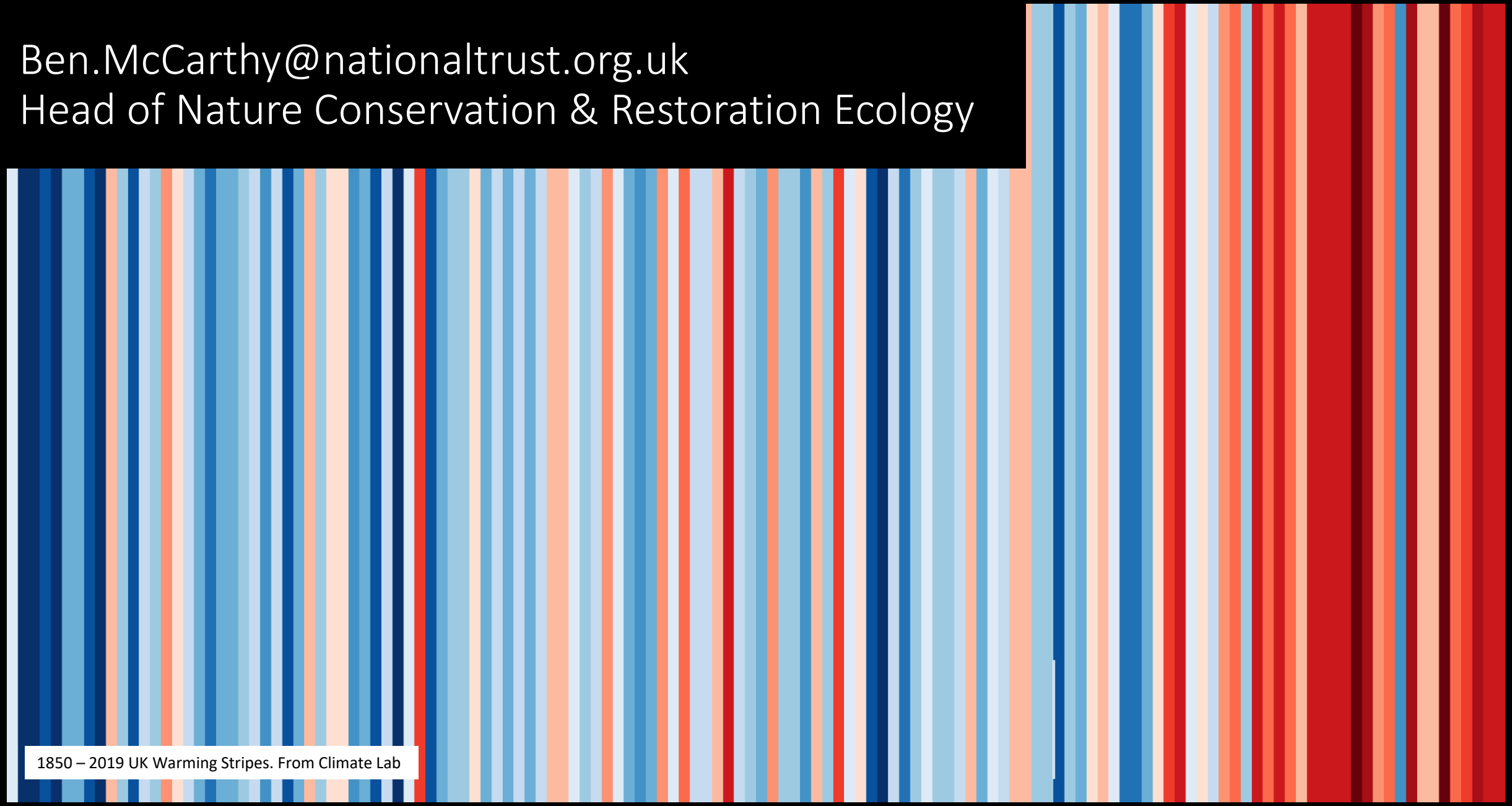
Ben.McCarthy@nationaltrust.org.uk
Head of Nature Conservation & Restoration Ecology

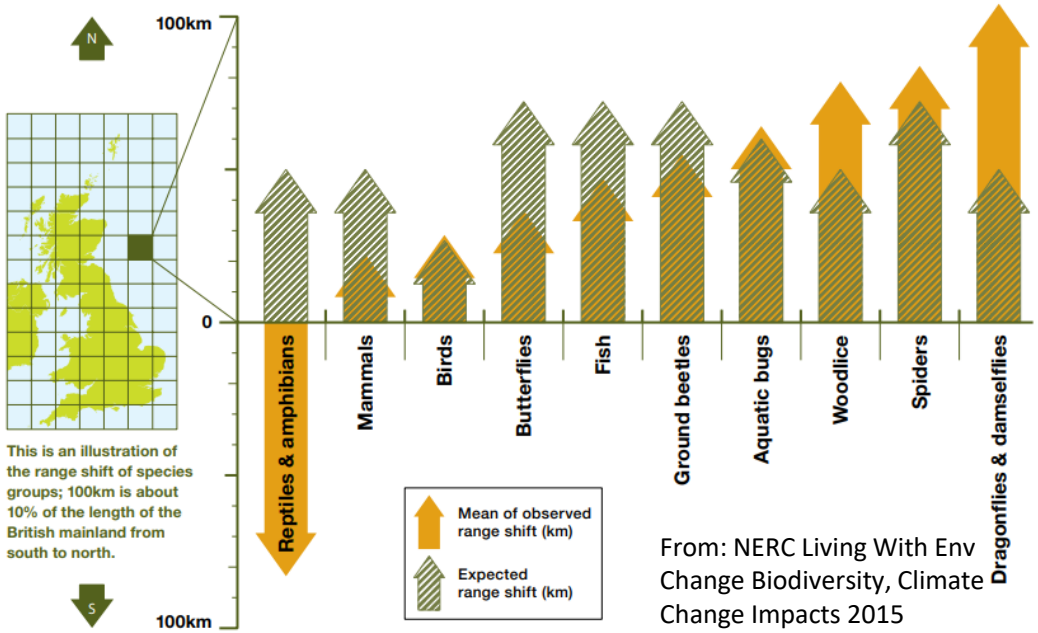


1850 – 2019 UK Warming Stripes. From Climate Lab

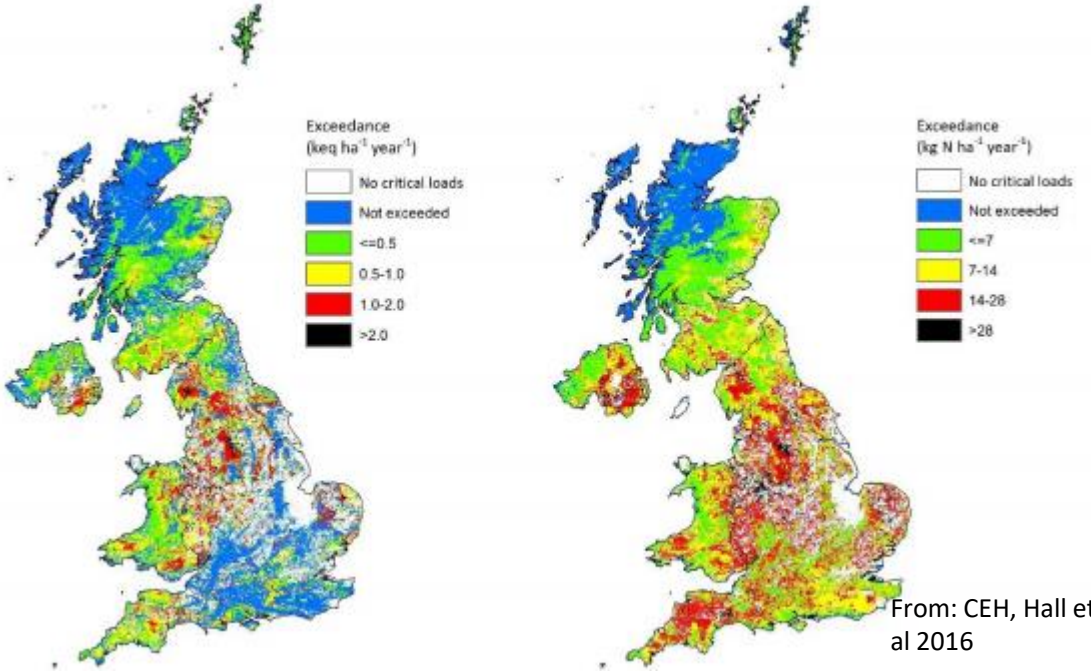
A nature & climate crisis

- **Climate change**
  - Public expectation & appetite for change increasingly reflected in our supporter base
  - Responsibility as major UK landowner - agriculture & land use = 11% GHG emissions (25% of which is from degraded peatlands)
  - Impacts on current & future ecosystem delivery - differential effects: major risk to our charitable purpose & UK plc
  - Nature based solutions provide critical opportunity in responding to UK Govt priority climate risks including 'more action needed' to reduce pressures & reverse declines of natural capital including ecosystems, soils & biodiversity, coastal change & flooding
- **Nature**
  - Significance of our estate – home to 44% of UK species incl 737 threatened with extinction; 41% estate nationally important; significant proportion of internationally important biodiversity including chalk grassland, Atlantic woodlands, waxcap fungi, veteran trees & seabirds
  - Step change required to effect persistent drivers of biodiversity loss: intensive agricultural systems, inappropriate and/or lack of management, pollution, climate change, habitat loss due to urbanisation
  - > 50% global GDP depends on nature & ecosystem services (food, fibre, clean water & air)

- **Broader context**
  - Legal: legislative, regulatory & policy change ~ an opportunity to lead in influencing and delivering for Nature-Climate-People (& new tools in the tool box Environment & Agri Bills, 25YP, Glover etc)
  - Financial: shift towards Payments for Public Goods & Services, Innovative Green Finance, Net Gain, Nature Campaign
  - Societal: our research has demonstrated increasing engagement with nature is good for you & good for the planet
  - Political: **Green not grey recovery**; COP26, CBD



From: NERC Living With Env Change Biodiversity, Climate Change Impacts 2015



From: CEH, Hall et al 2016

THE UK'S BIODIVERSITY IS DECLINING

15% of species are threatened with **extinction** from Great Britain

133 of 8431 assessed have already become extinct from Great Britain

SINCE 1970...

More species have seen their **populations decrease** than increase:

41%	33%	26%
have decreased	little change	have increased

We have seen big changes in where the UK's wildlife is found:

27%	52%	21%
found in fewer places	little change	found in more places

THE GREATEST DRIVERS OF CHANGE IN THE UK ARE...

- Climate change
- Urbanisation
- Pollution
- Woodland management
- Fisheries
- Invasive established non-native species
- Freshwater management
- Agricultural management

CLIMATE CHANGE IS HAVING AN INCREASING IMPACT ON NATURE IN THE UK

48% of moth decline is due to climate change

60% of aphid increase is due to climate change

The UK's kittiwake population has declined by **70%** since 1986 as climate change has reduced the availability of sandeels, a key food source in breeding season

Migratory birds are arriving and laying eggs earlier:

Swallows are arriving in the UK **15 days earlier** and breeding **11 days earlier** than they did in the 1960s

Great tits lay their eggs on average **11 days earlier** than they did in 1968

CHANGING AGRICULTURAL MANAGEMENT HAS HAD THE BIGGEST SINGLE IMPACT UPON NATURE IN THE UK OVER RECENT DECADES

72% of UK land is managed for agriculture

URBANISATION

Between 2006 and 2018, **1,600 miles of road** were constructed in Great Britain

POLLUTION

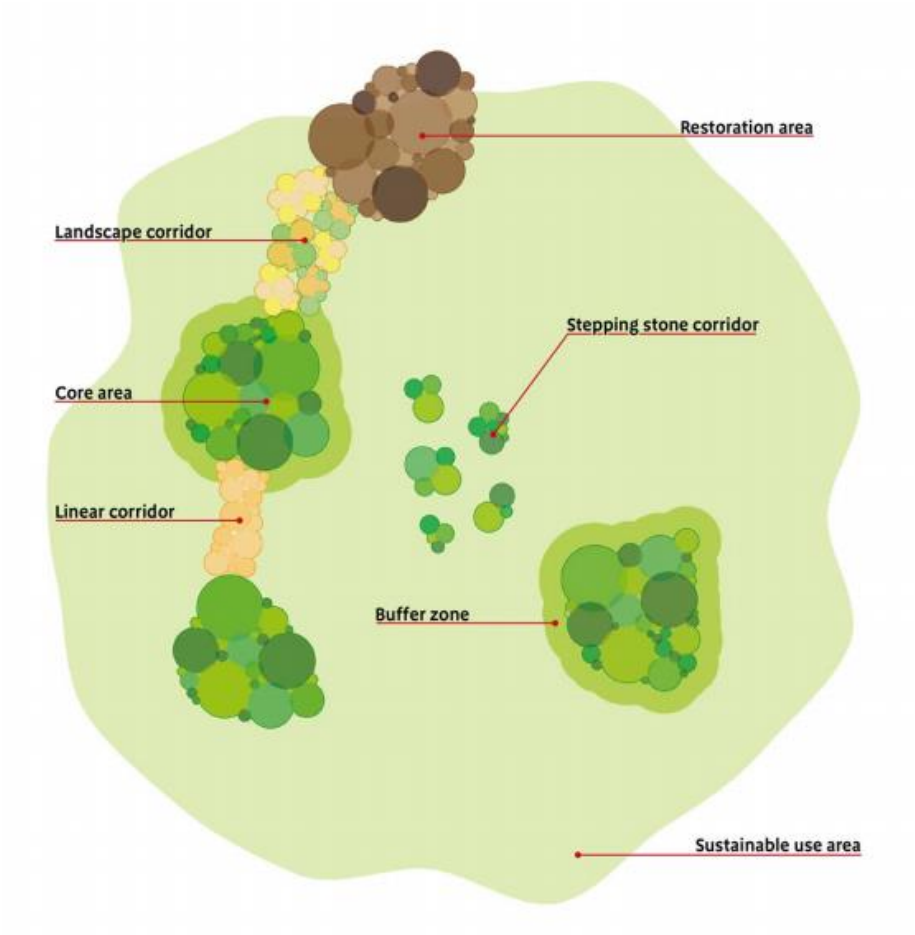
Nitrogen oxides and ammonia emissions **have decreased** since 1970

Nature-Carbon-People

We have made some ambitious decisions:

- Climate change is one of the organisation's **top five priorities**
- We are going to **be net zero carbon as an organisation by 2030**
- We will refocus on our **energy strategy** to **reduce use and convert to renewables**
- Our land will be for **nature, carbon and people**. To capture and store more carbon, we will repurpose farmland to create 20**,000ha of new woodland** and maintain our focus on creating **25,000ha of new priority habitat**
- We will co-ordinate and prioritise action through a national **Climate Change Programme**

Better, Bigger & More joined up



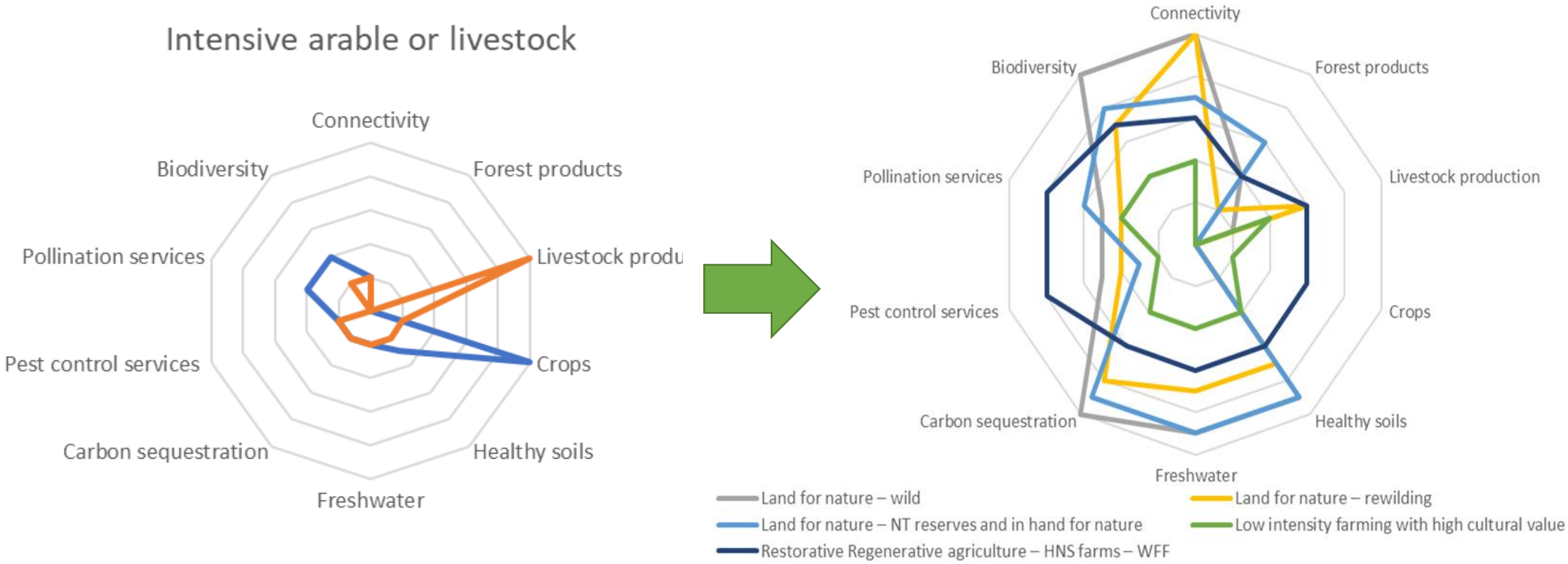
- Conserve existing biodiversity
- Reduce sources of harm not linked to climate
- Develop ecologically resilient & varied landscapes
- Est ecological networks through habitat protection, restoration & creation
- Evidence based decision making
- Integrate adaptation & mitigation measures in conservation mgmt., planning & practice

Hopkins et al 2007

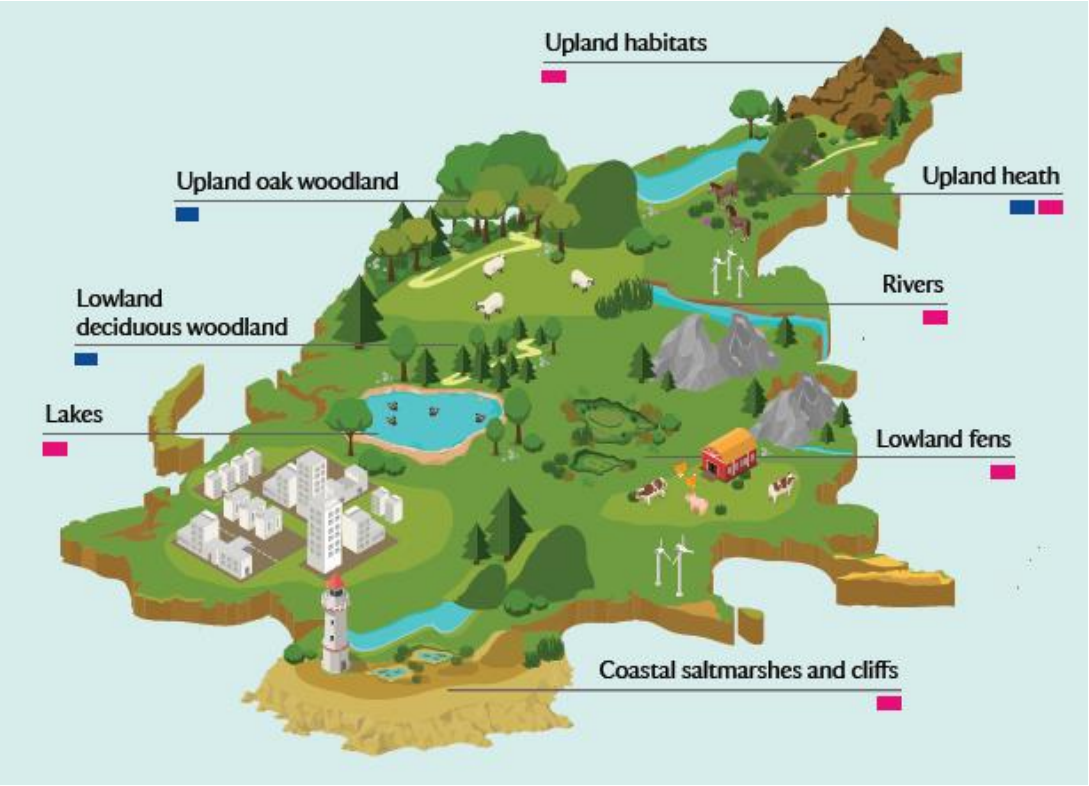
Seeking synergistic outcomes from ecosystem-based adaptation & mitigation actions e.g.

- Reduce GHG emissions & promote sequestration and stable C rich soils
- Increase biodiversity resilience
- Plan for future climate scenarios
- Help people adapt to climate change

Optimising land use & management for public benefit



Custodians of Carbon



- Scoping analysis suggests priority habitats net sink ~ 500,000 tCO2e/yr
- 80% from woodlands, wetlands & heaths
- 49% of properties have priority habitats that are highly sensitive (12% by area)
- 73% of habitats sensitive to climate change. 80% coastal

Density map of habitats with high sensitivity

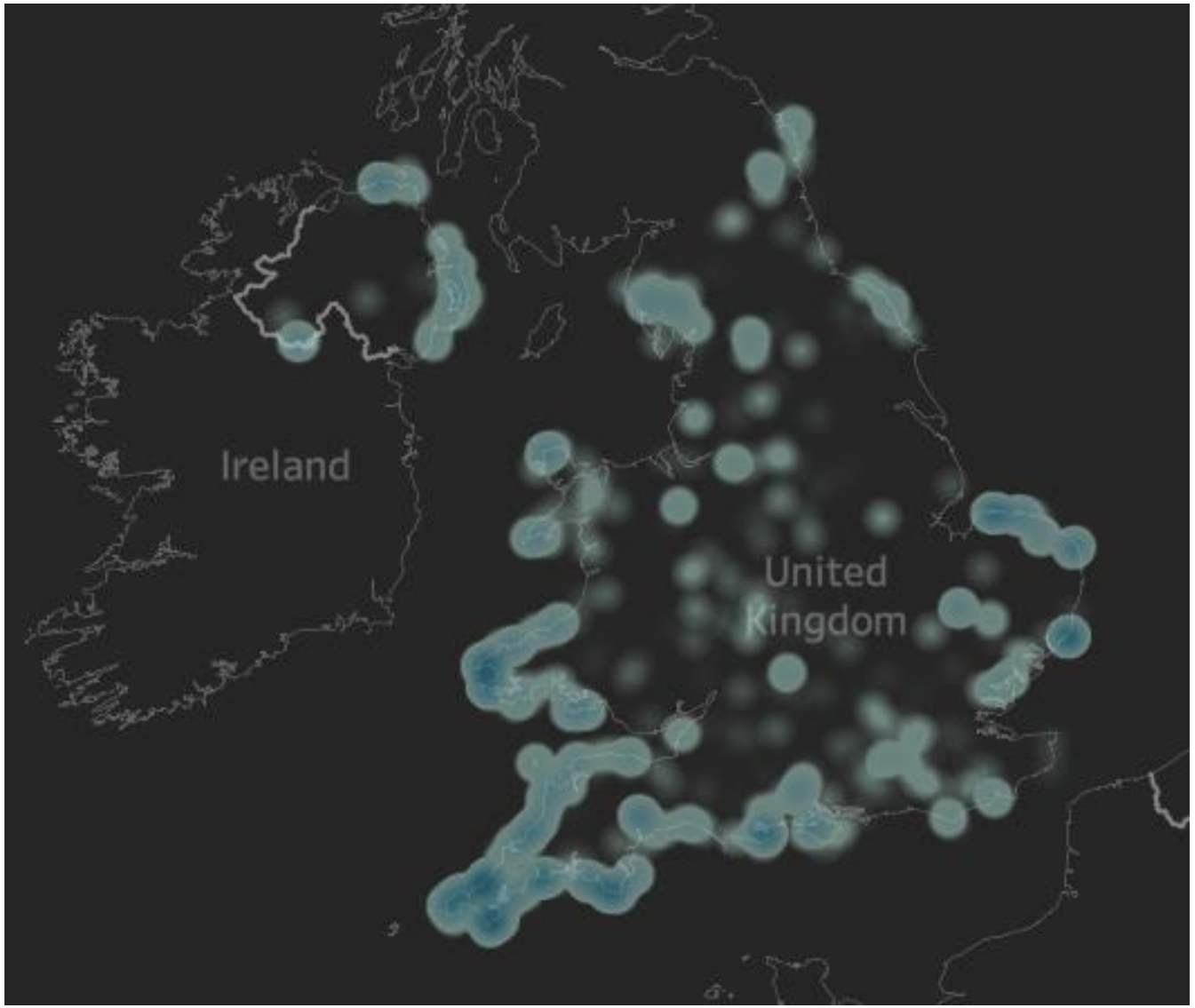
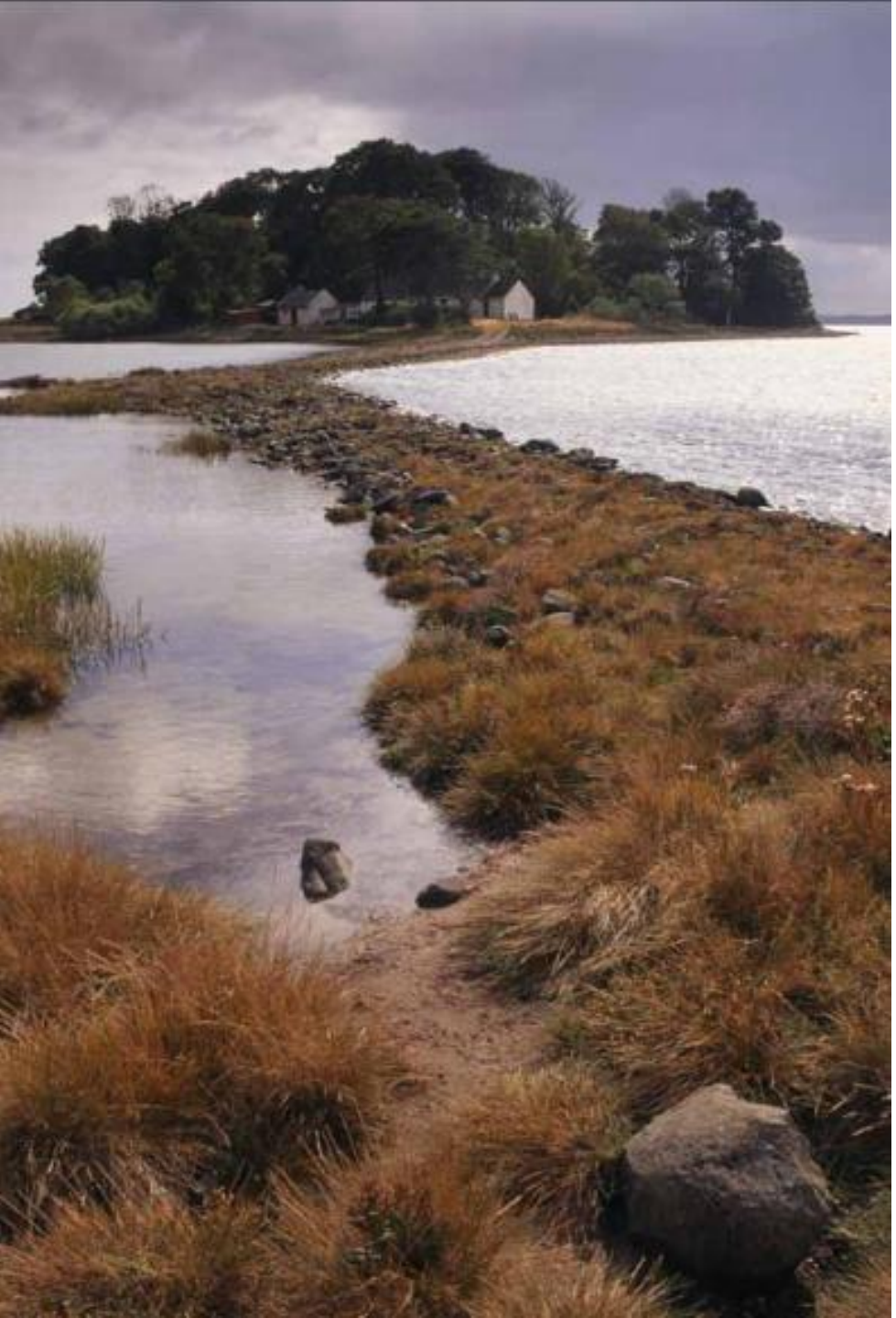


Table 1 Relative sensitivity of habitats to climate change

Habitat	National sensitivity classification
Coastal Saltmarsh	H
Montane	H
Saline Lagoons	H
Standing Water	H
Lowland Fen	H
Rivers and streams	H
Upland Hay Meadows	M
Coastal Grazing Marsh	M
Lowland Raised Bog	M
Floodplain Grazing Marsh	M
Purple Moor Grass and Rush Pasture	M
Coastal Vegetated Shingle	M
Lowland Meadows (wet)	M
Reedbeds	M
Blanket Bog	M
Coastal Sand Dunes	M
Upland fens and flushes	M
Lowland Heathland	M
Upland Heathland	M
Intertidal Mudflats	M
Lowland beech and yew woodlands	M
Wet woodland	M
Upland mixed ashwoods	M
Upland oak wood	M
Maritime Cliff and Slope	M
Limestone Pavements	L
Lowland Meadows (Dry)	L
Deciduous Woodland	L
Lowland Calcareous Grassland	L
Lowland Dry Acid Grassland	L
Upland Calcareous Grassland	L
Arable field margins	L
Ancient / species rich hedgerows	L
Lowland wood pasture and parkland	L

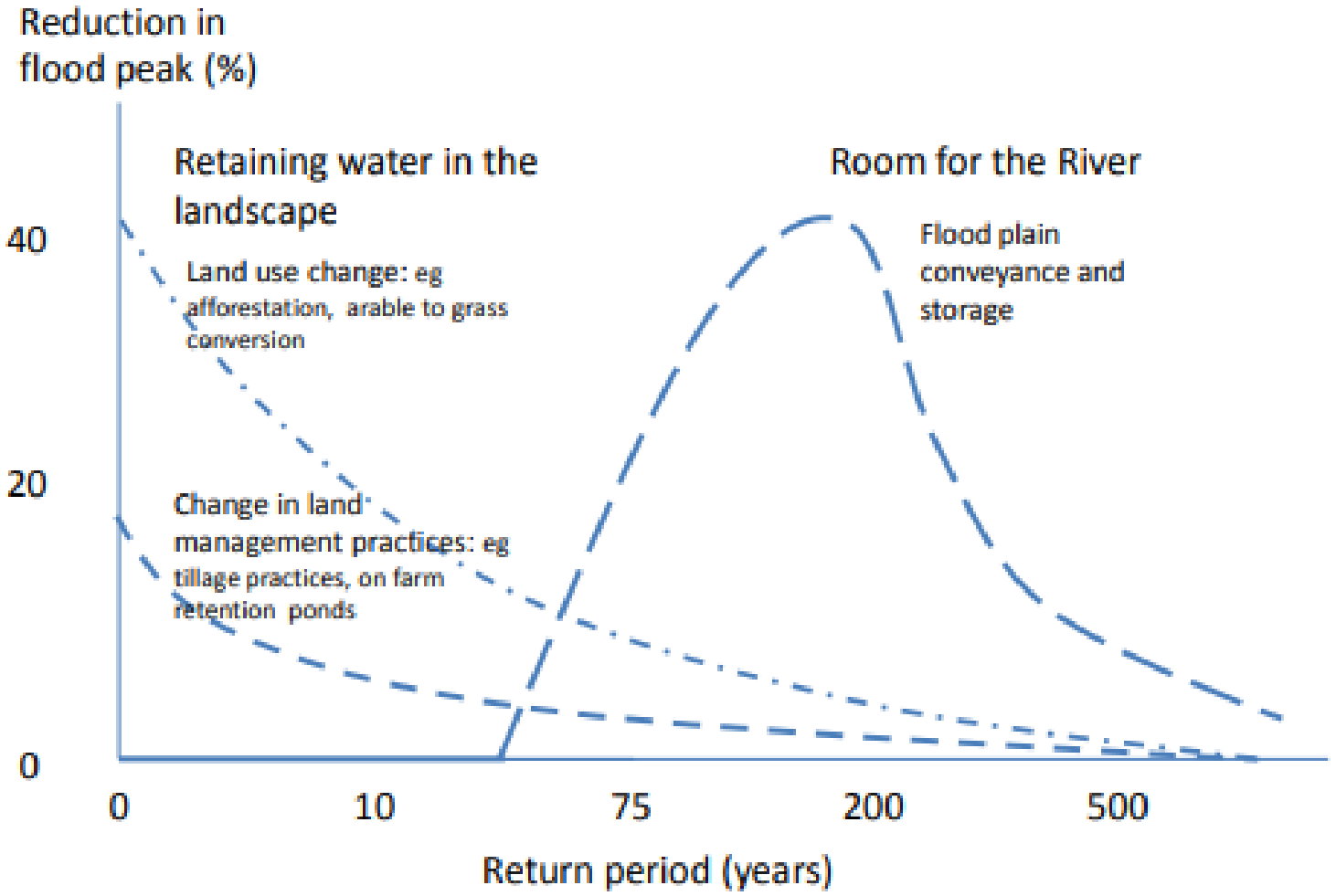
Classification adapted from Mitchell et al (2007) England Biodiversity Strategy – Towards adaptation to climate change.



Shifting shores

- 20% of our estate is coastal; 3% (8k ha) marine
- Coastal habitats moderately or highly sensitive due to sea level rise & other climate pressures
- Significant land holdings & internationally important e.g. saltmarsh & maritime cliff & slope - 2/3 internationally important & 6% of saltmarsh extent
- Shifting shores: research, advocacy, planning & practical action.
- 90 coastal adaptation strategies: taking the long view, adapting to change & working with others
- 350ha of potential new coastal realignment

Natural flood management



- Working with the grain of nature e.g. natural flood management
- £13M Riverlands prgm with EA & NRW delivering for nature people & sustainable land mgmt.
- e.g. Stage Zero river restoration Porlock

- A global moment – that needs seizing
- A step change towards action - 2 degrees perilously close
- Huge opportunities (& risks) ahead – bold and ambitious
- Important opportunities to collaborate across sectors & with new audiences

- NT – Nature Climate People

- Thank you