

10.30 **Coffee**

10.30 **Welcome** Marc Metzger, ESCom Co-Chair

10.45 **How ecosystem services support One Planet Prosperity** Nicola Melville, SEPA

11.15 **Planting woodlands for carbon and ecosystem services** James Hepburne Scot, Forest Carbon Ltd

11.45 **ESCom on Oppla – new community resource** Paul Mahoney, Oppla

12.00 **Lunch, networking and posters**

12.45 **Oppla – registration & adding content** Paul Mahoney, Oppla

ESCom – what should ESCom do next? Jan Dick, CEH

13.45 **5-minute flash talks followed by 20 minutes questions**

- **What are stakeholder views on value of Long Term Socio Ecological Research in the Cairngorms National Park?** Jennifer Holzer, Israel Institute of Technology
- **How can natural assets based social innovation support rural Scotland?** Maria Nijnik, James Hutton Institute
- **What are the tensions between plan-led and place-led approaches to green infrastructure?** Jessica Maxwell, James Hutton Institute
- **How and where to manage natural capital sustainably?** Chloe Bellamy, Forest Research
- **What is the common ground and disagreement in Scottish woodland expansion visions?** Vanessa Burton, The University of Edinburgh

14.35 **Coffee and networking**

15.00 **5-minute flash talks followed by 20 minutes questions**

- **Do current policy instruments support the delivery of multiple ecosystem services?** Alba Juarez Bourke, James Hutton Institute
- **How can we integrate ecosystem services in impact evaluation? Lessons learnt from three SNH projects.** Donatien von Rohland, Scottish Natural Heritage
- **How can ecosystem services support decision-making in publicly owned plantation forests?** Louise Sing, Forest Research / The University of Edinburgh
- **An Ecological Network Tool for Planners and Developers.** Andrew Rattey, Forest Research
- **Do healthier ecosystems mean healthier people?** Scott Herrett, James Hutton Institute

15.50 **Short report back from workshops & short plenary discussion**

16.15 **Closing** Marc Metzger and Jan Dick, ESCom Co-Chairs

5th annual ESCom conference

Ecosystem Services in Practice



Marc Metzger, Jan Dick, Abi Gardner

ESComScot - #ESCom18

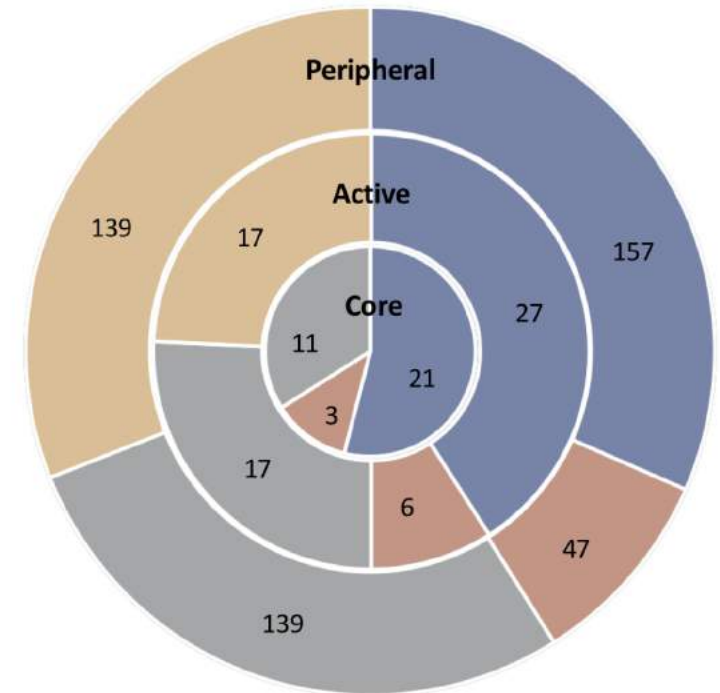
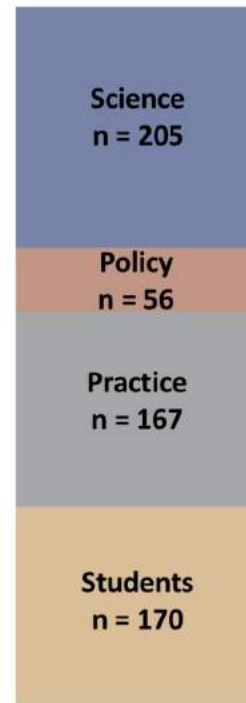
ESCom aims

To become a community of practice for ecosystem services research, decision-making and natural resource management in Scotland.

- Encourage dialogue between Science, Policy and Practice
- Align Scottish ecosystem services research
- Organise and promote events to support knowledge exchange

ESCom 2014 - 2018

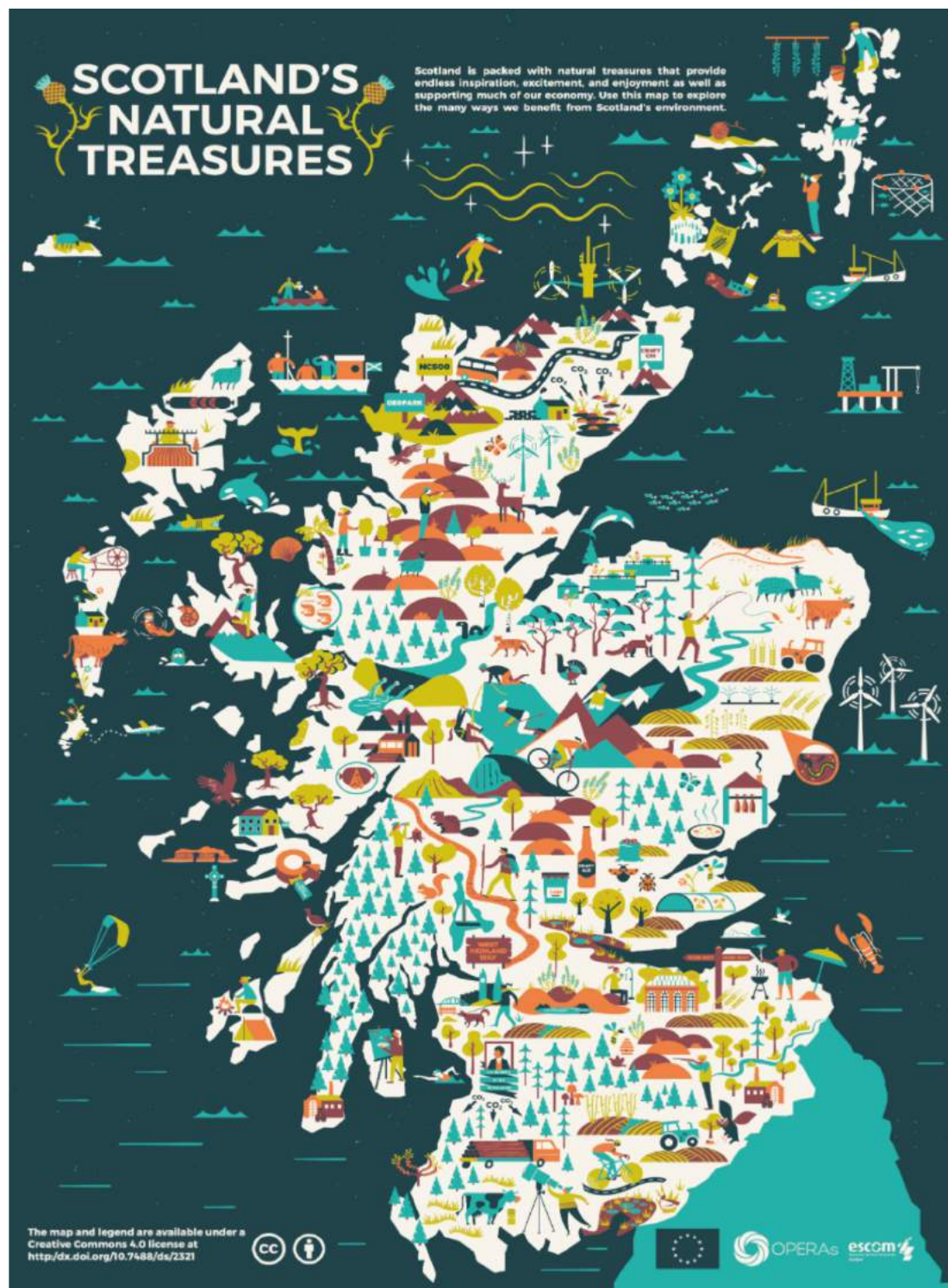
- 24 events
- > 1000 attendees
- >100 active members
- science, policy, practice & students
- >700 twitter followers
- 20 blogs
- 5 newsletters
- 'an identity'



Activities

- Events
 - Jerrah forest excursion
 - Bob Costanza panel discussion
 - Connectivity workshop
 - Forest vision workshop
 - Green infrastructure pie and pint night
- Foster collaboration
- Website & social media
 - Blogs, newsletter, twitter

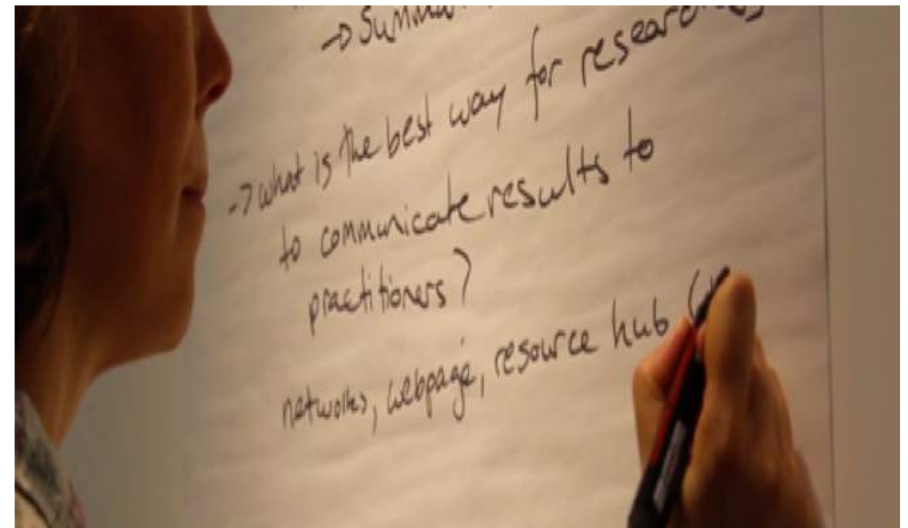




What next for ESCom?

The screenshot shows the ESCom Scotland website. At the top left is the ESCom logo with the tagline 'Ecosystem Services Community Scotland'. To the right, it says 'POWERED BY OPPLA' and includes social media icons for Twitter, Facebook, and LinkedIn. Below this is a search bar with the text 'enter search terms...' and an 'APPLY' button. A blue navigation bar contains links for HOME, ABOUT, 2018 CONFERENCE, MARKETPLACE, CASE STUDIES, and RESOURCES. The main content area is titled 'ESCom Scotland' and includes a 'View Members' button. Below this is a large ESCom logo and a paragraph describing the community as inclusive and open, with members from various sectors. To the left, there is a 'Twitter' section with two tweets from ESCom Scotland. To the right, there is an 'ESCom events' section for the '2018 ESCom Conference' on June 28, 2018, at the Edinburgh Centre for Carbon Innovation. On the far right, a 'Group members' list includes names like Abi Gardner, Marc Metzger, Anja Liski, Chloe Bellamy, Louise Sing, Alexander van der Jagt, Scott Herrett, Neville Makan, Scot Mathieson, Alistair McVittie, Mary Christie, Rebecca Badger, Alessandro Gimona, Kerry Waylen, and Jan Dick. At the bottom, a 'Public posts' section features a large 'oppla' logo and the text 'ESCom is now powered by Oppla!' and 'The ESCom website is now part of the Oppla knowledge hub: an online platform and community for sharing information on natural capital, ecosystem services and nature-based solutions.'

Suggest ideas for future activities!



Today: 5th annual conference

'Ecosystem Services in Practice'

ESComScot - #ESCom18

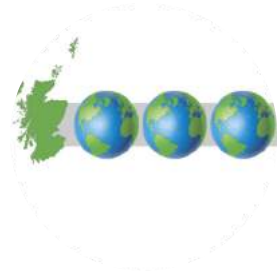


ONE PLANET

PROSPERITY

Nicola Melville
Senior Scientist
Sustainable use of natural systems

Overview



Why change?



Approach



Application

Why change?



**Healthy
ecosystems**

Our natural capital



**Provide
ecosystem services**

Our life support system



**Provide
benefits to people**

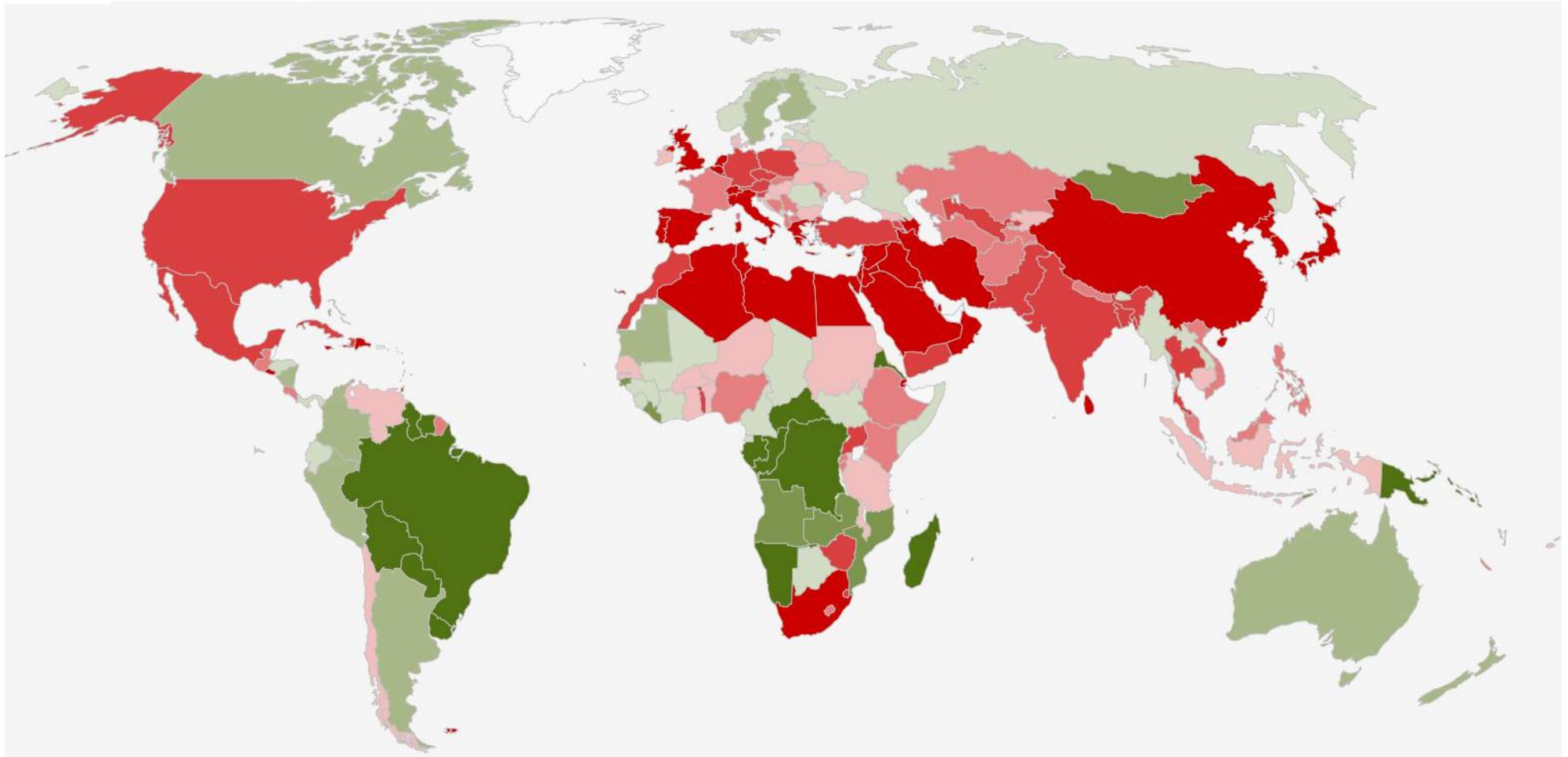
Value • Health • Well-being

What is One Planet Prosperity?



Global Footprint Network®
Advancing the Science of Sustainability

Scotland is in ecological deficit!



Only societies that change will prosper...





Protect and improve the environment

New ways of working

“ENVIRONMENTAL SUCCESS”



Help create health and well-being benefits

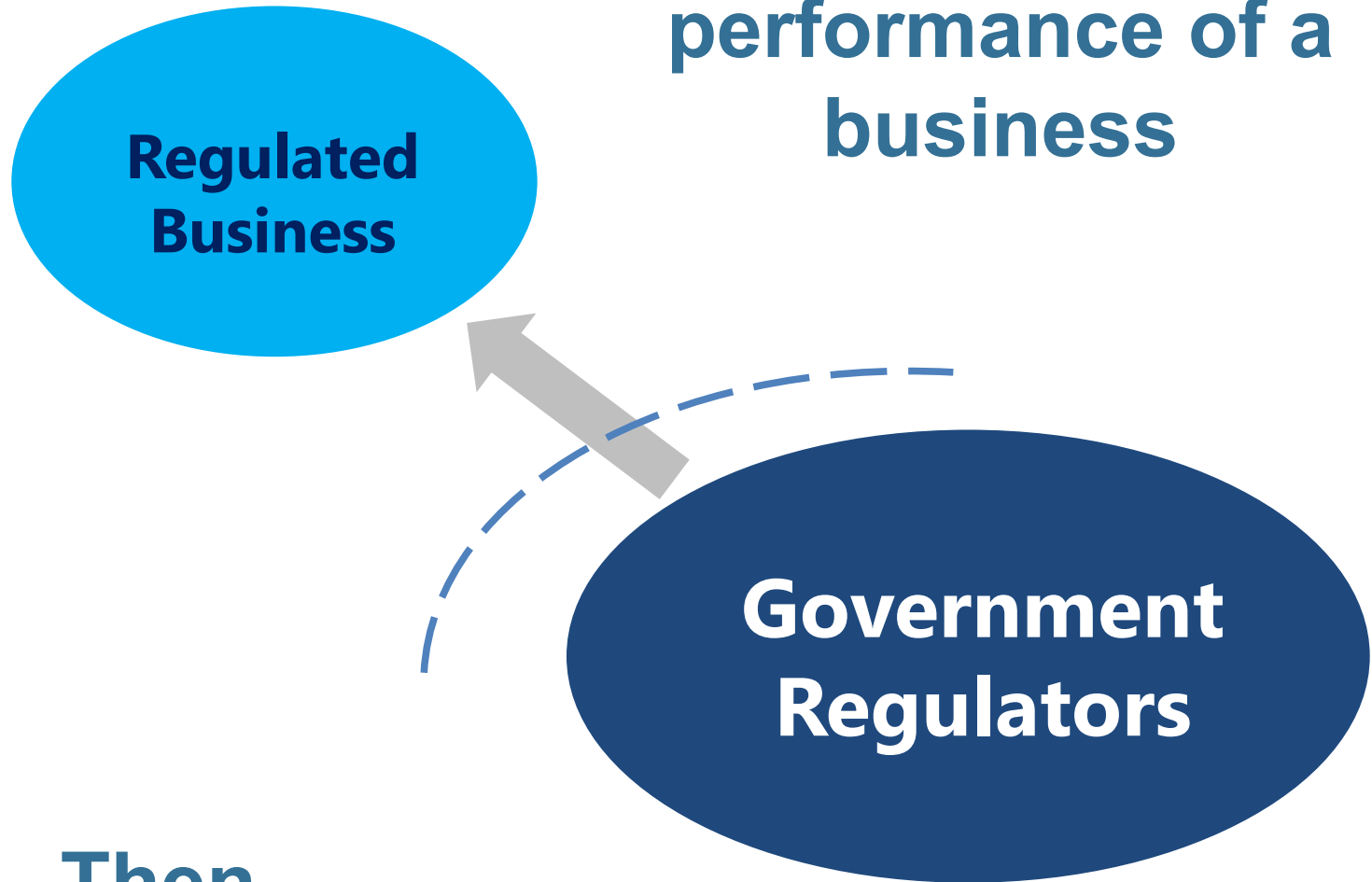
“SOCIAL SUCCESS”



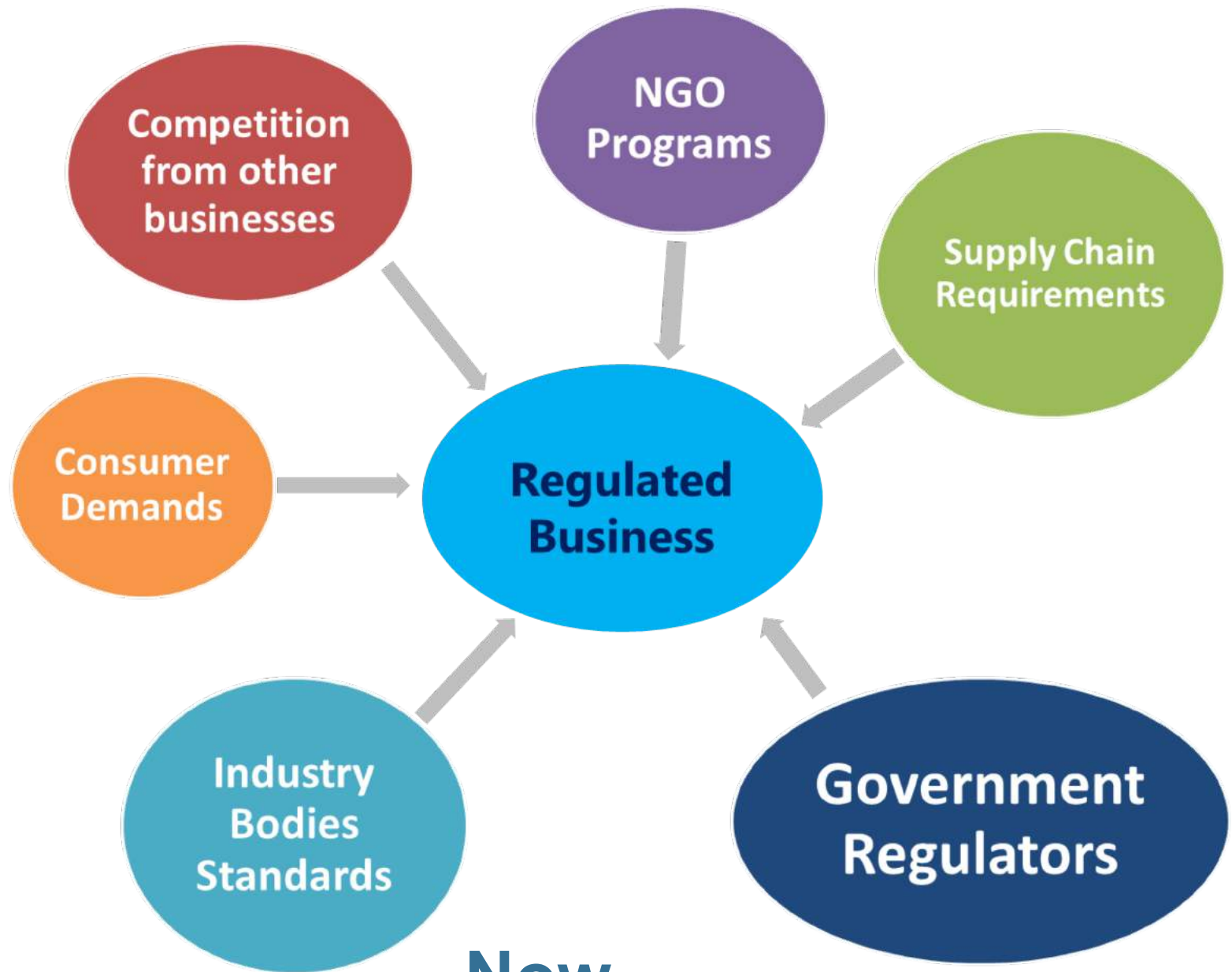
Help create sustainable economic growth

“ECONOMIC SUCCESS”

Influence on the environmental performance of a business



Then...



Now...

Working with businesses



Sectoral approach

- Engagement
- Sector Plans
- Focused on practical outcomes



WHISKY SECTOR

INPUTS



Finance



Raw material: Grain, yeast and water



Logistics: Transport and fuel



Waste packaging materials



Packaging: Barrels, closures, bottles, labels and presentation boxes



By-products e.g. Duff, pot ale and spent lees

The Distillery



OUTPUTS



Waste packaging materials



Final product and packaging



Logistics: Transport and fuel



Retailers: Supermarkets, wholesalers, independents etc.



Consumers: Retail consumers, corporate consumers, restaurants etc.

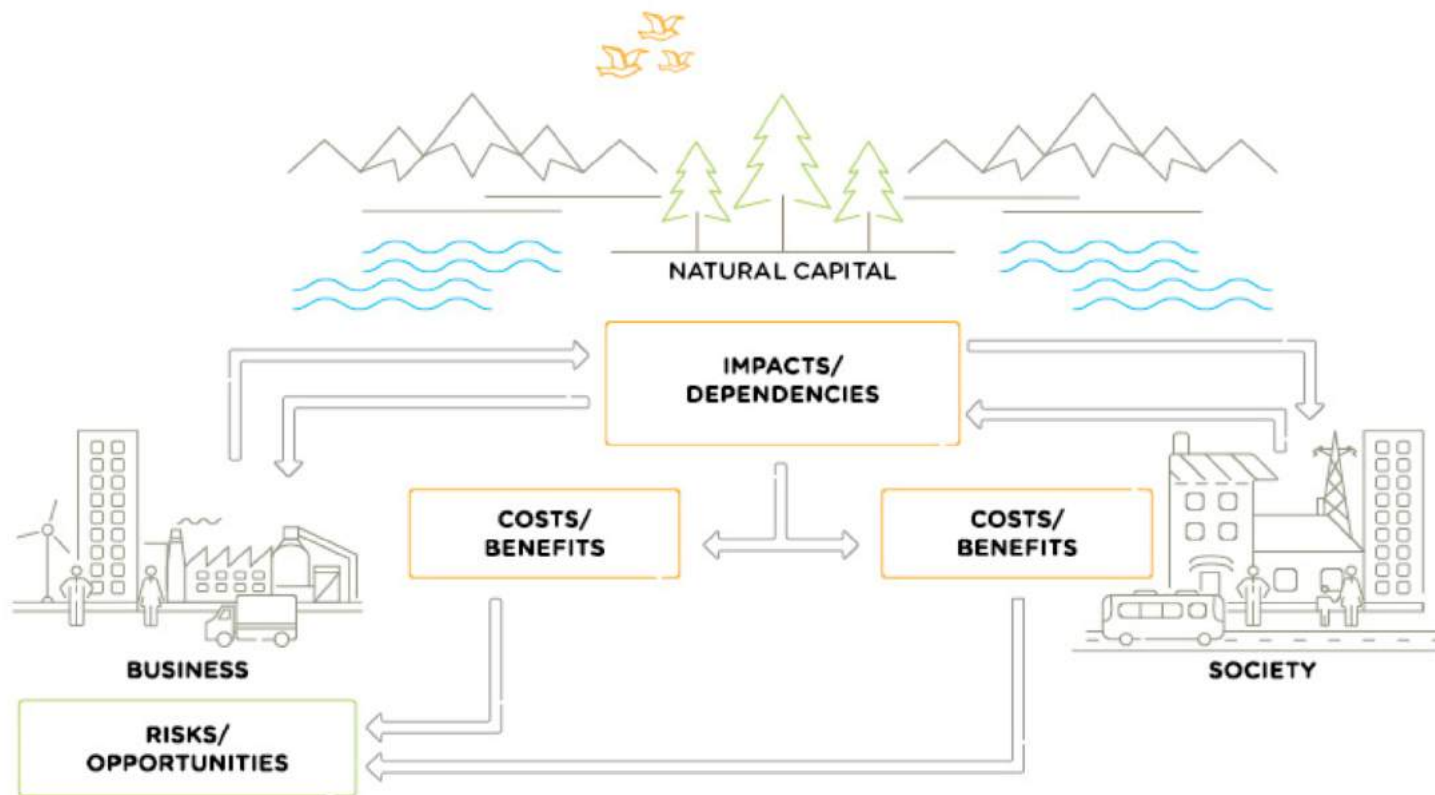


Waste packaging materials



NATURAL
CAPITAL
COALITION

Rolling out the natural capital protocol


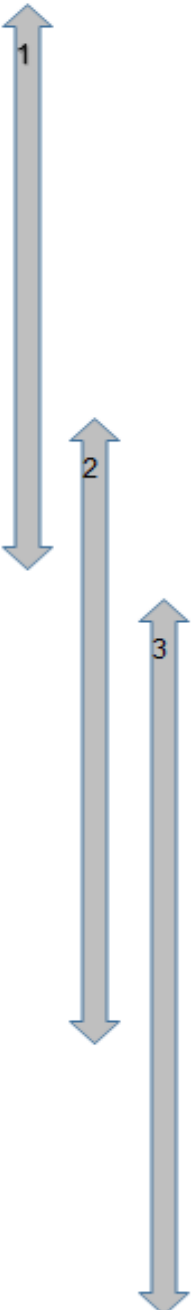







Trial of the Natural Capital Protocol for land-based businesses



Application of the protocol

 <p>FRAME: Why?</p>	<p>1. Get started</p>	<p>Introduced natural capital (NC) as a concept, the protocol and the project/trial</p> <p>Gathered information on the business/enterprises, and became familiar with farm/estate.</p>	
 <p>SCOPE: What?</p>	<p>2. Define the objective</p>	<p>Discussed/agreed objectives for the farm/estate and anticipated business benefits.</p>	
	<p>3. Scope the assessment</p>	<p>Agreed scope of the assessment including organisational focus (farm/estate enterprises and activities) and boundaries (farm/estate boundaries).</p>	
	<p>4. Determine the impacts and/or dependencies</p>	<p>Produced NC asset register and ecosystem services (ESS) delivered by assets, integrating relevant public data.</p> <p>Brainstormed/reviewed key/material impacts and dependencies of farm/estate.</p>	
 <p>MEASURE AND VALUE: How?</p>	<p>5. Measure impact drivers and/or dependencies</p>	<p>Used data gathered to complete qualitative assessment of dependencies and gross impacts of enterprises on NC and ESS using colour-coded scoring</p>	
	<p>6. Measure changes in the state of natural capital</p>	<p>Produced similar assessment of impacts of enterprises on NC and ESS over time/tenancy period.</p> <p>Prepared dependency and impact pathway diagrams for key farm/estate activities.</p>	
	<p>7. Value impacts and/or dependencies</p>	<p>Produced a case study focused on specific project/intervention, including quantification of changes in NC and ESS, and valuation as far as possible with data available.</p>	
 <p>APPLY: What next?</p>	<p>8. Interpret and test the results</p>	<p>Identified risks and opportunities associated with farm/estate dependencies and impacts.</p> <p>Reviewed and refined NC assessment with farmer / estate staff.</p>	
	<p>9. Take action</p>	<p>Proposed actions for consideration of farmer /estate staff.</p>	

Business Feedback

- *“Increased awareness and potential effects on the business. Subconsciously heading that way, but quantifies and formalises it”*
- *“The tables, impacts and dependencies, make you think about the linkages between businesses and inter-dependencies. Also ways to save money”*
- *“We are doing it, but we don’t call it natural capital”*

The Protocol is useful for land-based businesses

- Improving understanding : “Made sense”
- Being able to articulate the benefits for future payments

Benefits of Protocol

1. Assessing change over time and informing actions for business
2. Informing decisions on significant projects or land use change

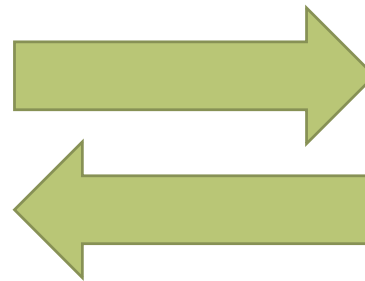
Enterprises	% area of land of enterprise	Ecosystem Services													
		Provisioning			Regulating								Cultural		
		Crops	Livestock	Water Supply	Global climate regulation	Local climate regulation	Flood regulation	Water quality regulation	Soil quality and erosion regulation	Air quality regulation	Disease & pest regulation	Pollination	Wild Species Diversity	Recreation	Education
Crop production	3%	Green	Green	Yellow	Green	Green	Yellow	Green	Green	Yellow	Yellow	Green	Yellow	Yellow	Yellow
Livestock grazing	97%	Yellow	Yellow	Yellow	Green	Green	Yellow	Green	Green	Yellow	Yellow	Green	Yellow	Green	Yellow



VALUING NATURE

Coordinating business actions and investments
in the Spey

Anja Liski - Placement with SEPAg



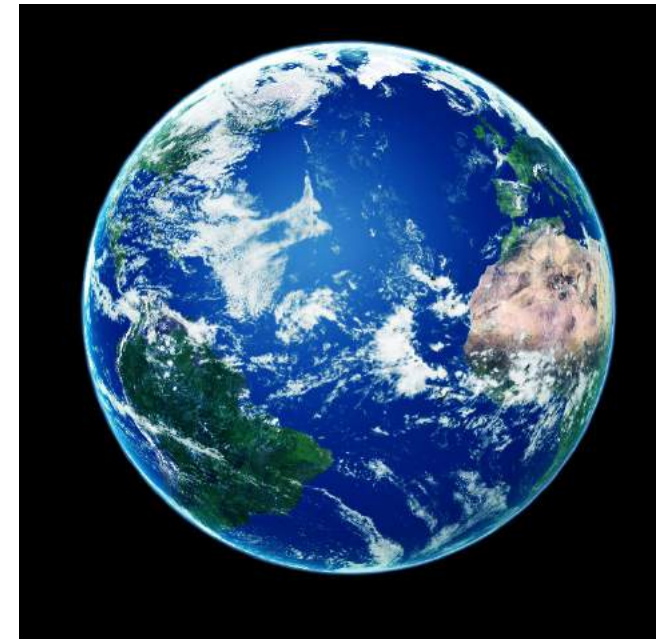
What are businesses looking for?



- Tangible returns or solves environmental problem
- Control over where funding is spent
- Spatial interest and benefit
- Deliver global targets
- Effective regulatory framework
- SAFE and neutral intermediary

One Planet Prosperity

1. Use their language and systems
2. **Work with them** to build up the information used in their decisions
3. Support businesses to coordinate their investments and action in landscapes



FOREST CARBON

ESCom

28 June 2018

The role of Forest Carbon



Forest Carbon is the leading developer of woodland creation projects for the UK voluntary carbon market. Our woodlands can play a critical part in the fight to reduce the effects of a new climate, and better adapt to it

Since 2006 we have been planting forests:

- In the UK
- Of all shapes and sizes
- That are funded by the sale of certified carbon credits to UK business, to mitigate their carbon footprints
- Because trees capture carbon dioxide – the major greenhouse gas
- To provide other benefits, including habitat creation, flood prevention, water quality improvements, recreation and employment
- That are quality assured under the government's Woodland Carbon Code

We also:

- Developed the UK's first (and only) carbon peatland restoration project
- Are active in developing a new peatland carbon market and quality assurance standard
- Developed Ireland's first ever forest carbon projects, on behalf of Microsoft

What we have achieved so far



2006	founded
135+	new woodlands
10,000	total acres
7 million+	trees planted
1.4 million+	tonnes CO2 capture
5.5%	of all UK woodland creation since 2013

6,000+	acres of biodiversity priority habitat type
1st	WCC certification, & Markit Registry delivery
Founding members	WCC Advisory Board
1 st	UK peat carbon project
Members	Peatland Code Advisory Board
Developed	Ireland's first ever carbon woodlands - for Microsoft

Carbon capture

Doddington North 340ha gross 254ha net



Cumulative to Year	Total Project Carbon Sequestration (tCO₂e)	Total Risk buffer (tCO₂e)	Total claimable Carbon Sequestration (tCO₂e)
5	-3891	-778	-3113
10	424	85	339
15	13098	2620	10478
20	34377	6875	27502
25	48543	9709	38834
30	61063	12213	48850
35	72584	14517	58067
40	83823	16765	67058
45	93187	18637	74550
50	100236	20047	80189
55	106028	21206	84822
60	111762	22352	89410
65	115950	23190	92760

Flood mitigation



Halterburnhead
2011

Water quality



Headshaw
2017

Timber

Ardochy
2017



Cranborne Douglas
2017

Habitat restoration



Ardochy
2017



Ardochy
2017

Recreation

Minnowburn
2010



Parkhead
2010



Boston Beechwood
2017



Education



Doddington North
2018



Tweed
2017



Cranborne
2014

Community engagement



Parkhead
2013



Jobs



Doddington North
2018

Dryhope, St Mary's Loch, Selkirk



- Approximately 77.05 hectares of actively eroding and drained blanket bog
- 9.5km of Hags re-profiled
- 3.7km of drains dammed
- Work completed in November 2017
- Carbon funding was critical in persuading the landowner to commit to the project, and to agree to a 45 year contract
- The project will prevent the emission of 6,484 tonnes CO₂
- Carbon funding has been provided by NEX

NEX

Why businesses are working with us



Product differentiation

Allstar Fuel Cards

Staff from Allstar visit their first woodland project, Madresfield in Worcestershire. They have since planted over 40 further projects.



Why businesses are working with us



On behalf of customers

Dignity Funerals

Dignity's Memorial
Woodland, at
Hawkshead in the Lake
District.



Why businesses are working with us

Altruism

ICAP

ICAP makes only one small public reference, in its annual report, to its carbon mitigation programme.



Science partners

**FOREST
CARBON**



**Centre for
Ecology & Hydrology**

NATURAL ENVIRONMENT RESEARCH COUNCIL

Policy collaborations



The UK is a global leader in climate change and natural capital policy...

- Climate Change Act
- Natural Capital Committee
- World's first Green Investment Bank
- UK National Ecosystem Assessment
- Ecosystem Markets Task Force
 - Biodiversity Offsetting
 - Peatland Carbon Code
- Defra Payment for Ecosystem Services trials
- UK Climate Change Risk Assessment and National Adaptation Programme
- UK second only to the US in terms of total voluntary carbon market spend by businesses
- Home to Europe's largest Sustainable and Responsible Investment Market, second only to US globally
- Recently published 25 year Environment Plan is very ambitious on developing the UK carbon market, and specifies a role for woodlands and peatlands

Who we work with



Contact details



Forest Carbon Ltd

www.forestcarbon.co.uk

0191 395 2956

07989 389709

Jhs@forestcarbon.co.uk



Oppla welcomes ESCom!

Paul Mahony
General Manager

www.oppla.eu
[@OpplaCommunity](https://twitter.com/OpplaCommunity)



What is Oppla?



**The latest thinking on natural capital,
ecosystem services and nature-based solutions**

Free services for members

These services are available to all members of our community



CASE STUDIES

Browse and share practical case studies from around the world



GROUPS

Create an Oppla community of your own, specific to your project, location or research topic



ASK OPPLA

A crowd-sourced enquiry service, where your questions get answered by the community



MARKETPLACE

Promote your project outputs and achieve greater impact



COMMUNITY DIRECTORY

Network with other members and reach new audiences



PROJECT MICROSITE

We can build a home for your project within Oppla, giving you direct access to our online resources and community



PROJECT REPOSITORY

Let us create a lasting legacy for your project by archiving its outputs and promoting them to our members



COMMUNICATIONS & DISSEMINATION

We are experts in design, communications, networking and knowledge exchange. Let us help you reach your target audiences and achieve real impact in new and exciting ways



WEBSITE & SOFTWARE DEVELOPMENT

Draw upon the expertise of our team in creating your next software tool or online platform



OPPLA WEBINARS

Present the work of your organisation to the Oppla community



www.oppla.eu

THE HUB FOR NATURAL CAPITAL, ECOSYSTEM SERVICES AND NATURE-BASED SOLUTIONS

Services on demand

Premium services for organisations, EU research projects and others



What problems does Oppla solve?



Project websites often disappear and research outputs lost
Oppla gives a permanent home for research outputs



Platforms can be demanding of time and resources
Oppla uses crowd sourcing and generates its own revenue



Research outputs can become lost in silos
Oppla integrates different ecosystem-based approaches



Oppla is a community

Oppla is a **community**
where you can connect
and collaborate with
others from across Europe





Oppla in numbers

Since 2017 we have accumulated:

- **1500+** members of the Oppla community
- **400+** products in the Marketplace
- **175+** case studies
- **1100+** Twitter followers
- **100+** strategic partners... *one of which is now ESCom!*



← Oppla groups

ESCom Scotland

View

Members



ESCom is an inclusive and open community with a wide constituency spread across Scotland. We have members and partners from across National Government, local authorities, government agencies, research organisations and universities, NGO's and private sector companies, including SME's.

Twitter



ESCom events



Group pages

- [About](#)
- [2018 ESCom Conference](#)

Group members



Abi Gardner



Marc Metzger



Anja Liski



Chloe Bellamy



Advantages for ESCom

- **Embedding ESCom within a growing, global community** focussed on ecosystem services, natural capital and nature-based solutions
- **Promoting good practice** from Scotland to wider audiences
- **New opportunities for engagement** with people from other disciplines and sectors
- **Creating a permanent home** for resources and outputs



Thanks and welcome aboard!

Paul Mahony
General Manager

www.oppla.eu
[@OpplaCommunity](https://twitter.com/OpplaCommunity)



Impressment is after lunch...!



How to join and get involved

Paul Mahony
General Manager

www.oppla.eu
[@OpplaCommunity](https://twitter.com/OpplaCommunity)

Natural capital • Ecosystem services • Nature-based solutions

Sign up to become part of this exciting new community!

[JOIN !\[\]\(0fb13ad0bfa3d86868cdd3883e5665b3_img.jpg\)](#)

You'll receive updates about Oppla as it develops. You'll also be given opportunity to contribute your own ideas and network with other members.



[Join oppla](#)[Log in](#)[Request new password](#)

Enter your Oppla username.

PASSWORD *

Enter the password that accompanies your username.

[LOG IN](#)

paul

View

Edit

Contact

My favourites

My products

My case studies

My groups

My similar users

Paul Mahony



Countryside

UK

Paul is Creative Director at Countryside: a UK based SME, established in 2002, which combines the creative skills of a communications agency with the scientific knowledge of an environmental consultancy. Paul has an extensive track record in communications strategy, commercial development and knowledge exchange within both the public and private sectors, focusing on environmental issues (notably landscape, ecosystem services, climate change and sustainable tourism). He works as part of an inter-disciplinary team that includes expertise in landscape planning, urban design, ecology and creative media. Paul is a graduate in Geography from The University of Manchester, where he specialised in sustainable development. Prior to joining Countryside, he worked as a journalist for the Guardian Media Group.

Interests



Other interests



[EDIT YOUR PROFILE](#)

[PRIVACY POLICY](#)

[TERMS OF USE](#)

[CANCEL ACCOUNT](#)

Natural capital • Ecosystem services • Nature-based solutions

Sign up to become part of this exciting new community!

[JOIN !\[\]\(e9474ce1d70442456f8fe9c393ea149c_img.jpg\)](#)

You'll receive updates about Oppla as it develops. You'll also be given opportunity to contribute your own ideas and network with other members.



Community

Displaying 1 - 20 of 1514

Paul Nolan



The Mersey Forest
UK

[MORE](#)

Karen Chambers



Margin
United Kingdom

[MORE](#)

Giulia Facelli



Belgium

[MORE](#)

Jessica Johnson



CEMBUREAU, the
European Cement
Association
Belgium

[MORE](#)

Jonathan Porter



Countryside
United Kingdom

[MORE](#)

Martin Watson



Prospex
Belgium

[MORE](#)

FIND MY MATCH

enter search terms:

GO

EXPERTISE

INTERESTS

Ecosystems



Implementation



Methods



Regions



Topics



APPLY

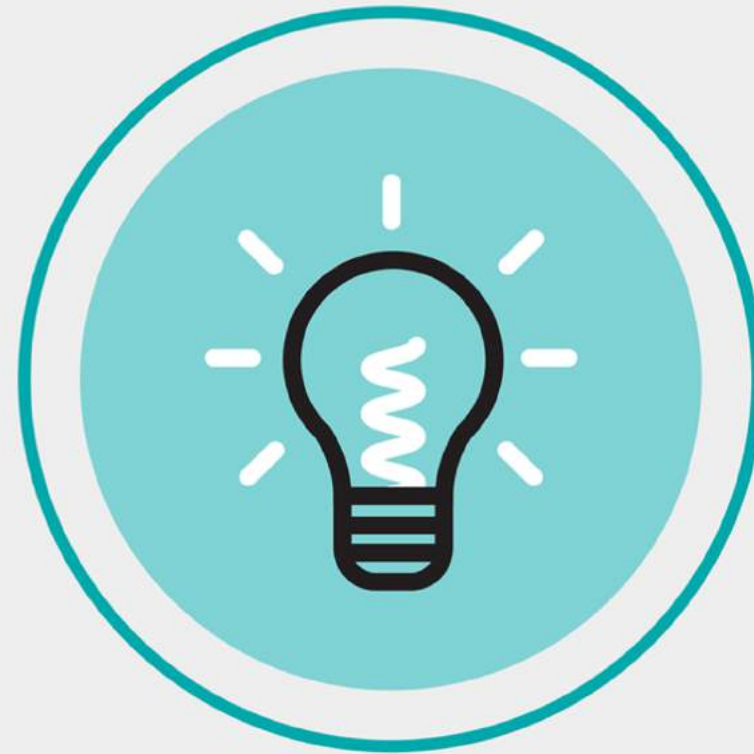
RESET



Oppla marketplace

Oppla is also
a marketplace

A place where
ideas can grow



Natural capital • Ecosystem services • Nature-based solutions

Sign up to become part of this exciting new community!

[JOIN !\[\]\(b792654f2cef9719eabeb6c5be00811e_img.jpg\)](#)

You'll receive updates about Oppla as it develops. You'll also be given opportunity to contribute your own ideas and network with other members.



Marketplace

PRODUCTS



FILTERS



enter search terms:

GO



GIZ ValuES - Method Profile: Scoping ecosystem services for impact assessment (WRI)

This manual for scoping ecosystem services is related to impact assessments. It enables the identification of key ecosystem services that could be impacted by or could constrain the successful implementation of projects at a point when they can still be modified. The complete manual covers six

English

MORE

KEYWORDS

Choose keywords from the menus below and hit apply...

Ecosystems



Implementation



Methods



Regions



Topics



GIB SmartScan

Increase your infrastructure project's attractiveness to investors in only a few steps. The GIB SmartScan allows you to assess your infrastructure projects based on its Environmental, Social and Governance (ESG) issues and helps to efficiently flag risks and opportunities for improvements of your

English

€235.00

MORE

+ SHARE / ADD PRODUCT

PRODUCT NAME *

PRODUCT TYPE

- Consultancy
- Dataset
- Document
- Event
- Guidance
- Software
- Training

Tick all that apply

PRODUCT SCALE

- Global
- Continental
- Sub-continental
- National
- Subnational
- Local

Tick all that apply

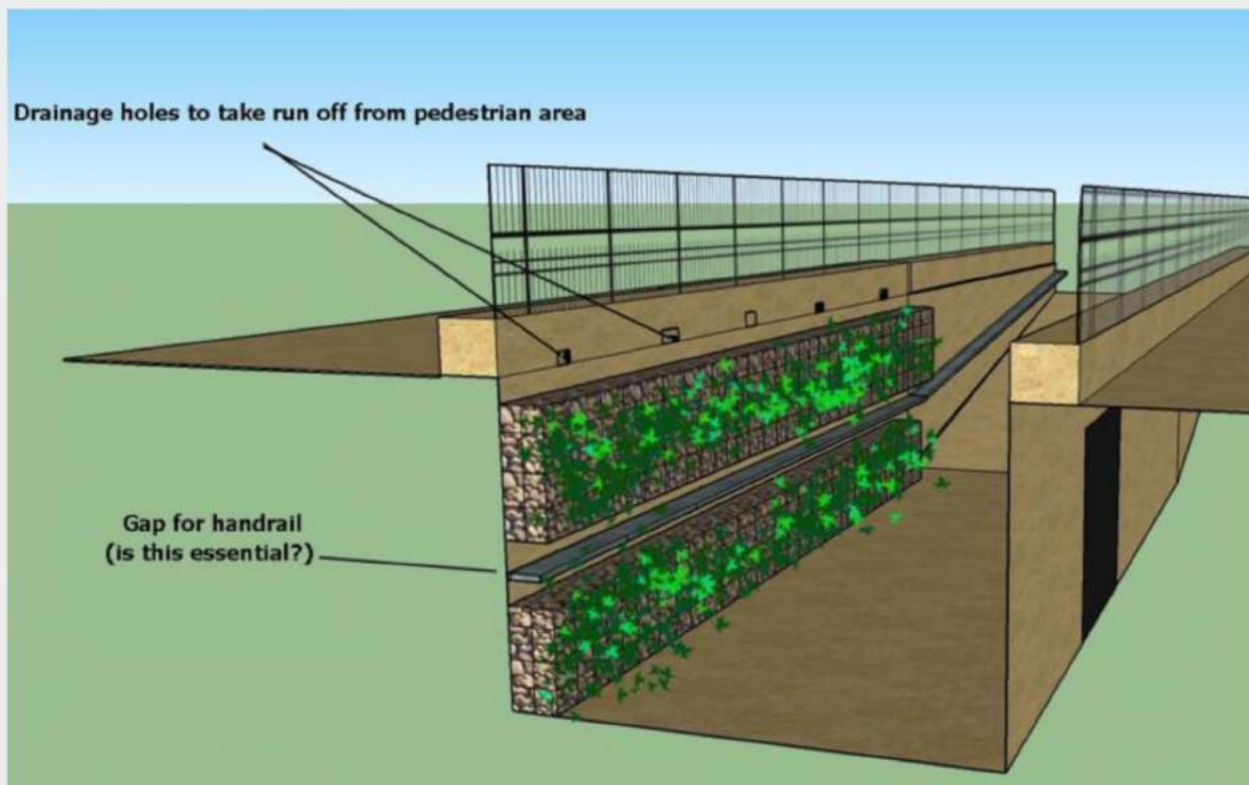
KEYWORDS

SUMMARY DESCRIPTION

Green Values

View

Edit



Guidelines to identify, measure and articulate the multifunctional benefits of urban green infrastructure (UGI) projects in order to support the development of cohesive business cases and to inspire project initiators to refine their projects to yield wider benefits.

GET



TURAS



Scale:

Subnational
Local

License:

Free, no licence

Development stage:

Full, working product

Publication date:

30 September 2016

Primary language:

English

Professional indemnity:

None

[← ECom Scotland](#)

ECom Scotland marketplace

[PRODUCTS](#) ^[FILTERS](#) ^[GO](#)

Displaying 1 - 16 of 16



escom
Ecosystem Services Community
Scotland

**SCOTTISH
POLICY
GROUP**
BRITISH ECOLOGICAL SOCIETY

Urban greenspace – space for nature and people?

The British Ecological Society's (BES) Scottish Policy Group (SPG) teamed up with the Ecosystem Services Community (ESCom) Scotland to run their first joint event, a pie and a pint night on urban greenspace. Discussions were focussed on the question: 'Are the provision and management of greenspace

English

[MORE](#)

Urban greenspace – space for nature and people?

Notes from the ECom Scotland - BES Scottish Policy Group Pie and a Pint, 9th May 2017, Edinburgh

[Ecosystems](#) ^[Implementation](#) ^[Methods](#) ^[Regions](#) ^[Topics](#) ^[+ SHARE / ADD PRODUCT](#)



Oppla case studies

Case study finder

Displaying 1 - 176 of 176



SEARCH

enter search terms:

SCALE

- Global
- Continental
- Sub-continental
- National
- Subnational
- Local

+ ADD CASE STUDY

TITLE *

CASE STUDY TYPE

- None - 

IMAGE

Choose File no file selected

UPLOAD

Upload your illustrative teaser image of the case study here.

Files must be less than **20 MB**.

Allowed file types: **png gif jpg jpeg**.




Location

Latitude

Longitude

OBJECTIVE

(300 characters including spaces)

Format       

Socio-cultural valuation of green space in peri-urban Edinburgh



Area characterisation:

The City of Edinburgh is the rapidly growing capital of Scotland, approaching 500,000 inhabitants. The city exerts pressures on the surrounding area. This study looks specifically at recreation pressure in the Pentland Hills Regional Park, and impacts of rapid urban expansion in East Lothian. Both cases, ecosystem services valuation tested as approaches to support planning.

Keywords:

- Cropland
- Ecosystem management
- Ecosystem services
- Grassland
- Heathland and shrub
- Landscape
- Public participation
- Stakeholders
- Urban
- Valuation: deliberative
- Valuation: non-monetary
- Valuation: socio cultural
- Woodland and forest

Scale

- Subnational
- Local

Organisations:

- Pentland Hills Regional Park
- Scottish Natural Heritage

Tools and methods

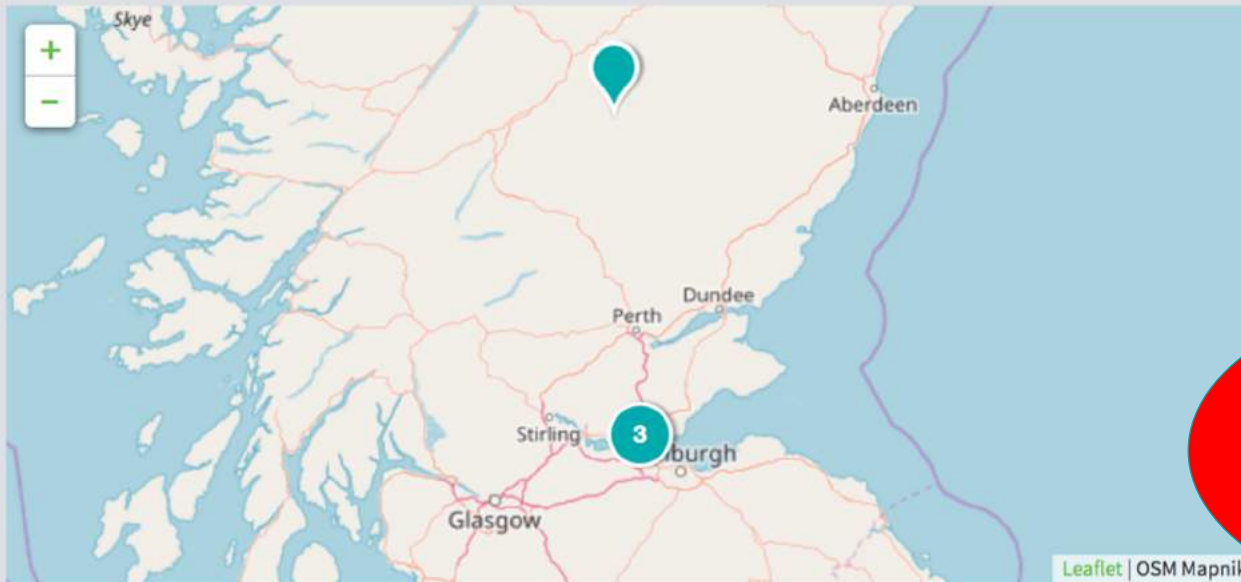
- LANDPREF - Interactive tool to assess and visualise land use preferences
- Creating Space, Aligning Motivations, and Building Trust: Key Elements of Stakeholder Engagement in 12 Ecosystem Services Case Studies

enter search terms: **APPLY**

← ECom Scotland

ESCom Scotland case studies

Displaying 1 - 4 of 4



SEARCH

enter search terms:

SCALE

- Global
- Continental
- Sub-continental
- National
- Subnational
- Local

+ ADD CASE STUDY

Improved, integrated management of the natural



Oppla enquiry service

Simply ask a question and receive answers...



Ask Oppla to help you find
the information you need...

Natural capital • Ecosystem services • Nature-based solutions

Sign up to become part of this exciting new community!

[JOIN !\[\]\(0fb13ad0bfa3d86868cdd3883e5665b3_img.jpg\)](#)

You'll receive updates about Oppla as it develops. You'll also be given opportunity to contribute your own ideas and network with other members.



The image features a central graphic consisting of several concentric circles. The outermost circle is a dark red, and the inner circles transition through lighter shades of red to a dark blue center. Overlaid on this graphic is the text "That's all Folks!" in a white, elegant cursive font. The text is positioned diagonally across the center of the circles.

That's all Folks!

ESCom – what should ESCom do next ?

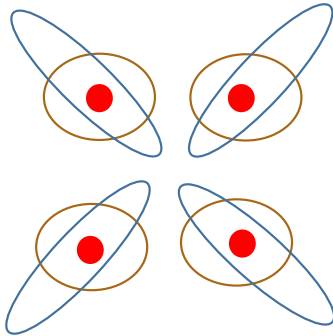


ESCom Scotland supports collaboration between science, policy and practice to better manage Scotland's natural resources

www.escom.scot

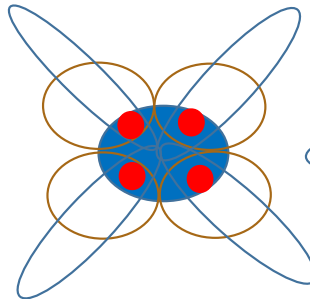
How to develop a sustainable CoP

Separate institutions
and Projects



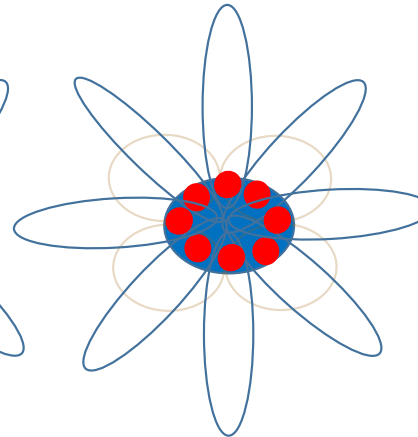
Separate funded
institutions
collaborating in
time limited
projects

Strategic alliances to
create CoP



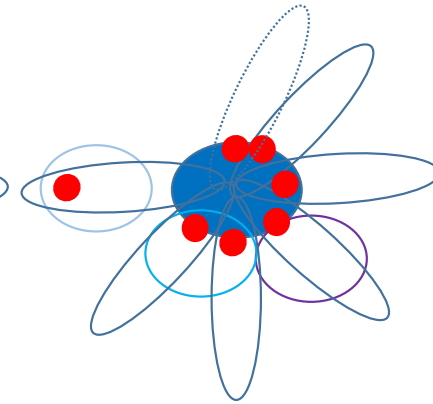
Strategic alliance
in a network or
CoP as
encouraged by
project funding

Building and
consolidating CoP



Additional partners
join CoP initial
projects becomes
less visible

Transition to
durable CoP ?



But how to sustain
when initial funds
end and the
pressure of new
projects arise

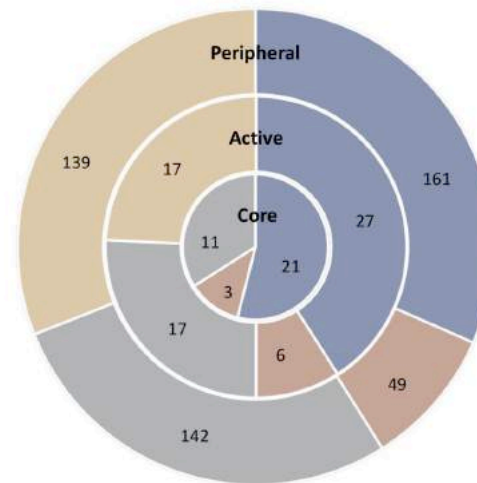
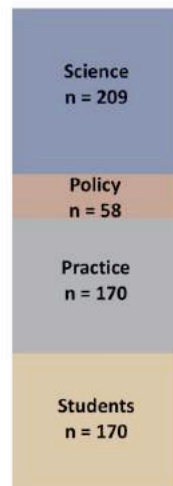


Analysis of ESCom journey

1
2
3
4
5
6
7
8
9
10

Knowledge sharing, problem solving and professional development in a Scottish Ecosystem Services Community of Practice

Authorship: Marc J. Metzger^{1*}, Jan Dick², Abi Gardner¹, Chloe Bellamy³, Kirsty Blackstock⁴, Calum Brown^{1,5}, Rachel Chisholm¹, Phoebe Cochrane⁶, Joanna Drewitt⁷, Alessandro Gimona⁴, Alison Hester⁴, Scot Mathieson⁸, Maria Nijnik⁴, Alistair McVittie⁹, Michal Petr³, Ron Smith², Mike Smith¹⁰



Participation in ESCom activities between May 2014 and November 2017

Core – attended >5 events,
Active attended 3 or 4 events
Peripheral - < 3 events.

What did people say they wanted or would do ?

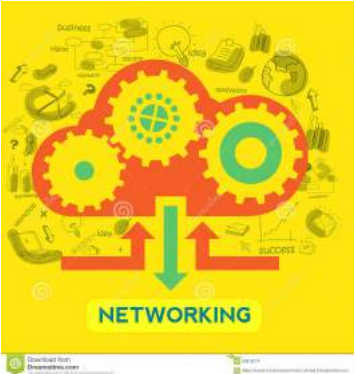
	2014 survey			2018 survey			
	Science n=18	Policy n=5	Practice n=6	Science n=21	Policy n=6	Practice n=16	Student n=5
What can ECom do for you?							
A forum for debate and learning sharing best practice	22	20	17	43	0	25	0
Collaborative research planning and delivery	6	0	0	5	0	6	0
Capacity building and training workshops	6	0	0	0	0	0	0
Field trips to demonstration sites	0	0	0	0	0	0	20
Synthesis and overview of topics	17	40	17	10	50	13	40
Online resource hub with case-studies, news and information	6	20	17	5	0	0	0
Networking opportunities	33	0	50	33	33	25	40
What can you do for ECom?							
Organise and host events	6	0	0	48	17	0	20
Co-badge activities with ECom	0	0	0	0	0	6	0
Collaborate with students	11	20	0	0	0	6	0
Share data, methods, experiences	72	40	83	0	0	13	0
Publicise ECom in network	6	0	0	10	17	25	40
Participate in events	11	0	0	14	0	13	20

Percentage of responses from two open-ended survey questions asked at the end of the ECom launch conference in 2014 and in 2018 via an online survey, summarised for common themes identified in the 2014 conference launch conference report



Please sign up via a post-it to offer a networking activity:

Details of Activity	Name	email
Seminar		
Workshop		
Training event		
Field trip		
....		



Ideas for collaborative research



Competition

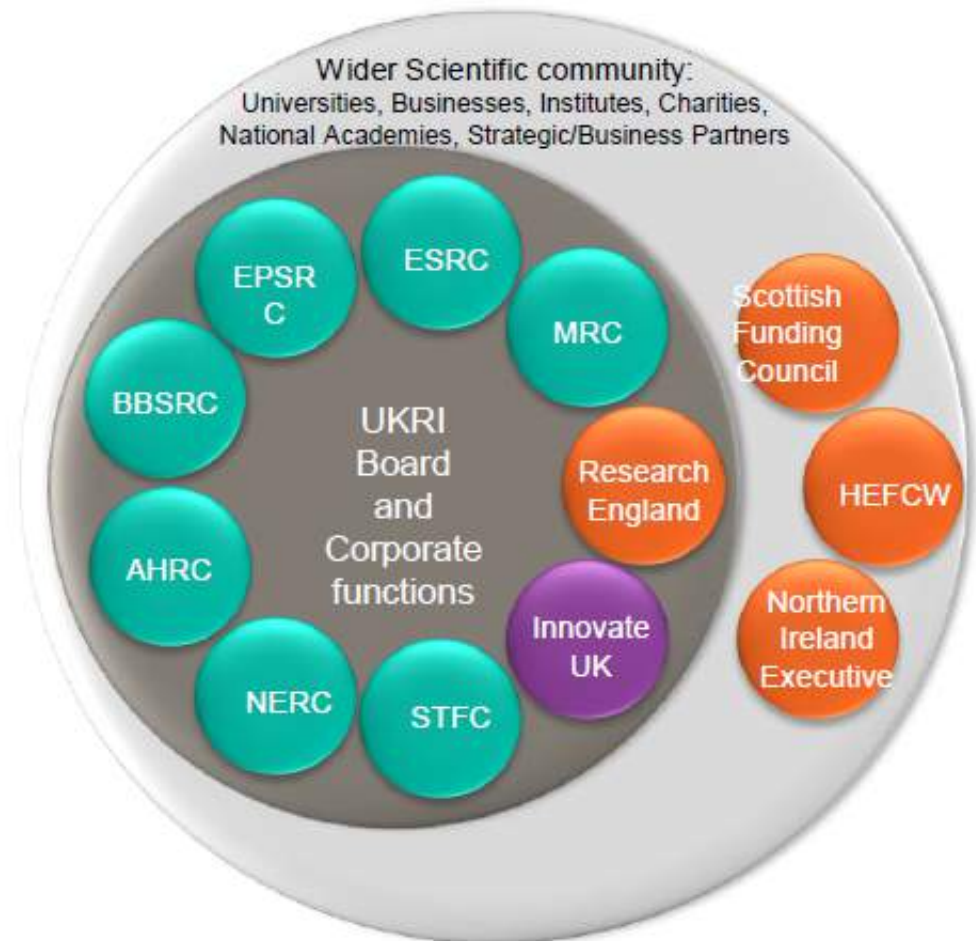


Conflict

What is UK Research and Innovation?

UK Research and Innovation, launched in April 2018, and is the new funding organisation for research and innovation in the UK.

It brings together the seven UK research councils, Innovate UK and a new organisation, Research England, working closely with its partner organisations in the devolved administrations.



Example of collaborative project ESCom Community may consider

UK: focused on linking research and business - aim economic growth

The screenshot shows the UK Research and Innovation website. The header includes the logo, social media icons for Twitter, LinkedIn, and YouTube, and a search bar with a 'Submit' button. The navigation menu includes 'Funding', 'Research', 'Innovation', 'Skills', 'News', 'Public engagement', and 'About us'. The 'Funding' menu is expanded, showing options like 'How to apply', 'Funding opportunities', 'Strength in Places Fund', 'UKRI stakeholder events focusing on place', 'Future Leaders Fellowships', 'Industrial Strategy Challenge Fund', and 'Global Challenges Research Fund'. The main content area features a breadcrumb trail: 'Home > Funding > Funding opportunities > Strength in Places Fund'. The title 'Strength in Places Fund' is prominently displayed. Below the title, a paragraph describes the fund as a new competitive funding scheme. A section titled 'Objectives of the fund' lists high-level aims, including supporting innovation-led regional growth and enhancing local collaborations.

UK Research and Innovation

Accessibility | Cymraeg | Contact

search Submit

Funding Research Innovation Skills News Public engagement About us

How to apply

Funding opportunities

- > Strength in Places Fund
- > UKRI stakeholder events focusing on place
- > Future Leaders Fellowships
- > Industrial Strategy Challenge Fund
- > Global Challenges Research Fund

Information for award holders

Home > Funding > Funding opportunities > Strength in Places Fund

Strength in Places Fund

Led by UK Research and Innovation, Strength in Places Fund (SIPF) is a new competitive funding scheme that takes a place-based approach to research and innovation funding, to support significant regional growth.

Objectives of the fund

The high level aims of the Strength in Places Fund are:

- To support innovation-led relative regional growth by identifying and supporting areas of R&D strengths that are:
 - driving clusters of businesses across a range of sizes that have potential to innovate, or to adopt new technologies;
 - in order that those clusters will become nationally and internationally competitive.
- To enhance local collaborations involving research and innovation. Building on the underpinning regional economic impact role of universities, research institutes, Catapults and other R&D facilities (such as Innovation and Knowledge Centres - IKCs); and engaging those businesses at the forefront of delivering economic growth through innovation within the identified economic geography.

Example of collaborative project ESCom Community may consider International: focused on Sustainable Development Goals

Please tell us about your experience of this website today.



Home Funding Research Innovation Skills News, Events & Publications About Us

Home / Research / Partnerships / International research / Overseas partnerships / Towards a Sustainable Earth / Human-Environment Interactions announcement of opportunity

Announcement of Opportunity: Towards a Sustainable Earth - Human-Environment Interactions & the Sustainable Development Goals

Closing date:
Intention to Submit: 16:00 BST (UTC+1) on 31 July 2018
Full Proposal Deadline: 16:00 BST (UTC+1) on 14 August 2018

The funding partners in Towards a Sustainable Earth (TaSE) invite proposals to this first call under the TaSE initiative, which aims to significantly improve our understanding of the complex interactions between people and the environment required to make progress in achieving the United Nations Global Goals (Sustainable Development Goals).

Name: Matthew Dobson (NERC)
Email: tase@nerc.ac.uk

Call Timeline

Call launch: 14 June 2018
Intention to Submit 31 July 2018
Proposal 14 August 2018
Assessment: August-October 2018
Assessment Panel Nov 2018
Announcement of awards: Dec 2018
Projects start: January 2019

June wk 2 14th
June wk 3 21st
June wk 4 28th
July wk1
July wk2
July wk3
July wk4
Aug wk 1
Aug wk2
Aug wk 3 Tuesday 14th Aug

Please sign up on the white boards to suggest collaborative research projects :

Project idea	Name	email
Strength in Place Fund		
Towards a Sustainable Earth		
....		



Workshop Discussion

- What role could ESCom play to provide a service for members to identify collaborative research projects?
- How should this service be funded?
- What could your organisation offer to collaborative projects





Ecosystem Services Community Scotland

June 28, 2018

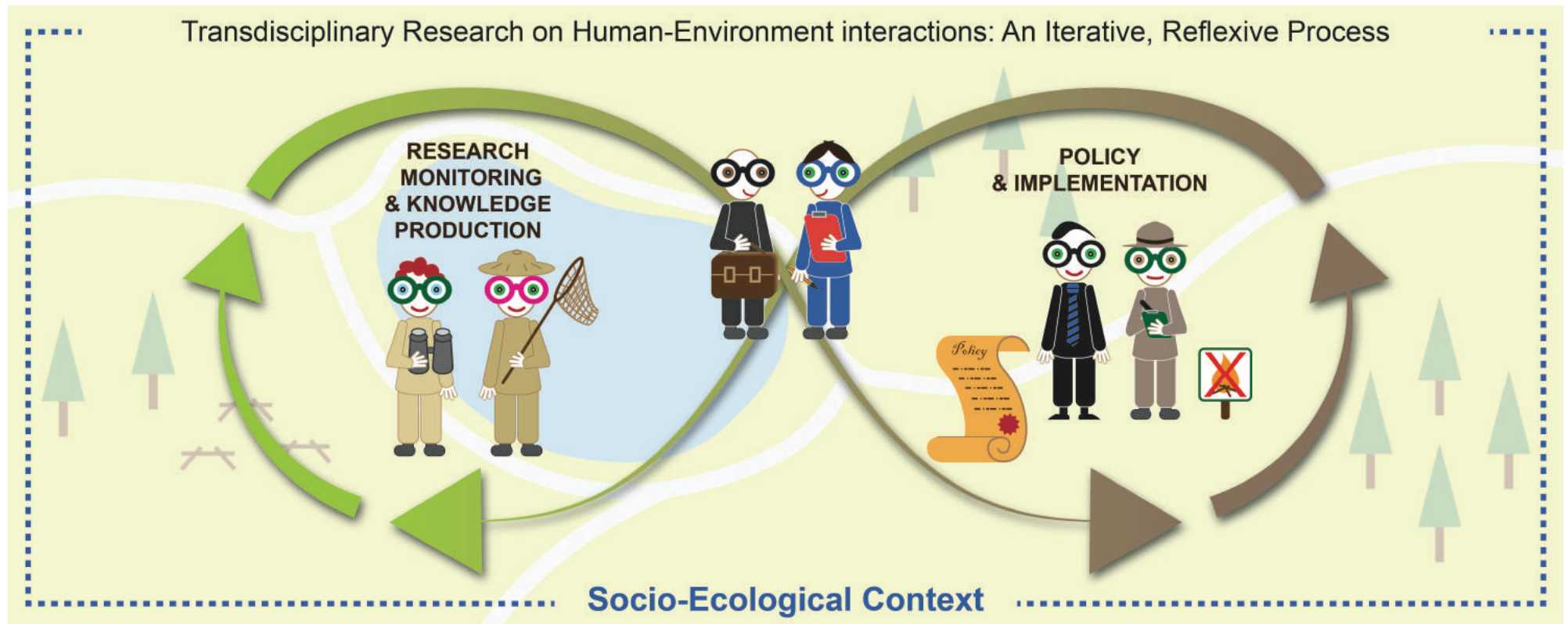
Stakeholder views on the value of Long-Term Socio-Ecological Research in the Cairngorms National Park

Jen Holzer

Technion Socio-Ecological Research Group
Funded by eLTER Transnational Access



Cairngorms LTSER has adopted this socio-ecological framework



Graphic: Ronit Cohen-Seffer

But is it achieving its aims?

I interviewed 23 stakeholders and this is what I learned...

The Caingorms – as part of an international network - has adopted the socio-ecological systems framework for transdisciplinary, problem-solving science.

But is it working?

We wanted to find out.

Cairngorms Knowledge Nexus

Model Management Structure

- Five LTSER co-directors represent Cairngorms National Park, research, and landowners
- Quarterly meetings
- Research strategy
- Regular knowledge exchange events

On the other hand...

- Lack of awareness about LTSER and what it does
- Interviewees did not articulate the clear mission, goals, and added value of the LTSER
- Dedicated funding and staff have been elusive

LTSER Cairngorms Aims & Benefits

- Aims to integrate ecological and social knowledge for better management of the Cairngorms
- Aims to provide venues and tools to promote knowledge-sharing about Cairngorms-related research
- Is part of a global network
- Formalizes existing work, aligned with National Park's mission
- Brings attention and funding

Insights on research process

- Ecological research is abundant; expressed need for increased socio-economic understanding
- Desire for web-based tool that tracks completed / existing / desired research
- Has been no *systematic* evaluation of research impact
- Challenge of aligning research with policy needs, especially across multiple governance scales
- Geopolitical uncertainty makes funding insecure and obscures research planning



What is Cairngorms Long-Term Socio-Ecological Research (LTSER)?

A network of researchers and practitioners working to **integrate ecological and social knowledge** in order to **make better decisions about managing the Cairngorms National Park**, which is linked into the International Long-Term Ecological Research (ILTER) research infrastructure.

Thank you!

Scotland-based host and advisor:

Dr. Jan Dick, CEH

PhD advisor:

Dr. Daniel Orenstein, Technion
Cairngorms National Park LTSER

stakeholders who spoke with me
Noa Silver, for transcription services



jholzer@technion.ac.il

[Technion Socio-Ecological Research Group](#)

How can natural assets based social innovation support rural Scotland?



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Maria Nijnik, SEGS, with thanks
to David Miller, Carla Barlagne,
Richard Hewitt and & others



This project has received funding from
the European Union's Horizon 2020
Research and Innovation Programme
under Grant Agreement No 677622



Processes observed in rural areas



1. Out-migration & ageing
2. Population drift from more remote places into villages/towns
 - Closure of services
 - Threatening capacity for endogenous development
3. Diversification & restructuring
4. Changing infrastructure
5. Changing lifestyles

interact with macroeconomic settings → societal segmentation

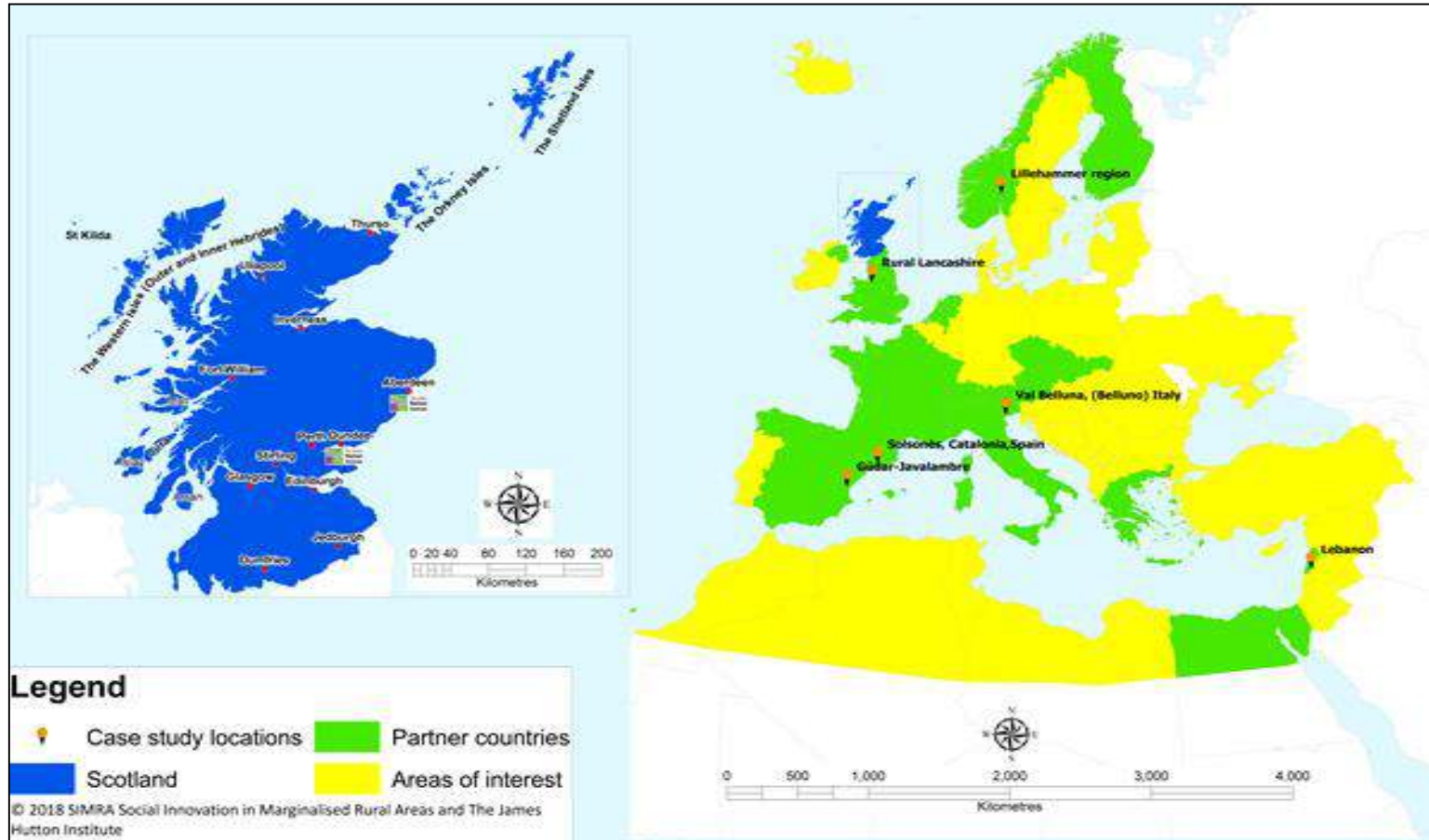
To address the challenges & use the opportunities:

*Support small businesses & entrepreneurship (new business models); local, short food supply chains; infrastructure and services; valorising ecosystem services; bio-economy; exploit green spaces; digital growth; fiscal incentives etc. & new collaborative actions – **social innovation (SI)***

Social innovation

- ... responds to pressing social demands **not traditionally addressed by markets or existing institutions**
- ... first & foremost is about **quality of life & well-being...**
- ... involves **new social relationships & collaborations**
- ... relates to **governance mechanisms & economic opportunities...**
- ... a mechanism to address **sustainability & social justice**
- ... considered crucial for **smart & inclusive growth**





In **Scotland**, under the **RESAS Programme**, and **beyond**, under **H2020 SIMRA_EU**, we investigate how SI arises, what drives its success and how it can address rural challenges

Key objectives of our projects:

Understand & enhance SI in agriculture, forestry & RD

- Define, conceptualise & categorise social innovation
- Explain its variability & diversity
- Examine its triggers, enabling/success factors, challenges/barriers
- Develop methods to evaluate SI & its impacts
- Advance knowledge and develop capabilities to support SI



SIMRA definition of social innovation

“the reconfiguring of social practices, in response to societal challenges, which seeks to enhance outcomes on societal well-being & necessarily includes the engagement of civil society actors” (SIMRA, 2017)



PARTNERS

The James Hutton Institute, University of Fife, LEI, CIHEAM, CRER, EURAC, Lancaster University, CAPRI UNIVERSITY, foreco, Eeds-int, OAR, SAB

simra
Social Innovation in Marginalised Rural Areas

www.simra-h2020.eu

[simra-h2020@anz.cihcam.org](#)
[@simra_eu](#)
[@SIMRAeu](#)
 Visit us on LinkedIn!

Duration
April 2016 to March 2020

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 677622

Get involved in SIMRA!

There are many opportunities to get involved in SIMRA...

- Participate in our workshops
- Take part in the case studies
- Contribute to our online blog
- Follow us on social media

To register your interest in SIMRA please contact us at simra-h2020@anz.cihcam.org

www.simra-h2020.eu



Tree house



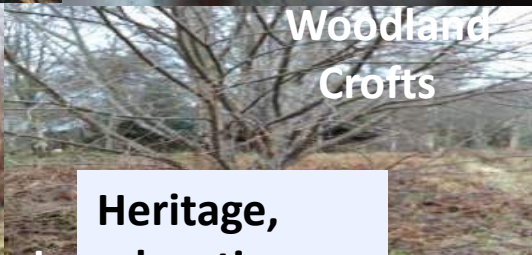
Potter



**Wood
turner**



**Kirkton woodland
Heritage group**



**Woodland
Crofts**

**Heritage,
education
& well-being**

**Local employment &
income**

Lochcarron Community Development Company

Lochcarron Community Development Company is a community run organisation. Managing local woodland, a tree house, cultural, environmental and heritage projects, training and employment, for local sustainability.

News About Training Treehouse Booking Kirkton Trading Events Diary of Events Heritage Craft Shop & Gallery Photos

Local Information Development information



Kiki's craft corner



Tree pruning

**Professional training and
skills development**



Dry stone walling



**Willow
weaving**



Craft centre

What makes it possible?



Dedicated volunteers with a vision

Seed & match funding



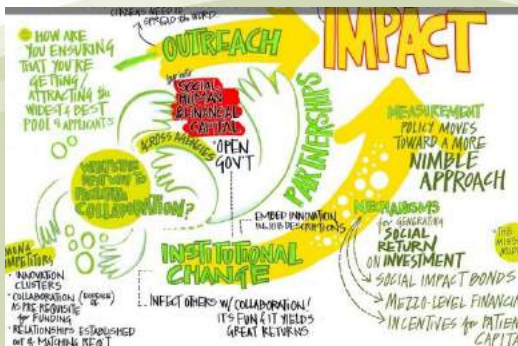
Skills (e.g. a full time Community Development Officer, Networks)



Opportunities !!!

LCDC is a registered Scottish charity. No SC020150.

Alternative business models



The Strathcarron Artisan Dairy Project.

Posted on May 14, 2017

The Strathcarron Artisan Dairy Project.



Practical challenges include:

The way through? Dependence on volunteers. Their “fatigue”?

SI communities victims of their success? Initial & matching funding?

Adequate scale/size? How to foster SI and up/out scale it?

New relationships between citizens, communities, public-private bodies?

Expectations include improved understanding of:

- Challenges to communities, businesses & institutions
- Sustainable solutions to challenges
- Social innovation & how it can help revive communities
- Building capacities to promote SI & develop new relationships & collaborations to bring prosperity to rural areas





What are the tensions between plan-led and place-led approaches to green infrastructure?

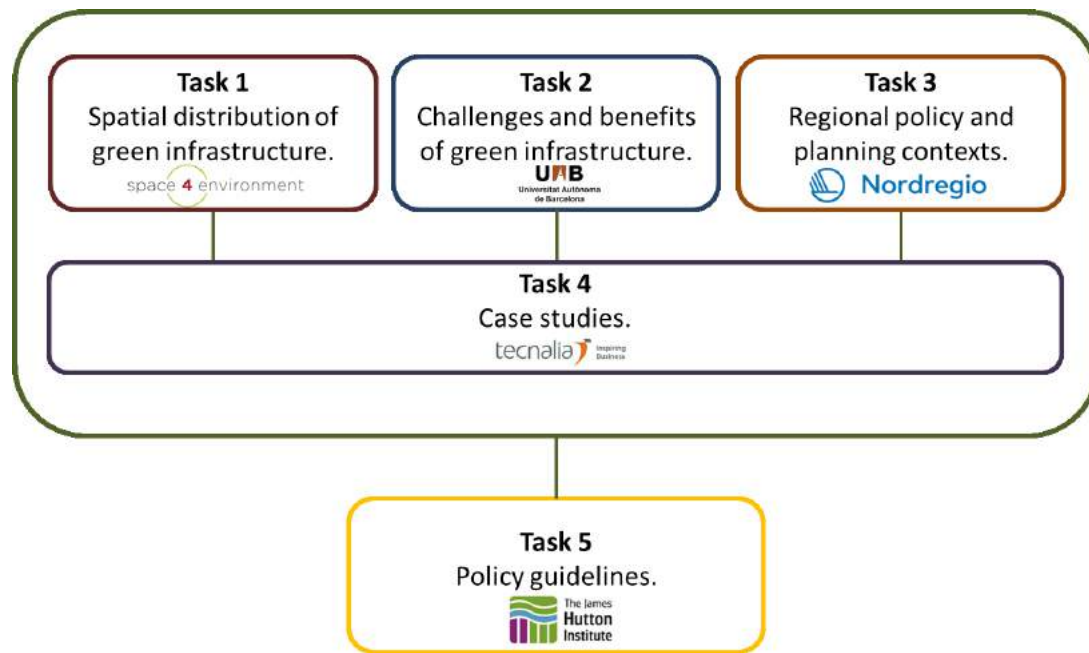
Jessica Maxwell

MDT Fellow in Placemaking, Planning and Ecosystem Services



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ESPON – GRETA



- European Union project funded by European Spatial Planning Observation Network (**ESPON**) called ‘**GR**een infrastructure: **En**hancing biodiversity and **ecosys**Tem services for **territori**Al development (**GRETA**)’.
- GRETA aims to examine how green infrastructure can be promoted through more integrated policies and innovative multi-functional solutions.



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Macaulay Development Trust Fellowship

Exploring the difference between top-down linear plan-led and bottom-up adaptive place-led approaches to green infrastructure.

1. Developing a conceptual framework.
2. Applying the conceptual framework to case study regions.





Policy

Placemaking

Planning

Policy
Structures

Placemaking
Structures

Planning
Structures

Policy
Stakeholders

Placemaking
Action

Planning
Stakeholders

Policy
Action

Placemaking
Stakeholders

Planning
Action





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Thank you!

Questions, comments, ideas?

Please come speak to me during the break(s) or email me at:

jessica.maxwell@hutton.ac.uk



How and where to manage natural capital sustainably: an analytical framework

Rebecca Spake¹, Chloe Bellamy², Laura Graham¹, Kevin Watts², Tom Wilson², Lisa Norton³, Claire Wood³, Reto Schmucki³, James Bullock³ & Felix Eigenbrod¹

¹ University of Southampton ² Forest Research, ³ Centre for Ecology and Hydrology

The problem

A major sustainability challenge is to identify both *how* and *where* management actions should be allocated to enhance natural capital.

However, achieving such understanding is difficult as the effectiveness of most management actions is context dependent.

Not understanding context dependency is problematic as it limits transferability



The solution: SCALEFORES analytical framework

1. Select appropriate ecosystem responses

Ecosystem responses should be of i) explicit social value, ii) direct relevance to management and, iii) comprise a measurable unit of data.

2. Select drivers and conceptualise their hierarchies



3. Define regional gradients

Multivariate analyses can be used to define principal regional gradients relevant to the ecosystem response.

We have developed an analytical framework that provides a mechanistic understanding of true interactions between local, landscape and regional contexts.

This enables us identify both 'why' and 'where' management actions are most effective for enhancing natural capital across large geographic areas.

The slide content has been obscured as this work has been submitted for publication. Please contact us if you'd like more information using the details below.

4. Characterise landscape

Composition and configuration of land cover in the surrounding landscape at

Step 7: Draw appropriate inference and produce marginal effect maps

Report on main effects and cross-scale interactions to yield practicable management guidance. Map geographic variation in the marginal effects of key landscape- and local-scale drivers on the ecosystem response according to regional conditions. These 'marginal effect maps' show where particular natural capital management actions can and cannot enhance ecosystem responses, informing the targeting of resources.

Step 6: Specify hypotheses within an appropriate statistical model and use model selection to identify important drivers and scales

5. Generate hypotheses and establish potential to model cross-scale interactions

Regional-level drivers

Woodland susceptibility to non-indigenous tree invasion will increase with landscape-scale cover of woodland as a potential propagule source, but this will vary according to regional conditions affecting suitability for non-indigenous.

Landscape-level driver

Farm water quality: The effect of intensive agriculture will be landscape and local water quality will be poorer in areas where soil properties, precipitation and topography associate rainfall.

Local-level driver and response

Example applications

Woodland susceptibility to invasion by rhododendron results

Effect of
understorey cover
on woodland
susceptibility to
rhododendron
invasion reduced



A regional soil gradient of increasing soil sandiness and decreasing atmospheric nitrate deposition moderated the effect of intensive land cover within 25km

Pore water quality results

High nitrate levels in smaller regions may be due to local agricultural activity and soil type

We have developed an analytical framework that provides a mechanistic understanding of true interactions between local, landscape and regional contexts.

This enables us identify both 'why' and 'where' management actions are most effective for enhancing natural capital across large geographic areas.

The slide content has been obscured as this work has been submitted for publication. Please contact us if you'd like more information using the details below.

Main effects: The effects of other local and landscape variables on woodland plant abundance distance to nearest regional city were consistent across Britain

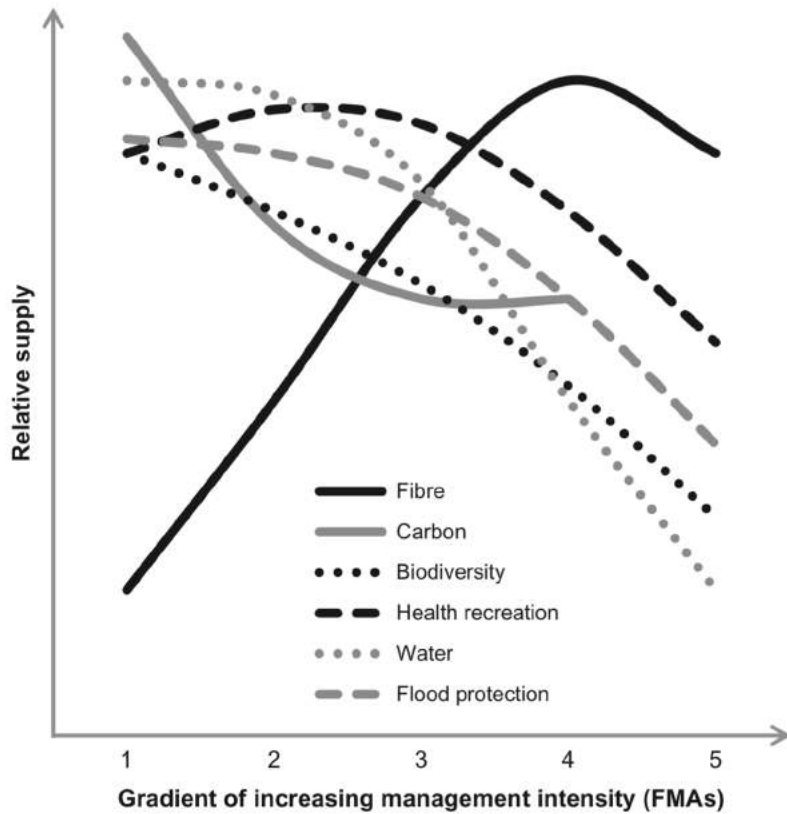
Main effects: Regional scale precipitation negatively impacted water quality and nitro overexposure consistently improved water quality independent of regional gradients

From Green Gold to Wild Woodlands

Developing stakeholder visions for
woodland expansion in Scotland

Vanessa Burton, Marc Metzger (University of Edinburgh),
Darren Moseley (Forest Research), Calum Brown (Karlsruhe
Institute of Technology)

Different forests provide different benefits



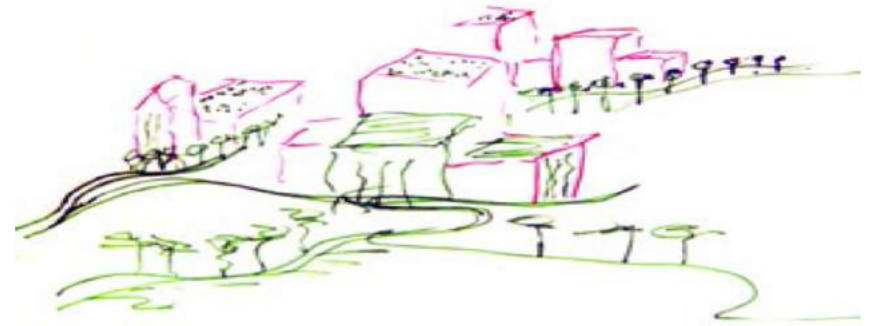
Sing et al., 2018. Forestry 91: 151-164

Different stakeholders want different forests



Visions – positive scenarios of desired future

- Stimulate dialogue
- Remove present-day constraints
- Stimulate creativity
- High saliency



Rounsevell and Metzger 2010 WIRC 1: 606-619

Peres-Soba et al. 2018. Regional Environmental Change 18: 775-787

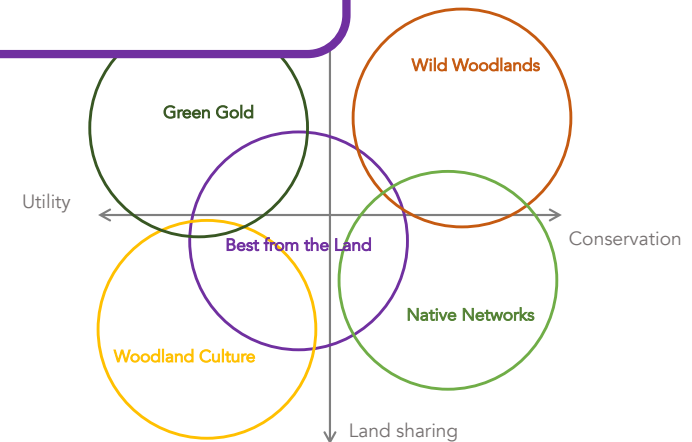
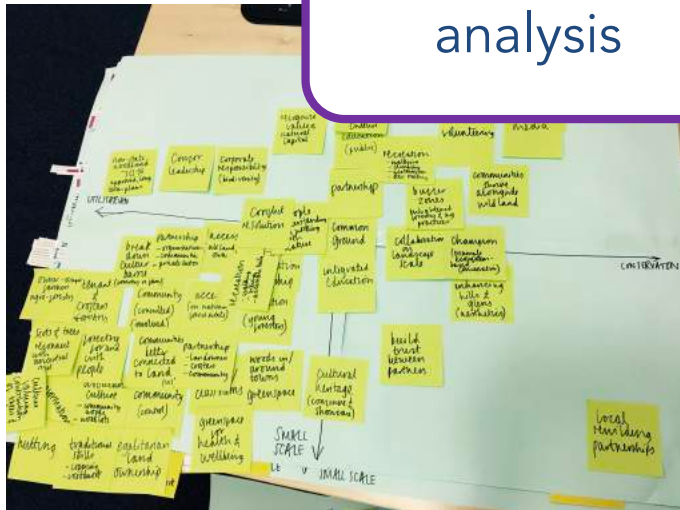


53 documents

Workshop & Interviews

Content analysis

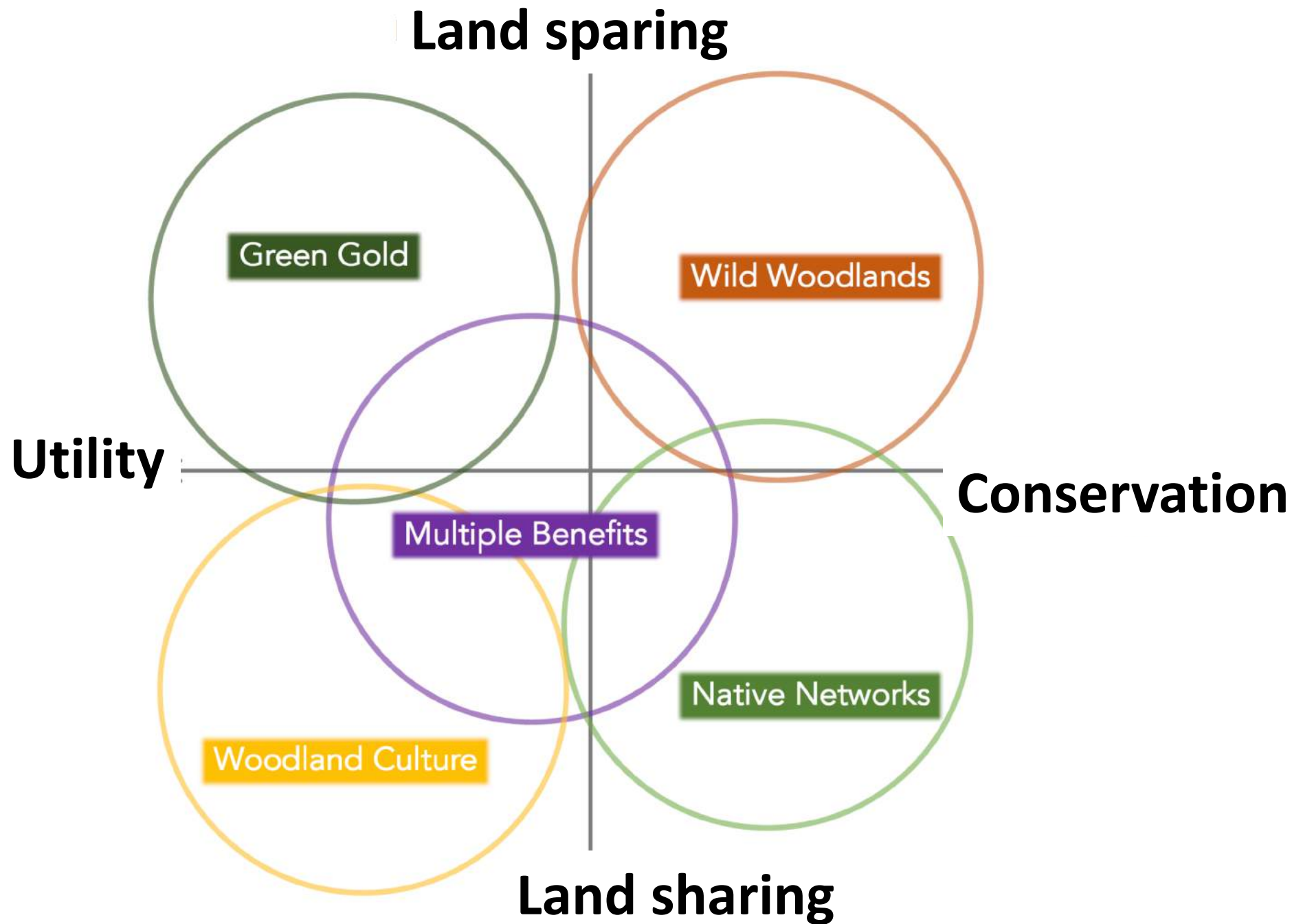
Visions



Burton et al. 2018. Landscape Ecology, *in press*

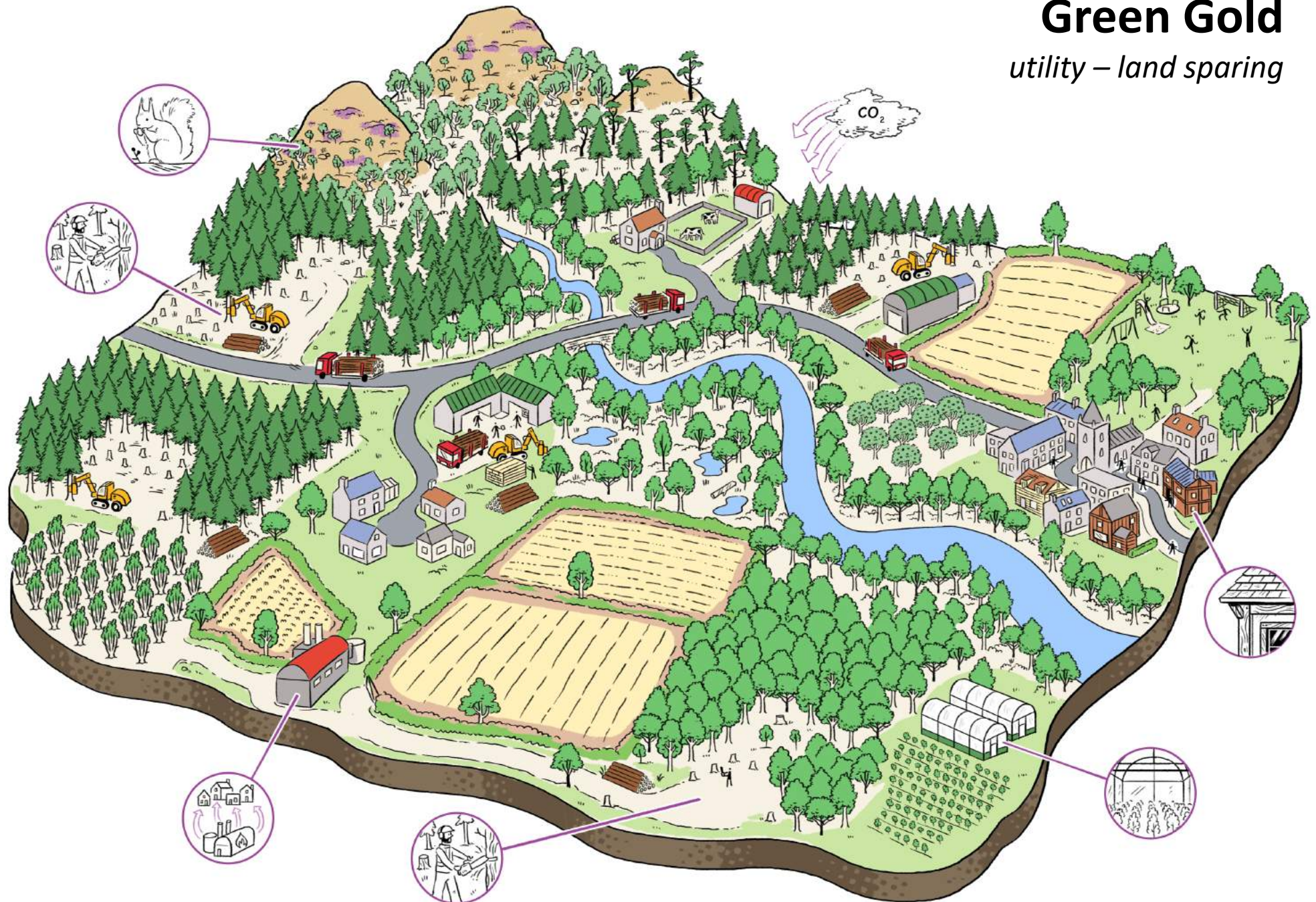


Burton et al. 2018. Landscape Ecology, in press



Green Gold

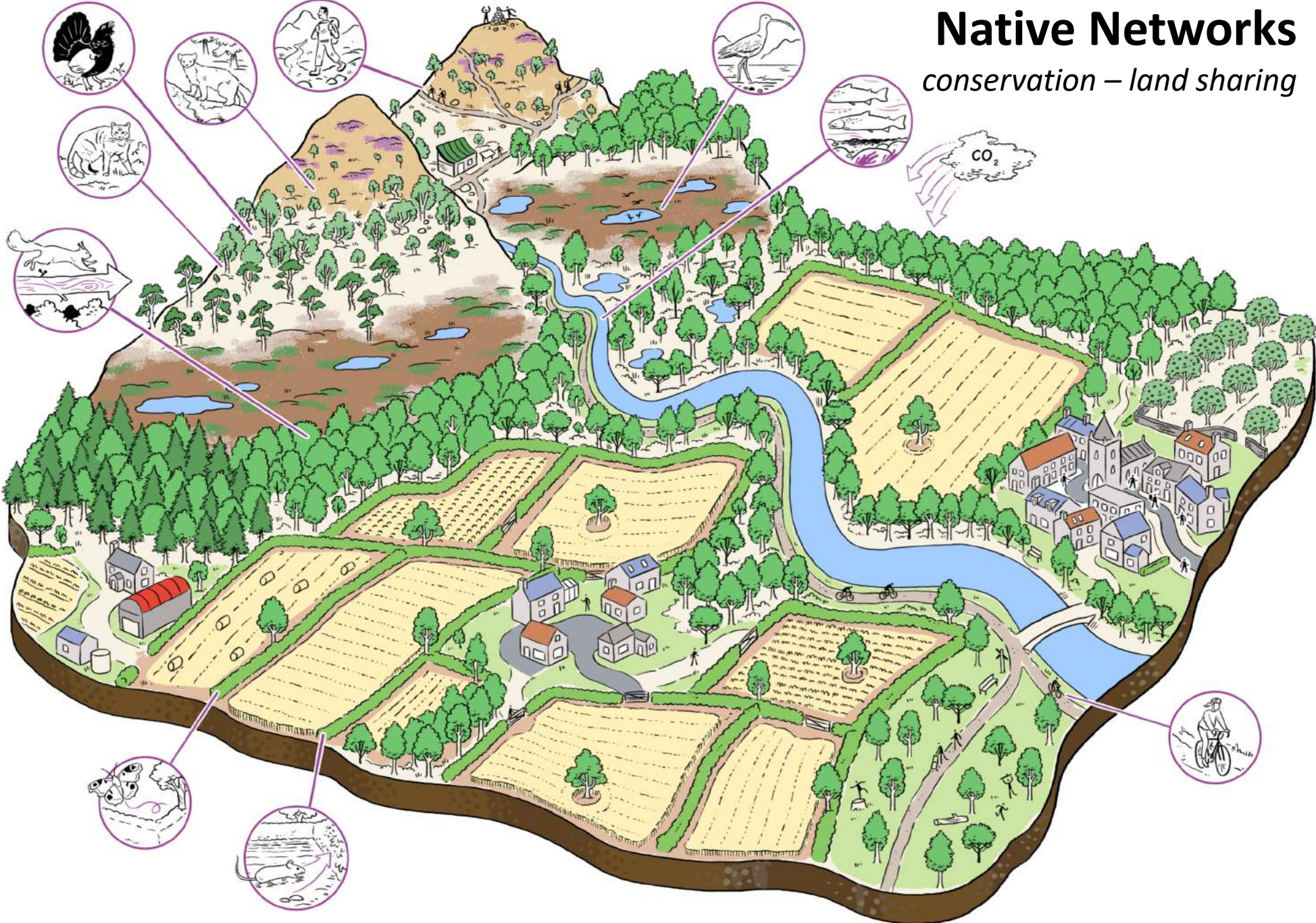
utility – land sparing



Burton et al. 2018. *Landscape Ecology*, in press

Native Networks

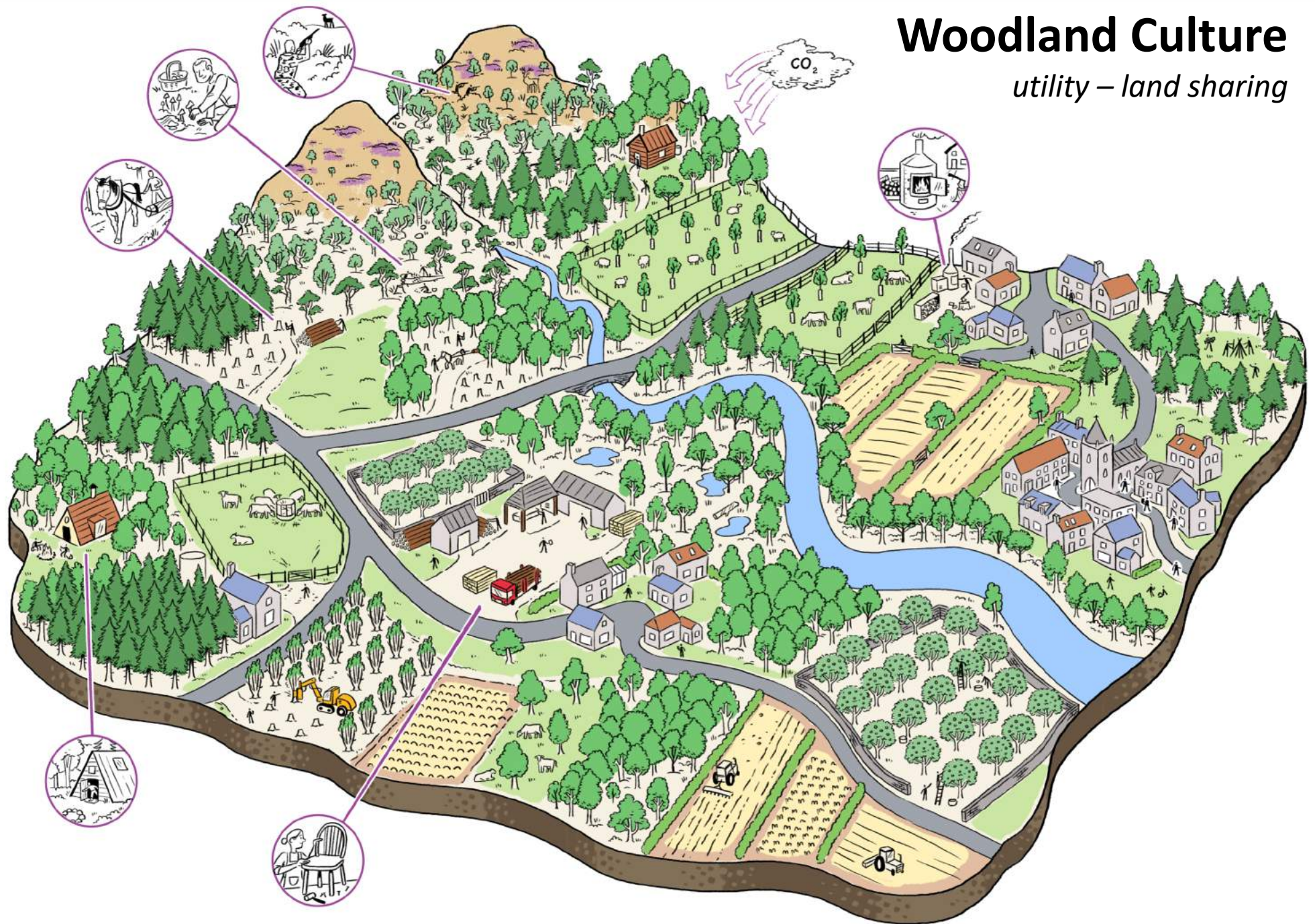
conservation – land sharing



Burton et al. 2018. Landscape Ecology, pending final revisions

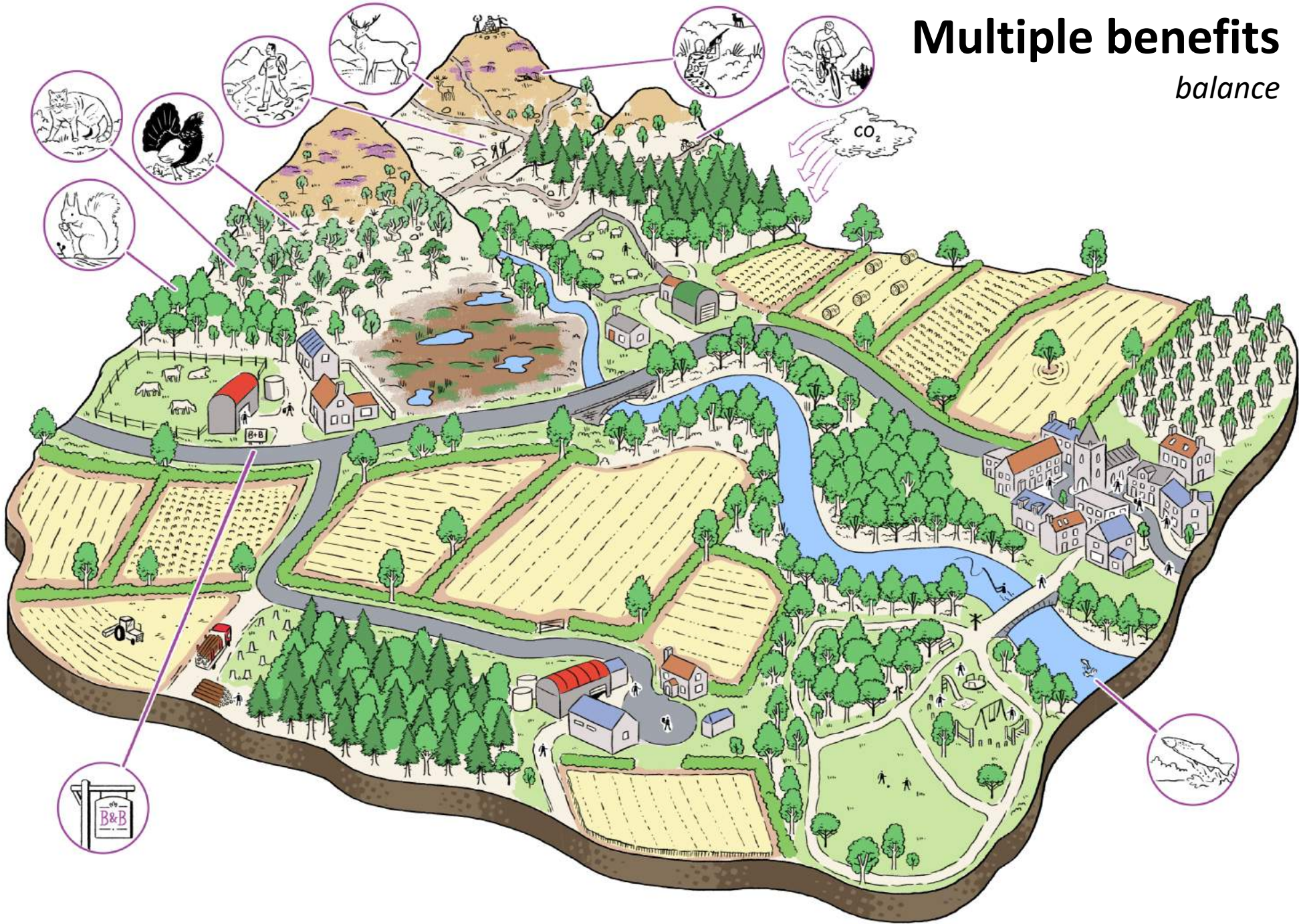
Woodland Culture

utility – land sharing



Burton et al. 2018. *Landscape Ecology, in press*

Multiple benefits *balance*



Burton et al. 2018. Landscape Ecology, *in press*

Common ground Divergence



Carbon, biodiversity, water

Regional taskforce



Facilitation/mediation

Tailored communication



Investment/payment for
Natural Capital or ES



Extent of land reform and
community empowerment

Cultural shift

Treatment of agriculture,
sporting, subsidies





Do environmental policy instruments support the delivery of multiple ecosystem services?

Alba Juárez-Bourke, Kirsty Blackstock

Jessica Maxwell, Sophie Tindale and Kerry Waylen



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Policy instruments



Soil

Fresh water

Biodiversity



Ecosystem services

Managing natural resources for multiple services

- Management practices affect the delivery of ecosystem services
- Can policy instruments be better aligned to help deliver multiple ecosystem services?
- Policy instruments = regulations, incentives, advice, guidance, hybrid
- We selected 10 that affect biodiversity, soil or water in Scotland



Do policy instruments help deliver multiple services?

- Instruments can help deliver multiple services
 - Either by design, or through how they are implemented, or both (e.g. Water Environment Fund)
 - Highlighting multiple services can be used to raise uptake and awareness



Are there gaps or conflicts between instruments?

Gaps?

- Few and weak instruments target soil, air quality, biodiversity, climate change

Conflicts?

- No evidence of conflict
- Efforts to avoid conflict or duplication

But...

- There are opportunities for better alignment
 - Cross compliance (soil, climate change)
 - Connections between some instruments
 - Expanding objectives of the instruments





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Thank you

More information on project can be found at:

<http://www.hutton.ac.uk/research/projects/analysing-how-policy-instruments-shape-soil-water-and-biodiversity>

Research funded by Scottish Government Strategic Research Programme 2016-21



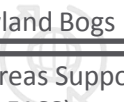
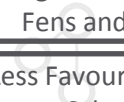
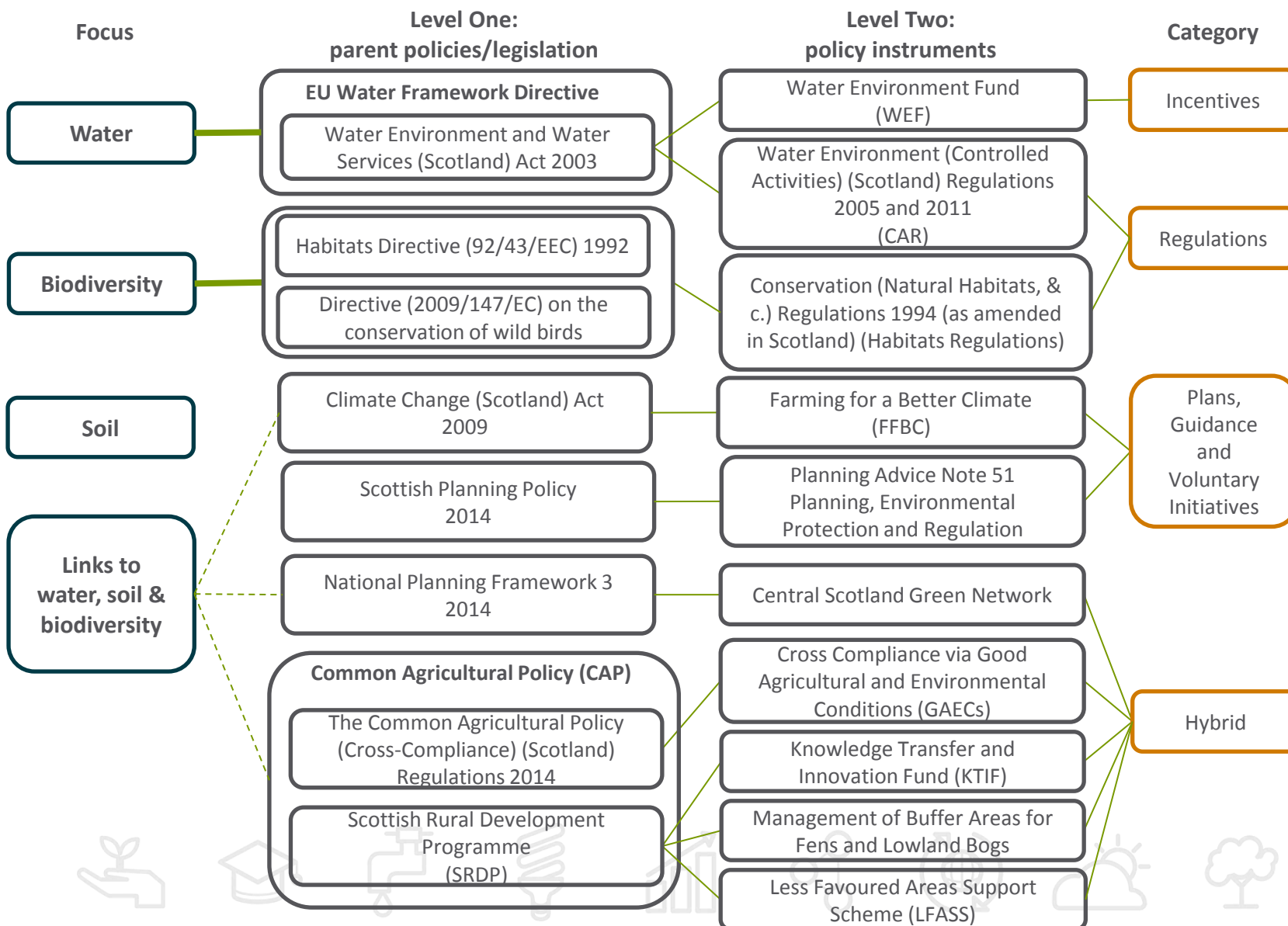
Scottish Government
Riaghaltas na h-Alba
gov.scot

More information on project can be found at:

<http://www.hutton.ac.uk/research/projects/analysing-how-policy-instruments-shape-soil-water-and-biodiversity>



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Hutton
Institute



How can we integrate ecosystem services in impact evaluation?

Lessons learnt from three SNH projects

Donatien von Rohland
Scottish Natural Heritage
Natural Capital Investment Graduate
Donatien.vonRohland@nature.scot



EcoCo Life+



Figure 4. Large ditch in Compartment 2 at Fannyside Muir before and after installation of reinforced plastic piling dams.

Left: Before work began. Right: Same ditch in late October 2015 after 3 days of rain.



Challenges

- Inherent bias in measuring value
- Translating complex outcomes into measurable indicators
 - The ecosystem services framework
 - Time and budget constraints
 - Surveys and interviews
- Lack of readily available data
- Difficulty in engaging with stakeholders



Blairbeth Golf Course site



Opportunities

- Improving existing monitoring and evaluation, capturing indirect benefits.
- Making the case for natural capital investment with new, evidence-based arguments.
- Offer a more comprehensive view of the benefits of a project for the general public.



Scottish Natural Heritage Dualchas Nàdair na h-Alba

Thank you!

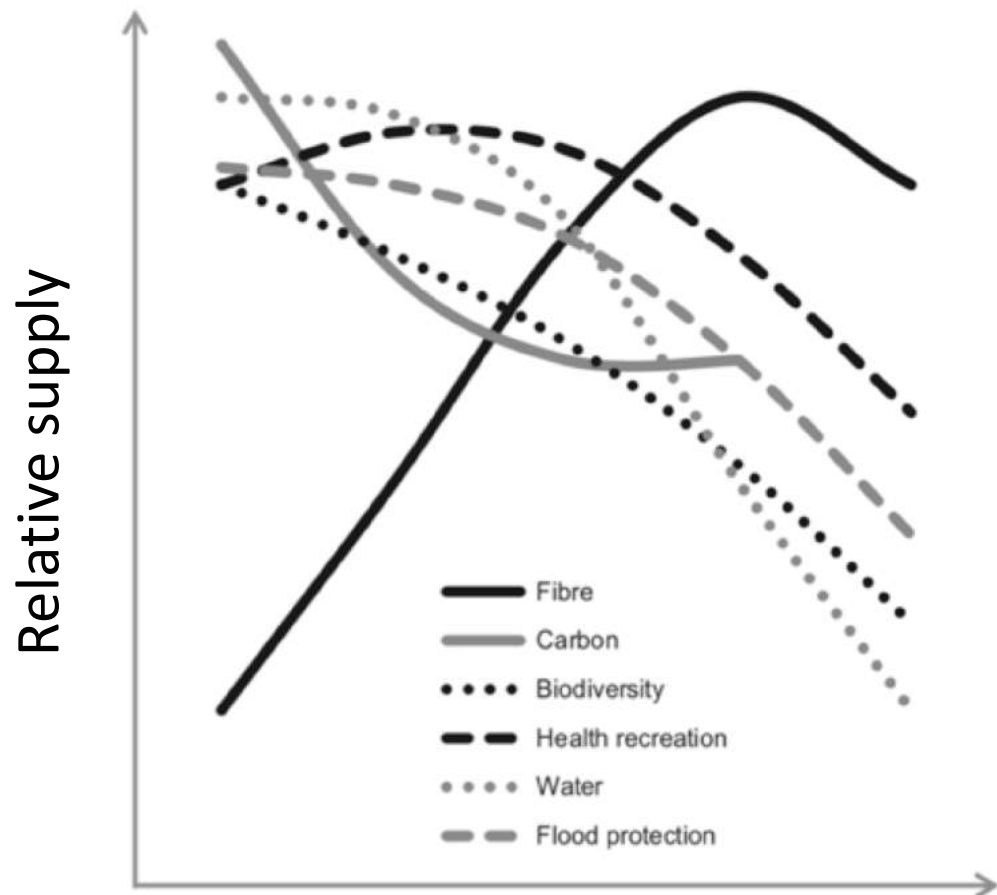
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Natural Capital Investment Graduate
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@dvrohland



How can ecosystem services support decision-making in publicly-owned forests?

Louise Sing, Marc Metzger, Duncan Ray,
Forest Research
School of Geosciences, University of Edinburgh

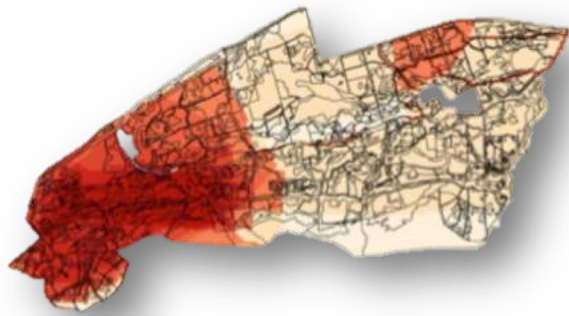




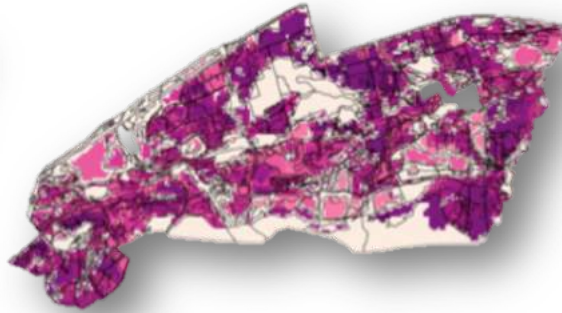
Gradient of increasing management intensity

Changing forest management intensity affects the supply of ecosystem services

Source: Sing et al (2018) *Forestry* 91 (2), 151-164



Social value



Standing carbon



Recreation

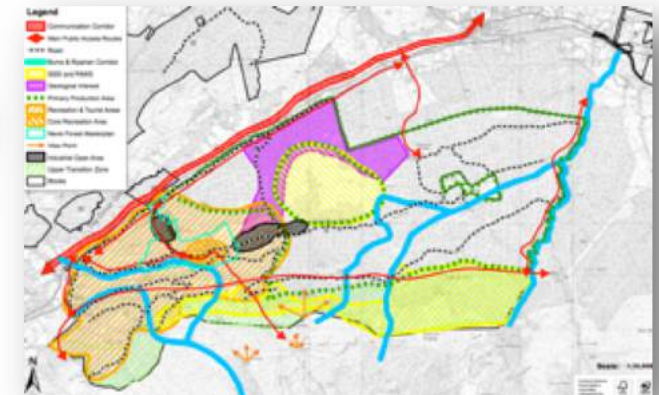
1. By filling knowledge gaps about *current* supply




Timber (yield)



Biodiversity



Informing design plan

A person wearing a pink helmet and a light blue long-sleeved shirt is riding a blue bicycle on a dirt trail. The trail is surrounded by dense green vegetation, including ferns and trees. A wooden post with a blue arrow sign is visible on the right side of the trail. The background shows a dense forest with sunlight filtering through the trees.

2. By exploring the impact of alternative management plan scenarios on *future* supply

“How much change in the forest is required to maintain and increase benefits?” 🤔

Forest planning manager



PROTOTYPE

in development

Select

Zone

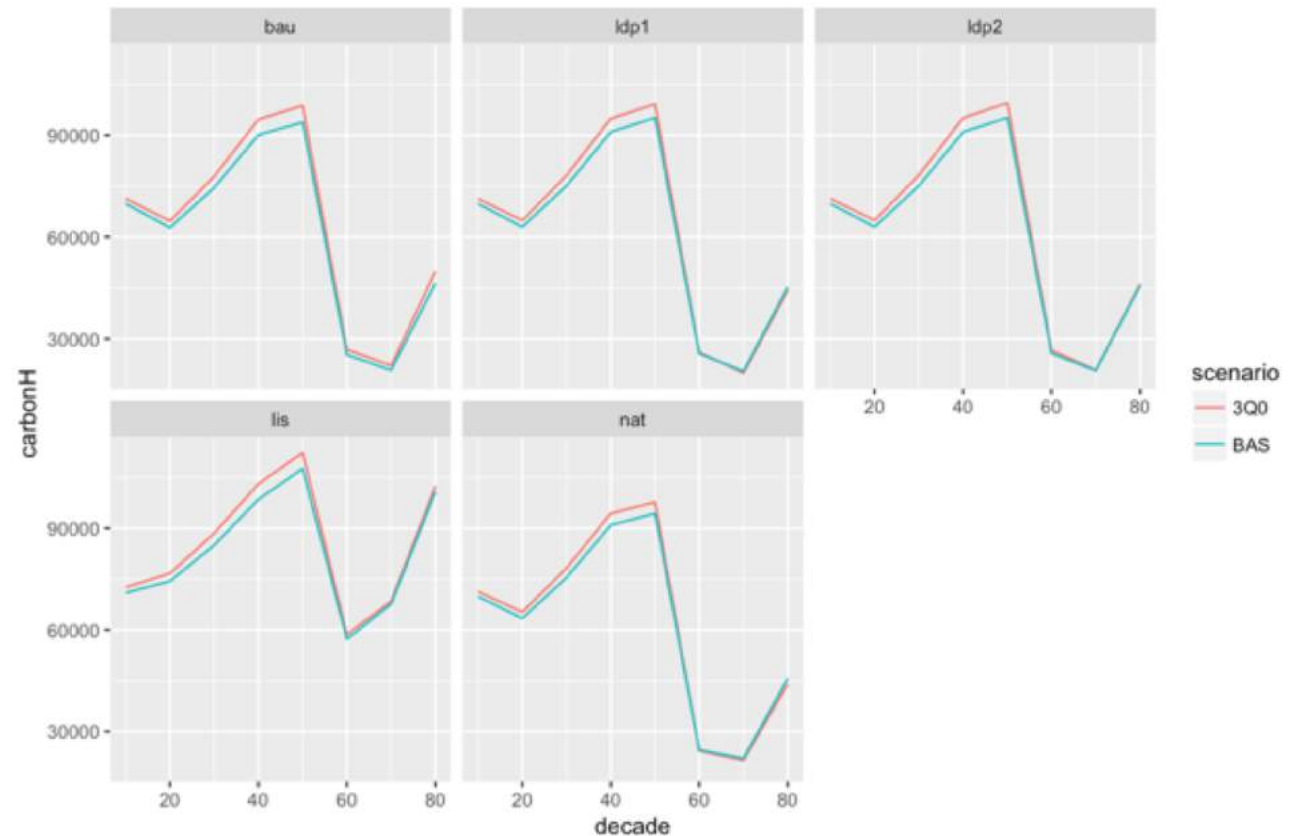
- Primary production zone
- Core recreation and tourism zone
- SSSI/PAWS areas
- Upper transition zone
- Riparian zone

Ecosystem service indicator

carbonH

Leanachan management graph tool

Shows supply of selected ecosystem service over time for each management scenario



PROTOTYPE in development



Select

Management

bau

ldp1

ldp2

lis

nat

Climate model

3Q0

BAS

Decade

2020

2050

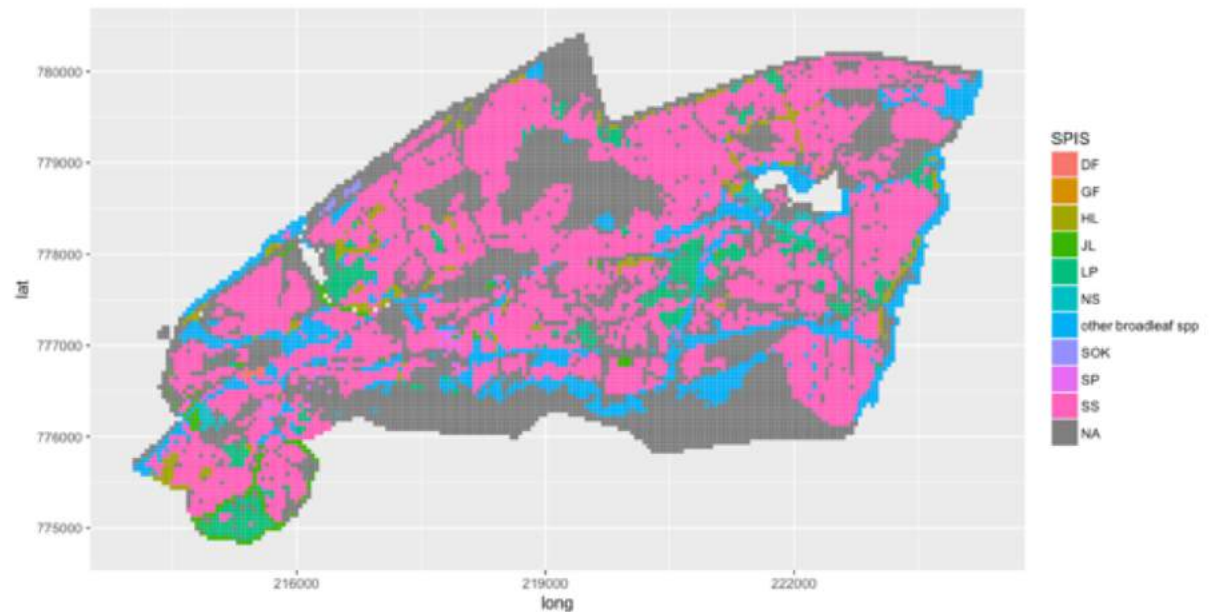
2080

Variable

SPIS

Some text here to describe the scenarios...

Leanachan management map tool



PROTOTYPE in development



Select

Management

bau

ldp1

ldp2

lis

nat

Climate model

3Q0

BAS

Decade

2020

2050

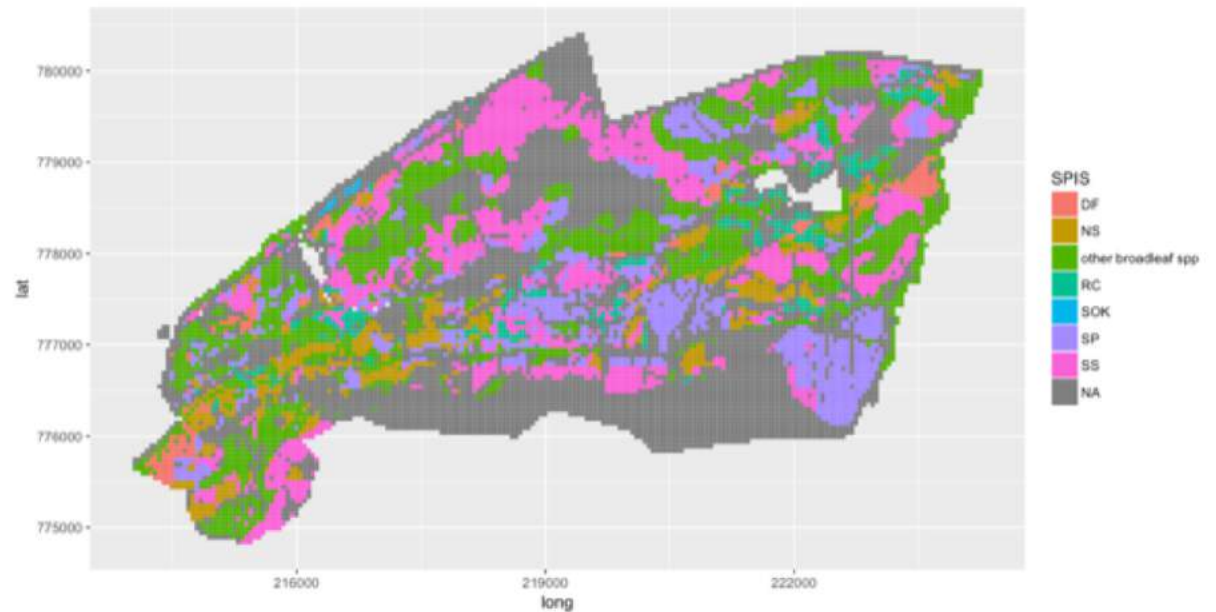
2080

Variable

SPIS

Some text here to describe the scenarios...

Leanachan management map tool





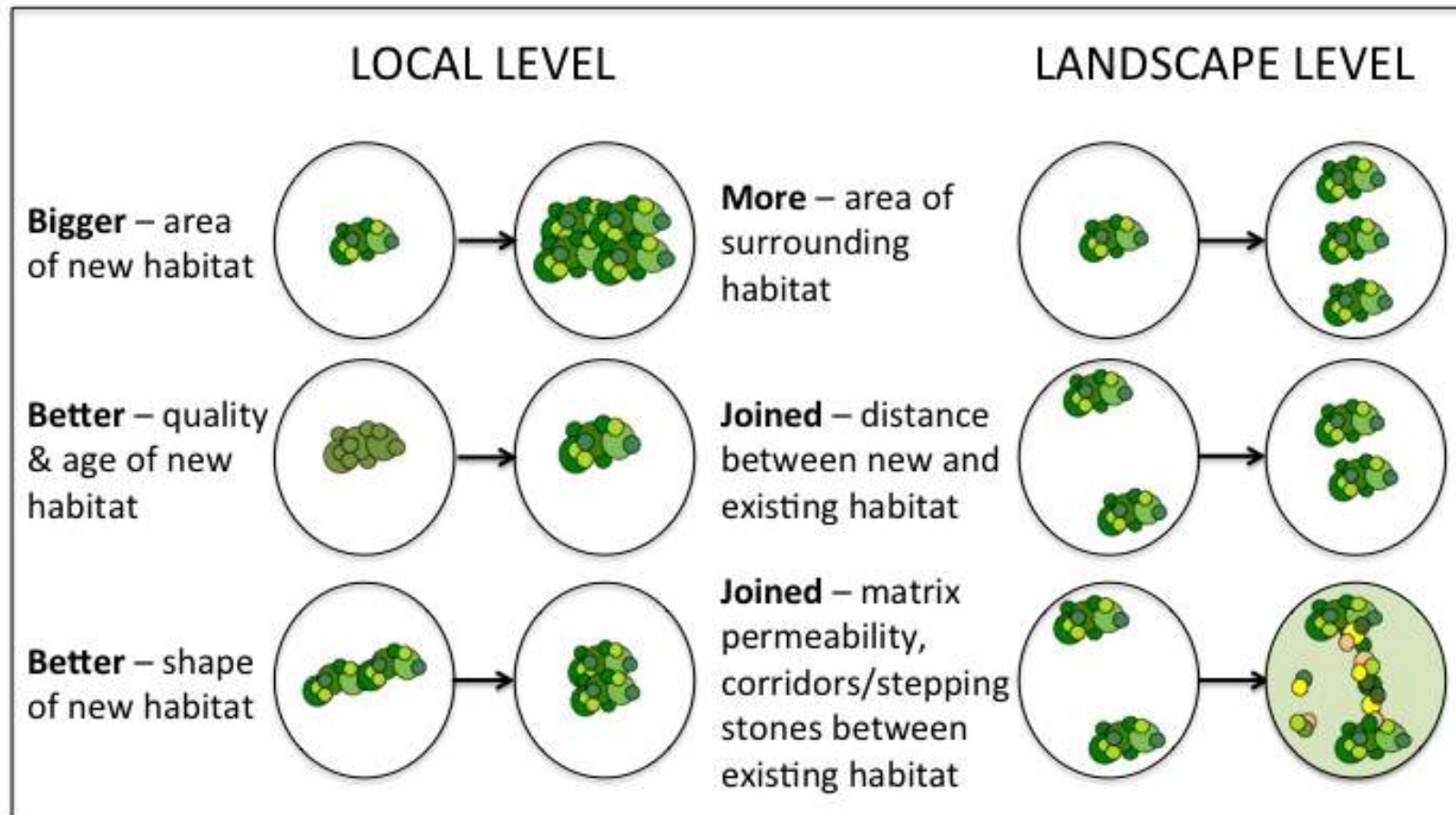
Thanks to Christina Tracey, Lochaber Forest District

More information available at:

lochaberfutures.wordpress.com

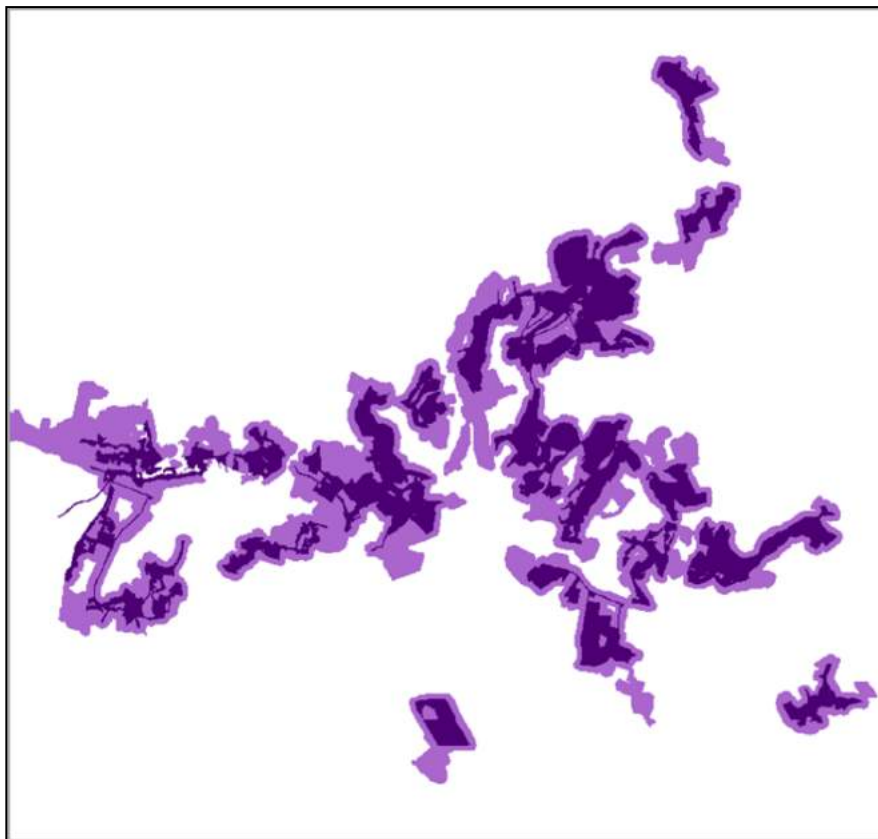
An Ecological Network Tool For Planners And Developers

Andrew Rattey



Approaches to targeting conservation action at local and landscape scales adapted from concepts set out in Lawton et al. (2010). The arrows depict positive changes, left to right, over time for each factor (Humphrey et al., 2013).

- Local authorities have a duty of care to species and their habitats under law
- National Planning Policy Framework (NPPF) states an explicit need to map ecological networks
- Central Scotland Green network initiative (Scotland)



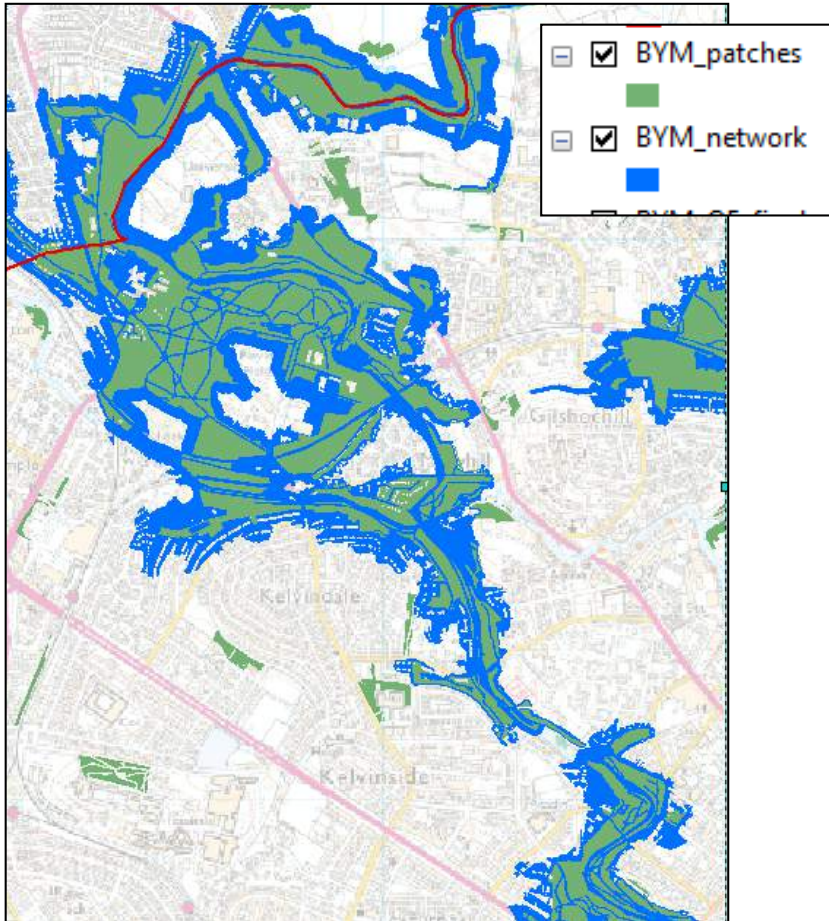
HOWEVER:

- Often unclear how they should be used
- Practitioners often lack the tools, skills and resources to fully integrate networks into decision making

THE SOLUTION:

- New tools to facilitate targeted action on the ground
- Modelling approach to facilitate targeted land management within Glasgow city region.

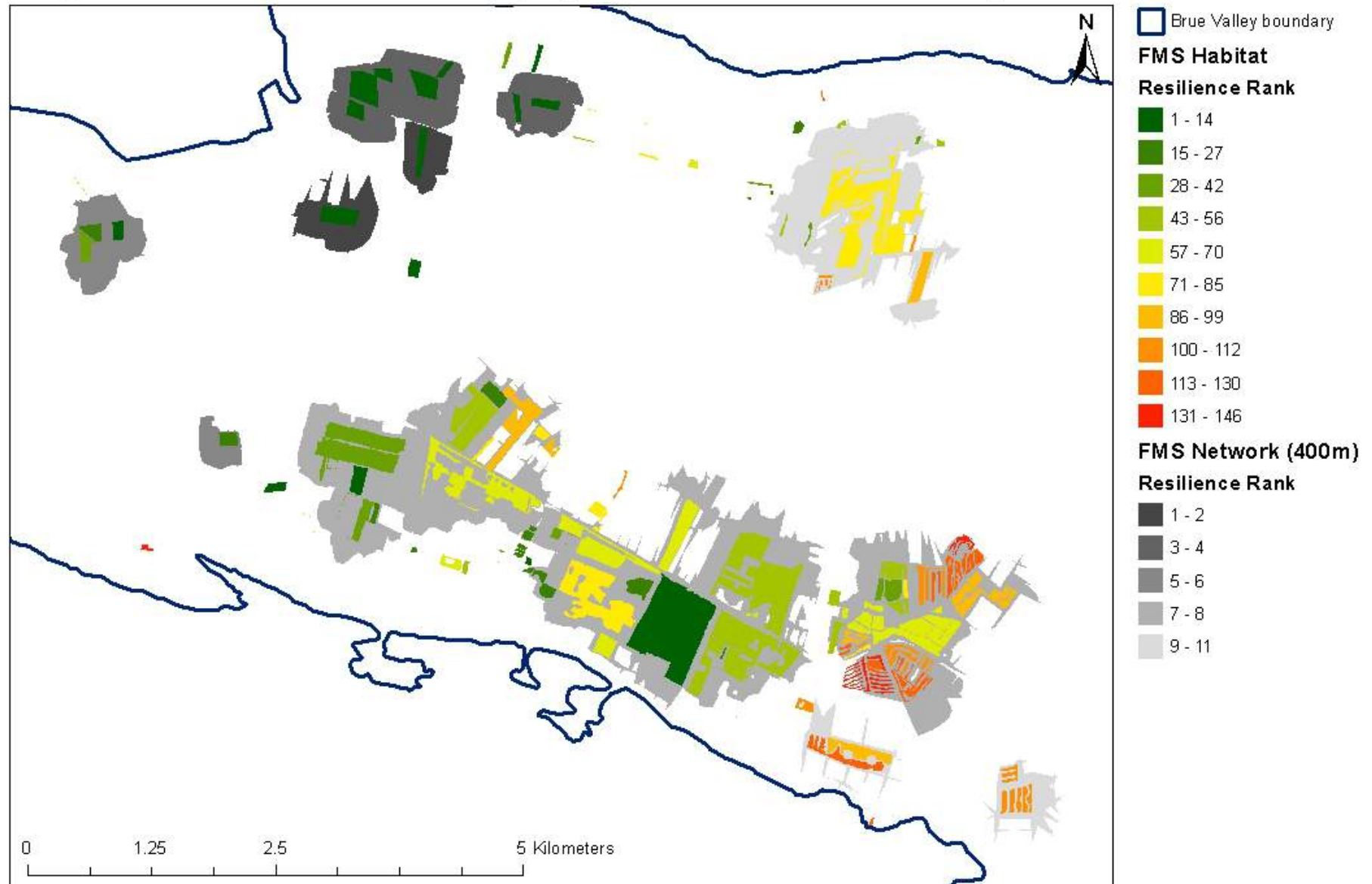
- Beetle Toolkit
 - Ecological networks



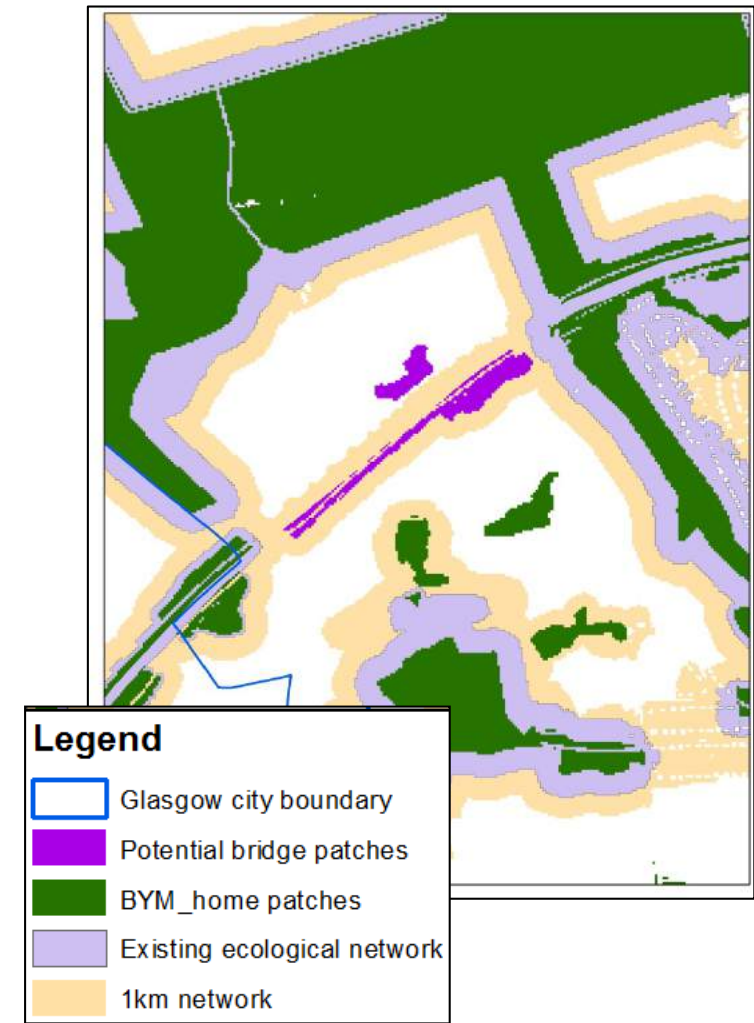
- BioCoRe tool kit
 - Attributes of networks/habitats

		METRIC	Bigger/ Better	More	Joined
HABITAT	COHERENCE	Patch location score			
		Interconnectivity			
		Proportional cover			
HABITAT	RESILIENCE	Patch size			
		Shape index			
		Naturalness			
		Edge naturalness			
		Proportion designated			
NETWORK	COHERENCE	Network area			
		Proportion of core area per network			
		Sum of interconnectivity per network			
		Sum of intra-connectivity per network			
	RESILIENCE	Change in interconnectivity per network with stepping stones			
		Average area weighted resilience score per network			

Ecological resilience of Fen, Marsh and Swamp (FMS) habitat and networks in the Brue Valley



- Which patches could be critical connections to networks but require enhancement?
- Generate a second network (2 X original dispersal distance)
- Pick out patches that fall within "connecting zones"
- Calculate benefits gained from transforming patches into network stepping stones.



- Ecological network tool for developers
 - Quantitative
 - Spatially explicit
 - Evidence informed
 - Standardized – enable comparisons between areas over space/time
- Tool provides GCV/Glasgow city council outputs to look at and inform decision making



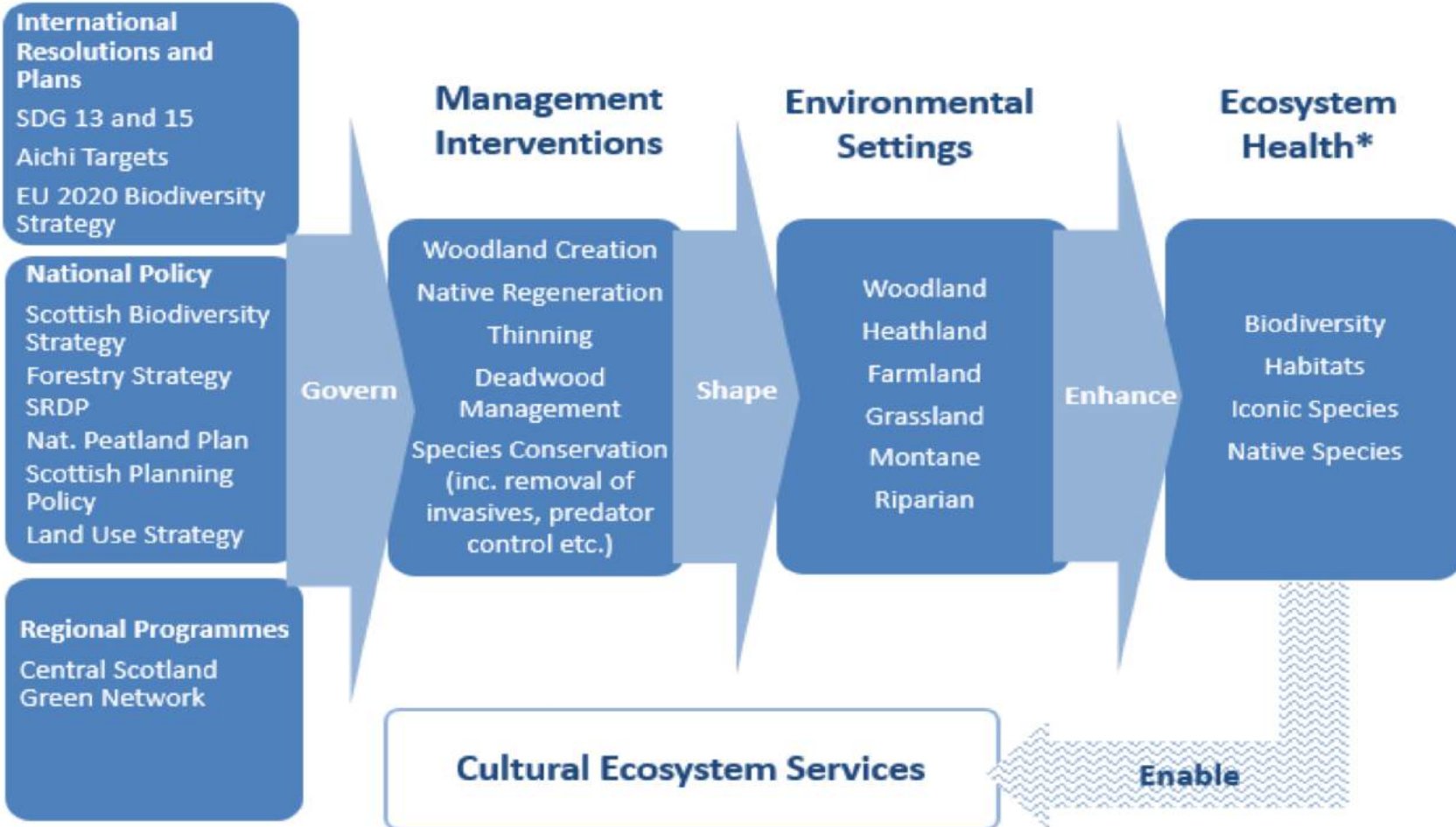
Do healthier ecosystems mean healthier people?

Scott Herrett & Kate Irvine

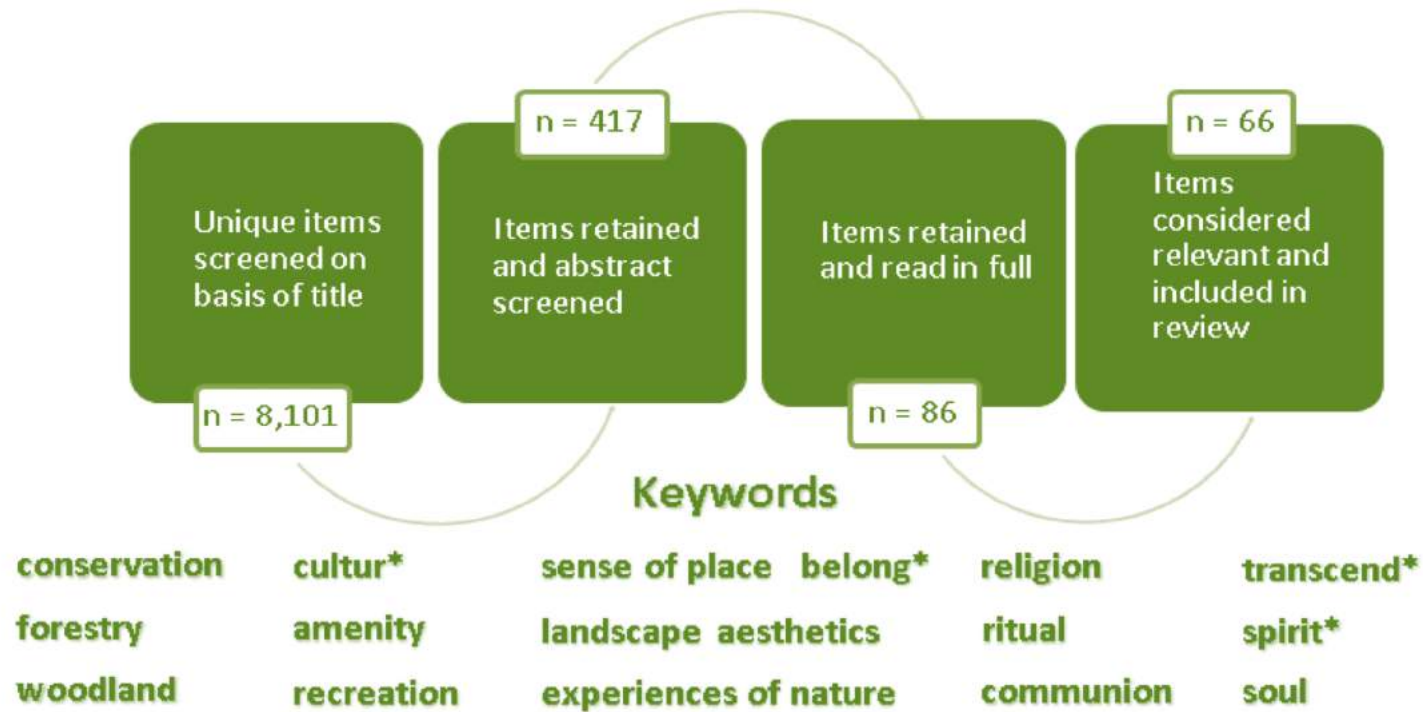


Policy and research context

Policy Drivers



Review process and keywords



Key points

Lack of studies on social and ecological outcomes

Public preferences - light and airy - structurally heterogeneous -
comprise diverse/iconic species

Spiritual – few studies

Few studies on how native/biodiverse woodlands enable CES
differently than non-native

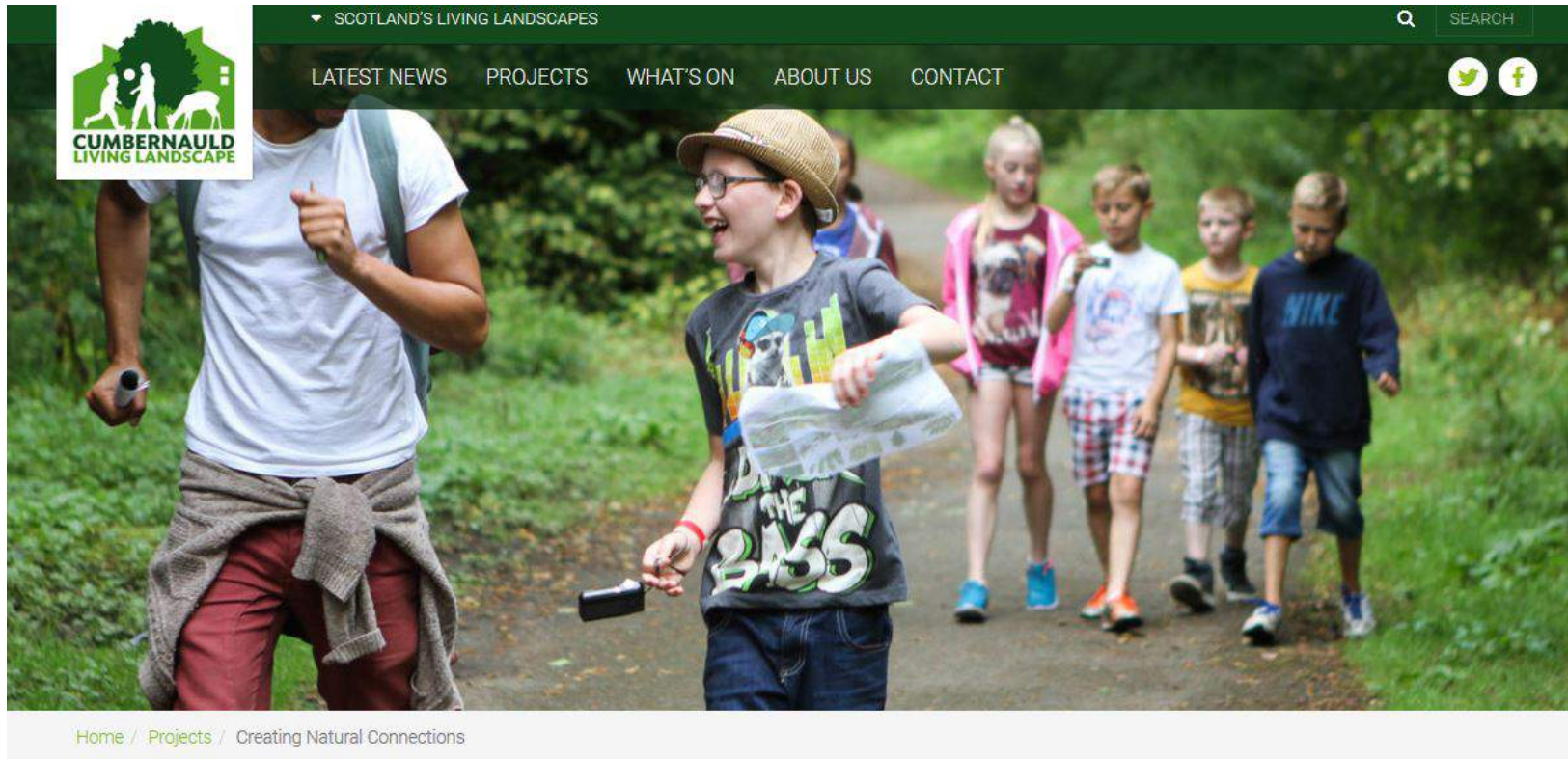
Meanings given to woodlands

CES are linked with BOTH native (e.g. Scots pine) as
well as with non-native (e.g. spruce, larch, beech)
woodlands.



Implications of findings

Need to embed monitoring of social as well as ecological dimensions for interventions



CREATING NATURAL CONNECTIONS

Implications of findings

Is biodiversity an appropriate indicator for the existence of CES?



Implications of findings

Diverging perceptions towards native/non-native species
(or 'what is natural')



Thank you

Reference

Irvine, K.N. and Herrett, S. (under review). Does ecosystem quality matter for cultural ecosystem services? *Journal of Nature Conservation*.

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Scott Herrett Scott.Herrett@hutton.ac.uk

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