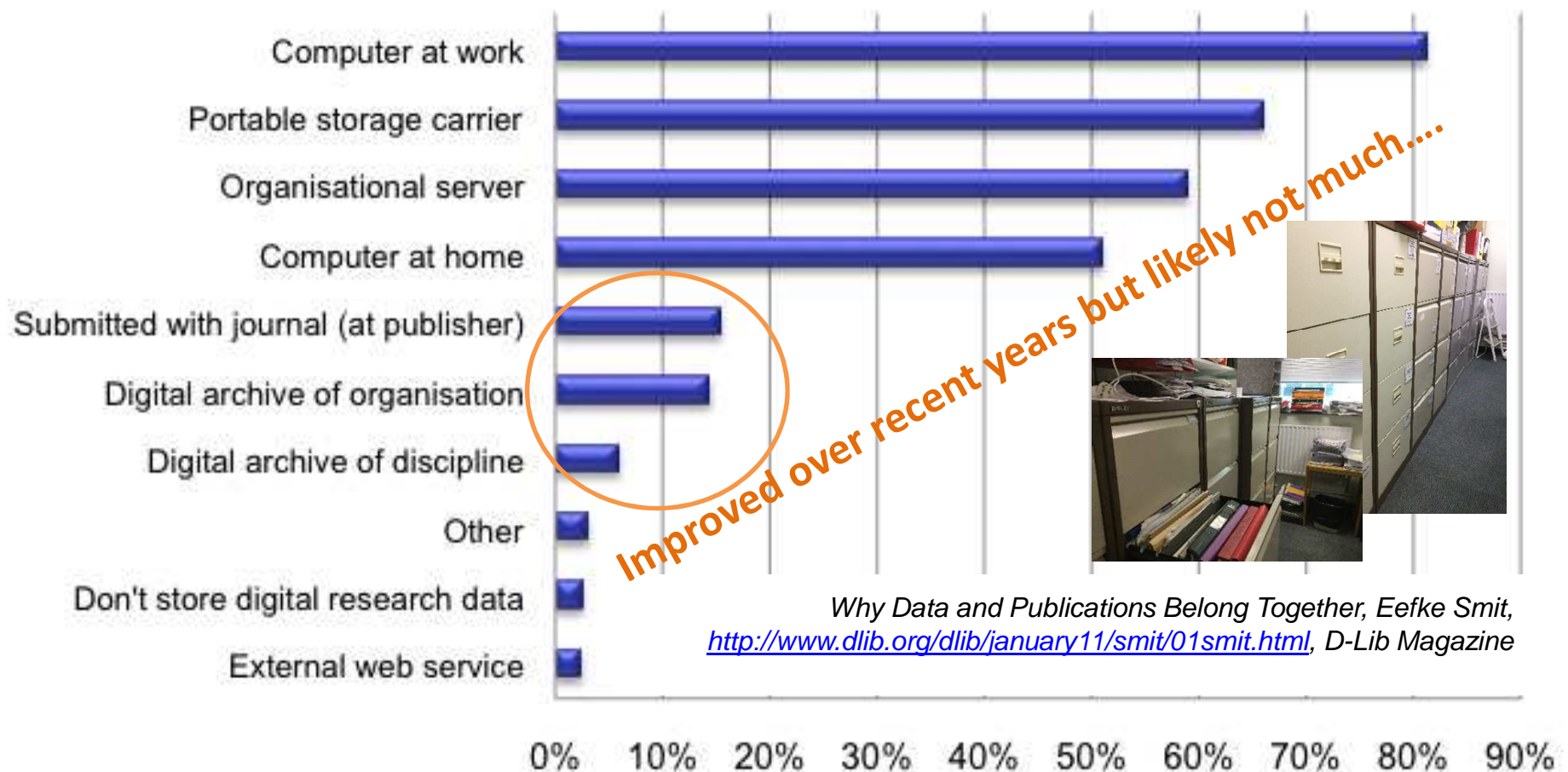
Published 18 June 2013

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

Do we take opportunity to publish data?

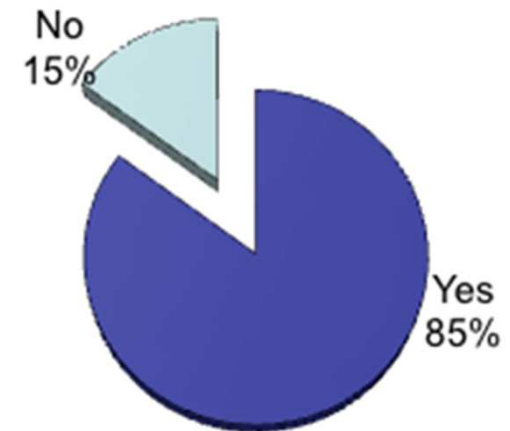
A few years ago 1202 US Researchers were asked
Where do you currently store your research data?



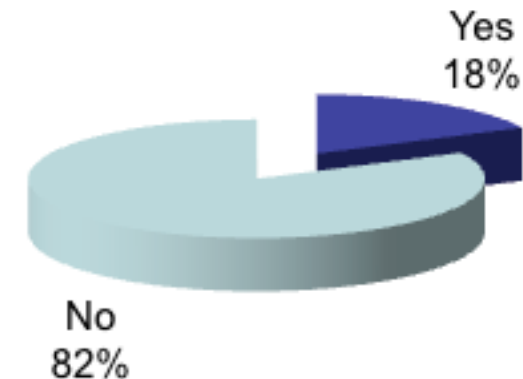
Attitudes towards sharing research data (1)

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 !



INSPIRE compliant catalogues

Environmental Information Data Centre

The Environmental Information Data Centre (EIDC) is a NERC Data Centre hosted by the Centre for Ecology & Hydrology (CEH). We manage nationally-important datasets concerned with the terrestrial and freshwater sciences.

Find data

You can find and access the data & services we provide in the EIDC catalogue

Deposit data

We will guide you through the deposit process with a dedicated team of Data Centre Operatives

Support

We provide support to NERC-funded researchers in data management planning and deposit to an appropriate data centre

Citing Data

We can make data citable by giving them a DOI so you can gain more credit for your work

About

Find out about who we are and what we do

Contact us

Get in touch for help and advice

INSPIRE compliant catalogues



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

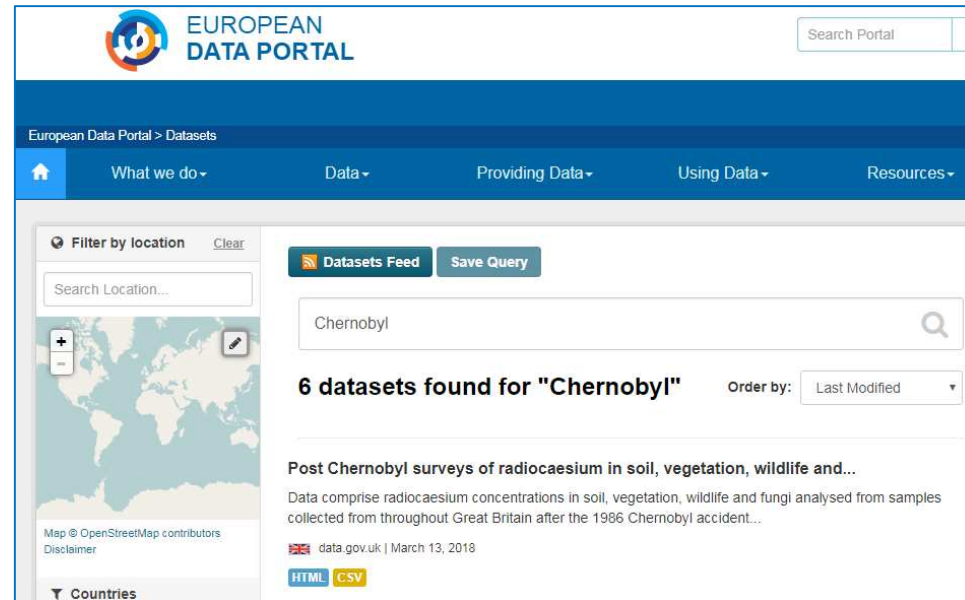
Centre for Ecology & Hydrology

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/>

STORE_DB

Secure | https://www.storedb.org/store_v3/

≡

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About STORE^{DB}


STORE^{DB} is a platform for the archiving and sharing of the primary data outputs from research on low dose radiation. It also provides a directory of bioresources and databases containing information and materials that investigators are willing to share. STORE supports the creation of a low dose radiation research commons. STORE was and is funded under contract numbers 23228 (STORE), 249689 (DoReMi), and 662287 (CONCERT) from the EC Euratom Programme.

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Sustainability

STORE^{DB} is maintained by the Bundesamt fuer Strahlenschutz.



Bundesamt für Strahlenschutz



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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

Journal metrics	
 IF 6.696	
 CiteScore 7.28	
 SNIP 2.755	
 SJR 5.363	
 IPP 6.509	
 h5-index 23	

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](#)

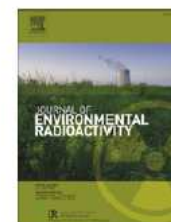




Contents lists available at SciVerse ScienceDirect

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

^aCentre for Ecology & Hydrology, Lancaster Environment Centre, Library Av., Bailrigg, Lancaster LA1 4AP, United Kingdom

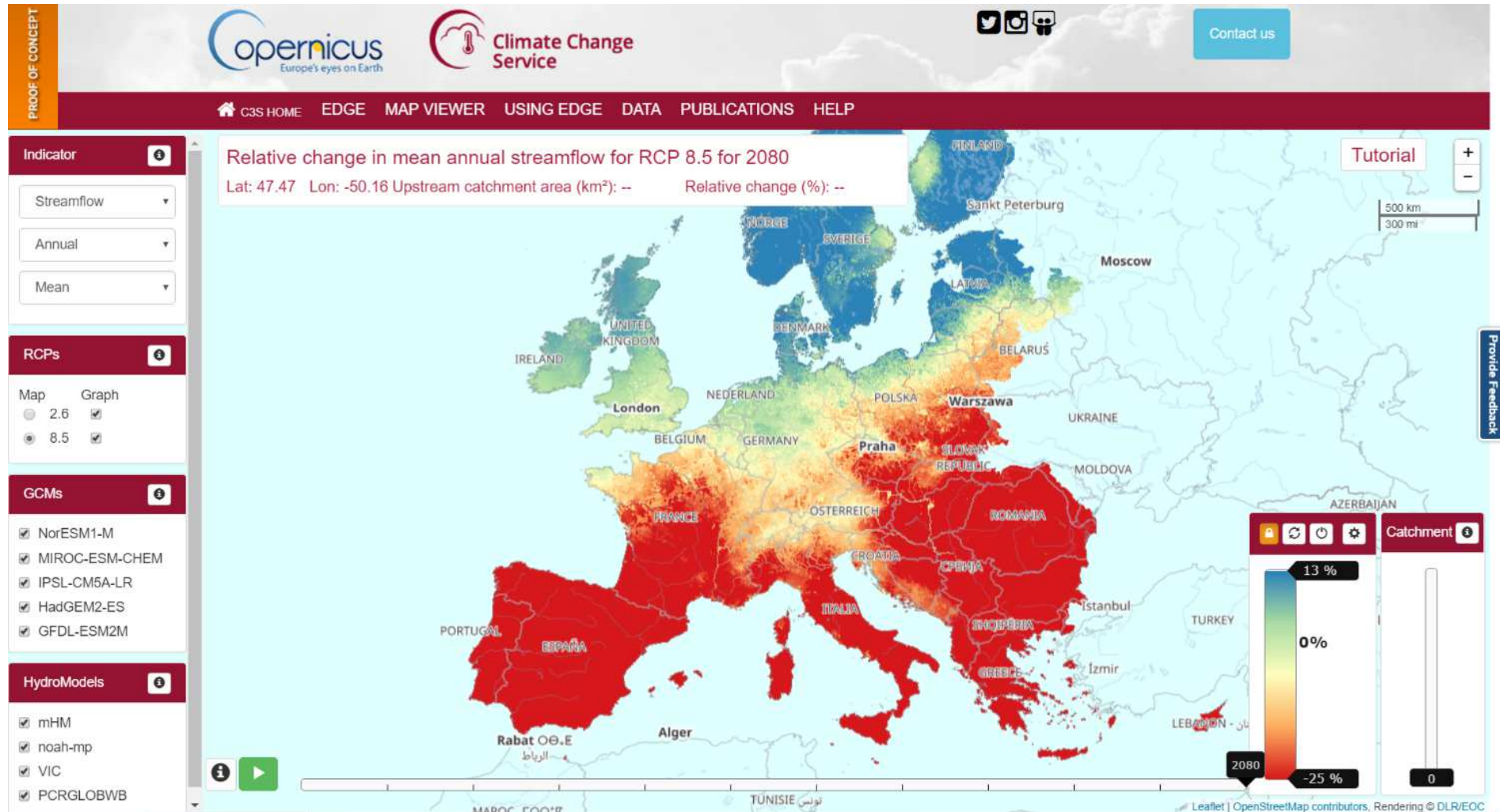
^bInstitute of Biological and Environmental Sciences, School of Natural Sciences, University of Stirling, Stirling FK9 4LA, United Kingdom

The screenshot shows a web browser window with the URL <https://catalogue.ceh.ac.uk/documents/1a91c7d1-ec44-4858-9af2-98d80f169bbd>. The page is from the Centre for Ecology & Hydrology (CEH) Natural Environment Research Council. The title of the dataset is "Observations of Fukushima fallout in Great Britain" by Beresford, N.A.; Barnett, C.L.; Howard, B.J.; Howard, D.C.; Tyler, A.N.; Bradley, S.; Copplestone, D. The DOI is <https://doi.org/10.5285/1a91c7d1-ec44-4858-9af2-98d80f169bbd>. The abstract states: "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 across the country with activity concentrations ranging from 10 to 55 Bq per kg dry matter. Concentrations were similar to those reported in other European countries. Rainwater and some foodstuffs were also analysed from a limited number of sites. Of these, I-131 was only detectable in sheep's milk (c. 2 Bq/kg). Caesium-134, which can be attributed to releases from the Fukushima reactors, was detectable in six of the grass samples (4–8 Bq/kg dry matter); 137Cs was detected in a larger number of grass samples although previous release sources (atmospheric weapons test and the 1986 Chernobyl and 1957 Windscale accidents) are likely to have contributed to this. All data and information for this sampling are available from this record. The data result from collaboration between CEH and the University of Stirling." The publication date is 2011-12-31. There is a "Where/When" section with a "Study area" map showing Great Britain. On the right, there are buttons for "Get the data", "Download the data", "Supporting documentation", and "Access and use conditions". The format of the dataset is specified as "Comma-separated values (CSV)".

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

Using data = data needs to be available



<https://edge.climate.copernicus.eu>