

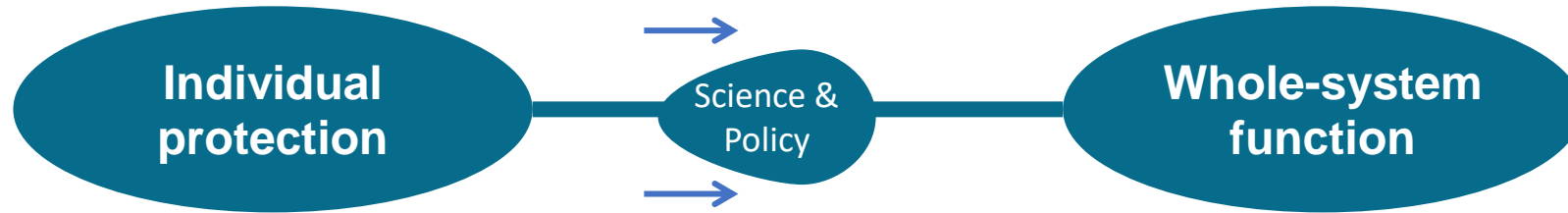


Karen Kramer Wilson – Principal Officer Data Engagement and Analysis
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Natural England Terrestrial NCEA

Natural capital describes the parts of our environment that have (sometimes hidden) value to people

NCEA provides evidence which makes it easier to incorporate our natural capital into decision-making

Nature Conservation Science & Policy Shifting



Natural Capital & Ecosystems

- **Restore and enhance** the environment for the next generation, leaving it in a better state than we found it.
- **Resilient** Landscapes & Seas, **Greener** Industry, **Sustainable** Development, and an **Engaged** Public.
- **Help society and industry** make our air purer, our water cleaner, our land greener, our food and manufacture sustainable, and recover nature.





NCEA

Natural Capital
and Ecosystem
Assessment

NCEA is a Defra led comprehensive and long-term science and innovation programme to transform landscape decision making in England by providing a rich picture of the state of our terrestrial and water environment and how and why it is changing

Informative

Improve understanding and monitor changes using better data, information, data integration and tools

Comprehensive

Long-term coordinated monitoring (field survey + earth observation + citizen science) to supplement and fill gaps in our evidence base

Accessible

Single source of standardized information that is up to date, transparent and openly accessible for everyone

Natural England NCEA Projects



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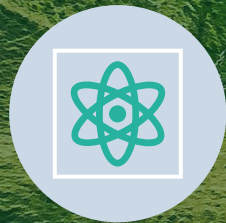
**Mapping and Earth
Observation**



England Peat Map



**Field Data
Collection: Soils,
Habitats and
Landscape**



Citizen Science



**Data
Engagement and
Analysis**

OFFICIAL

NCEA Partners: Defra, Cefas, Environment Agency, Forest Research, Natural England, JNCC, Marine Management Organisation, Royal Botanic Gardens Kew, UK Centre for Ecology and Hydrology

England Ecosystem Survey

EES will let us compare different habitats and land use types across the country, and see how they change over time.

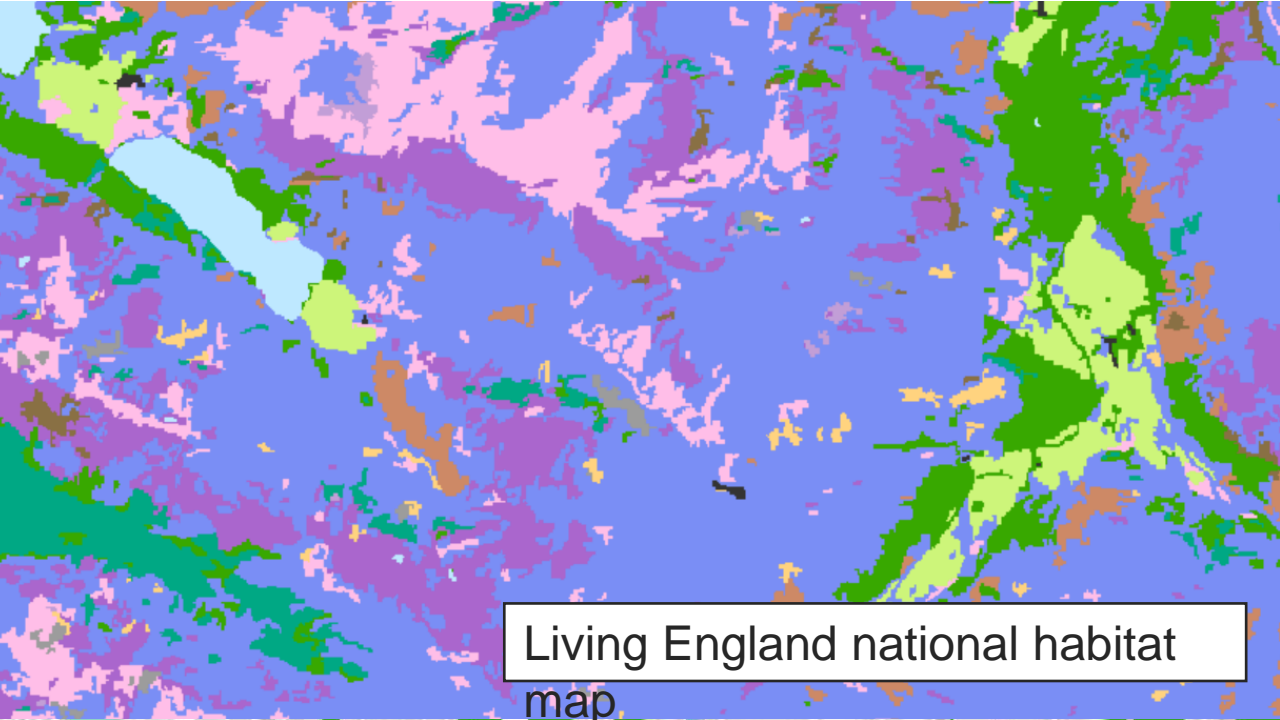
It may be **England's most ambitious field survey ever.**

Data on

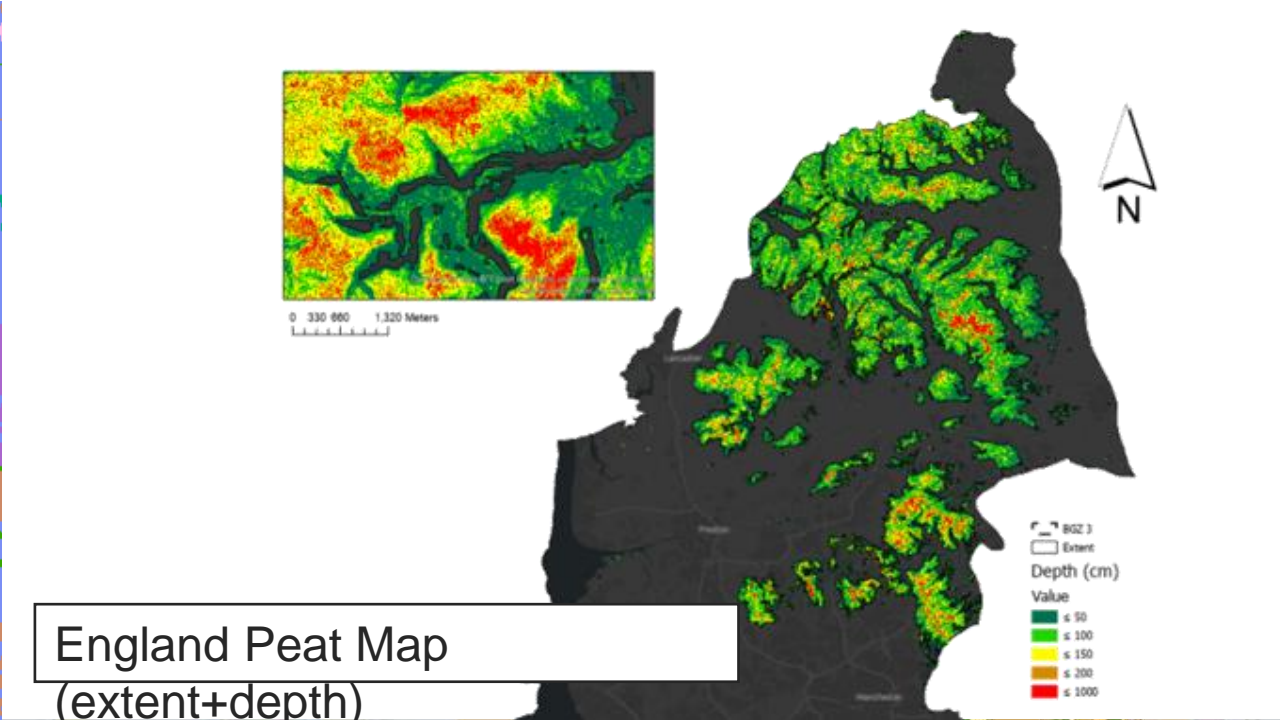
- soils – 24 parameters, depending how you count
- vegetation cover
- landscape change
- hedgerows, veteran trees, ponds – incl. pond eDNA testing

Data publication starts 2025, data at national and regional scales

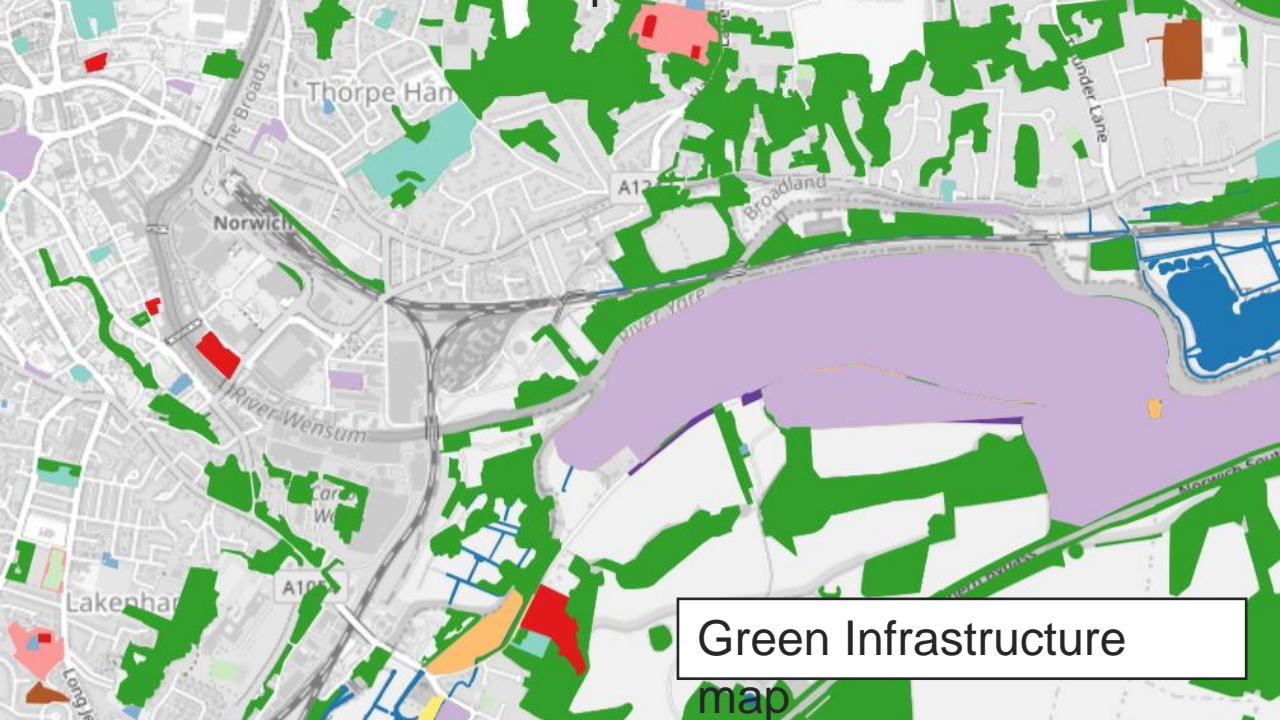




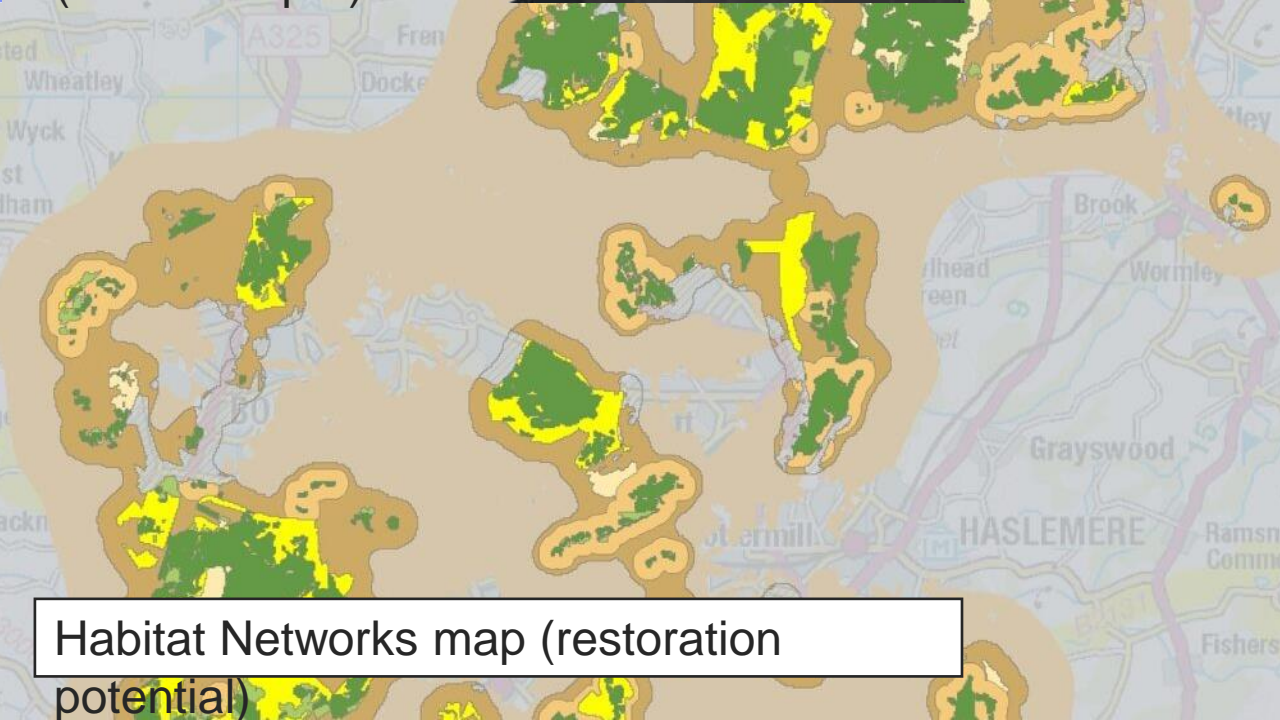
Living England national habitat map



England Peat Map (extent+depth)

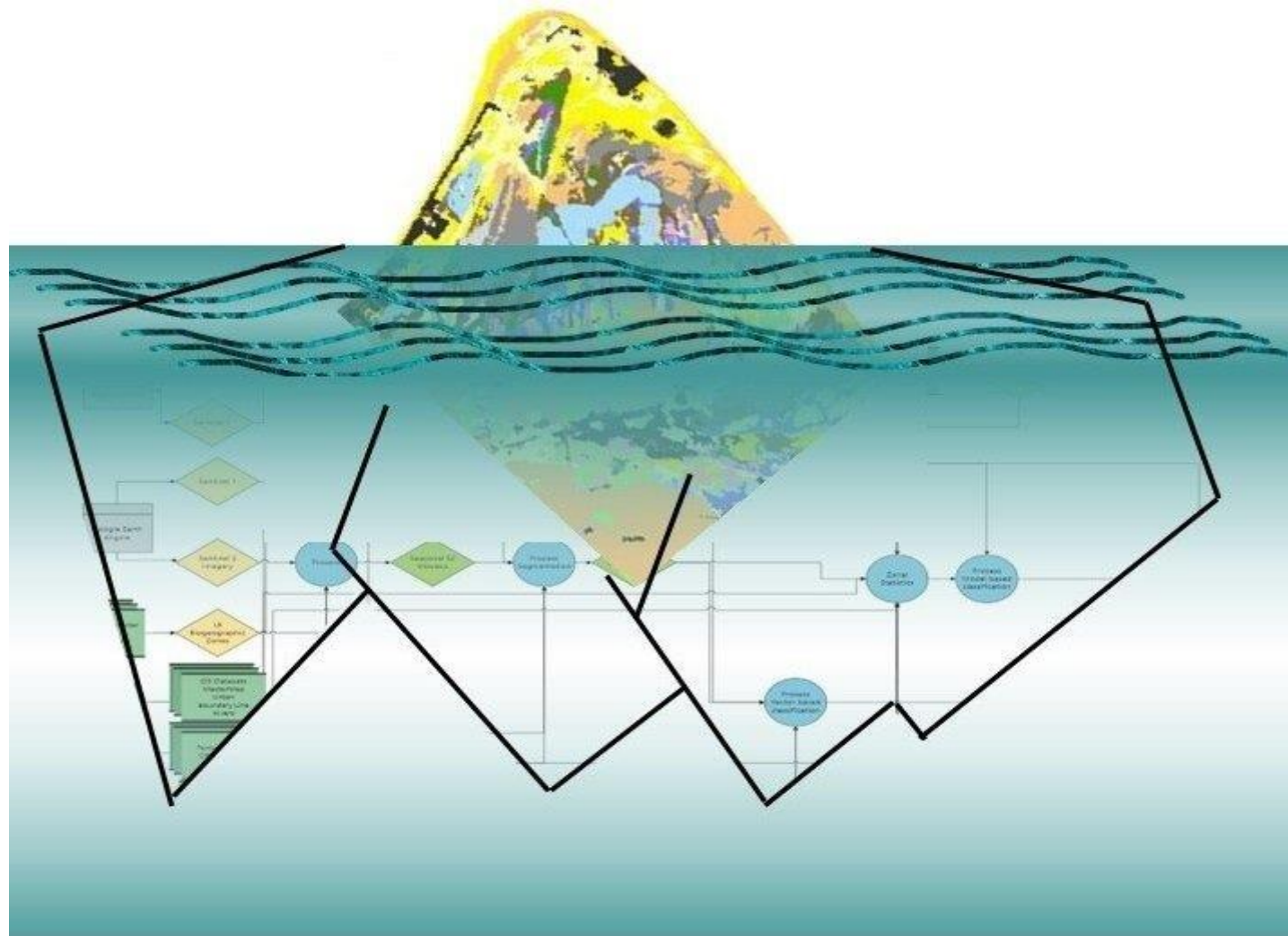


Green Infrastructure map



Habitat Networks map (restoration potential)

Maps and big data projects are like icebergs...



- Mobilizing our data for use in open-access products and policy delivery
- Facilitate data sharing that is sensitive to stakeholder's needs
- Producing Policy relevant Analysis Ready Data for all to access and use
- Better data analysis at every stage of complex projects – "Reproducible Analytical Pipelines"

Working with data support organisations to map data flow and unclog bottlenecks (targeted interventions) in the wider landscape

- UKCEH, BRC, NBN

Building on partnerships to create new ways of visualizing and signposting valuable evidence

- BSBI - Building partnerships to unlock the potential of England's species recording e.g. **Botanical Heatmaps** to inform tree planting with ability to prevent the damage of irreplaceable plant species
- RSWT - Empowering the community that underpins Local Wildlife Sites to explore the challenges to maintaining the LWS system, and challenges to sharing information about them

Working with innovative data collection approaches

- eDNA - Working with NBN and GBIF to ensure our records are can be mobilised easily onto the NBN Atlas, are FAIR and fully supported with metadata
- Improve UKSI alignment of DNA-derived species records and reference sequence libraries, developing tools to automate both

A key partnership: National Biodiversity Network



UK's largest partnership for nature, bringing together more than 200 organisations in a voluntary partnership.

Provides huge benefits to NE, Defra, govt. and the biological recording community

We've worked with NBN and partners to:

- Mobilise 90,000 records for amphibians and reptiles and 260,000 for myriapods and isopods
- Integrate AI image classification into iRecord
- Improve consistency of species taxonomy
- Understand how data flows from national Recording Schemes
- Undertake extensive user research to define community needs + data applications
- Upskill NE staff to contribute to NBN Atlas and use the data better



Why are we committed to engagement?

70% of environmental records come from volunteer driven communities

But... many of those records are not currently available to end users, and data is often fragmented, methodologically problematic etc. etc.

The work and data produced underpins...

- NE's day-to-day operations
- Reporting on international commitments and 25YEP
- ***Our collective understanding of the state of nature in this country***

We want to understand how NE and Defra group can work together better with the wider community to support nature recovery





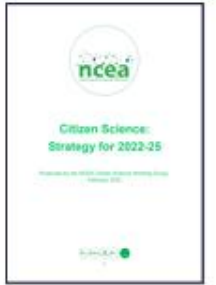
- 1 Already generates & contributes much of the data used in assessments
- 2 Significant past investment and review to combine and use existing data, but much less in aligning and combining survey effort.
- 3 The CS survey role is widening & more of the public can participate.



Citizen Science Delivery Group: 2021



Citizen Science Strategy: 2022

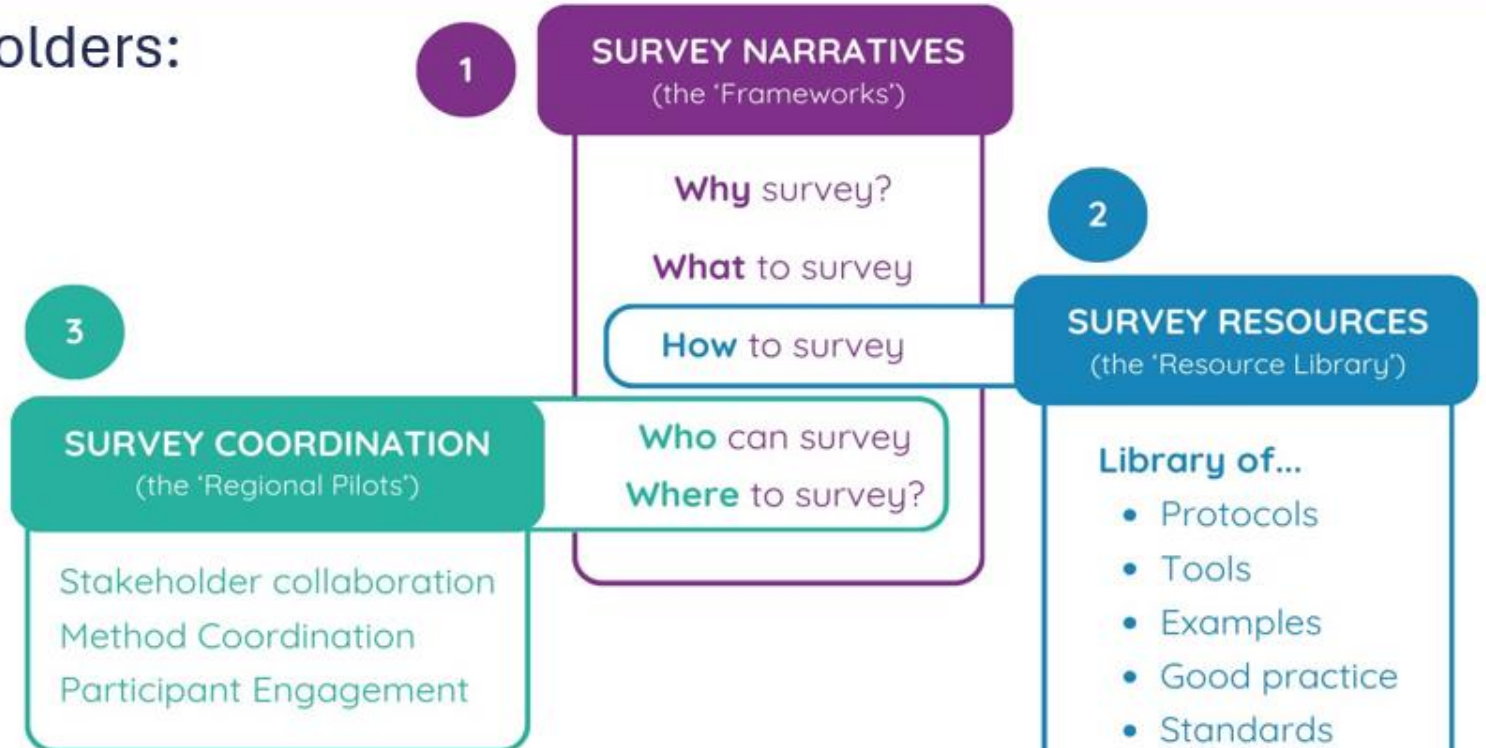


3 Pillars of R&D targeting stakeholders:

1 **Convene** Frameworks

2 **Align / Enable** Practice

3 **Coordinate** Cooperation

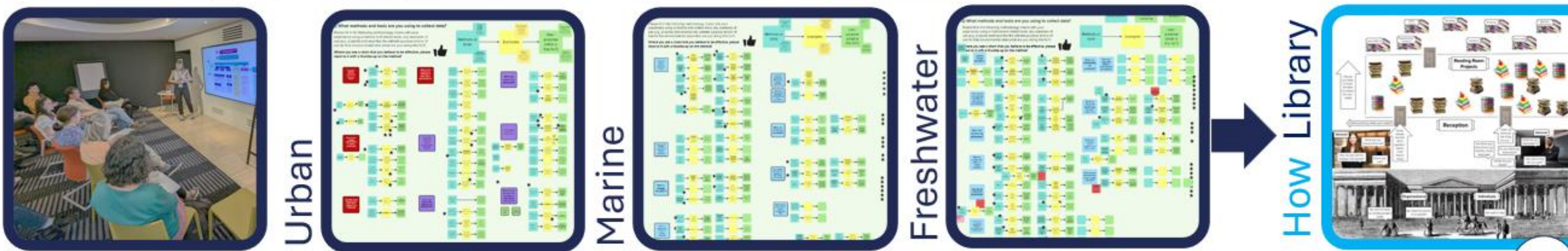


Convening & Aligning Stakeholders : Survey Frameworks + Library

1 **DONE** Produced a Framework that helps map assessment needs to survey approaches and practice.



2 **LIVE** Now mapping survey practice to assessment needs for 3 of 8 Natural Capital ecosystems...



3 **NEXT** Identify combinations of survey practice, which together, address shared assessment needs.

Coordinating Survey Effort : Local Pilots + Survey Cooperatives

1 **LIVE** Research to combine local & national stakeholder forces & resources

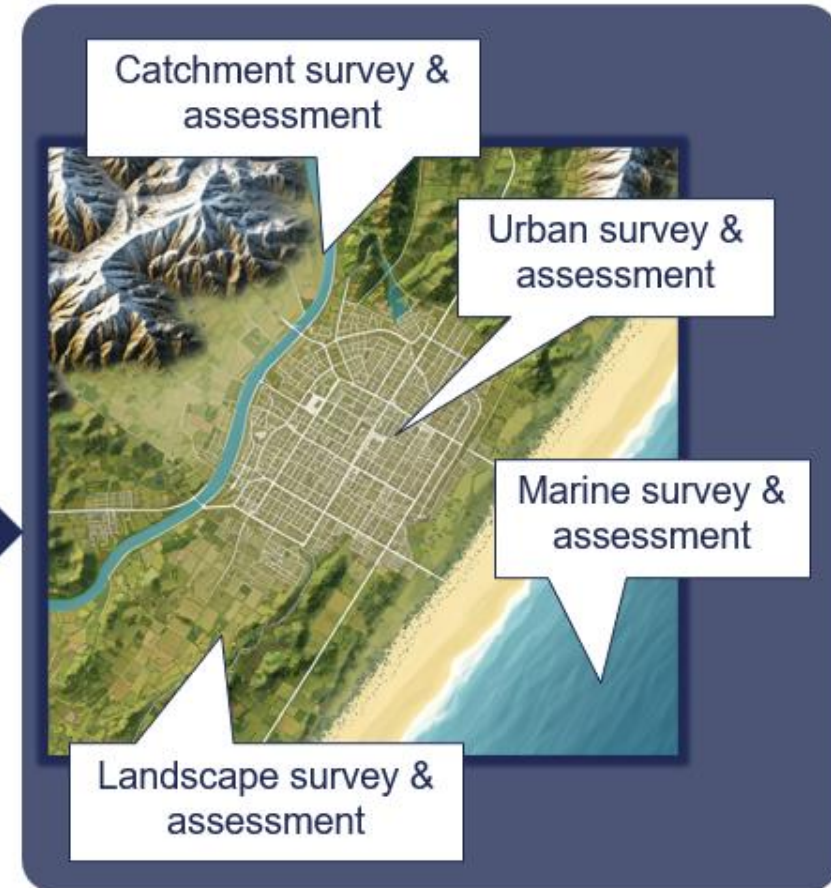
- Hubs to help a) Stakeholders Convene, Align & Coordinate Survey Effort
- b) Engage, Enable & Coordinate Participants (Volunteers)



2 **LIVE** Evaluation project to distil learning & successes

3 **NEXT** Establish **Survey Cooperatives ...**

- **City Survey Cooperatives for Urban Ecosystems**
- **River Catchment Cooperatives for Freshwater Ecosystems**
- *Coastal Cooperatives for Coastal / Marine Ecosystems*
- *Landscape Recovery Ecosystem Survey Cooperatives*



- 1. Integrated Survey** professional / volunteer / technology survey
- 2. Communities of Practice** advancing science, survey & assessment
- 3. Stakeholder Collaboration** more local and national cooperation
- 4. Accessible Survey Resources** empowering & aligning participation of the nation
- 5. Survey Cooperation** replicable & scalable collaborative survey model
- 6. Wider Society Participation** reach wider government, industry & community
- 7. Infrastructure Investment** prioritise management solutions & investment
- 8. Natural Capital Approach** NC science & assessment in decision-making



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Natural capital is a shared story