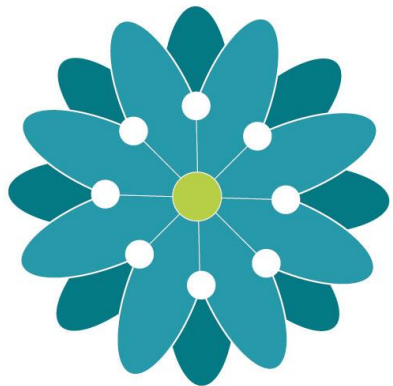


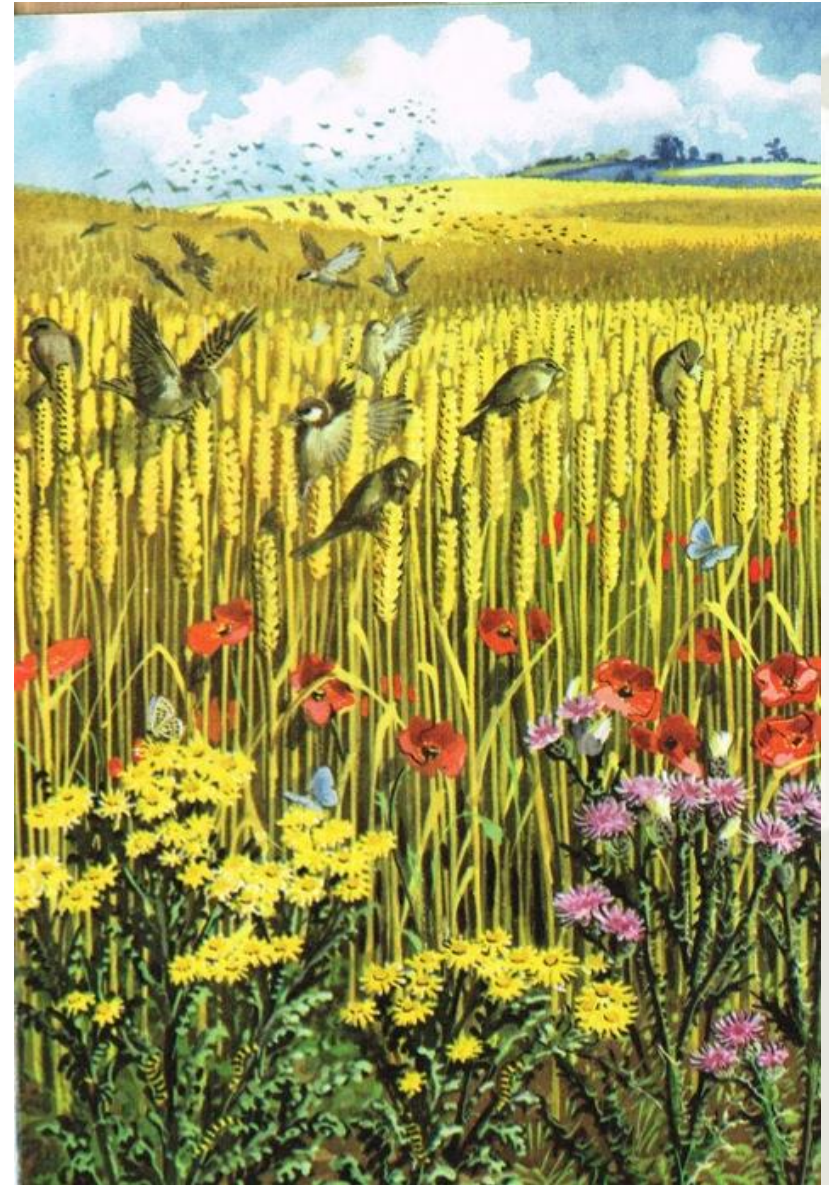
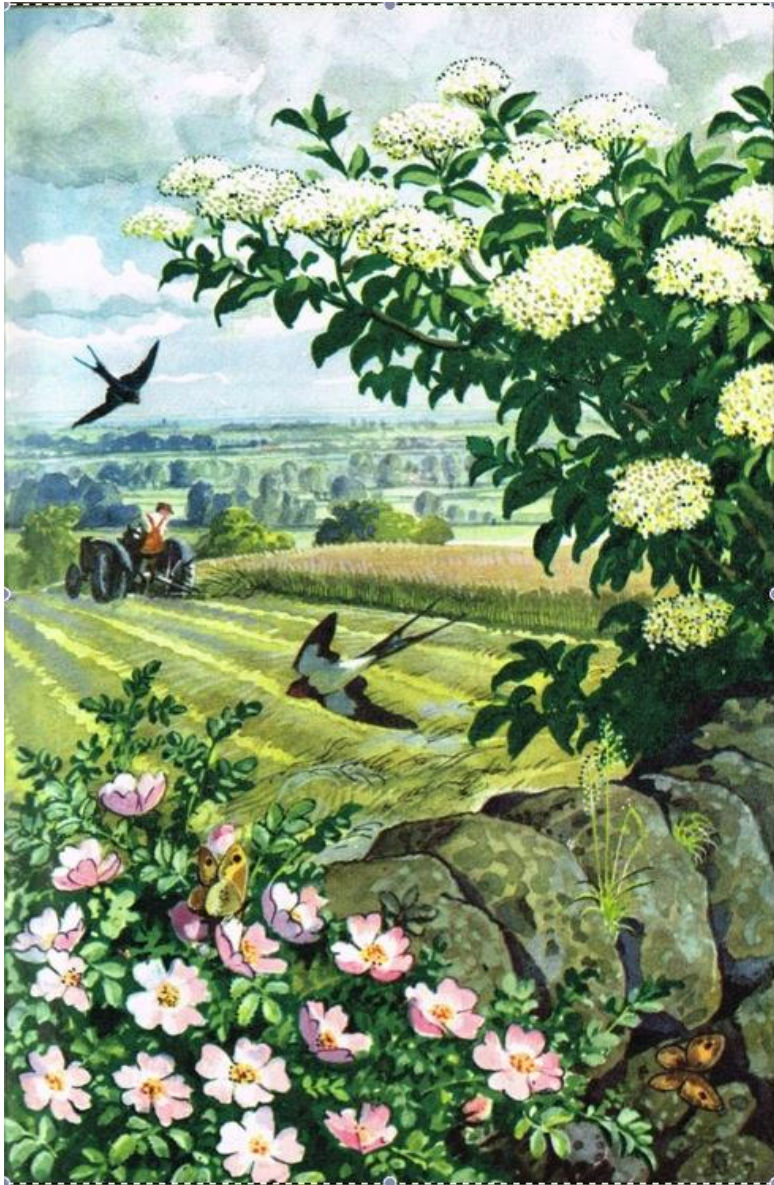
A new countryside : Restoring biodiversity in the UK by creating the Restoration Economy

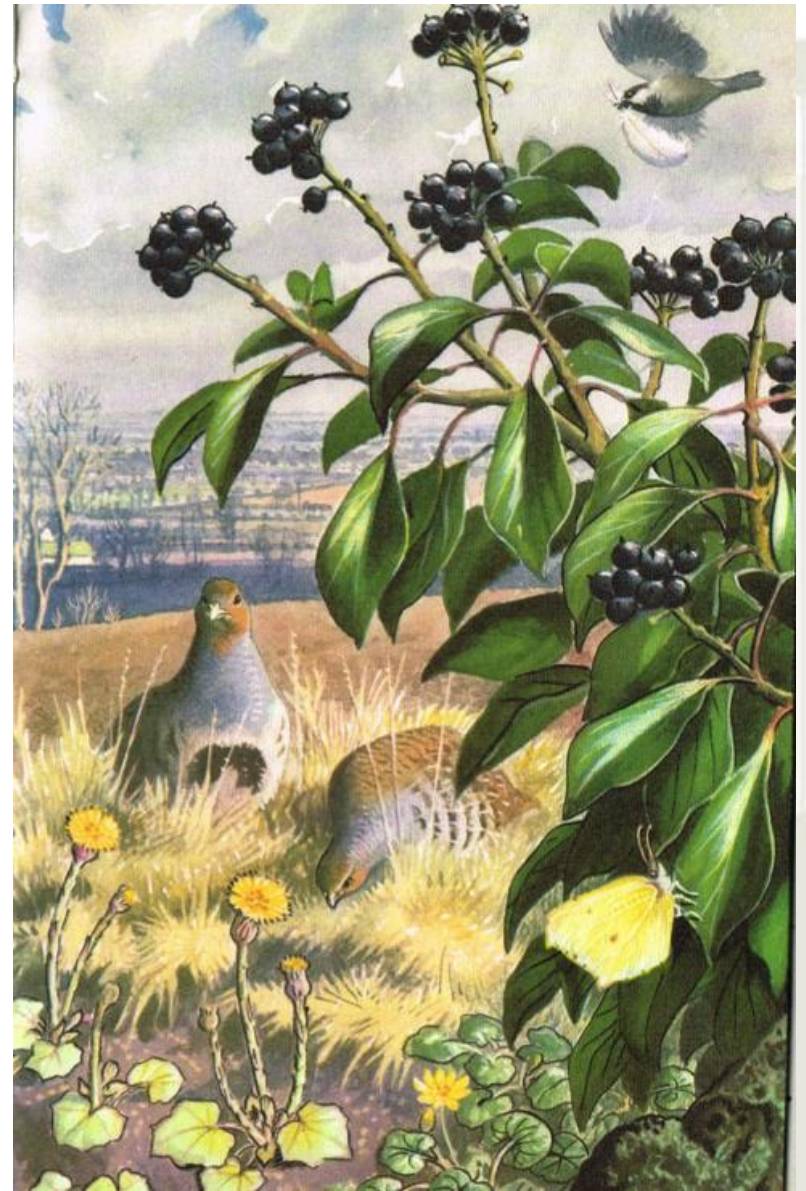
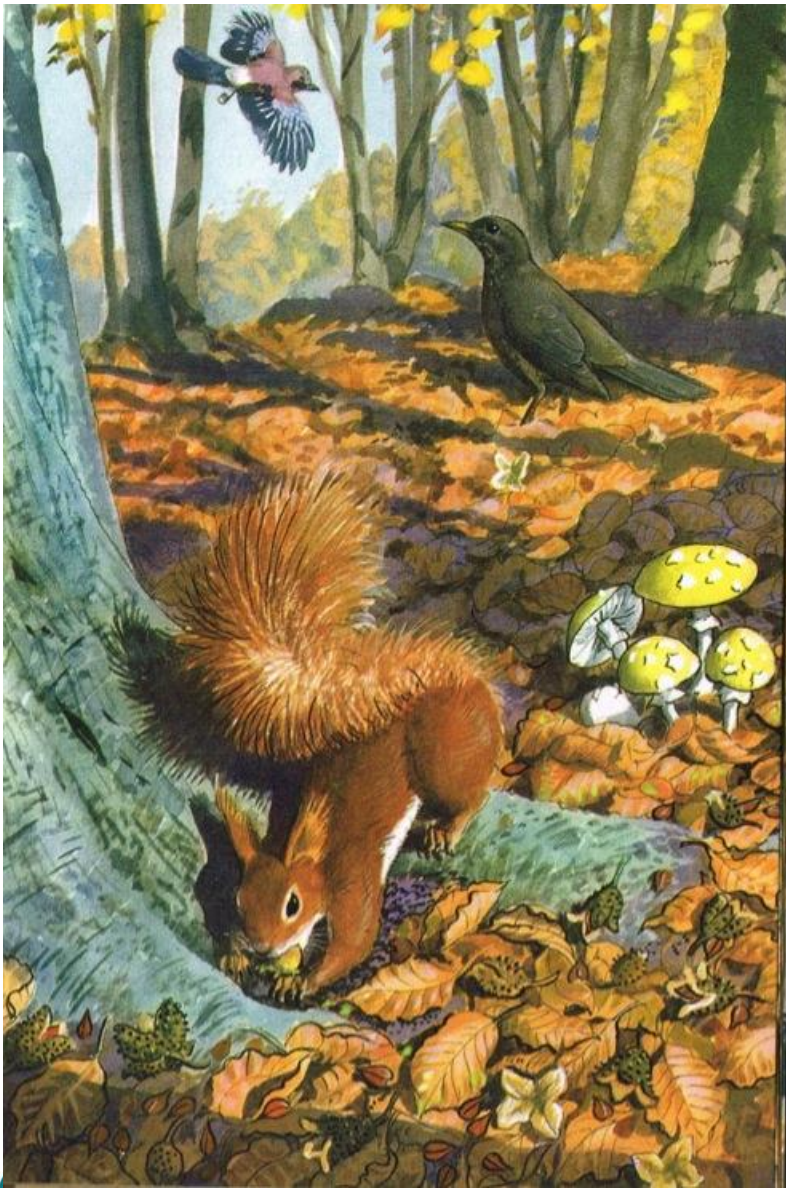
Prof David Hill CBE
Chairman, Environment Bank



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State of Nature

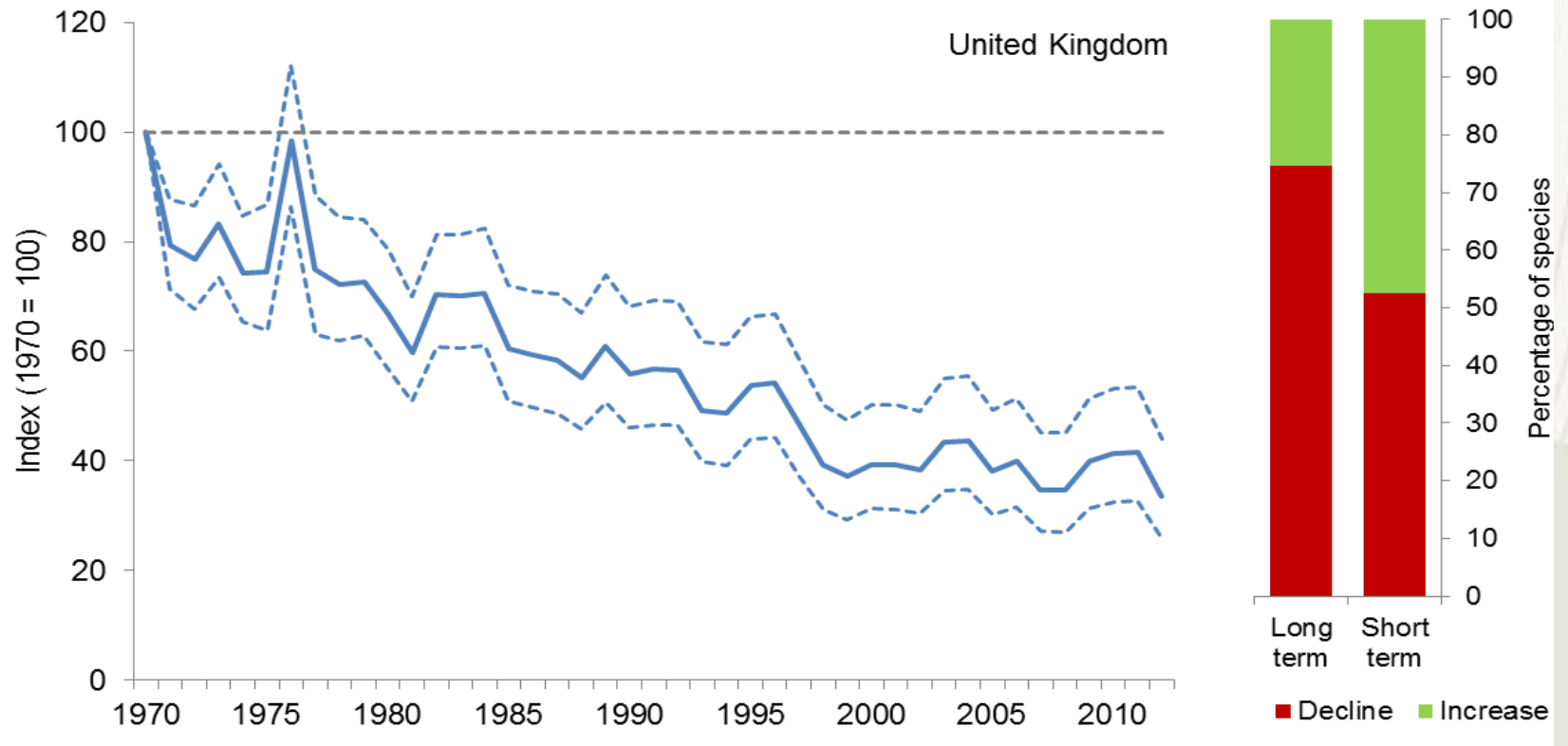
There is a need for a transformational change in the way we use land if we are to make a serious impact on restoring biodiversity in the UK

Causes of losses :

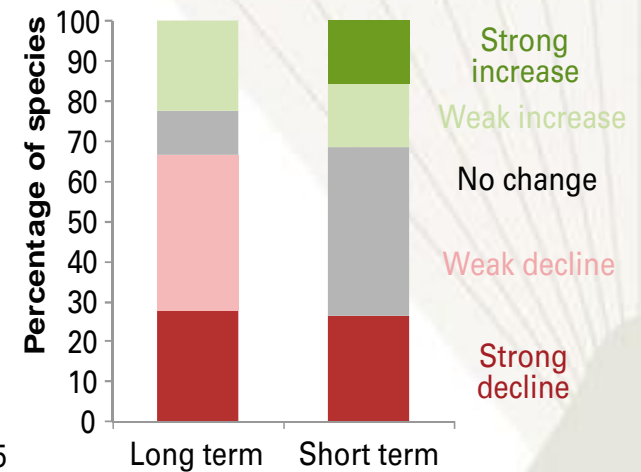
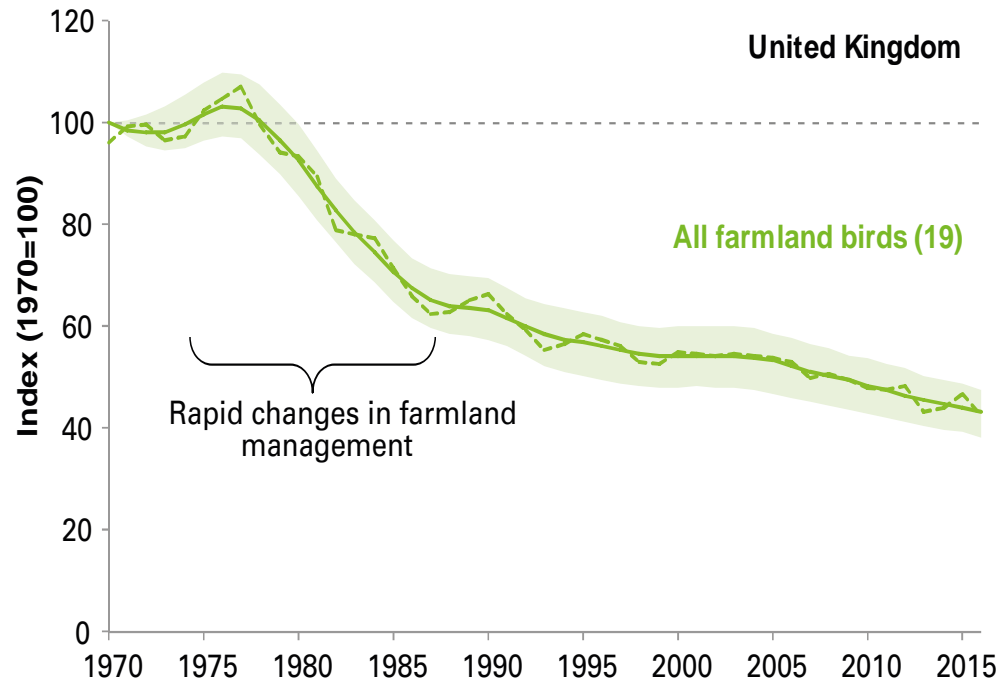
- Industrialization and intensification of farming since WW2
- Built development inclusive of infrastructure such as roads, rail, sea ports, residential and commercial property

Priority species

Change in the relative abundance of priority species in the UK, 1970 to 2012



Breeding farmland birds in the UK, 1970 to 2016.



Traditional funding

Aggregate membership 17 conservation bodies	7.3 million	Latest reports 2015-2017
NGO income	£979m	Latest reports 2015-2017
NGO staff numbers	14,800	Latest reports 2015-2017
NGO spending on biodiversity in England	£372m	Latest reports 2015-2017
Govt. spending on biodiversity in England	£384m	2013/14

- 25-year Environment Plan
- Restore 500,000ha of land for ecosystem benefits
- Nature Recovery Network
- New approaches to funding needed - both public and private sector
- 75% of land in the UK is farmed and farming intensification has inflicted greatest impacts on wider-countryside biodiversity
- Target funding at interventions in the farmed environment that can deliver large-scale significant improvements within as relatively a short a time period as possible

The race for initiatives - UK

- The Economics of Ecosystems and Biodiversity – TEEB - 2010
- Natural Environment White Paper 2011
- Ecosystem Markets Taskforce 2013
- Natural Capital Committee 2015
- Natural capital accounting – National Audit Office, Office for National Statistics – ongoing
- Biodiversity net gain – mandated 2019

Business as usual or are we waking up?

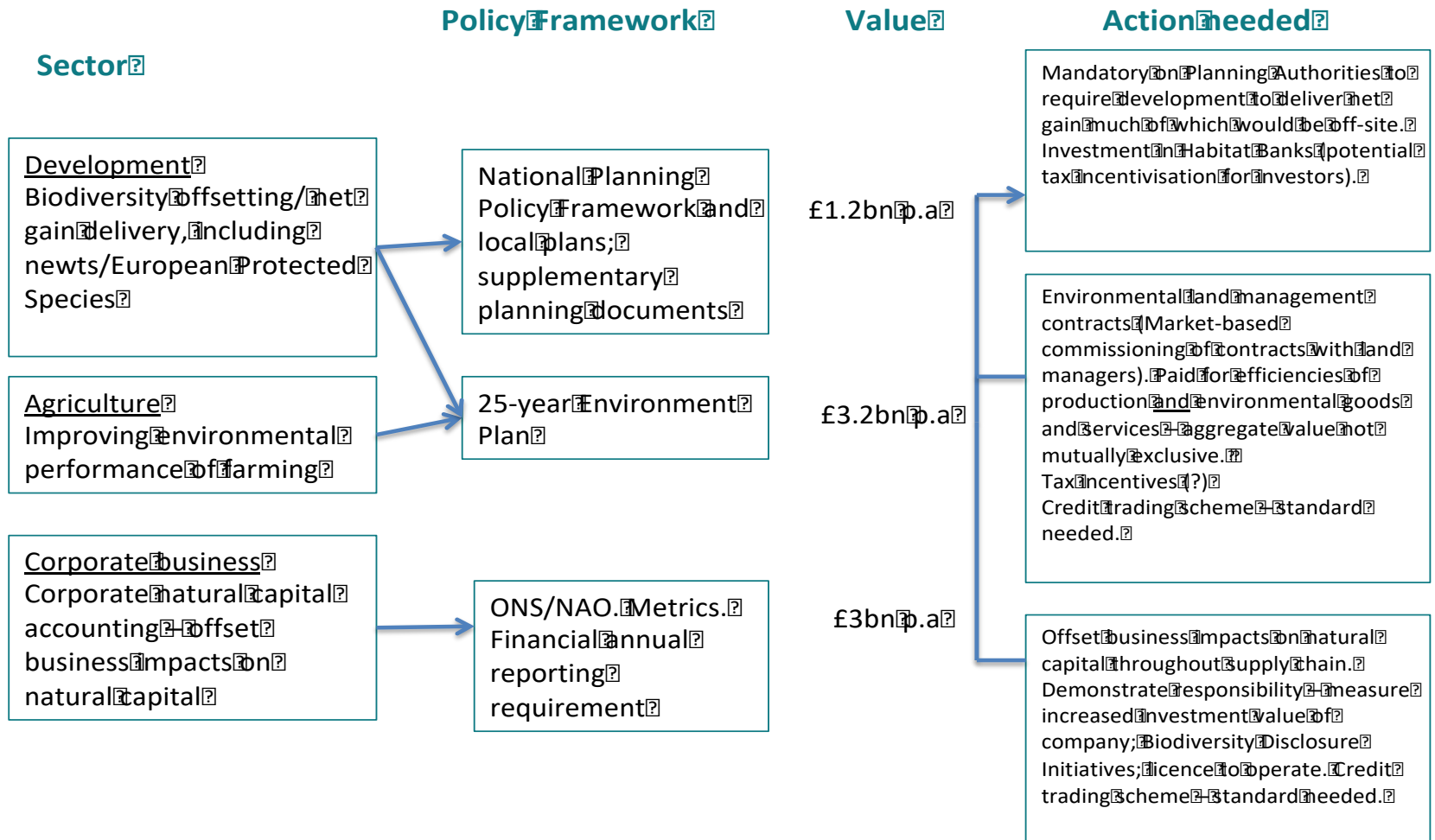
- About 40% of global GDP intrinsically relies on natural capital - yet we don't value it and we treat the environment as a charitable exercise

OECD 2012

- Cost of the loss of biodiversity = \$14 trillion; 7% global GDP by 2050

TEEB

The Restoration Economy





Restoration Economy 1.

Biodiversity Net Gain

- The most significant conservation policy development for the wider terrestrial environment in the past decade.
- LPAs have duty to protect biodiversity in planning system – NPPF
- Most are not delivering on their legal responsibility
- A mandatory system signals investment opportunities which will facilitate scale-up and create, enhance and manage large areas of habitat for biodiversity conservation ✓
- – MHCLG Garden Towns and Villages prospectus – includes BNG as a requirement ✓

Biodiversity compensation - from a natural capital perspective

- The costs of development in the absence of compensation are too low
- Development without full and effective compensation is development that is subsidised by the tax payer
- 1 million houses in the planning system - £55bn profit – currently no/limited capture of biodiversity impacts

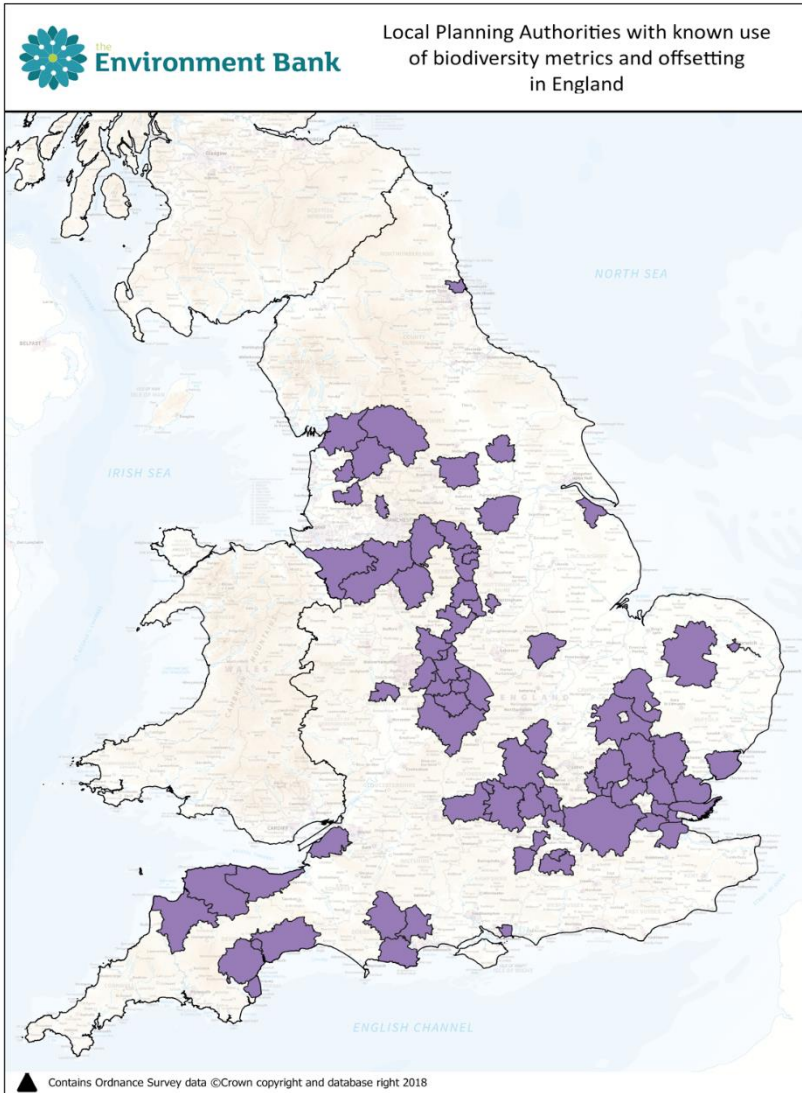
Case study example - development



- Biodiversity value of existing 12.96ha site = **48.68** units
- Biodiversity value of the proposed development = **16.78** units
- Biodiversity Offset units = **-31.90** units
- Large areas of low value habitats, but significant impact due to small areas of mitigation to allow development to meet housing need.



Map of LPAs engaged with Environment Bank



77 LPAs in 34 Counties
have engaged with
Environment Bank as at
2018

How to make BNG deliver effective biodiversity conservation

- Mandatory regime: LPAs require ALL development to be assessed using Defra metric (industry standard)
- Balance of net gain weighted to offsite provision 80:20 rule; not about 'prettifying' development. On-site must not include POS and gardens
- Offsite provision largely via habitat banks
- Governance – onsite and offsite use same rules ie 25 years+, regular audits, insurance for failures, onsite liabilities have to be accepted by developer and enforced
- Inspection of planning authorities – how are they delivery their biodiversity duty
- Role for Natural England, Environment Agency, new Office for Environmental Protection; accreditation



Onsite vs offsite costs

- Take an average 100ha large housing scheme; 35 units/ha
- 80% developable area; 20% POS etc.
- Measure biodiversity units lost (Defra metric) based on UK land cover values = **360 units**
- 10% gain applied – therefore development needs **396 units** = BNG requirement
- 2800 houses without BNG, gross revenue £635m
- 10% BNG with **only** 20% of BNG requirement delivered on-site costs **£55m** through loss of land for which development land prices paid
- PLUS loss of 686 house units at average UK price = **£154m** lost revenue. TOTAL COST for on-site delivery = **£209m**
- Cost of **entire** delivery of BNG requirement through 2 habitat banks = **<£5m**

Offsite delivery options

Bespoke

- Tailored, local - often necessary, can be expensive

Habitat Banks

- Standard, regional - very quick and cost effective
- Single large site to compensate multiple developments
- Large scale – cost effective
- Known credit price therefore costs known by developer

Benefits of habitat banking

- **Developers** : Clarity and certainty, increased net developable area, no long-term on-site liabilities
- **Planning Authorities** : transparent, consistent, auditable, net gains delivered, new secured wildlife habitat, easy, contributes to their biodiversity targets
- **Biodiversity Conservation** : proper funding of gains for nature, financial disincentives for habitat destruction, enables long-term and large-scale habitat conservation, biodiversity is a material benefit in planning
- **Landowners** : Restoration economy, realistic income, long-term funding, land status not affected

Setting up a habitat bank

- Locate landowner(s), identify area, identify habitat type to be delivered
- Survey receptor site
- Calculate biodiversity units created, convert to conservation credits to be sold to developers
- Produce Biodiversity Management Plan with objectives, measurable deliverables, outcomes focused, timescales set, payment regime (payment by results)
- Implement governance and delivery documents – CBA, CCPA, letter of sale, Conservation Credit Certificate
- Implement monitoring and reporting regime



Financing (1)

- Upfront funding of the habitat bank is best - provides instant, predictable, cost-effective supply of conservation credits – third party investors/ LPAs (?)
- BUT relies on certainty of market – mandatory BNG in planning now provides this ✓
- Habitat banks can also be funded ‘incrementally’ as credits are sold to developers
- Provides clarity to landowner and >25 year revenue stream to create eg wildflower meadows, wetlands, woodlands etc.

Financing (2)

- Regulatory framework – case law has confirmed habitat banks are fully compliant with planning legislation using Section 106 or planning conditions BUT CIL is not an appropriate mechanism to use.
- Development is therefore not permitted until such time as conservation credits have been purchased
- These factors mean limited exposure (low risk) for investors

Estimates of value of UK biodiversity net gain market

Estimate	Source
£54m p.a	Defra (2011) for White Paper
£500m - £1.2bn p.a	Ecosystem Markets Taskforce (2013) report
£700 - £800m p.a	Vivid Economics and Environmental Finance, <i>Natural capital finance model – Strategic Outline Case</i> , Defra, March 2018

Recent credit sales

Location	Development	Credits required	Compensation	
			Type	Location
Coventry	Business development	4	0.5ha grassland restoration	Within 2km
York, North Yorkshire	Large residential	1152	On-site grassland/birds	On-site/adjacent
Medway, Kent	Large residential	~ 850	Bird compensation	Within County
NE Lincolnshire	Industrial zone regeneration	711	Wet grassland - indirect impacts to SPA	On-site/adjacent
Rochford, Essex	c. 600 houses + school	14	3 ha lake restoration + woodland creation	Within 2 km
Cambridge, Cambridgeshire	Large residential	211	32 ha arable margins and grassland restoration	Within 1 km
Rugby, Warwickshire	c.100 houses	19	5 ha grassland restoration	Within 4 km
Rugby, Warwickshire	c. 860 houses + school	13	3 ha grassland restoration	Within 1 km
Thundersley, Essex	c. 7 houses	30	6 ha woodland restoration	Within 2 km
Wheatley, Oxfordshire	c. 50 houses	8	1 ha Grassland creation	Within 7 km
Warwick, Warwickshire	c. 60 houses	5	1 ha grassland restoration	Within 3 km
Southam, Warwickshire	c. 240 houses + sports facilities	11	2 ha grassland restoration	Within 6 km

Opportunities and barriers

Opportunities

- Ability to make a transformational change to the countryside and its biodiversity
- Attract in third party investors and recycle that investment
- Transparency, LPA complying with their duties

Barriers

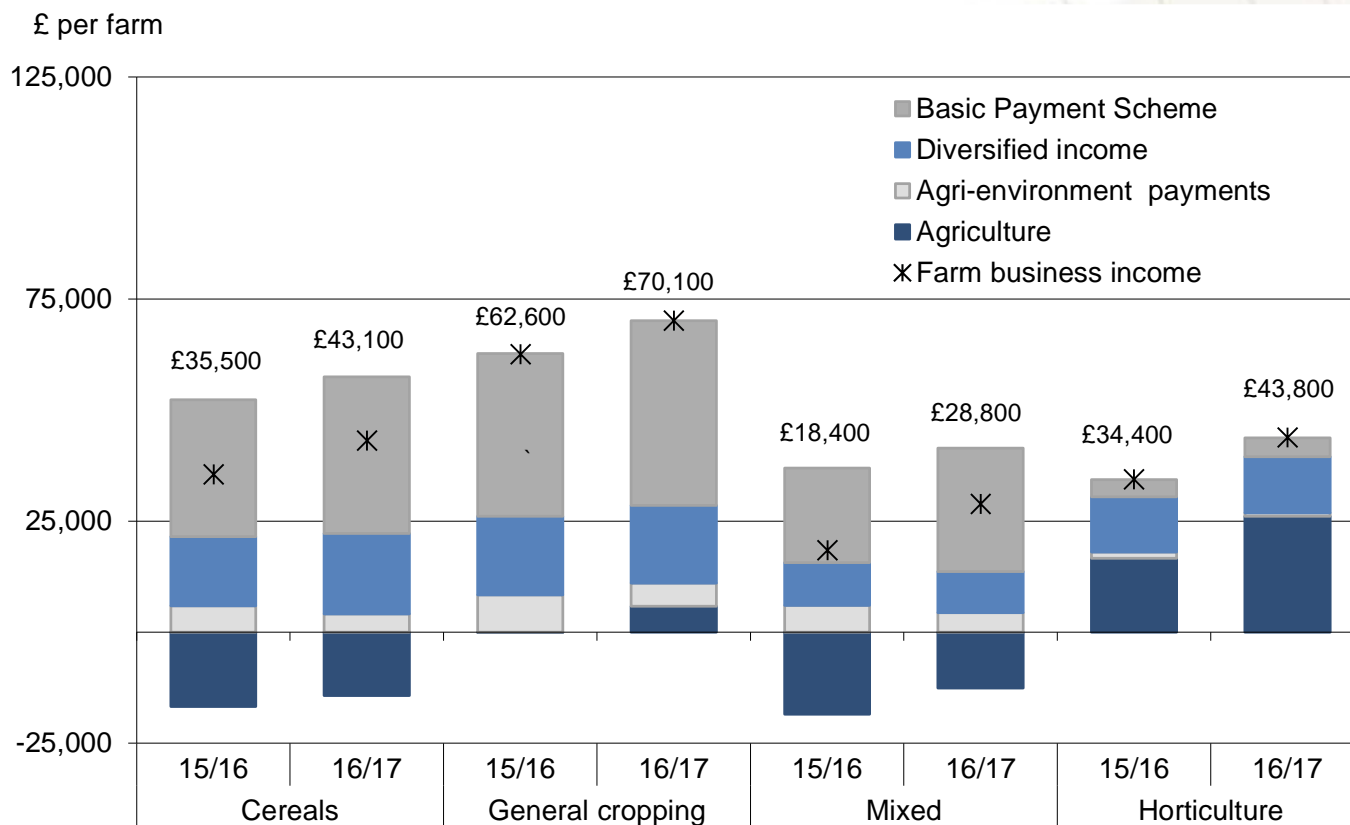
- Some LPAs won't prioritize – so mandatory is essential
- Too much emphasis on delivering 'biodiversity conservation' within development site boundary – evidence is that this does not provide value for money or effective for biodiversity conservation
- Need to show the value to developers of removing their liabilities
- Need effective monitoring

Restoration Economy 2. Improving the environmental performance of farming

- Farming systems have become main drivers of ecosystem crisis- deforestation, wildlife destruction, soil degradation, water pollution, chemical burdens, epidemic rise in diet-related ill health
- 75% of the land surface is farmed; contributing only 0.7% to GDP
- 20% of farmers produce 80% of the produce on 50% of the land; huge scope to increase efficiencies and spare land
- Lamb forms <1% of adult diet yet uses a massive area of the 75% farmed
- Externality costs (hidden costs of food) are 3x the value of the food produced
- Farming is an extractive industry rather than restorative and sustainable
- The profit from farming is not in producing food - small number of massive global agribusinesses control the whole food system

Environmental Land Management contracts

To improve the environmental performance of farming



Source: Farm Business Survey, England

Agricultural innovation should lead to land sparing and land sharing

- Whether we like it or not, agricultural innovation will continue eg. smaller robotic machinery, satellite guided, precision drilling, precision treatments with reduced chemical inputs, genetic modification, gene editing etc.
- We must maximise these opportunities to spare land for the restoration of biodiversity at scale in the UK
- Whilst also better integrating sustainable food systems and biodiversity 'within-field'

Interventions funded by ELM contracts

- Lowlands : within-field, whole field and landscape-scale benefits relatively close to human habitation
- Uplands : larger landscape-scale; conversion of whole areas to environmental delivery using livestock as the tools

Unsprayed margins, conservation headlands, wildflower margins, beetle banks	Wood meadows, woodlands and meadows
Skylark, lapwing plots	Water level management
Pond creation, wetlands	Arable reversions, scrub
Pollinator strips, wild bird seed mixes, water course buffer strips	High Nature Value farming; sustainable cropping systems
Overwinter stubbles, reduced tillage	Peatland restoration



Restoration Economy 3. Corporate natural capital accounting

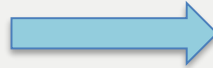
- 40% of global GDP intrinsically relies on natural capital - yet we don't value it and we treat the environment as a charity case
- Natural capital accounting should be required of corporates on basis of benefits derived from non-renewables to increase stock of renewables
- Financial reporting mechanism (metrics being developed – NAO/ONS) – makes corporate a more investable entity
- Development of environmental markets to establish natural capital assets and asset classes – contribute via environmental credit purchasing for eg. ecosystem service delivery

Government to:

- Require natural capital accounting by corporates
- Incentivize corporates – taxation
- Implement accreditation – standards
- Provide guidance



Corporates purchase 'natural capital' credits for assets – woodland, peatland, wetland, grassland and ecosystem services they provide



Market developed. Land brought forward under conservation covenants. Ecological networks-resilience
Long-term management income



- Better corporate reporting
- De-risk business
- Better investment value

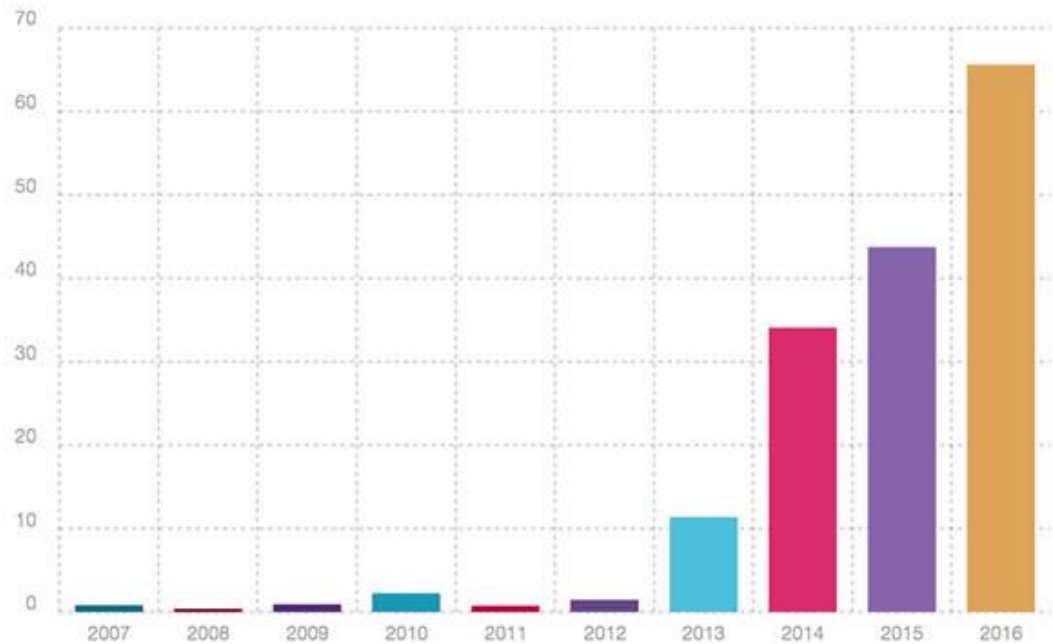


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Investment vehicle – Green Bonds

Market value by year

Total market value in \$Bn per year



Bloomberg Barclays MSCI Global Green Bond Index; 2017 c.£200bn



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Investment vehicle : Impact investments and environmental credits

- £117bn of impact investments globally
- Address worlds most challenging problems eg conservation and biodiversity loss
- Who? High net worth and Foundations
- ?In UK - impact to be addressed is deterioration of biodiversity and natural capital as a result of intensive farming
- eg restore biodiversity through land sparing – capitalise schemes with returns paid by Government ELM funds – farmer clusters and Community Interest Society structure

What the Restoration Economy could achieve for the Nature Recovery Network

Cost of 40ha high quality mosaic grassland habitat bank – creation and 30yr management	£1.585m
Value of fund from Environmental Land Management contracts	£3.6bn
Value of fund from net gain/offsetting (NG)	£1.2bn
Value of fund from corporate natural capital accounting (CNCA)	£3.0bn
Area of land restored through habitat banking (exc. CNCA and NG)	90,850 ha/yr
Time to deliver Nature Recovery Network (exc. CNCA and NG)	5.5 years
Area of land restored through habitat banking (inc. CNCA and NG)	196,845 ha/yr
Time to deliver Nature Recovery Network (inc. CNCA and NG)	2.5 years

Summary

Mechanism	Investment vehicle	Action
Net gain/habitat offsetting	Habitat banks – conservation credits	Mandate net gain ✓; accredit brokers and offset sites. Tax incentives for investors
Environmental land management contracts	Government post-Brexit funds; impact investing – environmental credits	Convert Pillar 1 and 2 funds into contracts. Tax incentives for investors
Corporate natural capital accounting	Biodiversity bonds, green bonds, natural capital bonds, environmental credits	Metric roll out; financial reporting requirement; biodiversity disclosure. Create and market bonds. Create standard and accredit environmental credits. Tax incentives for investors

**We don't inherit the Earth from our
ancestors, we borrow it from our
children**



Thank you

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