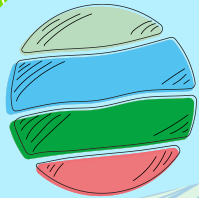


**Ian Lawson,  
University of St Andrews**



# StACCS

St Andrews Centre for **Critical Sustainabilities**

## ***Critical Sustainabilities***

1. **Critical** social science/humanities approaches focus on **structural issues of justice, equity, inclusion, power**
2. **Sustainabilities in the plural**: recognising disagreement on how to define and achieve 'sustainability'

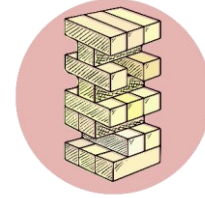
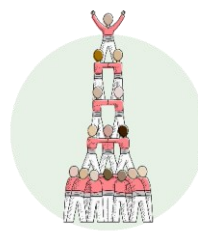
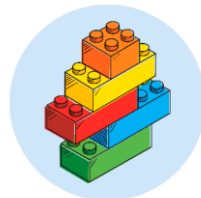
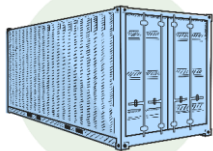
StACCS nurtures research integrating the social sciences, humanities, and natural sciences, aiming for **transformation towards sustainability**

Ian Lawson

[staccs@st-andrews.ac.uk](mailto:staccs@st-andrews.ac.uk)



NETGAIN 11-6-26



StACCS exists to make connections across the **social sciences, humanities**, and natural sciences at the University of St Andrews – and beyond

Some examples:



**International sustainable finance symposium,**  
March 2026



**Surveillance of the environment:**  
drones for ethical, careful, and fundable rewilding (NETGAIN PhD project)



Exploring **place-based** and **cultural** approaches to policy engagement



**'Roots and Shoots'** project,  
working with museums to repair human-nature relations



**StACCS**

St Andrews Centre for **Critical Sustainabilities**

**We welcome new collaborations**

[staccs@st-andrews.ac.uk](mailto:staccs@st-andrews.ac.uk)

More on our **website**:

[staccs.wp.st-andrews.ac.uk](http://staccs.wp.st-andrews.ac.uk)



**Joel Sellors-Moore,  
The National Trust**

# The National Trust

**The National Trust was established in 1895 on a pledge to preserve natural and historical places.**

**Europe's largest conservation charity, looking after:**

- More than 780 miles of coastline
- More than 250,000 hectares of land of which:
  - 131,000ha is leased to tenants
  - 50,000ha of common land
  - 103,100ha of SSSI
  - 39,200ha of woodland
- More than 500 historic houses, castles, parks and gardens and nearly a million works of art



# Our strategy

At the start of 2025, we marked the National Trust's 130th birthday by unveiling hugely ambitious plans for the next decade and beyond, as we launched our 10-year strategy, "People and Nature Thriving".

This strategy follows the largest public consultation ever carried out by the Trust, with more than 70,000 people – including members, volunteers and industry partners – sharing their views on the Trust's work and direction.

At its core are three ambitious 2050 goals and a fourth showing how we will serve them in the next decade. They are:

## Restore Nature

We all need nature to survive, but we've seen a higher depletion of nature on our islands than almost anywhere else in the world. We need to reverse this over the next decade. We'll help people to help nature - and nature will help us all.

## End unequal access

Inequality across our nations means many people don't have enough nature in their lives to be healthy, or enough cultural experience to feel valued. Using all that's been given to the Trust, there's much more we can do, for more people.

## Inspire Millions

We can't deliver the first two goals on our own – millions of people will need to join in. To make sure we're doing our best to preserve and expand our natural and cultural inheritance, our ambition needs to go beyond National Trust places.

## Renew our ways of working

To succeed in a world that's changing fast we'll need to expand our knowledge and skills and be able to share them more widely; taking advantage of the new tools, technologies and approaches that are open to us.



National  
Trust

If you'd like this information in an  
alternative format, please contact:

Joel Sellors-Moore

[Joel.sellorsmoore@nationaltrust.org.uk](mailto:Joel.sellorsmoore@nationaltrust.org.uk)

**Clare Quigley,  
Plantlife**



Clare Quigley

# PhD Proposal for NETGAIN

# Who we are

## Background

- International conservation charity working to secure a world rich in wild plants and fungi.
- 30+ years working across **landscapes, policy, and science** to protect and restore vital habitats, including grasslands, peatlands, and temperate rainforests.
- We manage 24 nature reserves, spanning 4,500 acres and collaborate with a network of global and domestic partners, ensuring our impact is felt worldwide.
- Work with farmers, landowners, businesses, NGOs, community groups and governments.
- We are a registered 'responsible body' and operate in the BNG market through our consultancy arm.



# Our Project Ideas

## 1. Plant and Fungi Biodiversity and BNG

- The habitat-based statutory biodiversity metric has been demonstrated to be an ineffective proxy for wider biodiversity outcomes (Duffus et al., 2025a, 2025c; Hawkins et al., 2022; Marshall et al., 2024).
- Marshall et al. (2024) also highlight cropland as a particularly stark example: condition is fixed at N/A for all arable habitats, yet their data show cropland supporting more Red Listed plant species than almost any other habitat type in the dataset.

### Potential research questions

- Where do threatened populations occur relative to habitat parcels as defined and scored by the metric?
- Which habitat types and scoring categories most consistently fail to capture threatened plant presence?

### Inter-disciplinary component

- Explore how the metric's species blind spots could be addressed through reforms to condition scoring, trading rules, or supplementary species-focused survey requirements.
- Butler et al. (2025) show that community acceptance of BNG is shaped by species richness - if locally distinctive or rare plants are invisible to the metric, communities may be losing something they value without it being registered in BNG accounting.



# Our Project Ideas

## 2. Ecosystem Services Provided by Species Rich Grasslands

- Grasslands support clean water and air, mitigate flooding events, food production, pollination services, nutritional benefits to livestock, climate change mitigation and adaptation through carbon sequestration and long-term storage.
- Yet they are **underrepresented in nature markets** due to a lack of robust data on their ecosystem service value.

### Potential research questions

- What is the relationship between grassland species richness and condition and water ecosystem service provision?
- Quantifying pollination services from species-rich grasslands and their economic value to surrounding farmland
- How does species-rich grassland condition affect livestock productivity, and what is that worth?

### Inter-disciplinary component

- Ecology + Economic valuation



**Mark Wilson,  
BTO**

# NETGAIN project idea - Peatland Restoration

- 25K ha restored in past 10 years. 1.8 million ha still to go!
- £90 million spent – aiming to spend £250 million by 2030
- Very little information on benefits for birds, also other taxa
- Opportunity to improve understanding both through:
  - Analysis of existing data
  - Collecting new information



**Birds  
Science  
People**

**Mark Wilson, BTO Scotland**  
**[mark.wilson@bto.org](mailto:mark.wilson@bto.org)**



**Santiago Montoya-Blandon,  
University of Glasgow**

# NETGAIN Annual Conference and Project Incubator

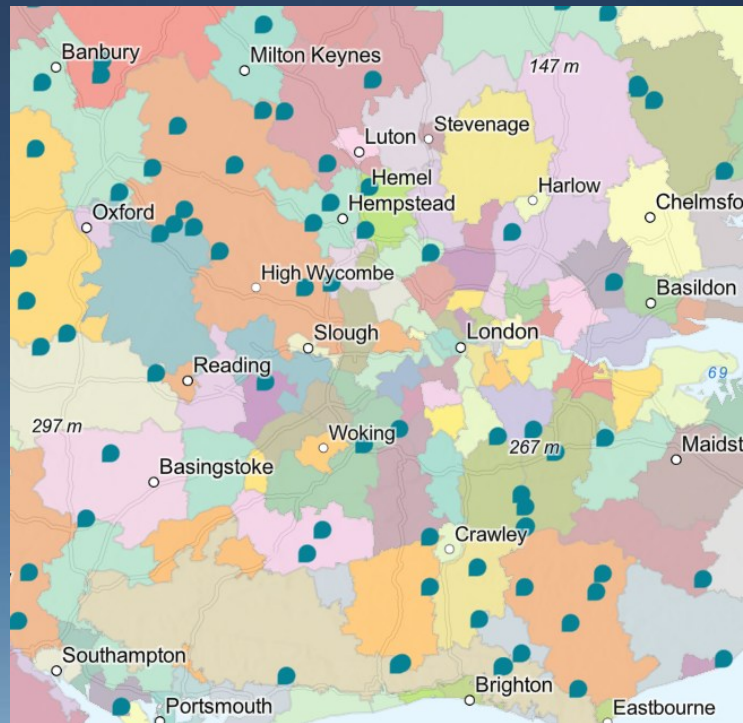
Pitch: “Co-evolution of Biodiversity  
Net Gain and Diffusion Channels”

Santiago Montoya-Blandon  
Lecturer in Econometrics  
ASBS, University of Glasgow



## Biodiversity Net Gain (BNG) Adoption

- Policies aim to increase BNG at many scales
- BNG unit performance has a diffusion (spatial) pattern: ***higher BNG replacement in land surrounded by those with high BNG***
- Diffusion channels are **also incentive-based**:
  - ❖ Local policies
  - ❖ Ecological spillovers
  - ❖ Clustering
  - ❖ Institutions
  - ❖ Land markets



## BNG Map Section

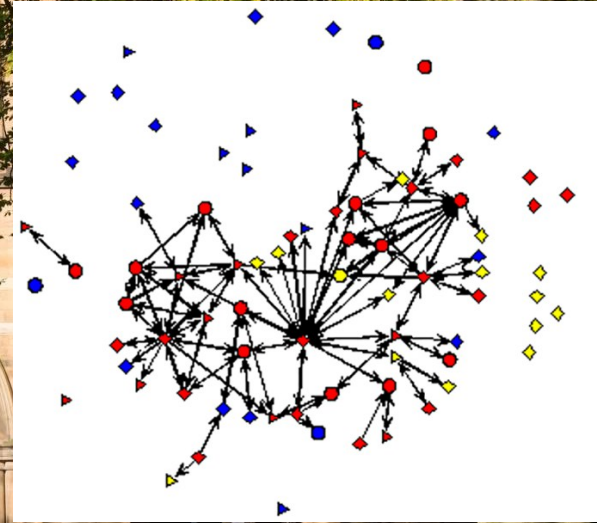
(<https://bng-map-wildlifetrusts.hub.arcgis.com/>)

## My work

- Develop methodologies to assess **diffusion** and **spillovers** of (economic) outcomes when **network / spatial connections co-evolve with outcomes** (e.g., R&D adoption, mental health, wages, tax policies)

## Where you / partners come in

- BNG adoption and performance within this framework
- PhD studentship / interdisciplinary research agenda
- Impactful synergies with policy actors shaping BNG



Farmers' social network grouped by pro-habitat attitudes (Albizua et al., 2021)<sup>1</sup>

<sup>1</sup>Albizua, A., Bennett, E. M., Larocque, G., Krause, R. W., & Pascual, U. (2021). Social networks influence farming practices and agrarian sustainability. *PloS one*, 16(1), e0244619.

# Research questions

(If you're like me and cannot help but think in terms of research questions, I leave you a few to ponder)

- Landowner's BNG adoption attitudes and performance compliance when spillover channels are **endogenous** (*jointly determined* with BNG)
- Carbon Market adoption and performance under similar conditions?
- Social learning of pro-environmental and nature-positive attitudes at many scales:  
individuals, firms, organizations, local authorities, multilateral institutions
- Network / spatial effects of nature market **pricing** and **valuation**

# Thank you for your attention!

## Contact details

Name: Santiago Montoya-Blandón

Email: [Santiago.Montoya-Blandon@glasgow.ac.uk](mailto:Santiago.Montoya-Blandon@glasgow.ac.uk)

Address: Room 620, ASBS Building, 2 Discovery Pl, G11  
6EY

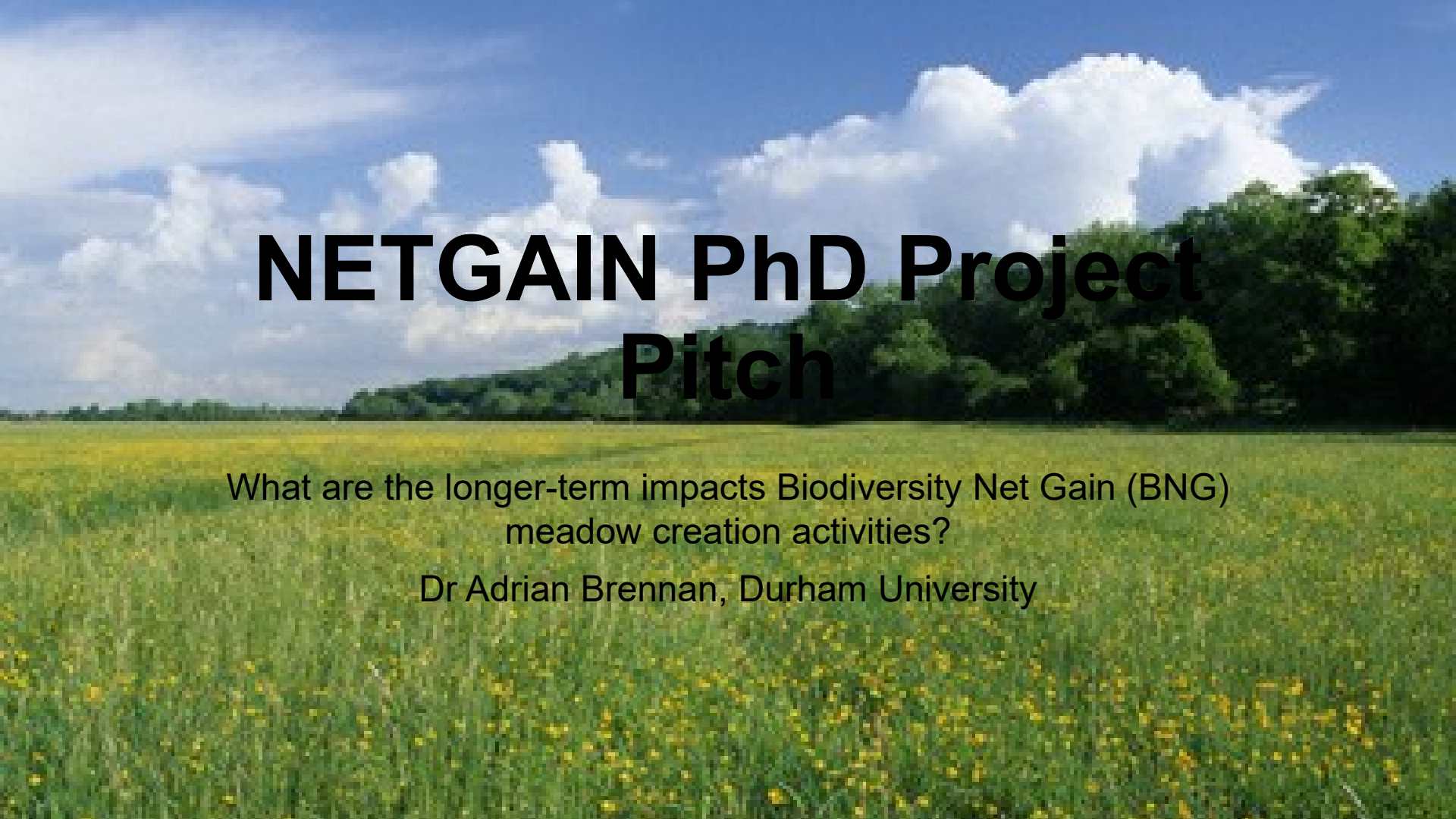


#UofGWorldChanger



@UofGlasgow

**Adrian Brennan,  
Durham University**



# **NETGAIN PhD Project Pitch**

What are the longer-term impacts Biodiversity Net Gain (BNG)  
meadow creation activities?

Dr Adrian Brennan, Durham University

# **Related project: Will Biodiversity Net Gain (BNG) result in biodiversity net loss and negligible socio-economic gain? A case study of BNG in England.**

Restoration of meadows is increasingly important for biodiversity recovery and agri-environmental delivery in the UK.

The project seeks to evaluate whether BNG nature markets can deliver biodiversity gain at genetic and functional levels.

It will address a highlighted lack of robust scientific evidence supporting England's BNG protocols and practice.

Alignment of socio-economic theory with science and practise will be explored by gauging landowners' perceptions.



# Project pitch: what happens next?

What are the longer-term impacts Biodiversity Net Gain (BNG) meadow creation activities?

How do restored meadows evolve over time in response to their starting conditions and ongoing management?

Do restoration projects achieve their BNG aims over time?



# My project contribution

A plant ecological geneticist, with prior experience working on diverse plant systems, who can lead on the evolutionary impacts aspects of the project: do restoration activities leave long-term genetic signatures?



Hybrid swarm of red and white campion

# Desired team

Land management organisations with a history of meadow restoration and links to landowners

Social scientists interested in drivers of land management practise

Landscape ecologists



**Richard Streeter,  
University of St Andrews**

# Integrating UAV datasets and ground-based measurements to understand environmental change



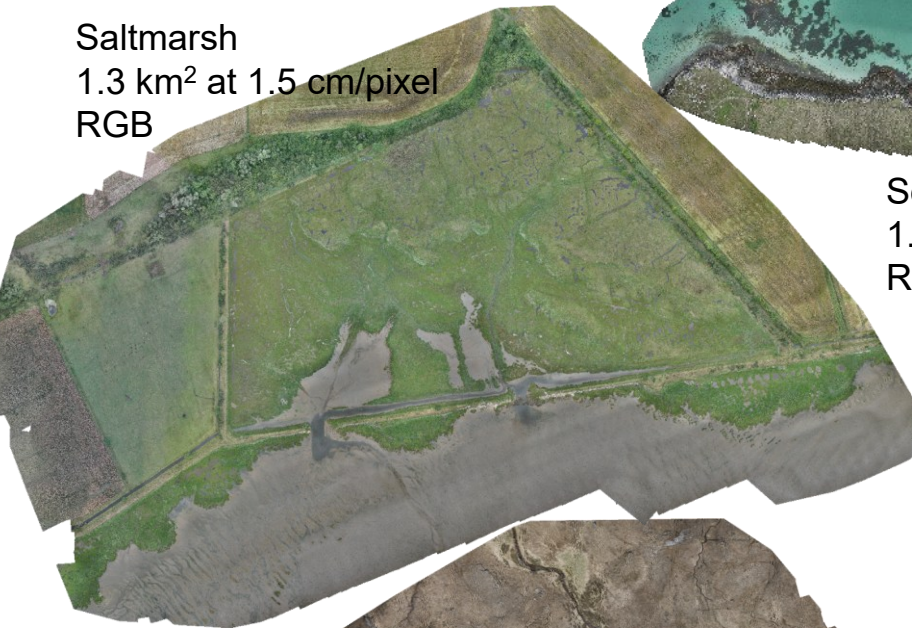
Dr Richard Streeter, Senior Lecturer  
[rts3@st-andrews.ac.uk](mailto:rts3@st-andrews.ac.uk)



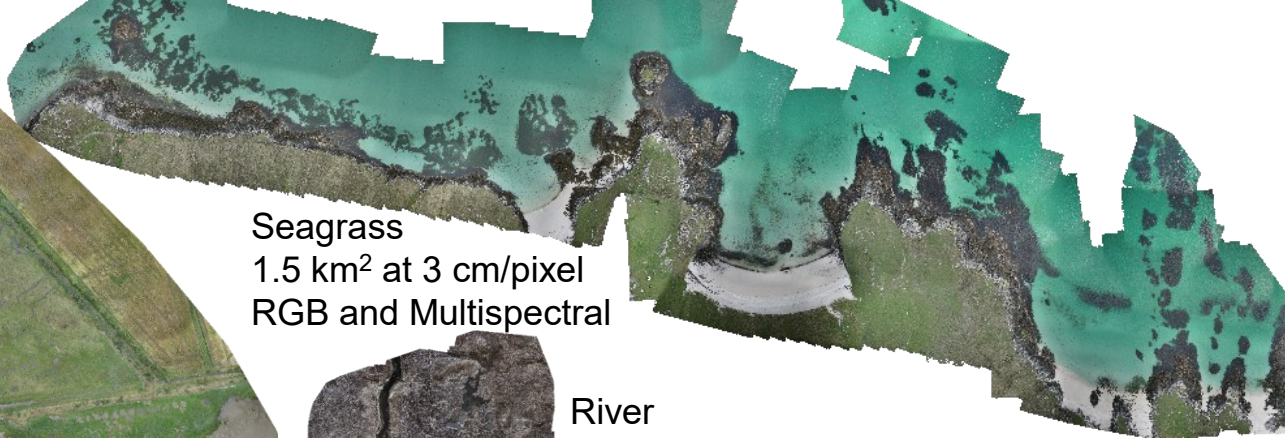
University of  
St Andrews

School of Geography and  
Sustainable Development

Saltmarsh  
1.3 km<sup>2</sup> at 1.5 cm/pixel  
RGB



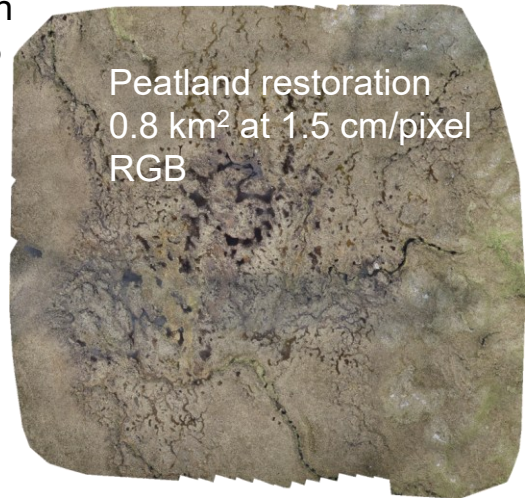
Seagrass  
1.5 km<sup>2</sup> at 3 cm/pixel  
RGB and Multispectral



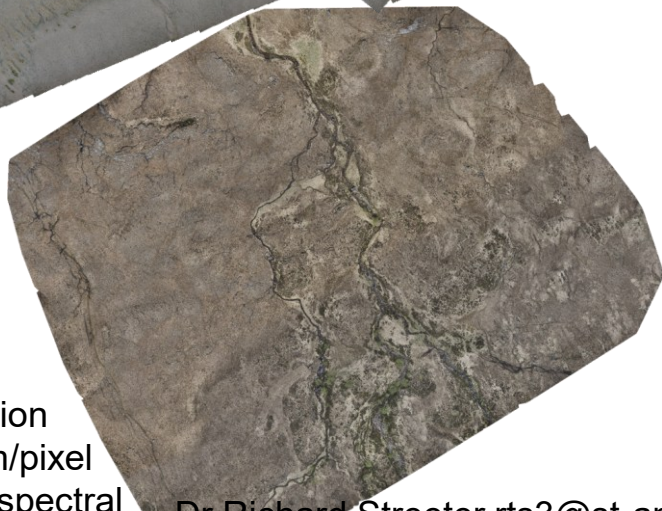
River  
regeneration  
1 km<sup>2</sup> at 1.5  
cm/pixel  
RGB



Peatland restoration  
0.8 km<sup>2</sup> at 1.5 cm/pixel  
RGB



Tree regeneration  
0.4 km<sup>2</sup> at 3 cm/pixel  
RGB and Multispectral



Dr Richard Streeter [rts3@st-andrews.ac.uk](mailto:rts3@st-andrews.ac.uk)



University of  
St Andrews

School of Geography and  
Sustainable Development

## Project ideas

How can monitoring systems efficiently scale?

Integrating satellite remote sensing and UAV remote sensing of environmental metrics to improve monitoring to meet NETGAIN goals across diverse terrestrial, coastal and marine environments

Upscaling from plot to landscape and incorporating multi-modal datasets

## Collaborations:

The economics of measurement

The incorporation of spatial data information into decision making systems

Existing ground datasets to combine with UAV survey

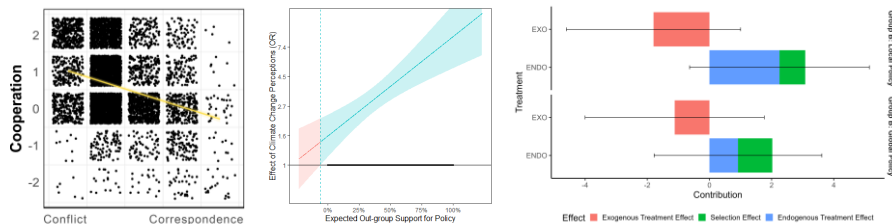
Interesting sites (restoration, regeneration, degradation) for developing new metrics or methods

Technical collaboration (e.g. new ML approaches, different sensors)



**Simon Columbus,  
University of St Andrews**

## Prior Research



### 1 MENTAL MODELS

Rules

Incentives

Social expectations

Preferences

CRISP model (Gächter et al., 2024)

*Example:*

Perceptions of self- vs. collective interest predict (a) cooperation (b) donations (c) policy preferences

### 2 PROCEDURAL PREFERENCES

Preferences for procedures to govern collective action  
How democratic procedures shape policy compliance

*Example:*

Democratic climate policies increase compliance vs. top-down mandates

### 3 METHODS

Surveys /  
survey experiments

Behavioural  
experiments

Field  
experiments

## Research Pitch

### 1 Increasing Uptake of Nature Markets

*What mental models prevent/promote engagement with nature markets?*

- Elicit mental models of different stakeholders (e.g. using CRISP)
- Identify barriers & motivations for market participation
- Field experiments to increase uptake among key stakeholder groups

↑ builds on sections 1 & 2

### 2 Aversion to Nature Markets

*To what degree do people consider nature markets 'repugnant transactions'?*

- (Some) people oppose market-based solutions to conservation and climate change
- Existing accounts of repugnant goods (commodification, irreparable harm) fail to fully explain aversion to nature markets
- Can insights from markets for other repugnant goods (e.g. organ exchanges) make nature markets more appealing?

↑ builds on sections 1, 2 & 3

**Gina Cavan,  
Environment Agency  
(presented by Chris Sutherland)**

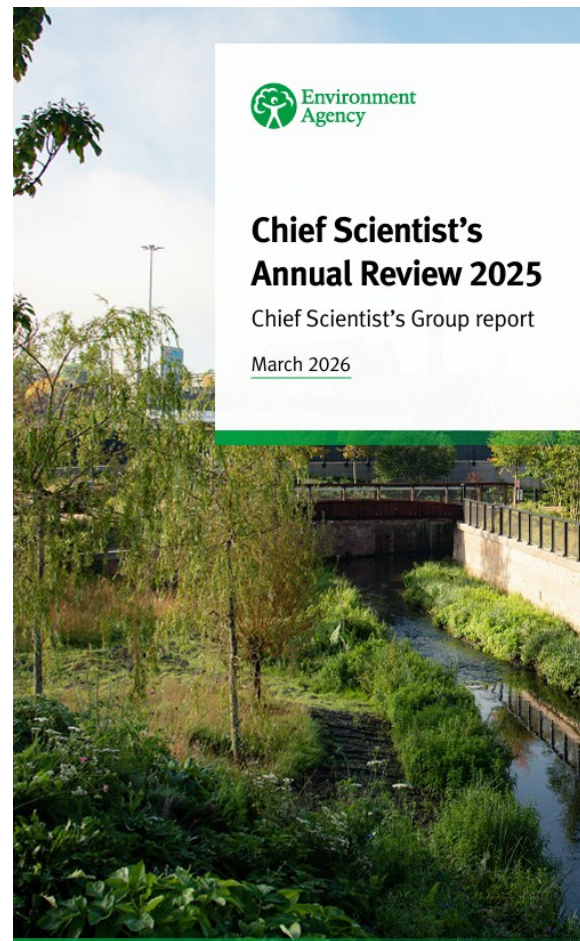
# Environment Agency - Chief Scientist's Group

Leads on science, research, analysis and evaluation for the Environment Agency.

## Our role:

- We identify the gaps in our evidence and address these by undertaking research ourselves or by influencing and working in partnership with external bodies to deliver more of the evidence we need.
- We are a research department focused on four research themes. **Nature-based solutions** is a priority area within our Climate Adaptation and Resilience research theme.
- Find out more in the [Environment Agency Chief Scientist's Annual Review 2025](#)

**Contact:** Dr Gina Cavan, [gina.cavan@environment-agency.gov.uk](mailto:gina.cavan@environment-agency.gov.uk)



# What are we interested in?

We would welcome the opportunity to contribute to projects in these or similar topic areas:

- **Scaling evidence** – What evidence is needed to support the scaling of nature-based solutions across different places and contexts?
- **Policy integration** – How does Net Gain align with wider policy frameworks, and where are there gaps or tensions?
- **Governance & stewardship** – What enables effective delivery and long-term management of nature-based interventions?
- **Equity & place** – How do Net Gain outcomes vary across different places and communities, and what does this mean for fairness?
- **Power & decision-making** – Who shapes decisions about land use and nature recovery, and how does this influence outcomes?

**Contact:** Dr Gina Cavan, [gina.cavan@environment-agency.gov.uk](mailto:gina.cavan@environment-agency.gov.uk)

## Seeking collaborations

We would welcome the opportunity to contribute to projects in these or similar topic areas.

The Environment Agency can offer:

- A research-active department (PSRE status) with strong links between science, policy and delivery
- Expertise in nature-based solutions, green infrastructure,

climate adaptation and resilience, alongside broader operational experience

- Experienced PhD supervision and research support

**Contact:** Dr Gina Cavan, Lead Scientist for Land Research

[gina.cavan@environment-agency.gov.uk](mailto:gina.cavan@environment-agency.gov.uk)