



Economic Policy and the Environment: Opportunities for LINK

A workshop for LINK members and taskforces organised by the Economics Taskforce

18 February 2015

Methodist Church, Nicolson Square, EH8 9BX

9:30 – 10:00	Registration & coffee/tea	
10:00 - 10:20	Economics and the environment	Matthew Crighton
10:20 - 10:40	LINK's engagement with economics	Phoebe Cochrane
10:40 - 11:30	Breakout groups: Taking stock and aspirations for LINK	
11:30 - 11:45	Tea/coffee	
11:45 - 12:15	What tools does Government use in policy formation/decision making to take account of environmental issues	Scottish Government: Sally Thomas
12:15 - 12:30	Q&A on SG's presentation	
12:30 - 13:30	Lunch	
Plenary session: Assessing and valuing the environment's contributions to humankind – a useful approach or a dangerous concept?		
13:30 - 14:00	The assessment of ecosystems services, natural capital and natural capital accounting	Marc Metzger and Bruce Wilson
14:00 - 14:20	Case study 1: How the use of ES/NC has helped an environmental campaign.	Bruce Wilson
14:20 - 14:40	Case study 2: How the ES and NC agendas can compromise environmental concerns	Paul Walton
14:40 - 15:00	Tea/coffee	
15:00 - 16:00	Breakout groups: Whether and how LINK members can use these tools or other economic approaches for specific concerns.	
16:00 - 16:30	Group feedback and round up	

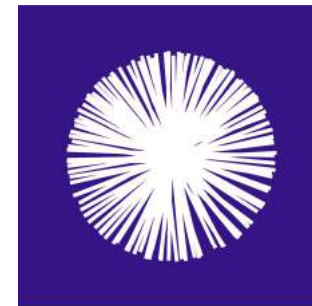
Members are invited to prepare for this workshop. Please read *Environment and the Economy: Helping Scotland to Flourish* at <http://www.scotlink.org/files/policy/PositionPapers/LINKHelpingScotlandFlourish.pdf> and two Flourishing Scotland papers: *Economic Policies and LINK* and *Sustainable Development and Related Concepts* which are both at <http://www.scotlink.org/member-docs/internal-reports/>. Additionally, useful articles on ecosystem services and natural capital can be found at: <http://www.theguardian.com/environment/georgemonbiot/2014/jul/24/price-nature-neoliberal-capital-road-ruin> <http://www.theguardian.com/sustainable-business/natural-capital-neoliberal-road-ruin-george-monbiot-experts-debate> <http://www.theguardian.com/sustainable-business/blog/framing-natural-capital-economy-ecology-not-competition>

Participants registered for ETF workshop 18 Feb 2015

Beryl Leatherland	SWLG
Helen Todd	Ramblers Scotland
Ross Finnie	LINK President
Alice Walsh	LINK
Richard Luxmoore	National Trust for Scotland
Gabrielle Flinn	Buglife
Ric Lander	FoE Scotland
Jonathan Wordsworth	Archaeology Scotland
Kathy Wormald	Froglife
Eddie Palmer	Scottish Badgers
Deborah Long	Plantlife
Jen Anderson	LINK
Pete Minting	Amphibian and reptile conservation
Denis Mollison	Hebridean whale and dolphin trust
Charles Dundas	Woodland Trust
John Fitzgerald	Friends of the Earth Scotland
Jim Orr	FoE/Edinburgh City Councillor
Ishani Erasmus	SEPA
Kara Brydson	RSPB
Mandy Orr	LINK Trustee
Andy Myles	LINK
Michal Petre	Forest Research
Daniel Hinze	Scottish Government
Rurighd McMeddes	Planning Democracy
Gill Davies	FoE Scotland
Calum Duncan	MCS Scotland
Matthew Crighton	Friends of the Earth Scotland
Phoebe Cochrane	LINK
Sally Thomas	Scottish Government
Marc Metzger	University of Edinburgh
Paul Walton	RSPB
Bruce Wilson	SWT

LINK's Engagement with Economics

Phoebe Cochrane
Scottish Environment LINK



**The voice of
Scotland's
environment
community**



Contents

- Features and characteristics of our neo-liberal market economy
- Fiscal policy and the use of land
- The Scottish Economic Strategy
- Specific developments and CBA

Features and characteristics of our neo-liberal market economy

Quest for growth and GDP



- Scottish Government's National Performance Framework

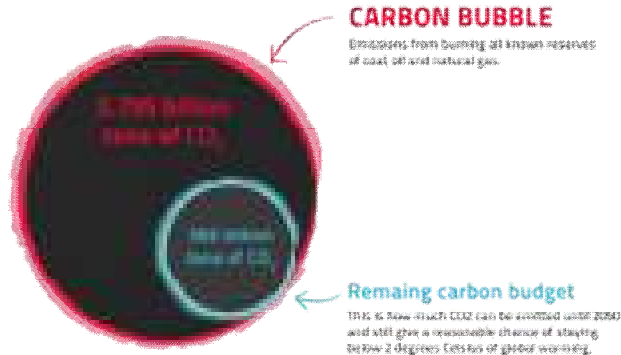
NATIONAL PERFORMANCE FRAMEWORK				
THE GOVERNMENT'S PURPOSE TO FOCUS GOVERNMENT AND PUBLIC SERVICES ON CREATING A MORE SUCCESSFUL COUNTRY, WITH OPPORTUNITIES FOR ALL OF SCOTLAND TO FLOURISH, THROUGH INCREASING SUSTAINABLE ECONOMIC GROWTH				
HIGH LEVEL TARGETS RELATING TO THE PURPOSE GROWTH PRODUCTIVITY PARTICIPATION POPULATION SOLIDARITY COHESION SUSTAINABILITY				
STRATEGIC OBJECTIVES				
WEALTHIER & FAIRER	SMARTER	HEALTHIER	SAFER & STRONGER	GREENER
NATIONAL OUTCOMES	We live in a Scotland that is the most attractive place for doing business in Europe			
	We realise our full economic potential with more and better employment opportunities for our people			
	We are better educated, more skilled and more successful, renowned for our research and innovation			
	Our young people are successful learners, confident individuals, effective contributors and responsible citizens			
	Our children have the best start in life and are ready to succeed			
	We live longer, healthier lives			
	We have tackled the significant inequalities in Scottish society			
	We have improved the life chances for children, young people and families at risk			
	We live our lives safe from crime, disorder and danger			
	We live in well-designed, sustainable places where we are able to access the amenities and services we need			
	We have strong, resilient and supportive communities where people take responsibility for their own actions and how they affect others			
	We value and enjoy our built and natural environment and protect it and enhance it for future generations			
	We take pride in a strong, fair and inclusive national identity			
	We reduce the local and global environmental impact of our consumption and production			
	Our public services are high quality, continually improving, efficient and responsive to local people's needs			

Review of NPF and LINK

- Roundtable
- LINK asking for:
 - Purpose wording to be changed
 - The environmental indicators and measures to be better
 - Appropriate indicators to be included to ensure that Scotland is performing within the constraints of sustainable development.

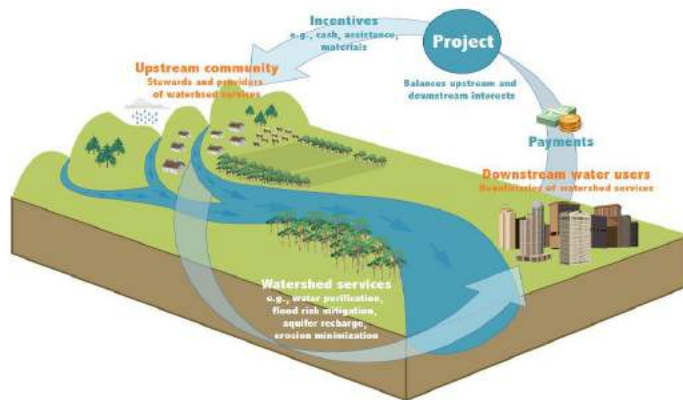
Finance and investment

- A vital part of market based economies
- Growth of financial sector
- Characterised by short-termism
- Guided by credit ratings
- LINK and LINK member activities



Market failure and externalities

- Environmental or social cost or benefit experienced by a third party
- Market based instruments (MBIs)
- Payment for ecosystem services



- LINK members and partnership projects

Fiscal policy and the use of land

- Aims of fiscal policy
- Fiscal policy and the use of land
- Land reform and proposed changes



- CAP
- LINK engagement

Scottish Economic Strategy

- Supporting business environment
 - Transition to a low carbon economy
 - Learning, skills and wellbeing
 - Infrastructure development and place
 - Effective government
 - Equity
-
- National Planning Framework 3: The spatial expression of the Government's economic strategy
-
- Natural environment recognised as a valuable asset in the Economic Strategy and Planning Framework.

Scotland's rich and diverse natural environment is a national asset and a source of significant international competitive advantage. We trade on its quality so its continuing health and improvement is vital to sustainable economic growth. Scotland's growth sectors tourism and food and drink depend on high quality environment.

LINK engagement

- Input to Planning Policy and Guidance
- Highlighting where enhanced environment can contribute to strategic priorities:
 - ✧ Contribution of environment to priority sectors
 - ✧ Woodlands and wellbeing
 - ✧ Equity
 - ✧ Infrastructure

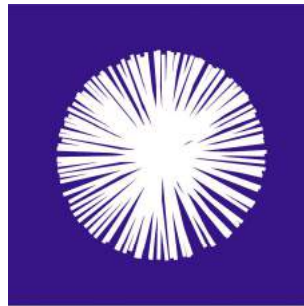


Individual developments and CBA

- Working to minimise the environmental harm of individual developments
- Using economic studies to highlight the value of the environment

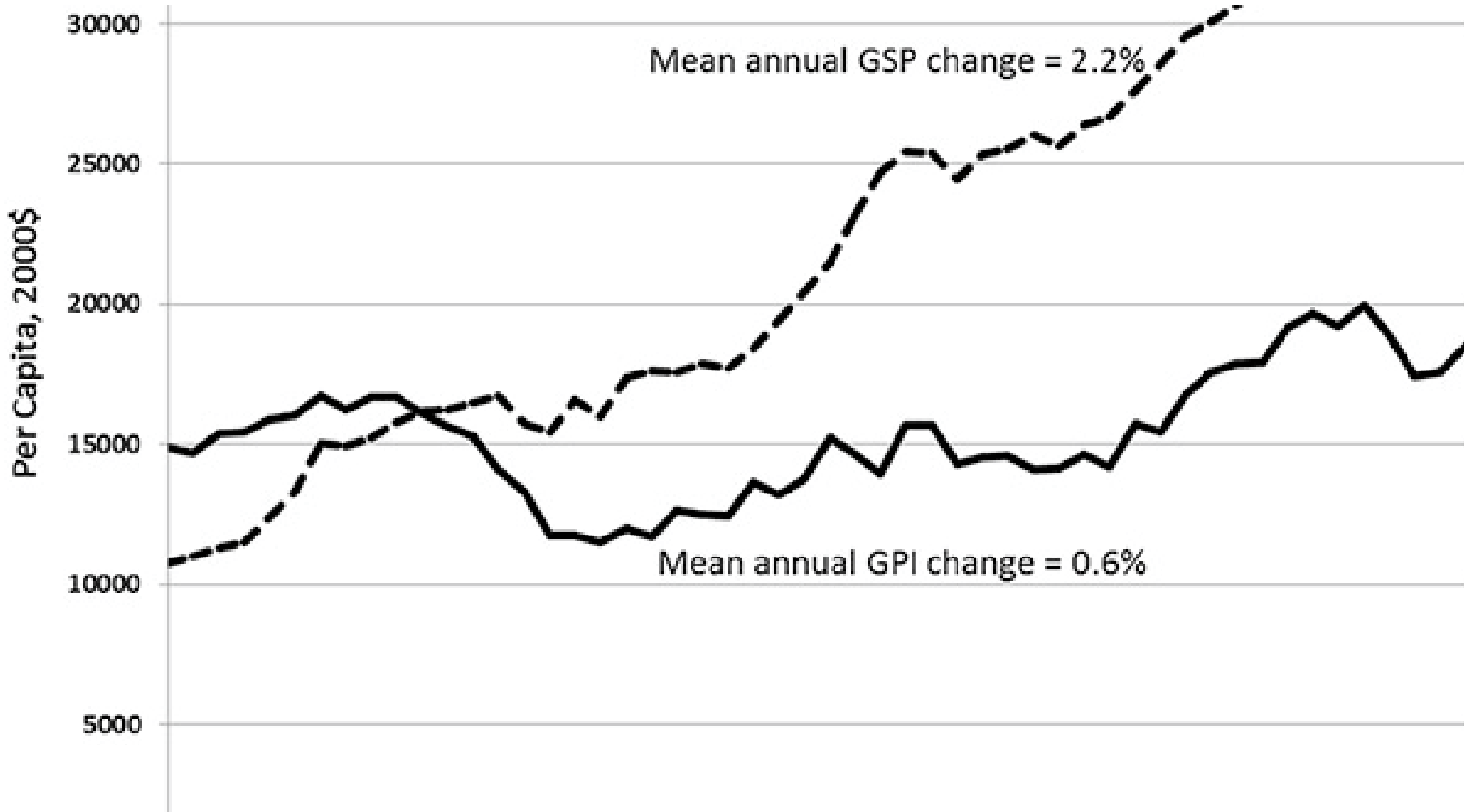


THANK YOU FOR LISTENING



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Scotland's
environment
community**





Economic instruments and market regulation in CAP, CFP and energy policy

- CAP – significant subsidy levels
- CFP – market regulation through quotas
- Energy policy – ‘Renewable Obligations Certificates’ and ‘Contracts for Difference’



The Assessment of Ecosystem Services a quick overview

Marc Metzger
The University of Edinburgh
ESCom co-chair



What are ecosystem services?

“the benefits people obtain from ecosystems”

“probably the most important trend in conservation science at the moment”

(McCauley, 2006)

What are ecosystem services?

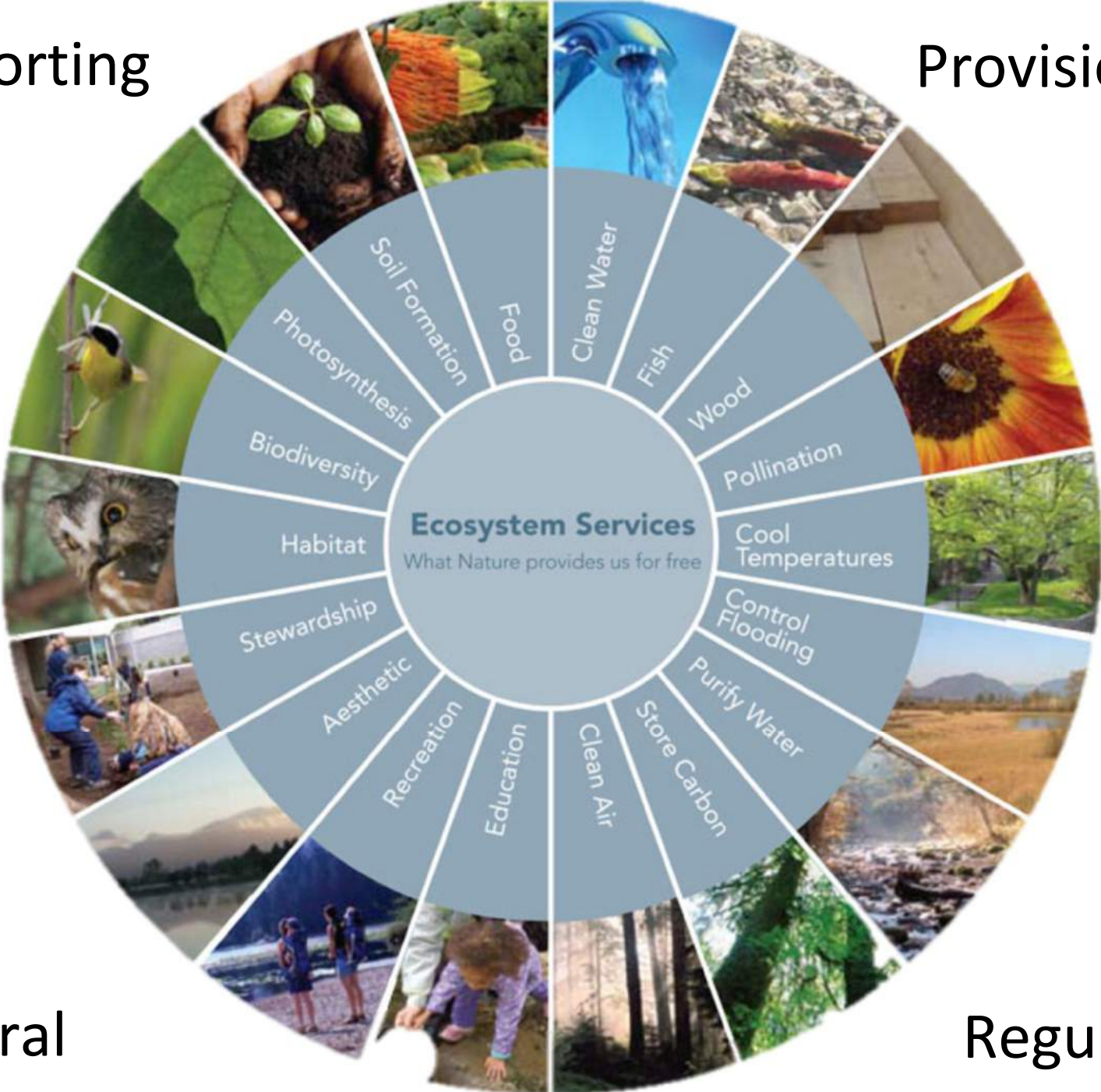
*“the benefits **people** obtain from ecosystems”*

“probably the most important trend in conservation science at the moment”

(McCauley, 2006; 27)

Supporting

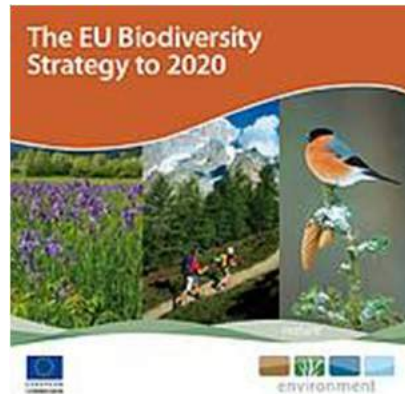
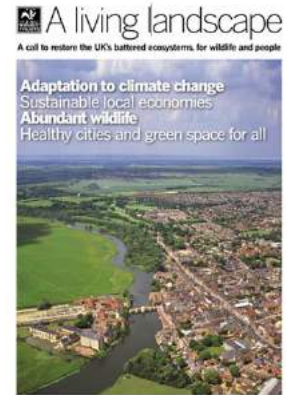
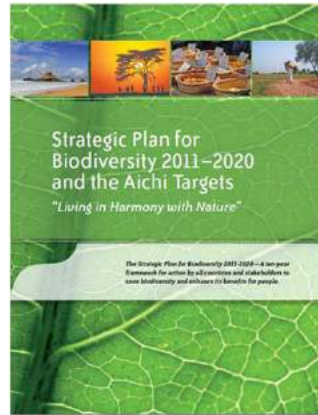
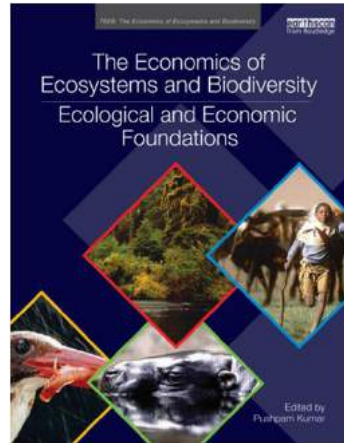
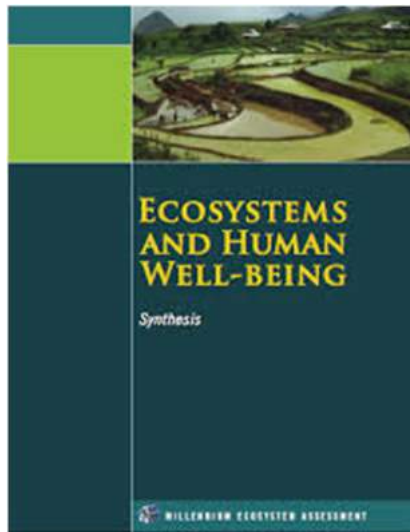
Provisioning



Cultural

Regulating

Ecosystem Services

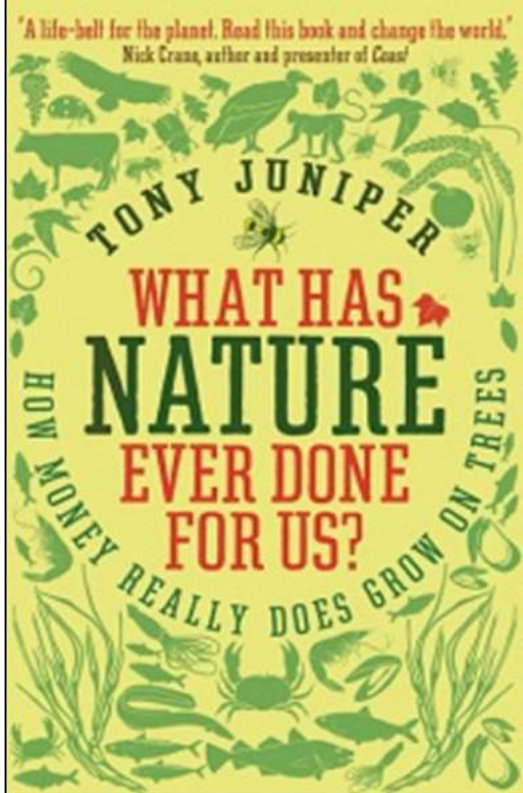


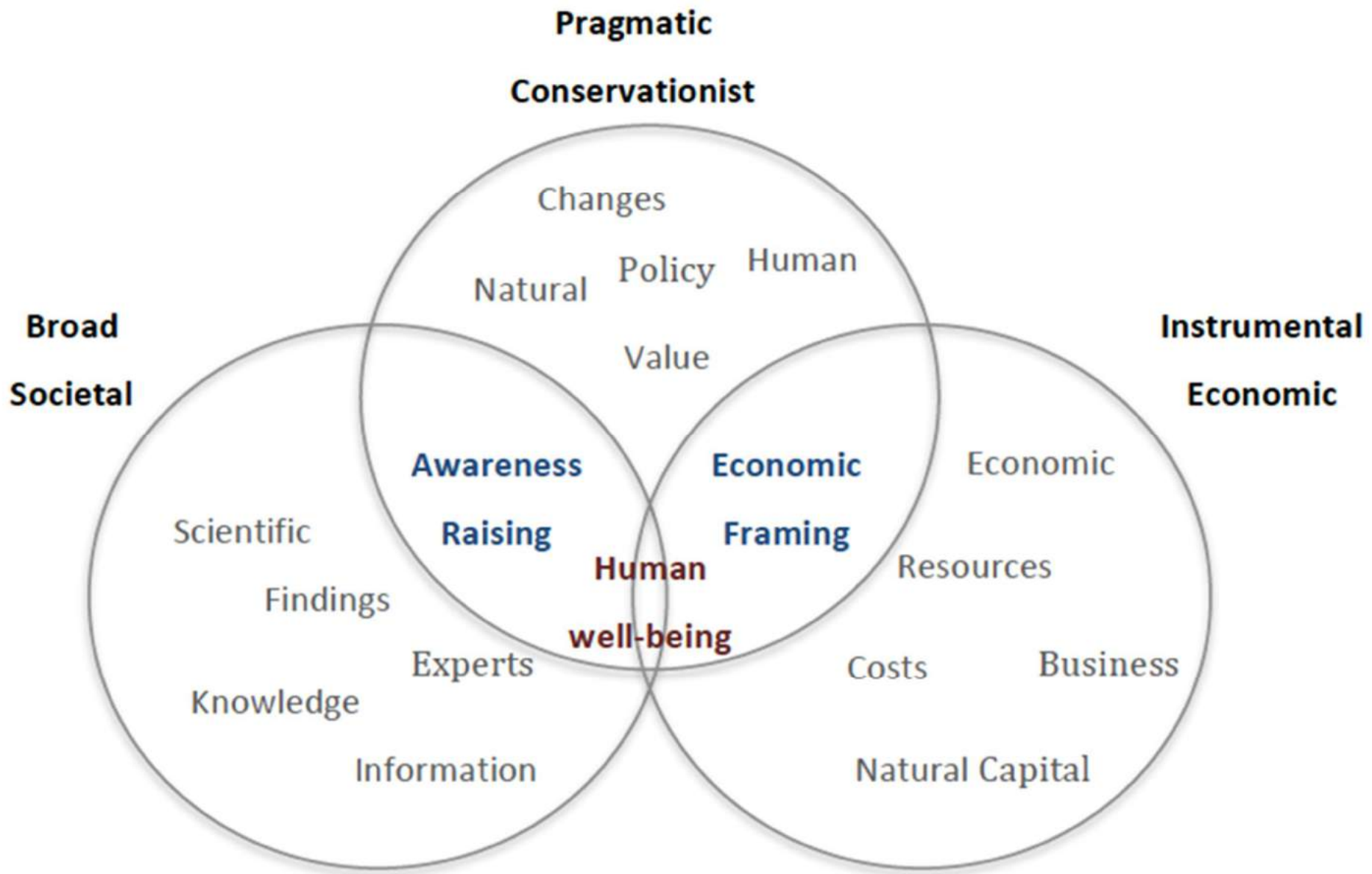
2020 Challenge for Scotland's Biodiversity



A Strategy for the conservation and enhancement of biodiversity in Scotland

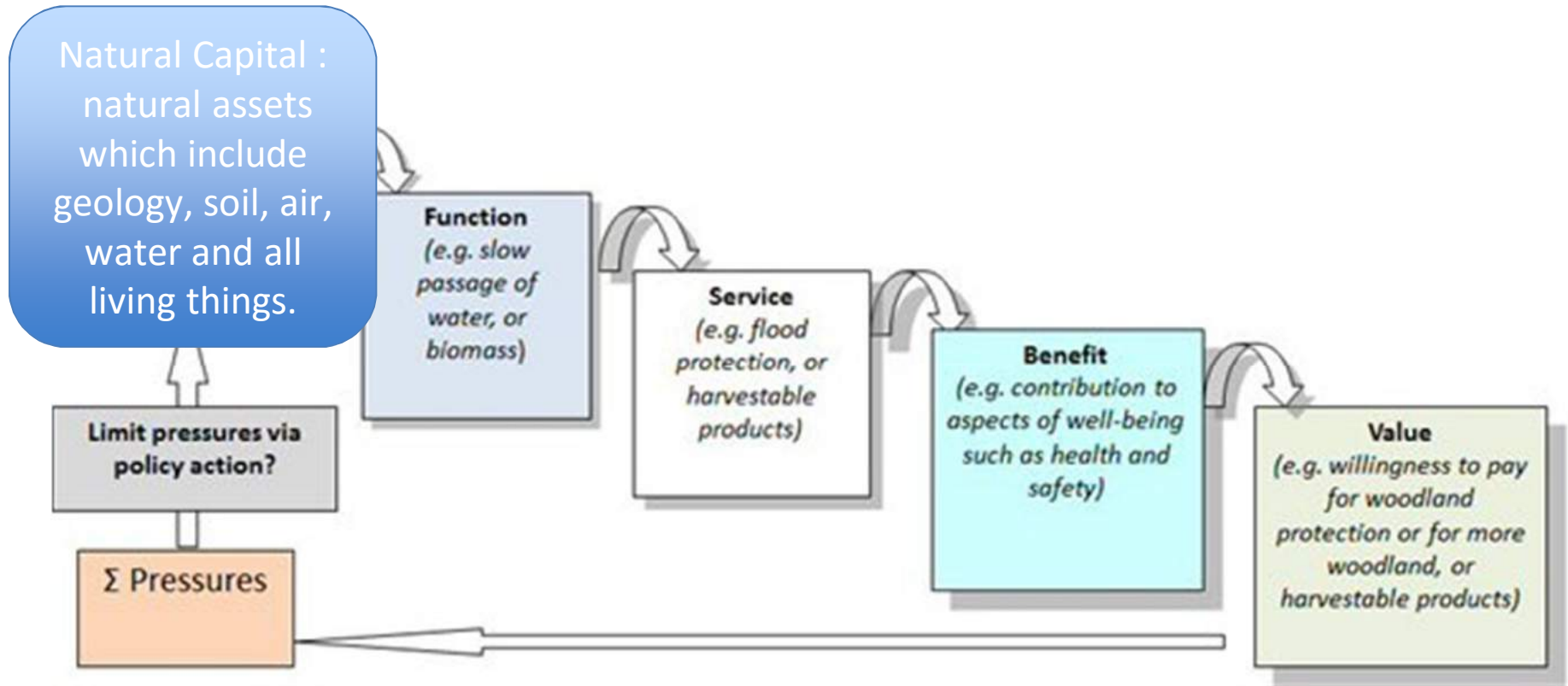






Ecosystem Services Assessment

'reporting the cascade'

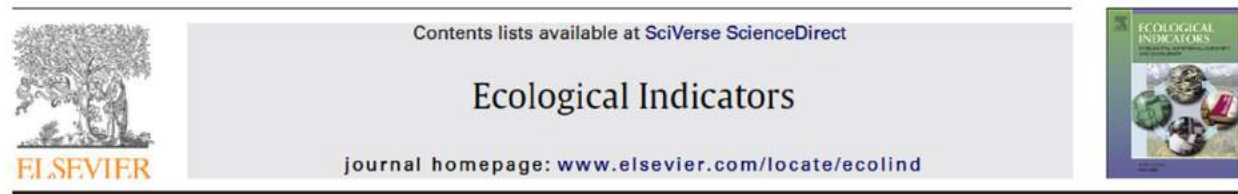


Framework for linking ecosystems to human wellbeing

(Haines-Young and Potschin, 2010, De Groot et al., 2010)

BluePrint for ecosystem services assessment

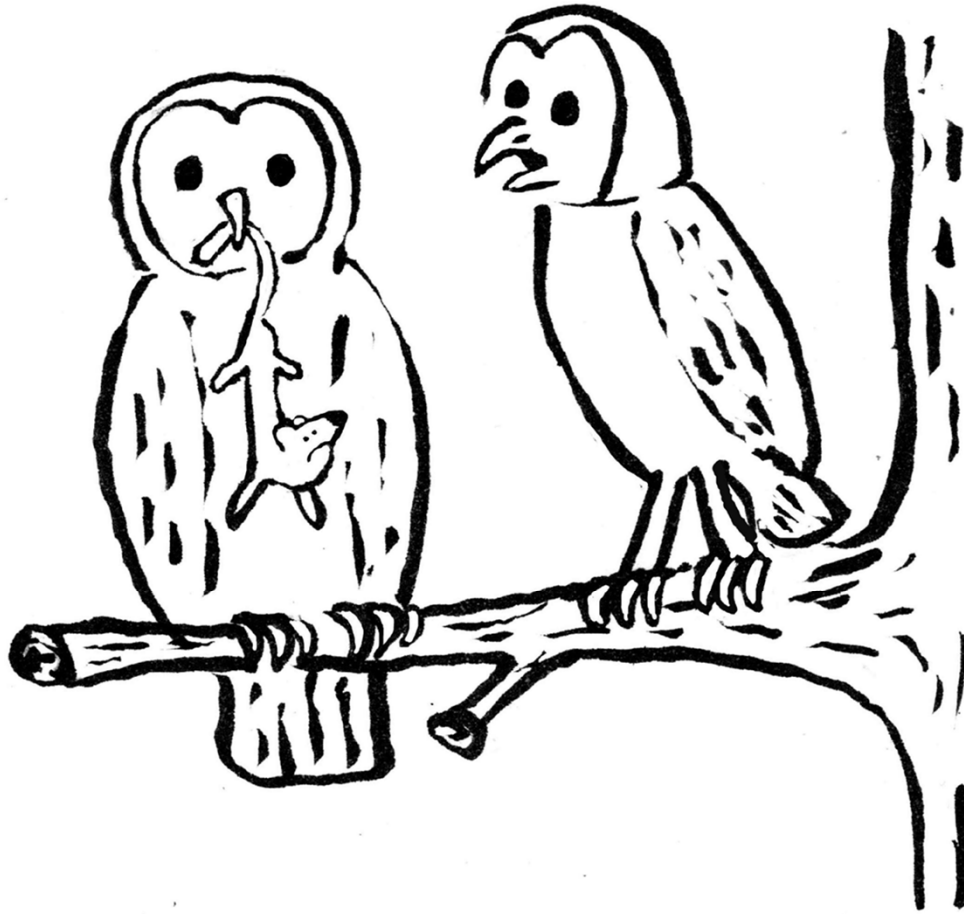
1. Purpose and design
2. Scope of problemscape
3. Analysis, assessment
4. Recommendation and results
5. Monitoring



Form follows function? Proposing a blueprint for ecosystem service assessments based on reviews and case studies

Ralf Seppelt^{a,b,*}, Brian Fath^{c,d}, Benjamin Burkhard^e, Judy L. Fisher^f, Adrienne Grêt-Regamey^g, Sven Lautenbach^a, Petina Pert^h, Stefan Hotesⁱ, Joachim Spangenberg^{j,k}, Peter H. Verburg^l, Alexander P.E. Van Oudenhoven^m

"YOU CAN'T EAT HIM DAVE, HE'S
WORTH £4.37 TO THE LOCAL ECONOMY"

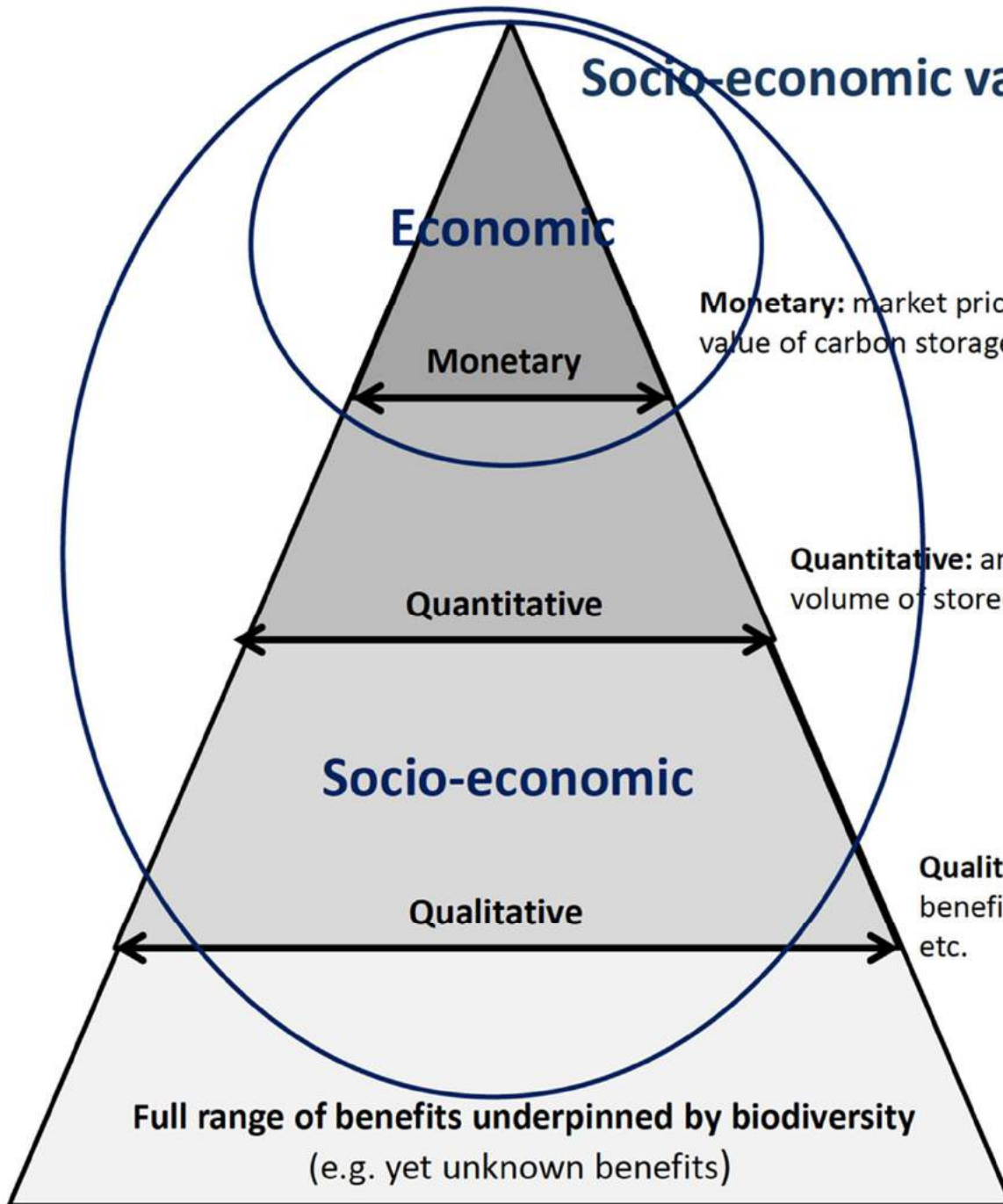


Value vs Price





Socio-economic value of ecosystem services



Monetary: market price of products, value of carbon storage, avoided costs of water purification etc.

Quantitative: amount of people enjoying given products, volume of stored carbon, volume of purified water etc.

Qualitative: description of the range of various benefits, dependency of people on these benefits etc.

Full range of benefits underpinned by biodiversity
(e.g. yet unknown benefits)



Where to plant Scotland's new forests

Ignoring
non-market goods

Including
non-market goods

Cost-benefit
value = **- £7.8 million p.a.**

+ £55 million p.a.

The social values of the Pentland Hills

Visitor Survey

Katja Schmidt
Ariane Waltz

- June and July 2014: On-site face-to-face interviews with visitors of the Pentland Hills (n=466)
- Tablet-based interviews on car parks
- 14 survey days with 13 volunteers from Univ. Edinburgh and associates:



The social values of the Pentland Hills

Preferences under trade-offs

Question 19 of 24

Ideally, which combination of benefits will be provided by the Pentland Hills Regional Park in the next 10-15 years?

Please note that certain combinations are limited as some land uses interact and you may not be able to adjust all sliders to the desired level. Please prioritize your preferences.

Please indicate the role that inspiration plays in your vision of the Park over the next 10-15 years by selecting (0 – “not at all important” to 5 – “extremely important”). Your choice will not be reflected in the picture of the landscape.

Sheep farming 0 1 2 3 4 5

Native forest 0 1 2 3 4 5

Birds 0 1 2 3 4 5

Wind turbines 0 1 2 3 4 5

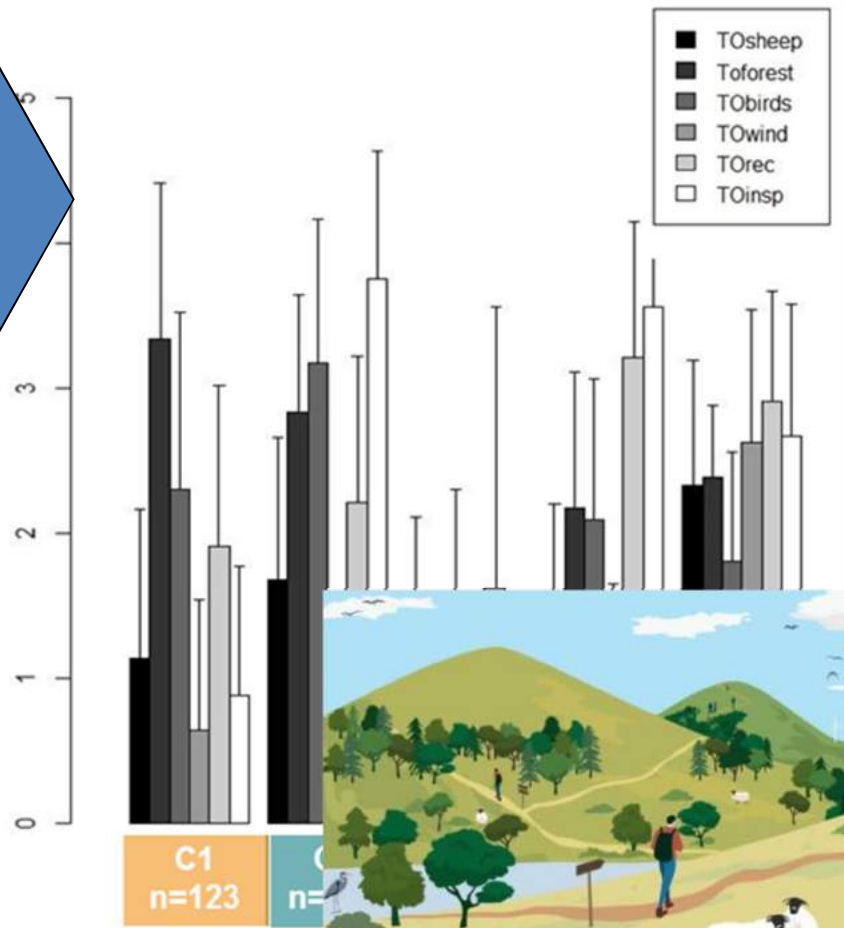
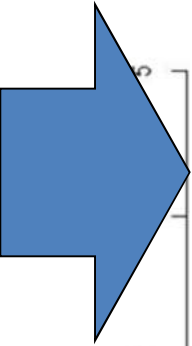
Carbon sequestration 0 1 2 3 4 5

Recreation 0 1 2 3 4 5

Inspiration 0 1 2 3 4 5



Next Question



C1
n=123



Increasing collaboration between science – policy - practice



- Working with RSPB and SNH on habitat restoration, coastal realignment and flood protection
- Working with Pentlands Regional Park, Midlothian and Eastlothian councils on cultural ES valuation and mapping
- Working with SWT on No Net Loss projects



THE UNIVERSITY
of EDINBURGH



- Working with Cairngorms national Park, Loch Leven Estate, SEPA on using ES in land management



- Working with SWT and Edinburgh City Council on green infrastructure in the Edinburgh Living Landscape



Ecosystem Services Community Scotland

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

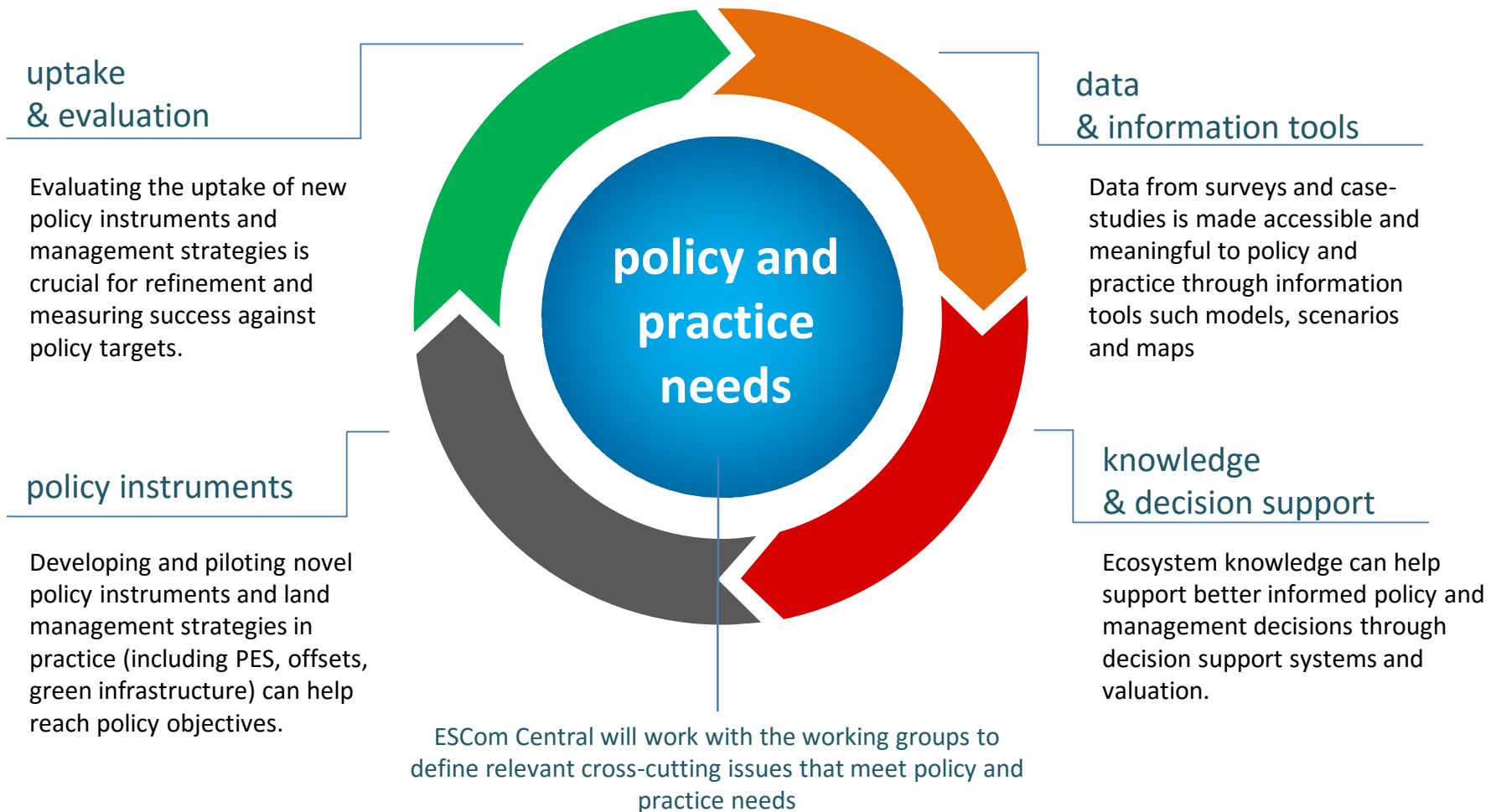


How ESCom and LINK could benefit each other

1. communication with the NGO community
2. case studies in terms of land or projects
3. ensuring that the Government invests a baseline (e.g. through NEA)
4. plugging the knowledge gaps from NEA
5. assess levels of ecosystem services associated with various policies or practices
6. develop and testing of ecosystem services estimation tools to enable NGOs to do basic assessments of different management/policy scenarios



ESCom process areas



ESCom process areas



Activities

- Annual conference
 - 7 May conference / 8 May unconference
- Thematic workshops
 - PES – 24 Feb (Hutton & EKN)
 - Modeling – May (Edinburgh Uni)
- Collaborative working groups
- Website & social media



ESCom questions for you...

- What are the most important ecosystem services for you now?
- What will be the most important ecosystem services for you in the future?
- What do you need to make decisions about ecosystem services?





The Ecosystem Approach

A way of intervening to manage a system, based on taking a systemic and participatory approach.

(Related terms: an Ecosystems Approach)

2 key concepts

Ecosystem Services Framework

A way of understanding how nature delivers benefits and services for human well-being

(Related terms: Ecosystem Services Approach)

Natural capital accounting

Bruce Wilson

Natural Capital Projects Manager

Scottish Wildlife Trust



What is natural capital:

Covered wonderfully by Marc, but...

Natural Capital can be defined as the world's stocks of natural assets which include geology, soil, air, water and all living things.

It is from this Natural Capital that humans derive a wide range of services, often called ecosystem services, which make human life possible.

So then what is natural capital accounting?

Table A: Summary Gross Domestic Product Measures

		Current Price Values				Chained Volume Index ¹	Implied Deflators
		£ millions		£ per capita		2011 = 100	2011=100
Year	Quarter	Gross Value Added (GVA) at basic prices	Gross Domestic Product (GDP) at market prices	Gross Value Added (GVA) at basic prices	Gross Domestic Product (GDP) at market prices		
1998		63,598	72,233	12,526	14,227		
1999		64,673	73,830	12,751	14,556		
2000		67,584	77,118	13,349	15,232		
2001		72,610	82,313	14,338	16,254		
2002		76,234	86,253	15,048	17,026		
2003		80,646	91,161	15,911	17,986		
2004		86,122	97,315	16,939	19,140		
2005		90,796	102,628	17,768	20,083		
2006		96,812	109,197	18,861	21,273		
2007		100,263	113,586	19,394	21,971		
2008		105,331	118,462	20,245	22,769		
2009		104,520	116,539	19,978	22,275		
2010		105,280	118,860	20,007	22,588		
2011		108,690	123,704	20,508	23,341		
2012		109,402	124,718	20,589	23,472		





Notes to the Financial Statements

Income and Expenditure

Income
Administration Expenses
Share of loss before taxation
Taxation

Share of loss for the year

Balance Sheet

Share of assets:
Current Assets



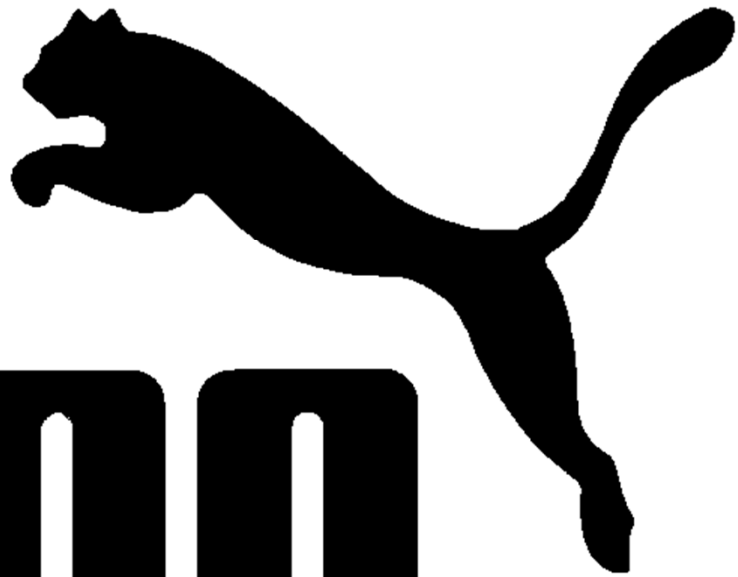
		Charity	
		2013	2012
		£	£
	Income	1,048,858	1,046,059
	Administration Expenses	1,085,815	1,142,056
	Share of loss before taxation	212,367	326,389
	Taxation	1,915,660	1,673,082
	<u>Share of loss for the year</u>	1,195,566	1,054,228
		859,104	744,696
		0	0
		0	0
		<u>6,317,370</u>	<u>5,986,510</u>
	Share of assets:		
	Current Assets	24,624	29,320
		850,928	578,368
		391,236	900,972
		<u>1,266,788</u>	<u>1,508,660</u>
		(589,194)	(643,374)
		677,594	865,286
		<u>6,994,964</u>	<u>6,851,796</u>
		2,009,791	1,774,615



Table A: Summary Gross Domestic Product Measures

		Current Price Values				Chained Volume Index ¹	Implied Deflators
		£ millions		£ per capita		2011 = 100	2011=100
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2004		86,122	97,315	16,939	19,140		
2005		90,796	102,628	17,768	20,083		
2006		96,812	109,197	18,861	21,273		
2007		100,263	113,586	19,394	21,971		
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OUR COMMON FUTURE

THE WORLD COMMISSION

ON ENVIRONMENT

AND DEVELOPMENT

Economics, natural capital and ES in campaigns

Bruce Wilson

Natural Capital Projects Manager

Scottish Wildlife Trust



FoEScot
@FoEScot

Following

How much would you pay for clean air?

Scot Govt plans to spend £3.15mill on air pollution.

Ask them to double it: foes.do/air-pollution-

...

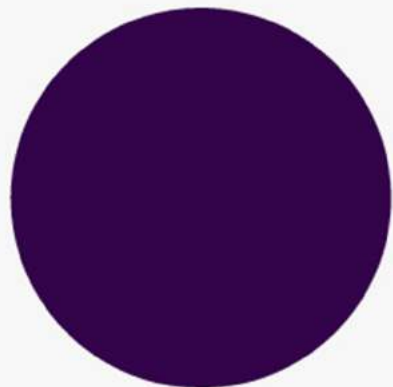
Retweet Favorite

RETWEETS
2

FAVORITES



SCOTTISH GOVERNMENT 2015-16 DRAFT BUDGET ALLOCATIONS (£ MILLIONS)



694.8

3.15

Roads Infrastructure spending Improving Air Quality

“Air pollution is responsible for more than 2000 deaths in Scotland each year and costs the NHS here up to **£2 billion annually**. The time has come for our polluted air to be treated as the public health crisis it really is.

“Although today’s air pollution is mostly invisible, its impact on our health is crystal clear. Breathing in polluted air increases your chances of having a heart attack, a stroke, or developing cancer. Children are also particularly vulnerable.

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White-tailed eagles help Scottish economy soar

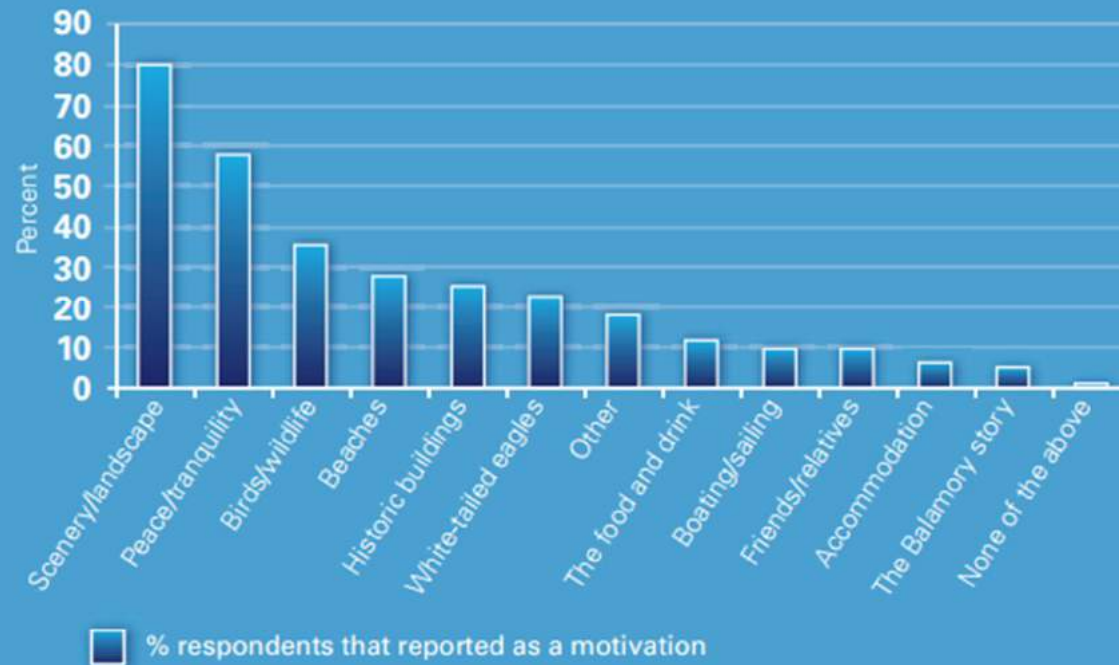
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WILDLIFE WORK

ECONOMIC IMPACT OF
WHITE-TAILED EAGLES ON
THE ECONOMY OF MULL

Figure 1: factors influencing the decision to visit Mull



The RSPB speaks on behalf of nature about the problems that threaten our natural world – help us keep it that way.

This report was produced by RSPB Scotland.

RSPB Scotland is part of the RSPB (RSPB), which is a registered charity in Scotland no. SC037654.

This report should be cited as:
The economic impact of white-tailed eagles on the economy of Mull
The RSPB, Sandy.



Scottish Wildlife Trust Briefing

Neonicotinoids



Key points

- There is a growing body of evidence showing that neonicotinoids, which are used as an insecticide on crops such as oil-seed rape, are harmful to pollinators such as honey bees and bumblebees
- Pollination is a vital ecosystem service worth at least £43 million per year to Scotland's economy
- We could see a collapse in ecosystems across the agricultural landscape and beyond if pollinators become scarce

Background

Neonicotinoids are systemic insecticides¹ used by farmers to help protect crops such as, oilseed rape, maize, sunflowers and potatoes from sap-sucking insects such as aphids and other insect herbivores. There are a variety of compounds, all nicotine-based, such as imidacloprid, thiacloprid, thiamethoxam and



Peatland Programme



12
YEAR OLD



THE EDINBURGH MALT
GLENKINCHIE
SINGLE MALT SCOTCH WHISKY
12
YEAR OLD

White
GLENKINCHIE DISTILLERY
PENCALTAND SCOTLAND
James Watson & Co. Distillers

GLENKINCHIE DISTILLERY WAS ESTABLISHED IN 1869 BY JAMES WATSON & CO. DISTILLERS. IT IS SITUATED BEHIND THE KINGS BURN IN THE HEART OF EAST LOTHIAN FARMLAND, OVER THE GENTLY ROLLING HILLS KNOWN AS GLENKINCHIE, HOME OF THE FINEST BARLEY GROWN.



THE EDINBURGH MALT
GLENKINCHIE
SINGLE MALT SCOTCH WHISKY

43%vol 70cl e

DISTILLED AT THE
GLENKINCHIE DISTILLERY
PENCALTAND SCOTLAND

James Watson & Co. Distillers

12
YEAR OLD



Marine Scotland Science

Management of The Scottish Inshore Fisheries;
Assessing The Options for Change

Technical Reports



Looking to the future...

- Increasing focus on social capital within the SG, we must highlight the importance of all three capitals / pillars that are vital to sustainable development
- We need to use all tools available
- We should be aware of the timescales we are facing



Useless



ES/NC: the underlying logic.

- Ecosystems provide benefits to people
– water purification, pollinators, soil regeneration etc.
- These should be maintained, enhanced and accounted-for.

Critical assessment:

“An uncritical commitment to payment for Ecosystem Services can lead to unintended outcomes”.

UNEP Assessment 2013

And vitriol...

“[Under Natural Capital] ...we no longer believe in wonder and delight and enchantment. We just want to show that it’s going to make money. **In doing so, we destroy our own moral authority and legitimacy.**” G Monbiot, 2014

ES vs Traditional Conservation

Conservation:

- Protects biodiversity with no regard for humans
- Rests on a myth of pristine nature that never existed
- Is losing popular support
- **Has failed to conserve biodiversity**

2 Problems

- Insists that 'trad' conservation is a failure – and so is pointless
- Primes ES as the sole target output - intrinsic value afterthought





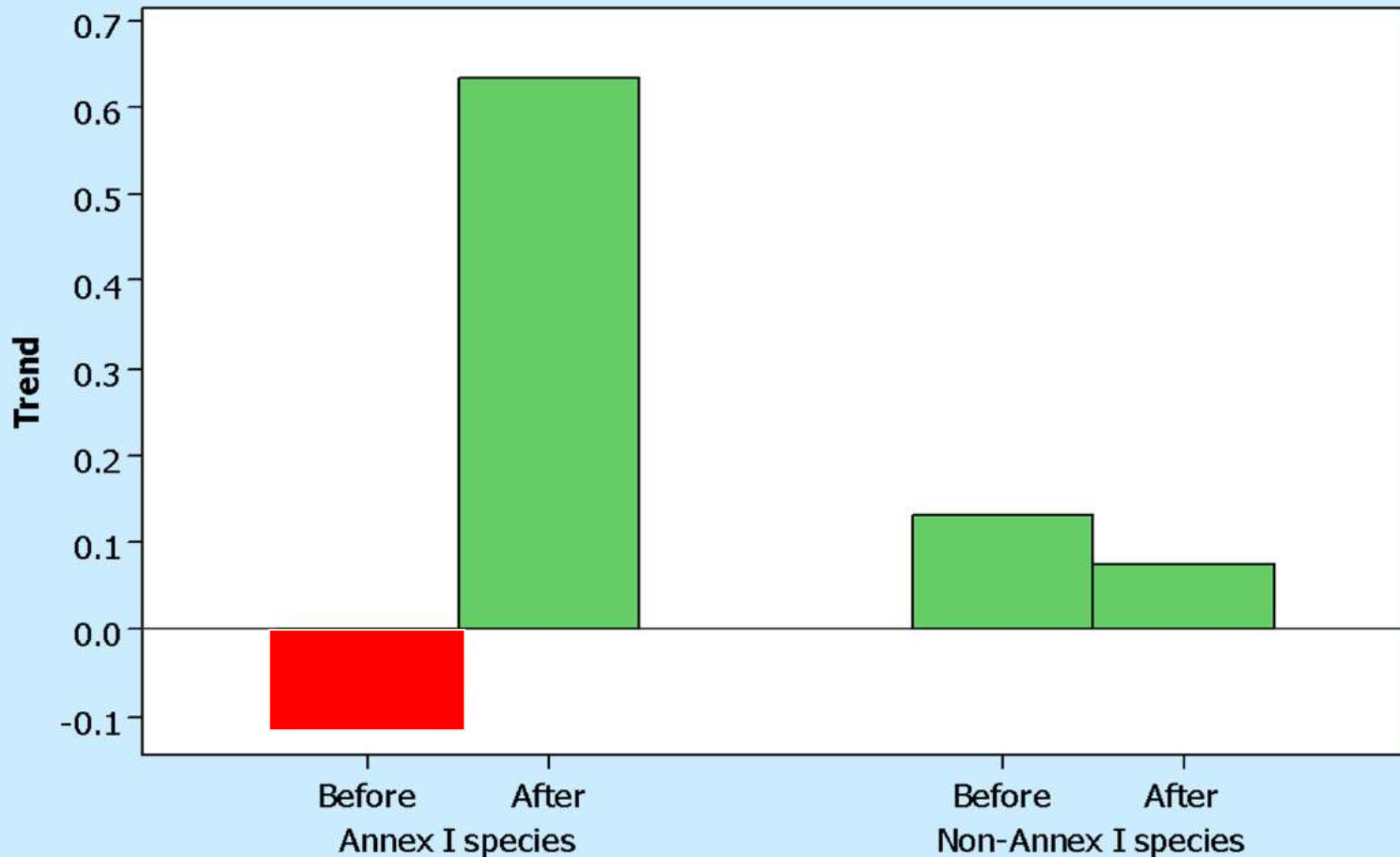






Annex I species did **significantly better** in the EU after the introduction of the Birds Directive

P.F. Donald *et al.* 2007. *Science* 317: 810-813





The ES 'Solution'

- Make ES delivery **the primary objective**.
- Ally with corporations and other significant economic actors.
- Reduce focus on landscapes and species to those most useful to humans.

Doak et al TREE 1771 (2013)

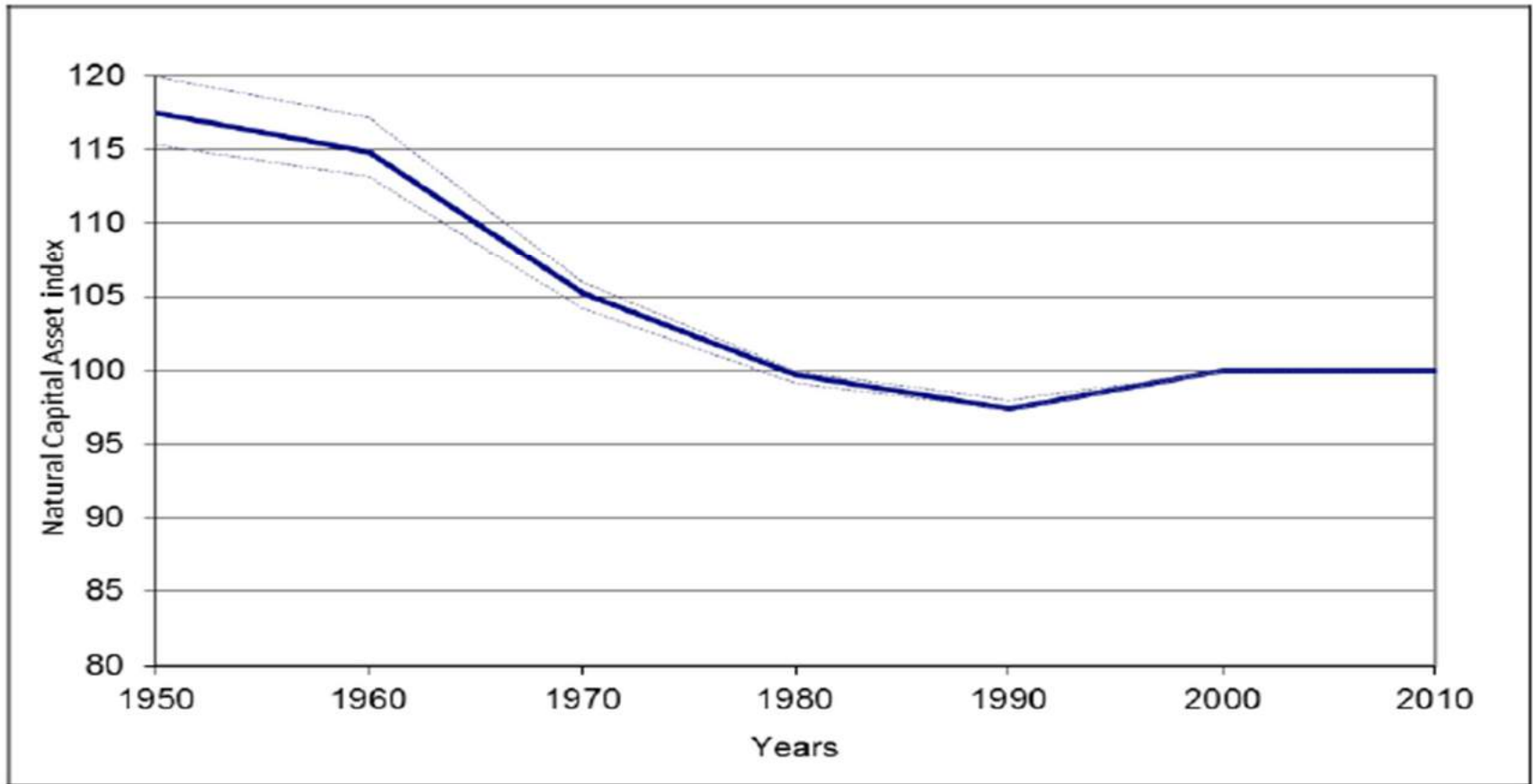
Scot Gov 2016-2021 Strategic Research Programme (SRP)

£50 million p.a.) managed by Rural & Environment Science & Analytical Services (RESAS).

Will underpin:

- rural communities and businesses;
- the productivity and profitability of our agricultural sector;
- the sustainable use of our natural resources;
- the prevention and effective management and control of animal and plant diseases; and
- our ability to respond effectively to global challenges such as sustainable nutrition and climate change.





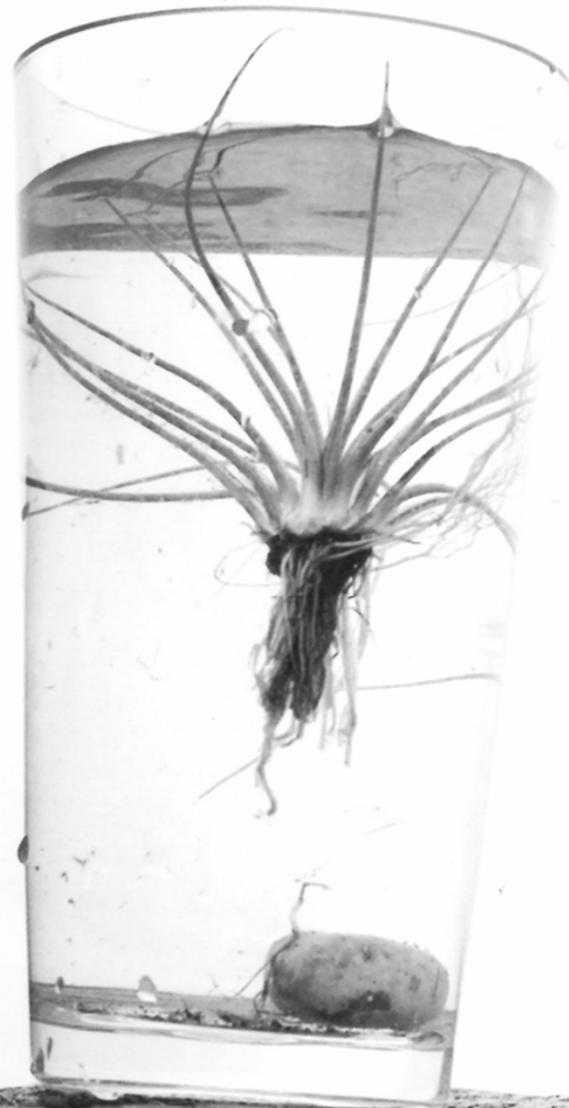
“...the magnitude of relative change differed markedly, suggesting that decision-making about management intervention and policy development could be difficult, if the assumptions underlying the ‘expert’ weightings were viewed as contentious.” – S Albon et al 2014 Systematic evaluation of NCAI.



Useful

..... ?

-\$1.2 Trillion
....Worse than useless



- Species and habitat conservation can work at realistic scales.
- A sole focus on delivering Ecosystem Services will not automatically deliver biodiversity.
- We need both to secure healthy, resilient ecosystems.
- We must intensify, extend and integrate conservation efforts – not to re-focus on ES targets alone.
- Otherwise... the huge progress and future potential for wildlife in Scotland is at risk.

An evolving agenda

- “Protecting biodiversity for its own sake has failed” *Kareiva et al 2011, Ecosystem Services*
- “Academic training should better portray the rich, global history of the field, introducing students to the diverse ways in which nature has been valued and conserved for centuries” *Tallis et al 2014, ‘A call for inclusive conservation’, Nature.*



DEPARTMENT OF HEALTH FOR SCOTLAND

NATIONAL PARKS
AND THE
CONSERVATION OF NATURE
IN SCOTLAND

Report by the Scottish National Parks Committee
and the Scottish Wild Life Conservation Committee

*Presented by the Secretary of State for Scotland to Parliament
by Command of His Majesty*

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EDINBURGH
HIS MAJESTY'S STATIONERY OFFICE: 1947

TWO SHILLINGS NET

Cmd. 7235

5. It is perhaps natural, and may be counted to them for righteousness, that our native writers and bards have always highly praised the scenery and wild life of their country. Recalling in his old age the changing scene throughout the year, one of our best-known Gaelic poets, Duncan Ban Macintyre, says of Ben Dorain :

“ Bha mi 'n de 'm Beinn Dobhrain,
'S 'na coir cha robh mi aineolach ;
Chunna mi na gleanntan
'S na beanntaichean a b'aithne dhomh.

“ B'e sin an sealladh eibhinn,
Bhith 'g imeachd air na sleibhtean,
Nuair bhiodh a' ghrian ag eirigh,
'S a bhiodh na feidh a' langanaich.

“ B'aobhach a' ghreigh uallach,
Nuair ghluaiseadh iad gu farumach,
'S na h-eildean air an fhuaran ;
Bu chuannar na laoigh bhallach ann.

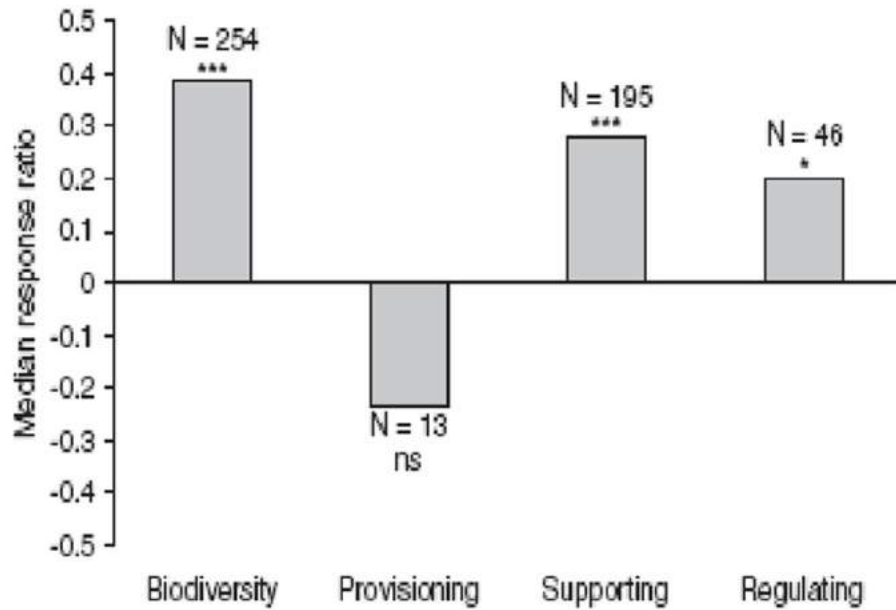
“ Na maoislichean 's na ruadh-bhuic,
Na coilich dhubha 's ruadha—
'S e 'n ceol bu bhinne chualas,
Nuair chluinnt' am fuaim 's a' chamhanaich.”

“ Yesterday I was on Ben Dorain, and there I was no stranger. I saw the bens and the glens that I knew. That was the joyous sight, to be walking on the mountains, when the sun was rising and the deer were belling.

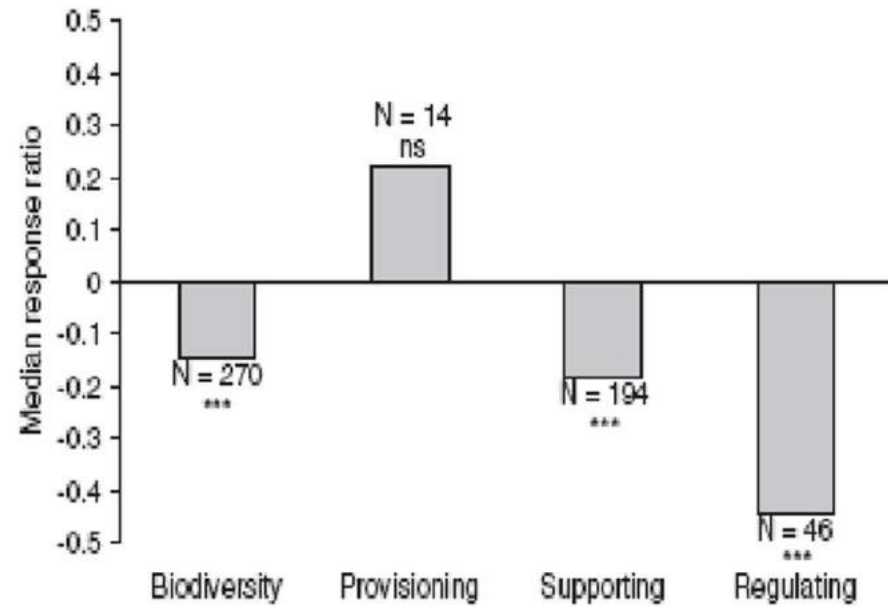
“ Beautiful were the stately herd as they moved noisily, and the hinds at the green springs. Handsome were the dappled calves there, the does and the red bucks, the black cocks and the red—their's was the most melodious music in the dawning.”

6. It is among the mountains that our future National Parks will mainly be derived

A Restored vs Degraded



B Restored vs Reference



B Restored vs Degraded
 $R_s = 0.590$, $N = 50$, $P < 0.001$

