What do we mean by a natural capital approach?

Managing Land for Nature and Climate webinar

17 February 2021

Mary Christie

Natural Resources Management

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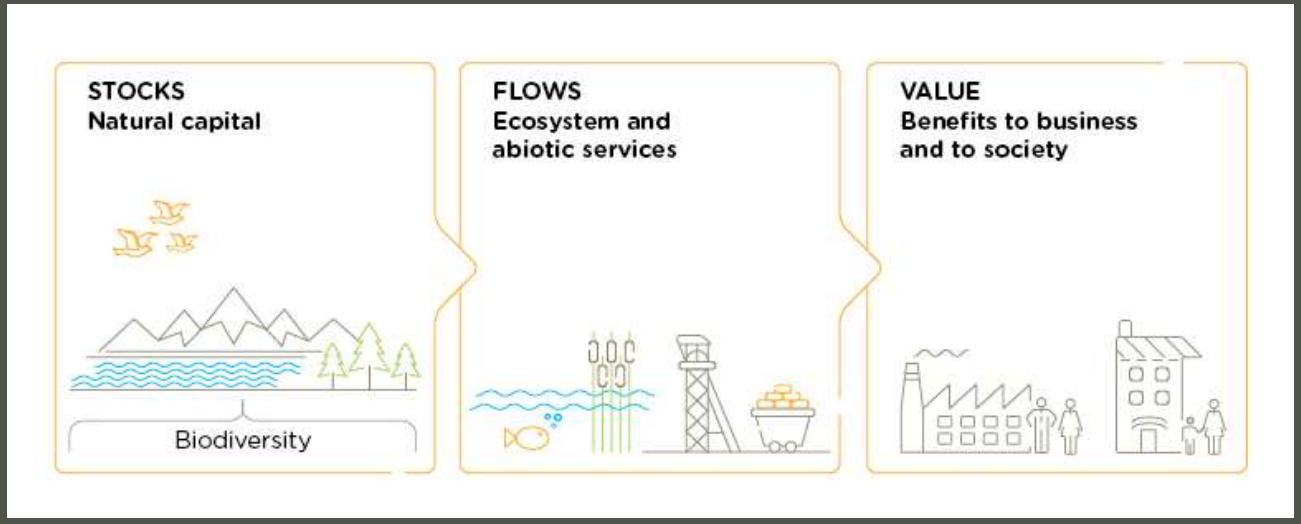
> Nature is the most important asset the economy has.
> Dieter Helm

What is Natural Capital?

Natural capital is another term for the stock of renewable and non-renewable resources (e.g. plants, animals, air, water, soils, minerals) that combine to yield a flow of benefits to people.



Source: Natural Capital Coalition

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Our food system is broken because we did not preserve non-renewable resources and over-pressurized renewable ones.
Emmanuel Faber CEO Danone

Ecosystem Services

Ecosystem Services can be broadly split into:

- Provisioning services – these are usually well represented on traditional economic markets
- Regulating services – can be measured directly but are more likely to be valued through physical flows and surrogate markets
- Cultural services – Tourism and recreation are easy to measure. Sense of place and cultural heritage are much harder

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What's different about a natural capital approach?

A natural capital approach….

Looks at…	not just…
Wider, non-traditional market and public benefits like carbon and biodiversity	Market benefits like food and materials
Investing in the stocks of assets	Exploiting the benefits
Future changes in stocks and flows	Present situation, past performance
Dependencies of economic activities on nature	Impacts of activities on nature
The **links** between all of these, within landholdings and landscapes	Individual assets or benefits

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More definitions

Natural Capital Assessment is

The process of valuing impacts and dependencies upon natural capital in order to better integrate natural capital into decision-making and so improve natural capital management

When natural capital assessments are used for compiling accounts and undertaking comparisons over time, these are referred to as natural capital accounting.

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Why should land managers adopt a natural capital approach?

- To **understand risks** related to how current activities depend on nature, e.g. increasing heavy rainfall events causing soil loss
- To identify ways **to improve resilience**, e.g. shelter to reduce soil erosion
- To identify opportunities **to increase current business benefits**, e.g. soil improvement for crop production
- To identify ways **to diversify income streams**, e.g. from carbon storage
- To **understand the trade-offs and win-wins** between options for future land use, e.g. where to improve drainage and where to create wetland

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Natural capital in practice…

1. Build an understanding of natural capital on your land
2. Identify opportunities to enhance assets
3. Value the benefits of these enhancements
4. Look at private and public funding streams

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Application of the Natural Capital Protocol to Land-Based Businesses

Crown Estate Scotland
Oighreachd a' Chrùin Alba

Scottish Natural Heritage
Dualchas Nàdair na h-Alba
All of nature for all of Scotland
Nàdar air fad airson Alba air fad

SEPA
Scottish Environment Protection Agency
Buidheann Dion Àrainneachd na h-Alba

CUMULUS CONSULTANTS
LAND - ENVIRONMENT - ECONOMY

AECOM

Natural Capital Protocol Trial – Asset register

Assets (habitat types)	Unit of measure	Start of tenancy 2006		Current status 2017		Data source	Trends (impact)
		Extent	Condition	Extent	Condition		
Enclosed farmland:							
Cropland (arable & horticultural)	ha	36.42	Degraded	7.75	Adequate/improving	Soil tests	Decreased extent, improving condition
Temporary pasture (temporary improved grassland)	ha	61.8	Degraded	23.88	Adequate/improving	Soil tests	Decreased extent, improving condition
Permanent pasture (permanent improved grassland)	ha	51.91	Degraded	113.55	Adequate/improving	Soil tests	Increased extent, improving condition
Permanent unimproved pasture (semi-natural Grasslands)	ha		-		Adequate/improving	Soil tests	Increased extent, improving condition
Hedgerows	metres	-	-	4,500	Species rich	Survey	Increased extent, improving condition
Woodland (includes farm woodlands)	ha	11.265	Degraded	37.19	Degraded/improving	Farmer	Increased extent, static condition*
Mountains, Moorlands and Heaths	ha	102.95	-	117.1	Stable	Farmer	Static extent, static condition
Water (Openwaters, Wetlands & Floodplains)	length of streams in meters	3,373	Unknown	3,373	Degraded	Farmer	Degrading condition

[the natural capital assessment will] help us make more informed decisions about how to improve our farming operation … both in economic and environmental terms.
Jim Simmons, tenant farmer

Natural Capital Protocol Trial - results

Site	Activity/project	Valuation approach/results
Den Farm	Soil improvement	Crop yield increases, material/application costs. Benefit-cost ratio: 4.2:1 by 2022
Ruthven Farm	Woodland planting / wetland restoration	Carbon sequestration using non-traded DECC carbon values 1.2: 1 over 15 years 4.7: 1 over 50 years
Glenlivet Estate	Peatland restoration	Carbon emissions reduction using non-traded DECC carbon values 4.5: 1 over 50 years

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Natural Capital accounts for NatureScot Land

- More holistic way to measure value
- To test whether it can highlight management opportunities
- To create a baseline for future assessments
- To demonstrate that it can be done in Scotland and share learning

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Natural capital accounting

What do we have?	What benefits does it provide?	What are those benefits worth?
Natural capital asset register	Physical flow accounts	Value/ benefits accounts
e.g. 40 ha forest	Flood alleviation	Avoided costs of flooding
	40 tn CO_2e sequestered per year	Social and economic benefits of reducing global warming

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Natural capital accounts for NatureScot Land

- Land owned and managed by NatureScot generates around £28m per year
- Over 60 years (the 'lifetime' of the asset) this amounts to £780m
- Benefits outweigh costs by eight to one
- Full value may be higher as not all benefits can be monetised at this time

- Recreation and tourism had the highest value
- Education visits are vitally important, 11,000 are conducted each year.
- Carbon sequestration had some benefits and some liabilities

At December 2017	Monetary Values		
	Private Value (PV £m)	Public Value (PV £m)	Total Value (PV £m)
Benefits			
Food	2.8	-	2.8
Energy	0.4	-	0.4
Carbon sequestration		90.2	90.2
Air quality		1.8	1.8
Physical health		8.9	8.9
Recreation & Tourism		686.4	686.4
Education & Volunteering	11.0	8.9	19.9
Wildlife	-	-	-
Gross Asset Value	14.2	796.1	810.3
Maintenance Costs			
SNH Management	(81.5)	-	(81.5)
Volunteer effort	-	(11.0)	(11.0)
Total Maintenance Costs	(81.5)	(11.0)	(92.6)
Net Natural Capital	**(67.3)**	**785.1**	**717.7**

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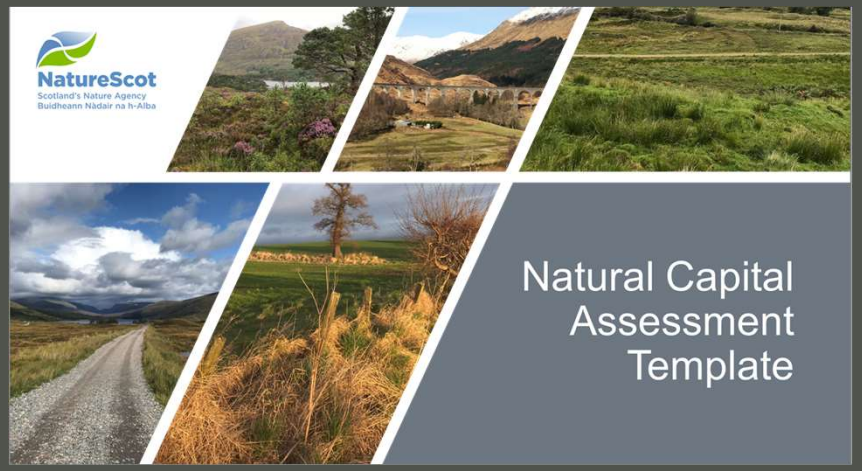
Natural Capital Pilot Programme

- Natural Capital Assessment template
- Natural Capital Approach at Landscape Scale
- Piloting an Outcomes based Approach (POBAS)
- Facilitating Local Natural capital Investment (Tweed pilot)
- Digital app for farmers to track environmental outcomes



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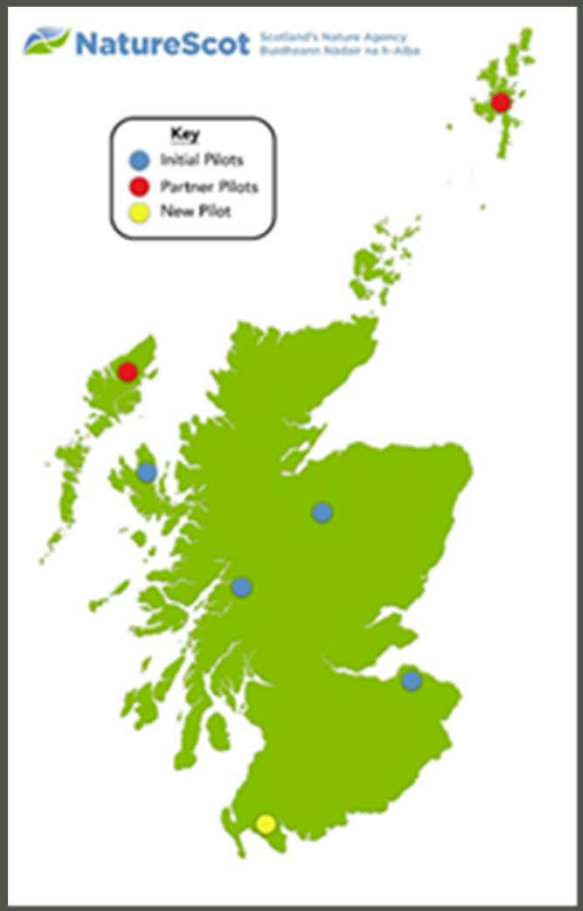
Piloting an Outcomes Based Approach in Scotland (POBAS)

Five pilot areas:

Arable – East Lothian
Crofting – Skye
Hill livestock – Argyll
Mixed livestock – Strathspey
Dairy – Dumfries and Galloway

Plus 2 ‘sister’ pilots:

Shetland crofting
Outer Hebrides Common Grazings



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What is an outcomes based approach?

- It's an agri-environment type scheme where land managers are paid for delivering an environmental outcome
- Farmers can choose what management is required to achieve the desired result, rather than following prescriptive management actions.
- Payment based on level of outcome achieved
- Often called results-based payment schemes

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https://www.nature.scot/piloting-outcomes-based-approach-scotland-pobas-project

Facilitating Local Natural Capital Investment – A Pilot Project

Partners – NatureScot, Scottish Government, Scottish Forestry, Scottish Land Commission

Local Partner – Tweed Forum

Consultants – Finance Earth, Eftec, Countryscape, RSPB Scotland

Project Aims and Outputs

- Develop an approach to facilitate investment in natural capital from the private sector at a regional level
- Support more varied and sustained investment in nature
- Identify innovative models that are replicable across Scotland

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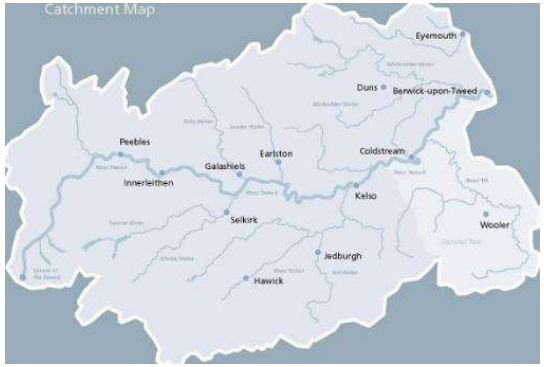
Priorities for Investment in the Tweed Catchment

Baseline information has been gathered on a range of investment opportunities in the Tweed, spanning eight themes.

Key Opportunities	Indicative Revenue Streams
Biodiversity	Biodiversity offset payments
Peatland Restoration	Carbon credits
Woodland Creation	Carbon credits; enterprise revenues e.g. timber; water-related outcomes-based payments
Riverwoods	Carbon credits; outcomes-based payments
NFM and Water Quality	Outcomes-based payments
Tourism	Business levies/taxes; enterprise revenues
Nature Friendly Farming	Enterprise revenues e.g. royalties; agri-environment income
Renewable Energy*	Energy sales



Project Area: The Tweed Catchment

Further investment opportunities may arise in future as a result of policy and market developments.

** Opportunities for Renewable Energy development have not been assessed within the scope of this project due to market maturity and limited direct natural capital benefits, although these developments have been considered as potential sources of biodiversity offset income.*

Why should land managers adopt a natural capital approach?

- Reduce risks and improve resilience
- Increase business benefits and add value
- Diversify income streams
- Invest in nature

By

- Understanding natural assets – stocks & flows of services
- Valuing benefits and comparing options for enhancing assets
- Finding new funding sources

Greater biodiversity reduces risks and uncertainty within a portfolio of natural assets. Mark Carney Un Special Envoy for Climate Change and finance

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Thank you

Questions?

Mary Christie

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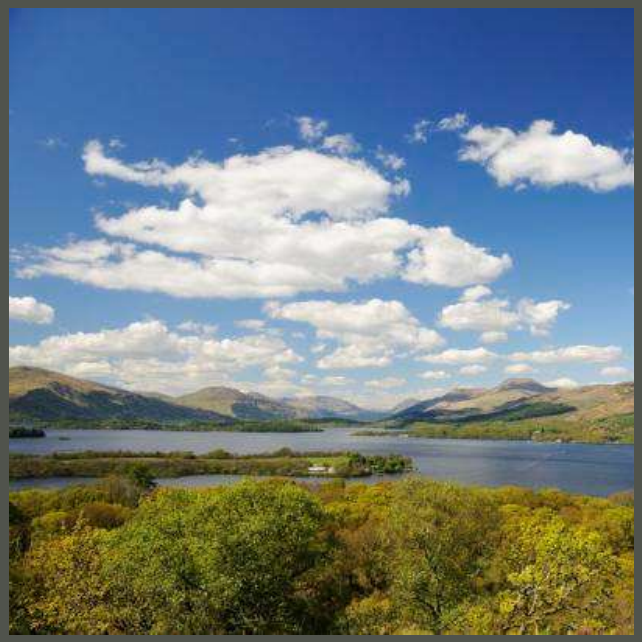

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