RISK Summer

From data to decision-making under conditions of uncertainty

RISK Summer School 2025

August 26th to 28th, 2025

UGA Université Grenoble Alpes

GS @UGA Université Grenoble Alpes

FRANCE 2030

GRENOBLE INP UGA

POLYTECH GRENOBLE

GRENOBLE INP Ense3 UGA

Risk Institute
Université Grenoble Alpes

DECODE Project

Decode stands for : DEvelop COmptences DEvoted to the management of uncertainty with creativity and drama tools

BRITISH COUNCIL

Swansea University
Prifysgol Abertawe

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Data Integrity and Power Dynamics in Knowledge Production

Professor Yan Wu

School of Culture and Communication

Swansea University

Email: y.wu@swansea.ac.uk

Aims &learning outcomes

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What does data integrity mean and why does it matter in citizen science?

Power dynamics: who defines problems, methods, and meaning?

Drawing on real-life experiences and from not-for-profit organization and the government-led agency

Data in citizen science projects

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- Citizen science projects… combine web-based social networks with community-based information systems to harness *collective intelligence* and apply it to specific scientific problems (Hunter et al 2013: 454).
- **Citizen science constitutes a process of active participation and citizen empowerment, with outputs directed toward generating collective benefits for society.**

Social media platforms

facebook

Meta

Crowdsourced navigation & mapping

E-commerce & Review platforms

amazon

Gig economy platforms

deliveroo

Citizen science for R &D

ZOONIVERSE
People-powered research

foldit

Arnstein, Sherry R. (1969) 'A Ladder of Citizen Participation,' *Journal of the American Institute of Planners*, 35 (4): 216-224.

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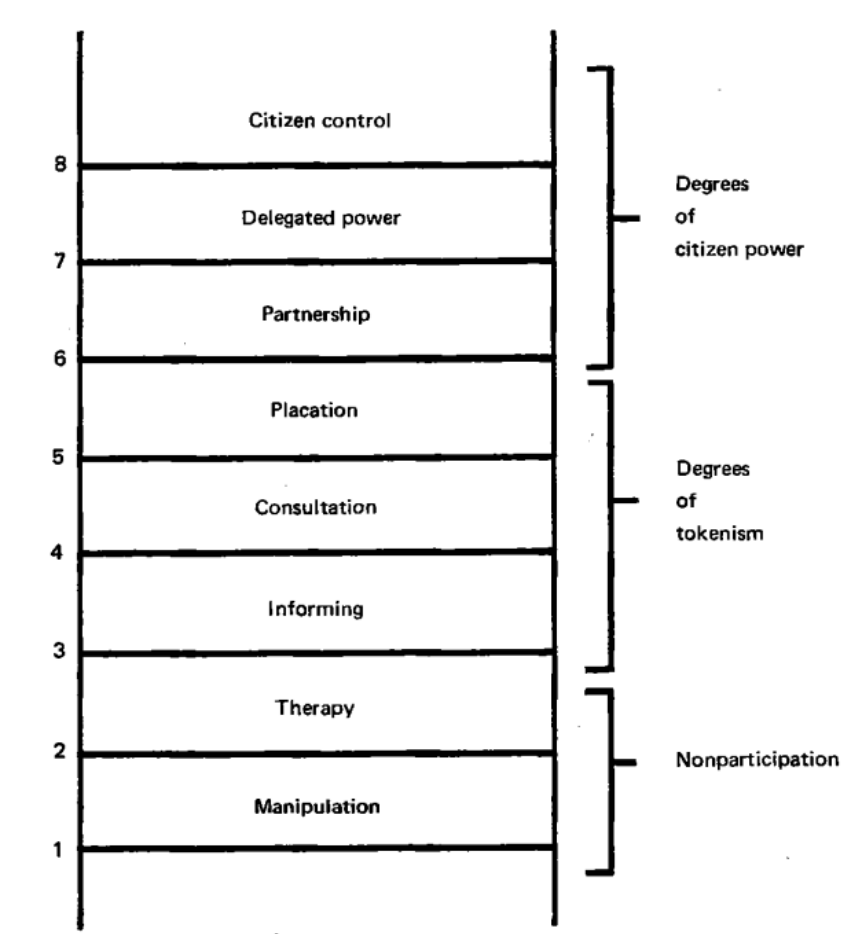

FIGURE 2 *Eight Rungs on a Ladder of Citizen Participation*

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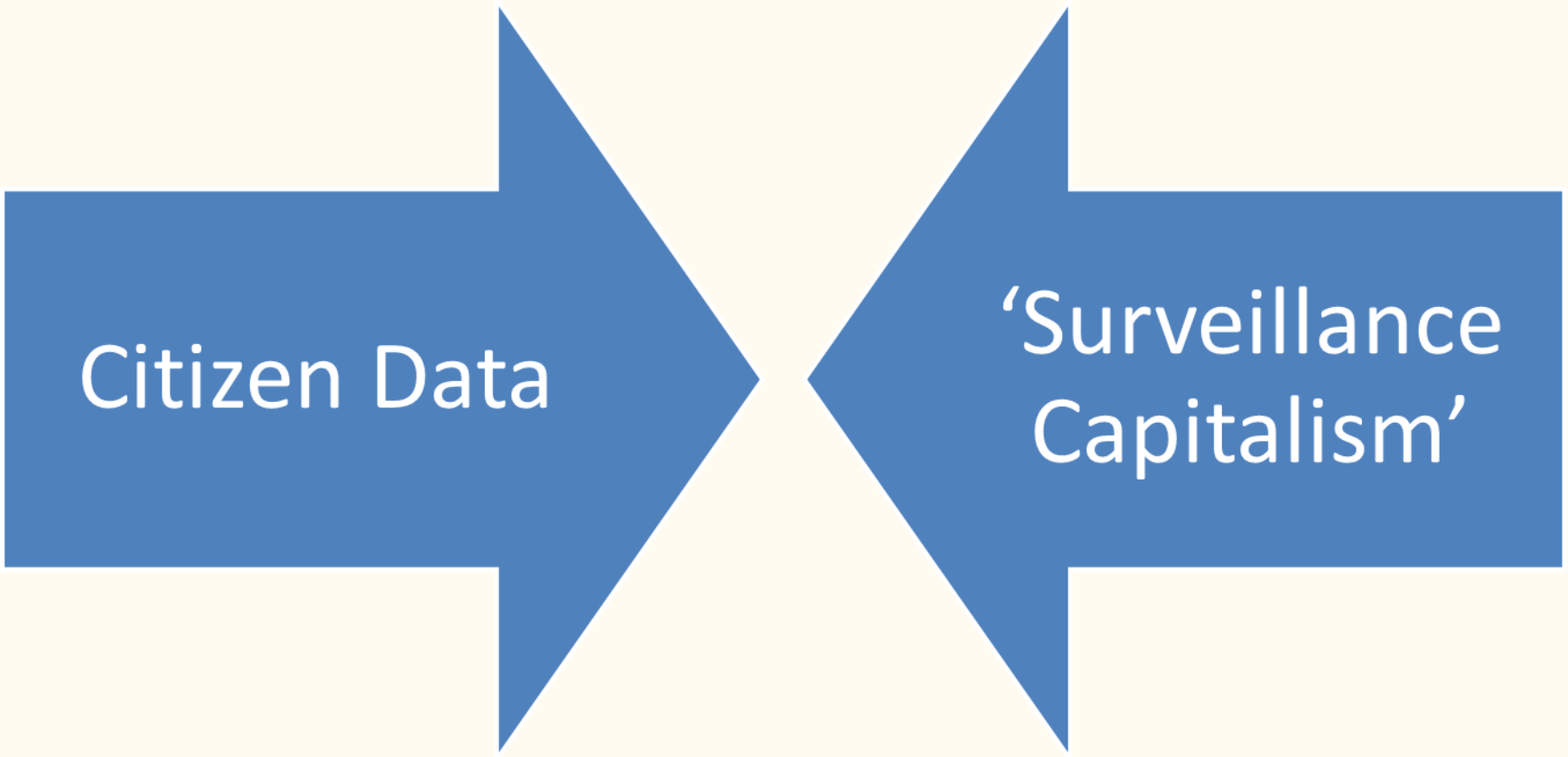

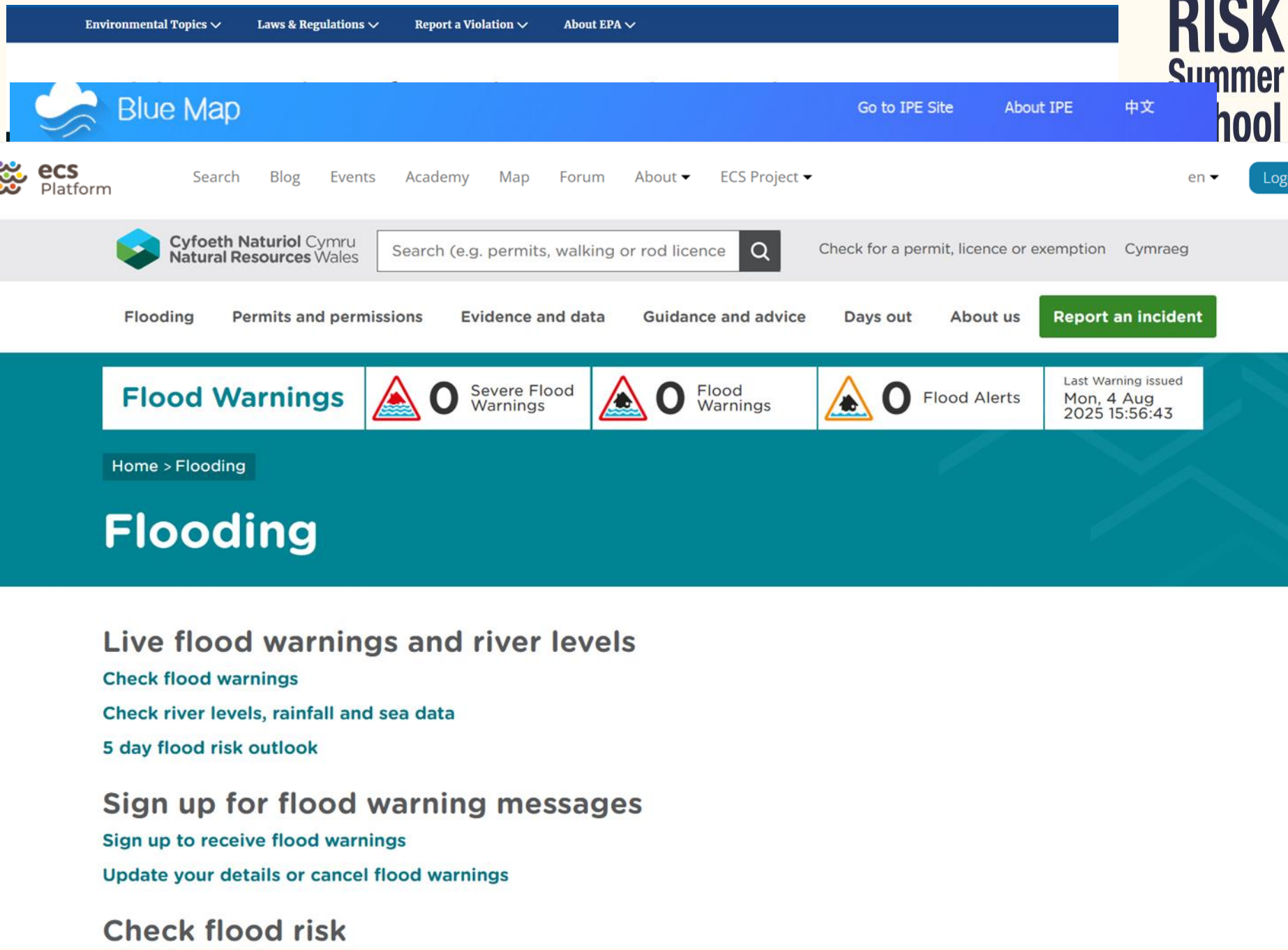
Environmental Topics
Laws & Regulations
Report a Violation
About EPA
RISK
Summer
hool
Blue Map
Go to IPE Site
About IPE
中文
ecs Platform
Search
Blog
Events
Academy
Map
Forum
About
ECS Project
en
Login
Cyfoeth Naturiol Cymru
Natural Resources Wales
Search (e.g. permits, walking or rod licence
Check for a permit, licence or exemption
Cymraeg
Flooding
Permits and permissions
Evidence and data
Guidance and advice
Days out
About us
Report an incident
Flood Warnings
0 Severe Flood Warnings
0 Flood Warnings
0 Flood Alerts
Last Warning issued
Mon, 4 Aug
2025 15:56:43
Home > Flooding
Flooding
Live flood warnings and river levels
Check flood warnings
Check river levels, rainfall and sea data
5 day flood risk outlook
Sign up for flood warning messages
Sign up to receive flood warnings
Update your details or cancel flood warnings
Check flood risk

Citizen data – created by ‘conscious’ user actions (Richter et al. 2011)

Paths in the woods and the ‘Beware! Steep Drop’ sign

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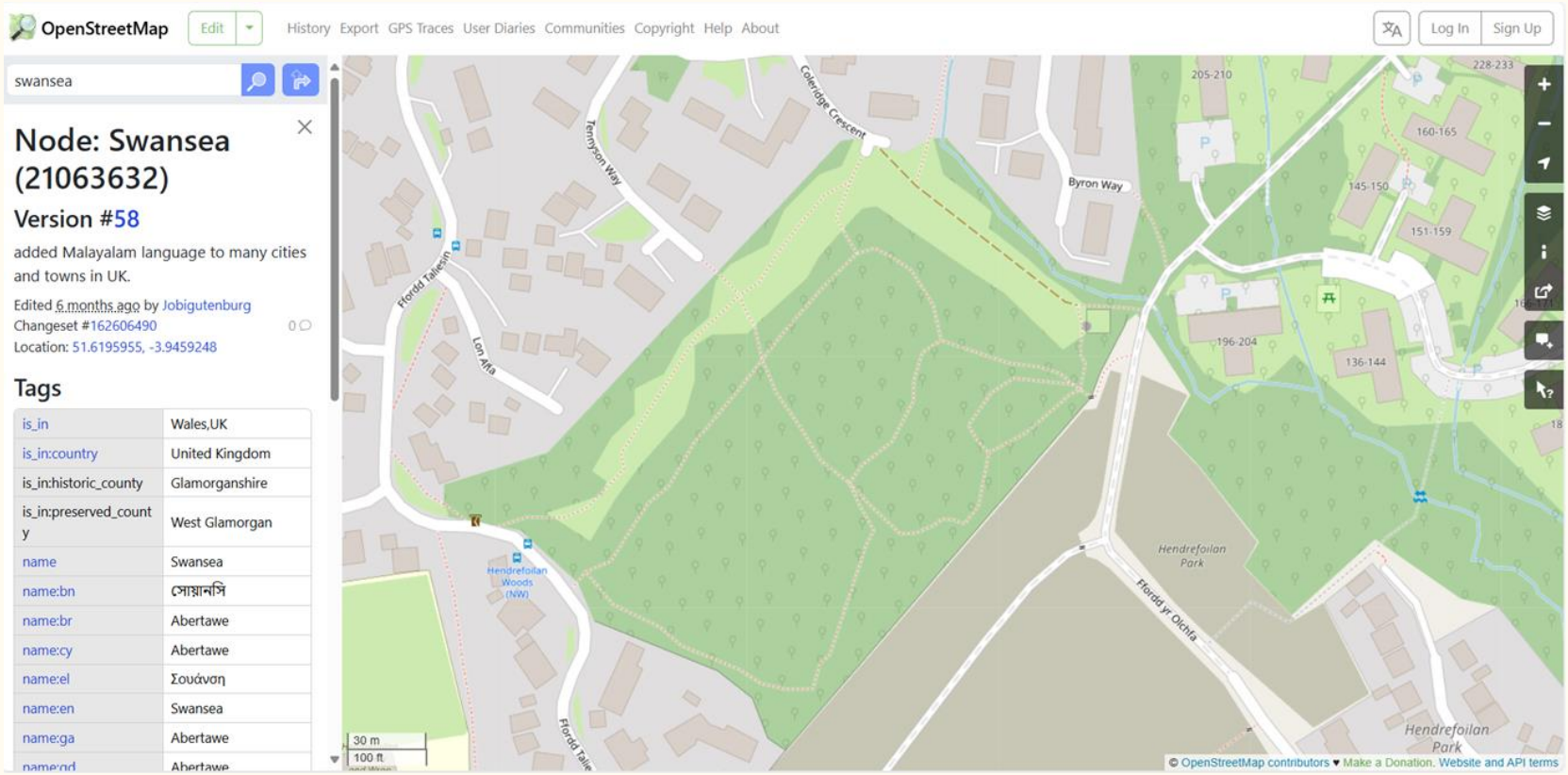


What does data ‘integrity’ mean to you? Let’s share our thoughts

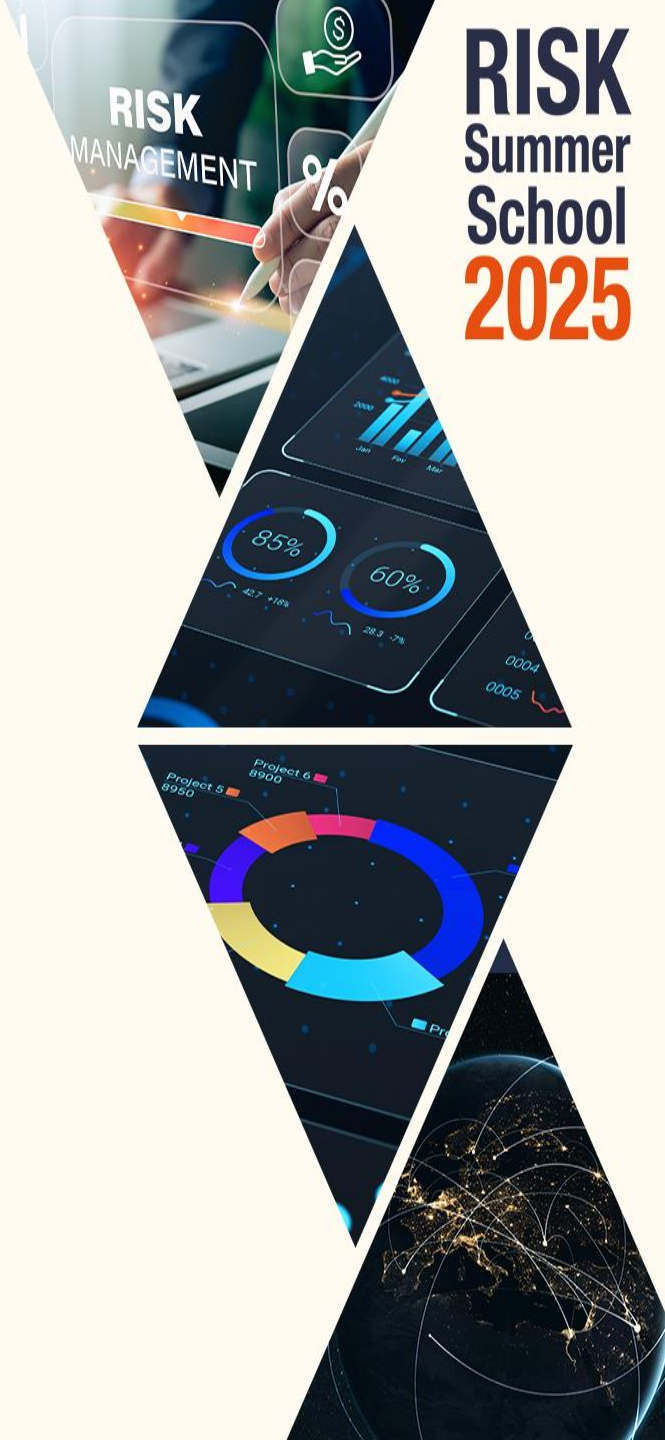
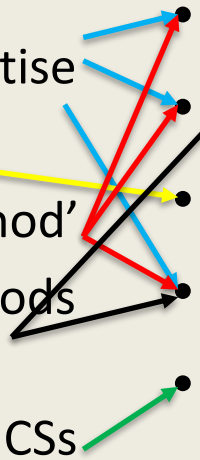


Table I. A set of data quality dimensions [17].

Dimensions	Definitions
Accessibility	The extent to which information is available, or easily and quickly retrievable.
Appropriate amount of information	The extent to which the volume of the information is appropriate for the task at hand.
Believability	The extent to which the information is regarded as true and credible.
Completeness	The extent to which the information is not missing and is of sufficient breadth and depth for the task at hand.
Concise representation	The extent to which the information is compactly represented.
Consistent representation	The extent to which the information is presented in the same format.
Ease of manipulation	The extent to which the information is easy to manipulate and apply to different tasks.
Free-of-error	The extent to which information is correct and reliable.
Interpretability	The extent to which information is in appropriate languages, symbols, units and the definitions are clear.
Objectivity	The extent to which the information is unbiased, unprejudiced and impartial.
Relevancy	The extent to which the information is applicable and helpful for the task at hand.
Reputation	The extent to which the information is highly regarded in terms of source or content.
Security	The extent to which access to information is restricted appropriately to maintain its security.
Timeliness	The extent to which the information is sufficiently up-to-date for the task at hand.
Understandability	The extent to which the information is easily comprehended.
Value-added	The extent to which the information is beneficial and provides advantages from its use.

Quality: trustworthiness of data

- Limited training/knowledge/expertise
- Relative anonymity
- Lack of the ‘scientific method’
- Lack of standardized methods of data collection
- Lack of commitment from CSs



- Inaccurate data
- Misleading data
- Malicious data manipulation
- Incomplete data
- Data gaps across time and space

Improving data quality

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- Data cleansing and data quality improvement technologies for data validation;
- Comparing the data sets with alternative sources or historical trends;
- Exploiting social network analysis tools to assess the trustworthiness of the contributor;
- Trust and reputation metrics

Organized biodiversity mapping exercise

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Ben jij geïnteresseerd in planten, insecten en vogels die voorkomen langs de Maas? Wil jij ons helpen met soorten in kaart te brengen tijdens 1 voormiddag? Ben je benieuwd naar een beschermde 'weerd' lang de Maas die nooit werd ontgraven, en veel agrarische graslanden heeft?

Jexta igi

Meld je dan aan voor deze BioBlitz, georganiseerd door het RivierPark Maasvallei / Regionaal Landschap Kempen & Maasland!

Wanneer? Zondag 15 juni van 9u tot 12u30

Waar? In Heppeneert. We gaan op pad langs de oever van de Maas en de Zanderbeek.

We spreken af op de parking achter de kerk (Google Maps: 'parking heiligdom Heppeneert')

Wat? Onder begeleiding van natuurkenners leer je bij over typische en zeldzame soorten. Je neemt foto's en notities en geeft ze in als waarneming.

Are you interested in plants, insects, and birds that occur along the Meuse? Would you like to help us map species during a morning? Are you curious about a protected 'weerd' along the Meuse that has never been excavated and has many agricultural grasslands?

Then sign up for this BioBlitz, organized by the River Park Maasvallei / Regional Landscape Kempen & Maasland!

When? Sunday, June 15 from 9 AM to 12:30 PM

Where? In Heppeneert. We will head out along the banks of the Meuse and the Zanderbeek.

We will meet in the parking lot behind the church (Google Maps: 'parking heiligdom Heppeneert').

What? Under the guidance of nature experts, you will learn about typical and rare species. You will take photos and notes and submit them as observations.

Data validation

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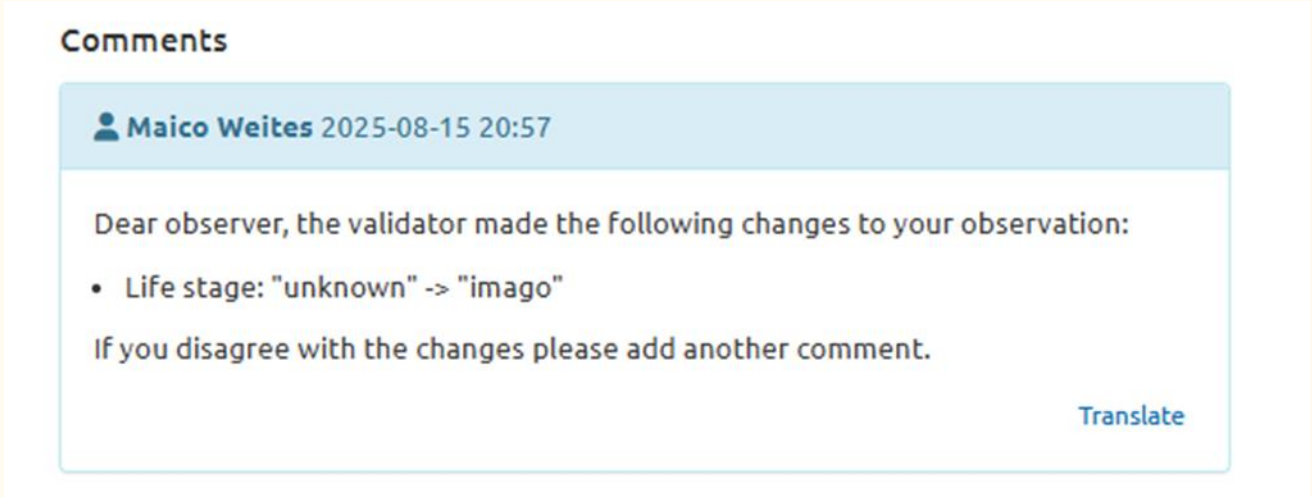

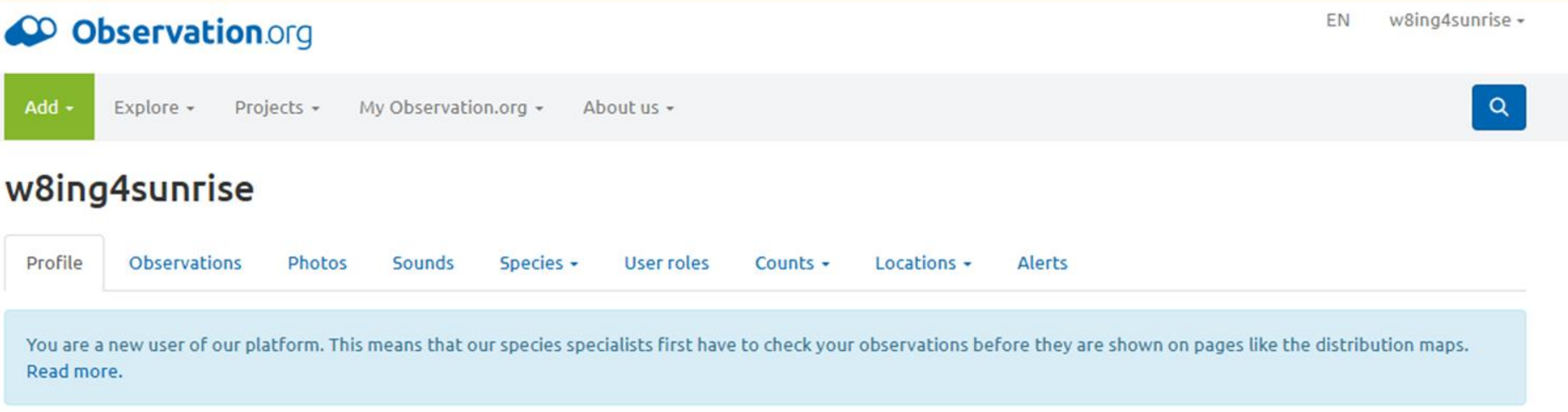

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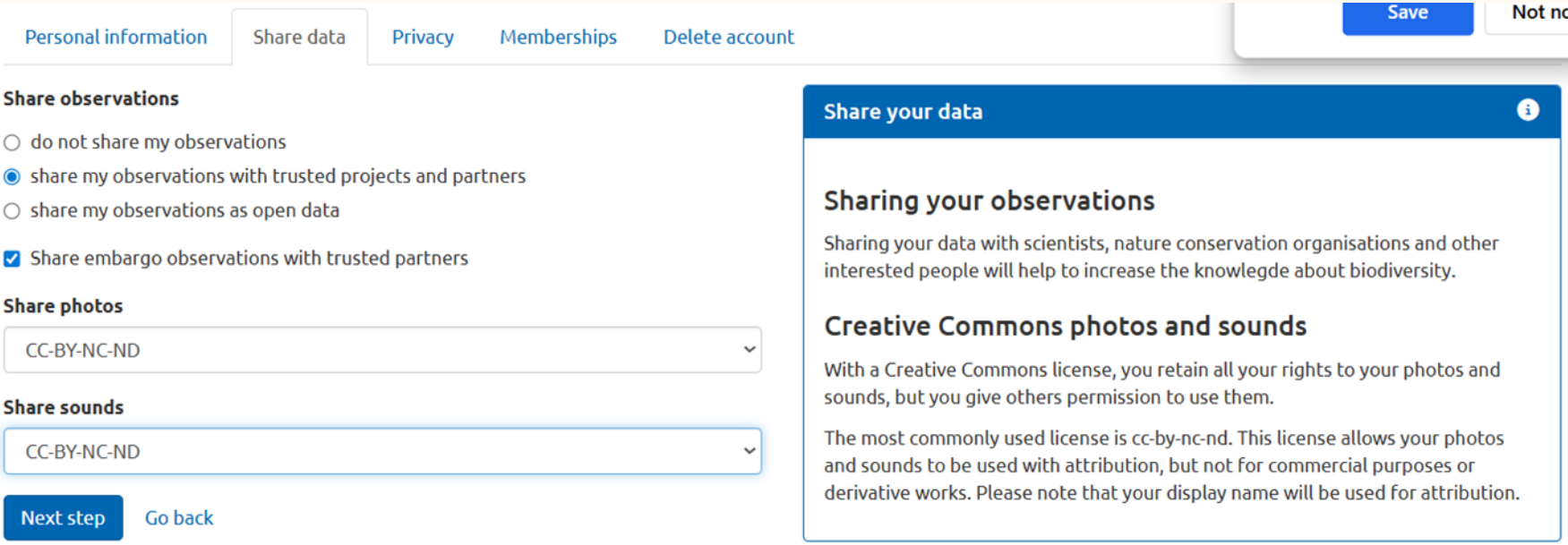
Clarify ownership and licensing from the outset

Benefit-sharing agreements (credit, access, monetary/non-monetary)

Ethical restrictions for sensitive species/places data

Sustainable funding and maintenance for longevity



Recognising Contributions & Labour

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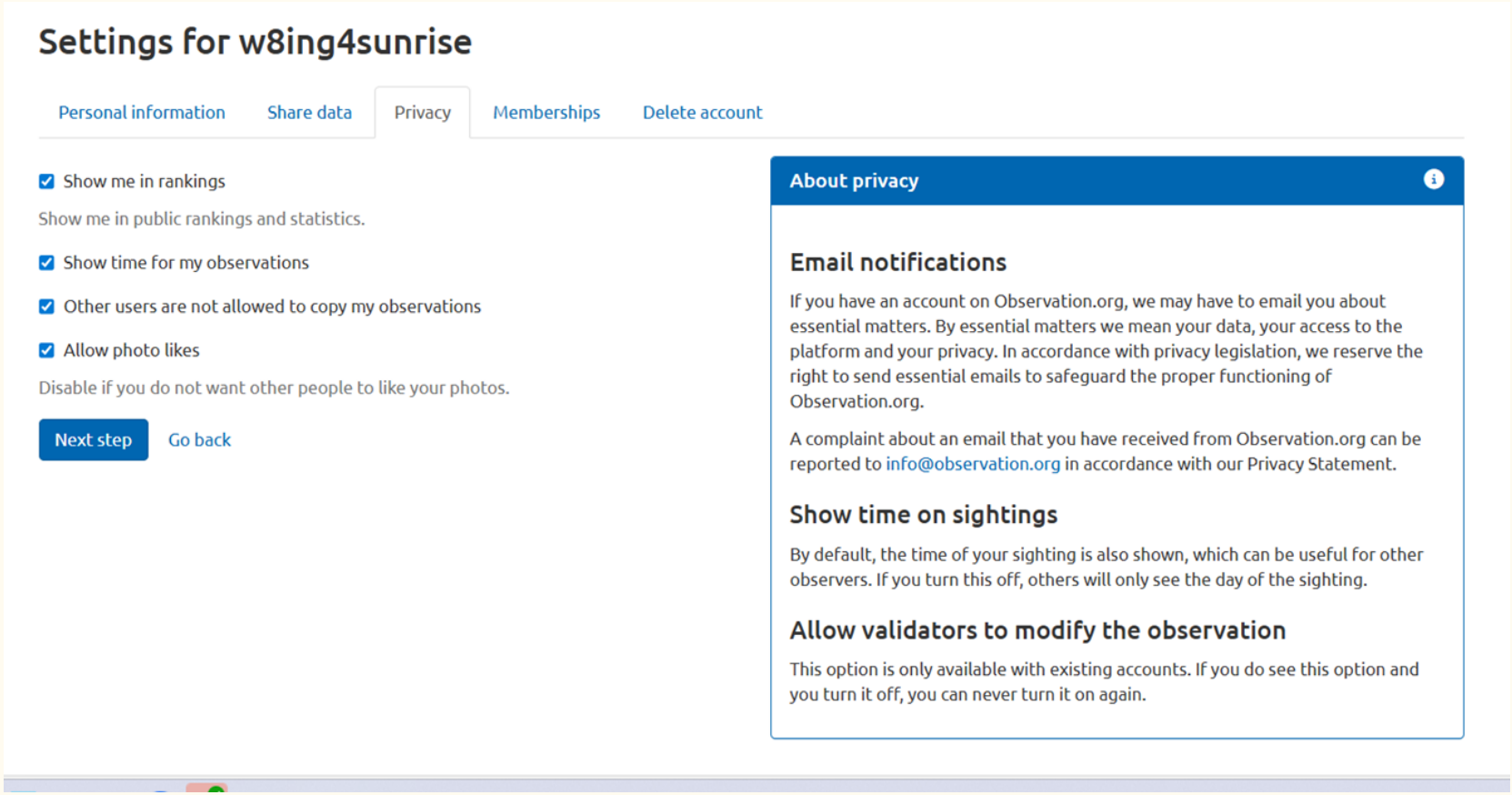

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Observation.org

EN w8ing4sunrise

Add Explore Projects My Observation.org About us

Sea-holly

Eryngium maritimum L.

relatively common
native

Plants | Apiaceae | Eryngium | *Eryngium maritimum* | Species

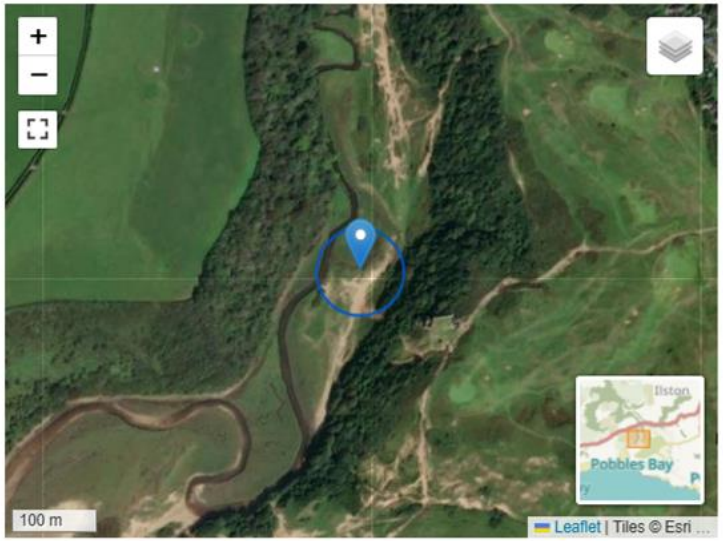
1 flowering indigenous

Options

2025-07-27 16:19
w8ing4sunrise
Pennard Community (United Kingdom)
Accepted (automatic validation)

GPS 51.5771, -4.1036
Accuracy 51m
Source Observation

Directions



Details

Date	2025-07-27 16:19
Number	1
Life stage	flowering

Photos

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Pennard Community United Kingdom

Details | Observations | Photos | Sounds | Species seen | Ranking observers

Plants | All years | Filter | Clear filters

Ranking	Observer	Species	
1	Niels Jeurink	163	Compare to my list
2	racheldavey	14	Compare to my list
3	Cas Retel	10	Compare to my list
4	Julia68	6	Compare to my list
5	Devon Delsman	3	Compare to my list
	gb	3	Compare to my list
	Aaron Meijer	3	Compare to my list
	Bob East	3	Compare to my list
9	Marcel	2	Compare to my list
	TON van Alphen	2	Compare to my list
	ErikB	2	Compare to my list
	Gary Harper	2	Compare to my list
13	Julian Myers	1	Compare to my list
	Alida Kranenburg	1	Compare to my list
	Show all		
	dangel	1	Compare to my list
	ellenvdsteen	1	Compare to my list
13	w8ing4sunrise	1	
	benjiclunie	1	Compare to my list
	QueenBeeBCV	1	Compare to my list
	Joris Van der Schoot	1	Compare to my list
	Maxim Hallaert	1	Compare to my list

Data integrity in every stage of citizen Science

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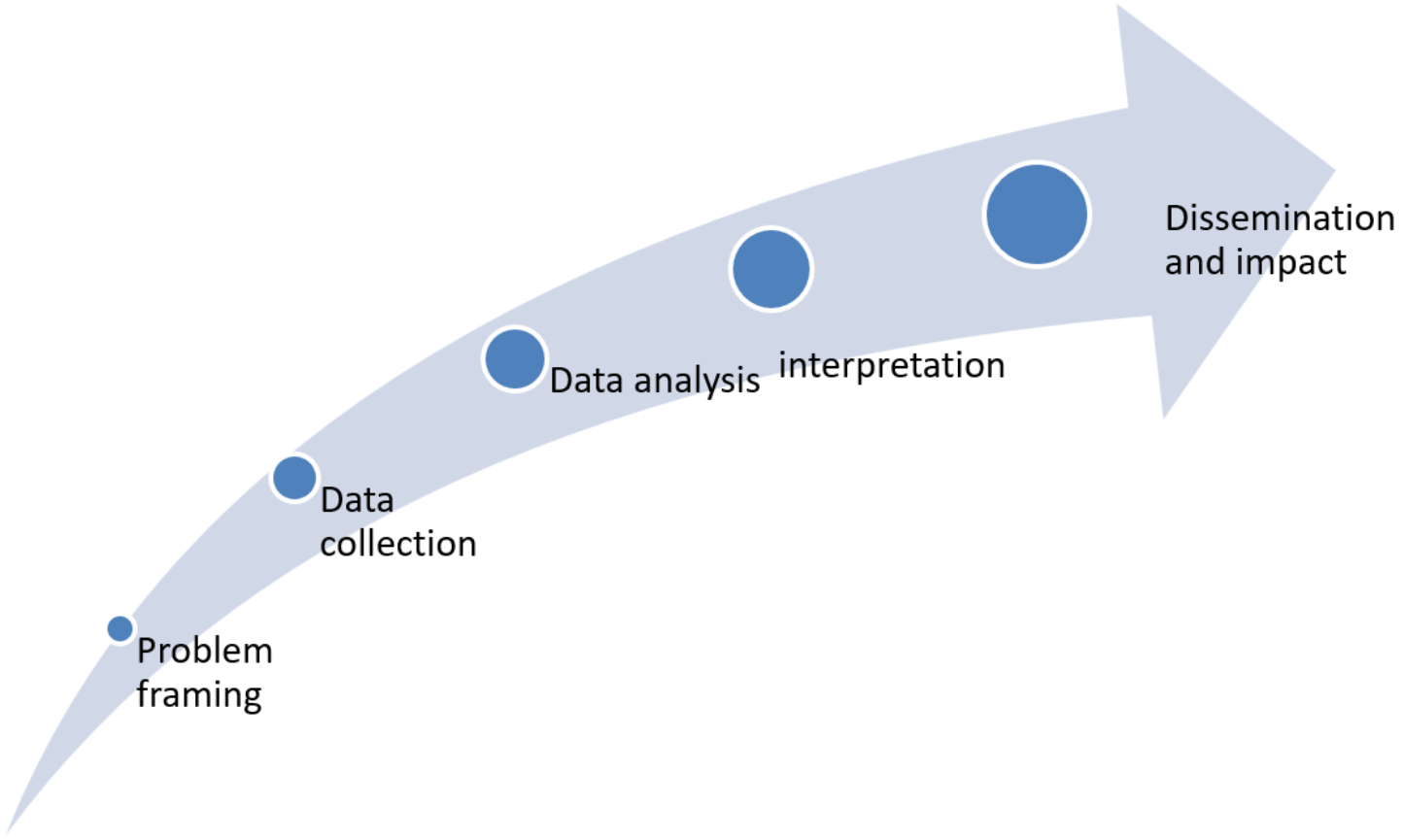
Public participation in scientific processes across the knowledge lifecycle



Who are the citizen scientists

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- Currently, citizen scientists tend to be whiter, older, well-educated, and more middleclass than broader society (Hobbs and White 2012; Measham and Barnett 2008; Wright et al. 2015);
- Missed opportunity for other demographics such as increased understanding and appreciation of science (Brossard et al. 2005)

Observation.org in Swansea area (activities 10- 20 August 2025)

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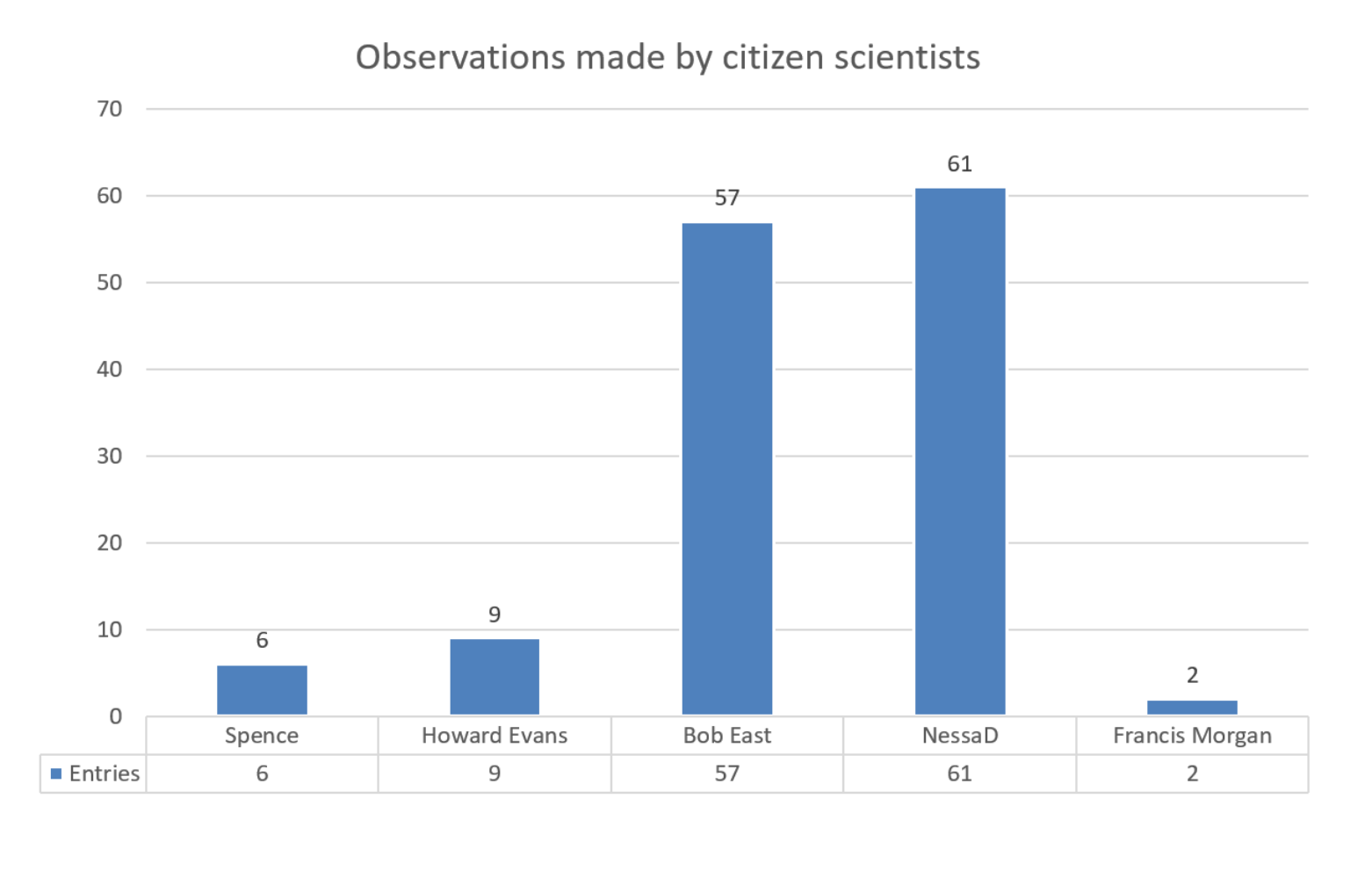

Who Holds Power in Knowledge Production?

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- Problem framing: whose questions are prioritized?
- Method choice: whose standards and what counts as evidence?
- Interpretation: whose narratives shape meaning and action?
- Gatekeeping: publication, media, and policy influence
- Data governance principles (e.g., Findable; ; Accessible; Interoperable; Reusable – FAIR principle; Collective benefit.)

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Inclusion & data Justice

- Avoid empowering some and marginalizing others due to technological or social barriers (Byrne and Pickard 2016)
- Respecting local/Indigenous sovereignty over knowledge and data
- Authority to control. Responsibility. Ethics - CARE for Indigenous data
- Co-governance and co-ownership models for data and outputs.
- Design for linguistic, cultural, and accessibility needs.

Key Takeaways

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Data integrity blends technical rigour with social legitimacy

Power dynamics shape what is known as the issue and what is actionable

Citizen science projects need to be designed for quality, governance, and justice

Merci Beaucoup

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This project is supported by the French National Research Agency (ANR-20-SFRI-0007) under France 2030 investment program.