

Puzzling through Connectivity: Placing it in partnership decision-making



Presentation by
Tim Graham NIA Programme Manager

Inspiring landscapes
and vibrant communities
in a changing climate

Puzzling through Connectivity: Placing it in partnership decision-making

- Partnership and place
- Partnership ideas and ambition
- An example from connecting Gateway Sites
- Connectivity Indicator and Evidence Base
- Partnership Context and Restoration Planning

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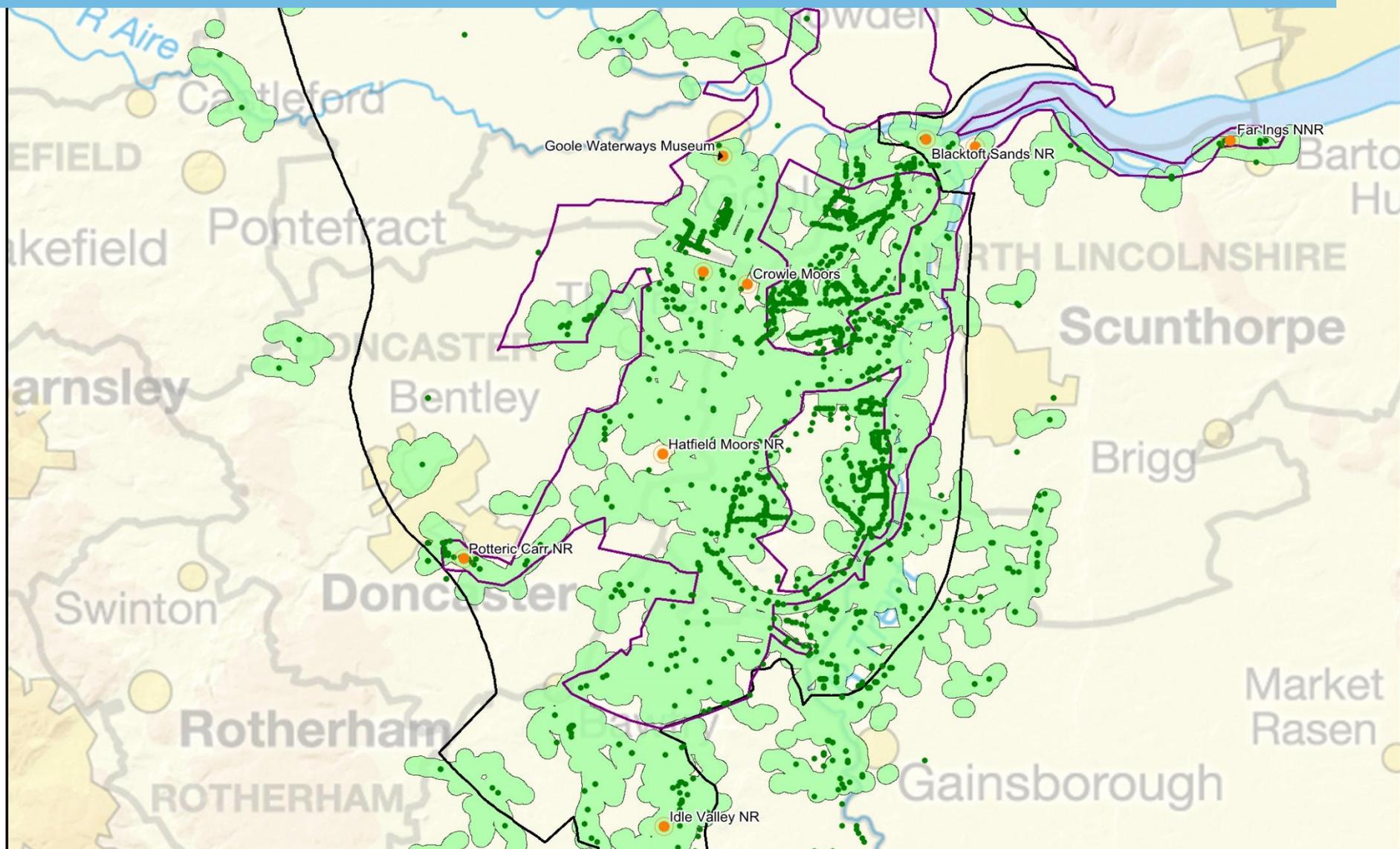
The Humberhead Levels



A Long history of conservation action and the current delivery programme since 2008 stands at £12million

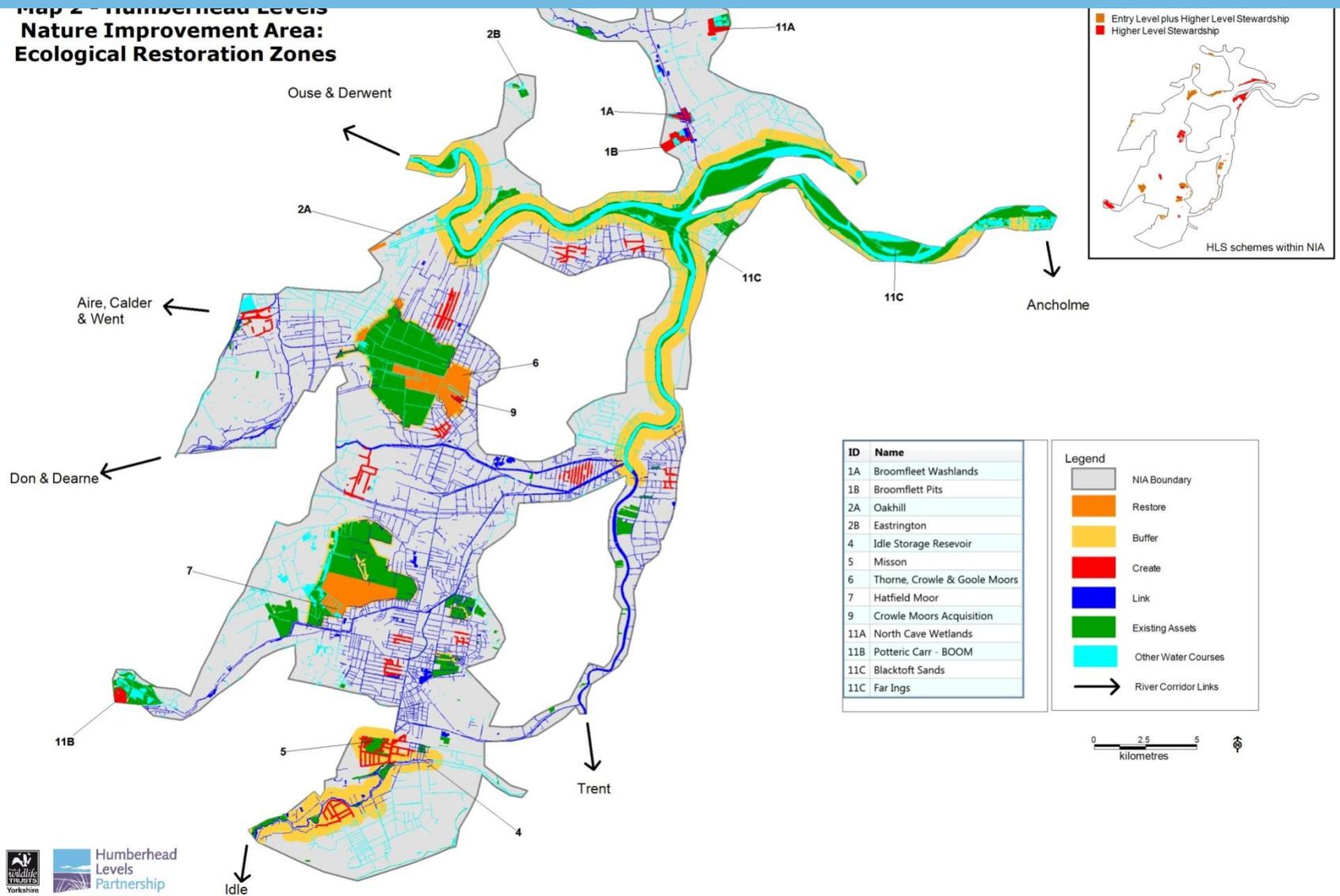


What do we want from connectivity?



What do we want from connectivity?

**Map 2 - Humberhead Levels
Nature Improvement Area:
Ecological Restoration Zones**



What were we wanting to connect?

- Infrastructure
- Elements of our ecological network
 - Core Sites
 - Wider landscape
 - New sites
- Dispersing populations
- Condition and habitat information
- Monitoring
- Planning and reporting

A Context for Dispersal

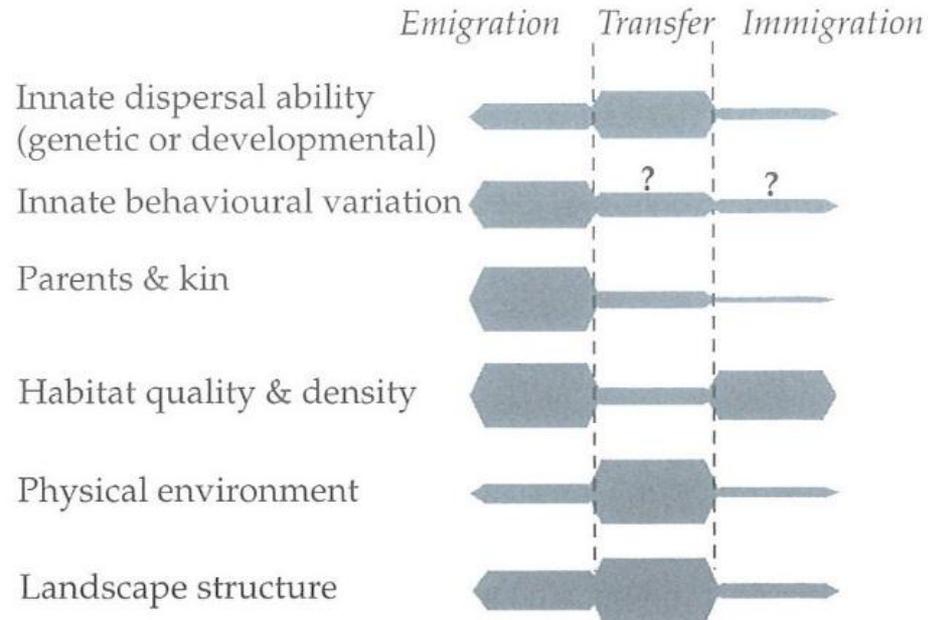


Figure 1.2 General overview of the importance of different causal factors in the dispersal process. Bar width indicates the relative importance of each factor in each of the three stages of the dispersal process. See text for further explanation.

(Matthysen, 2012)

The Connectivity Indicator

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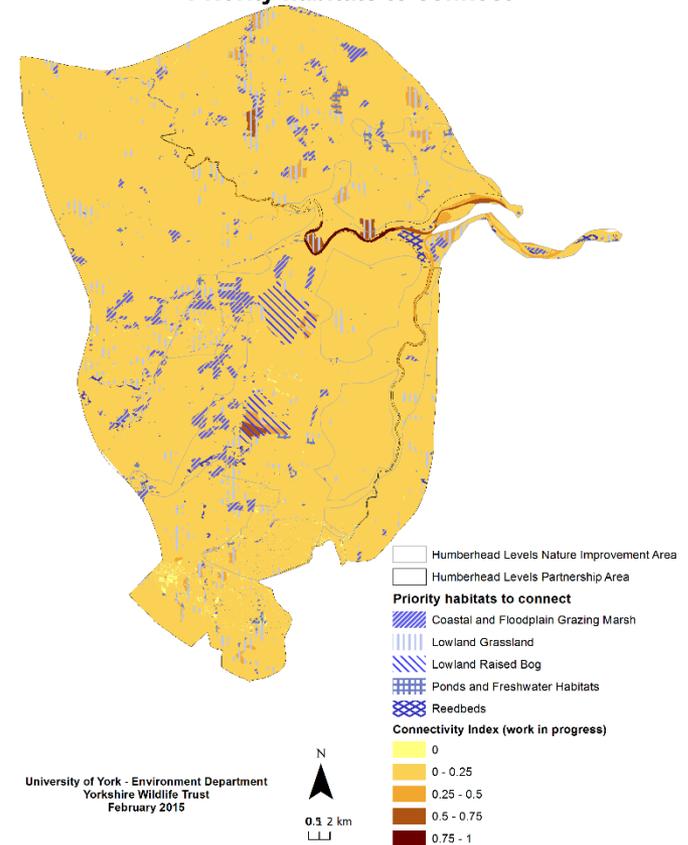
The basic principle of the patch-wise functional connectivity metric applied here are taken from Moilanen and Nieminen (2002):

$$s_i = \sum_{i \neq j}^n \exp(-\alpha d_{ij}) A_j C_j$$

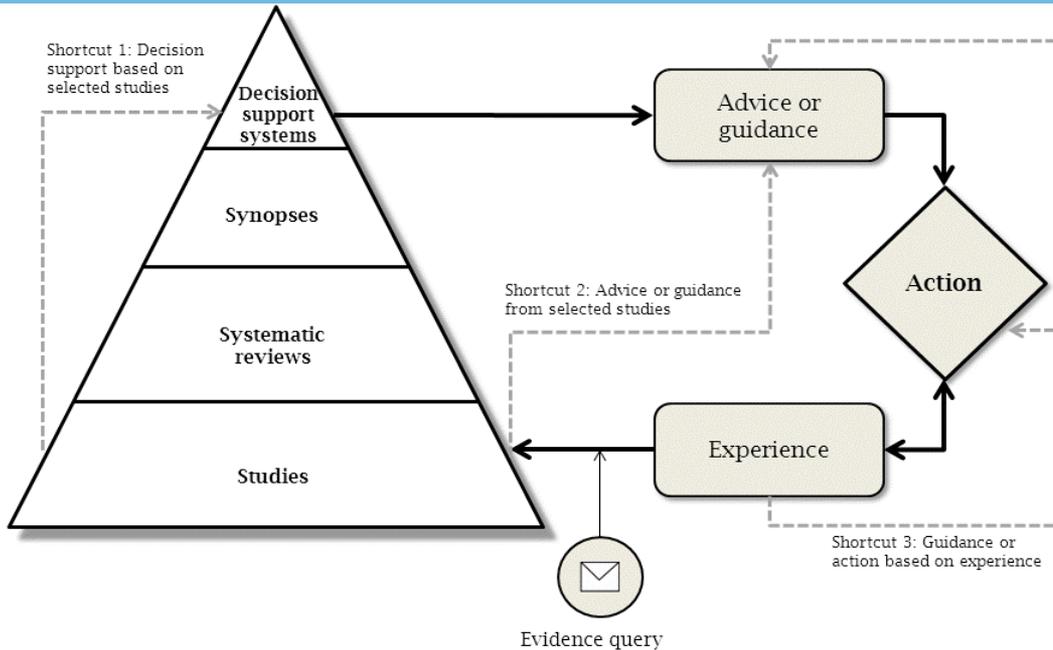
Scales: Local 5km; Landscape Unit; NIA/NCA
Species: low; medium; high

Edge ratio
Fragmentation

Connectivity Index for HHL NIA and HHL PA
Priority habitats to connect



Building an Evidence Base



Sutherland *et al's* 7 Step Framework

Step	Action
1	Ask an answerable question
2	Track the best evidence to answer question
3	Critically appraise the evidence
4	Integrate evidence with expertise and context
5	Implement intervention
6	Monitor and evaluate outcome
7	Actively disseminate knowledge



Halting overall Biodiversity Loss

- Healthy well-functioning ecosystems – what in HHL?
- Coherent and resilient network
- Improvement in the status of key species
- More, bigger and less fragmented areas for wildlife

An Integrated Partnership Approach

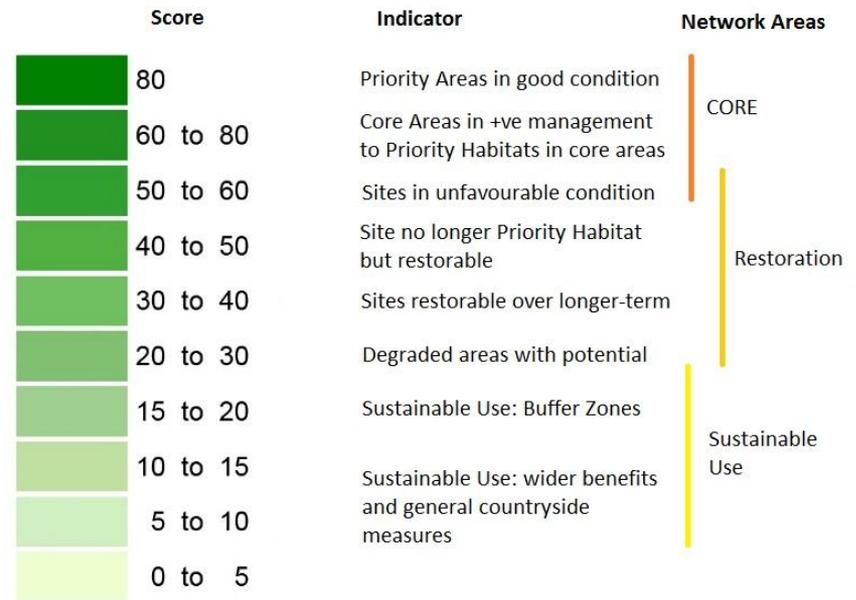
- Evidence based partnership approach
- Securing wider public benefits
- Leading the step change in innovative delivery

People and Success Centred

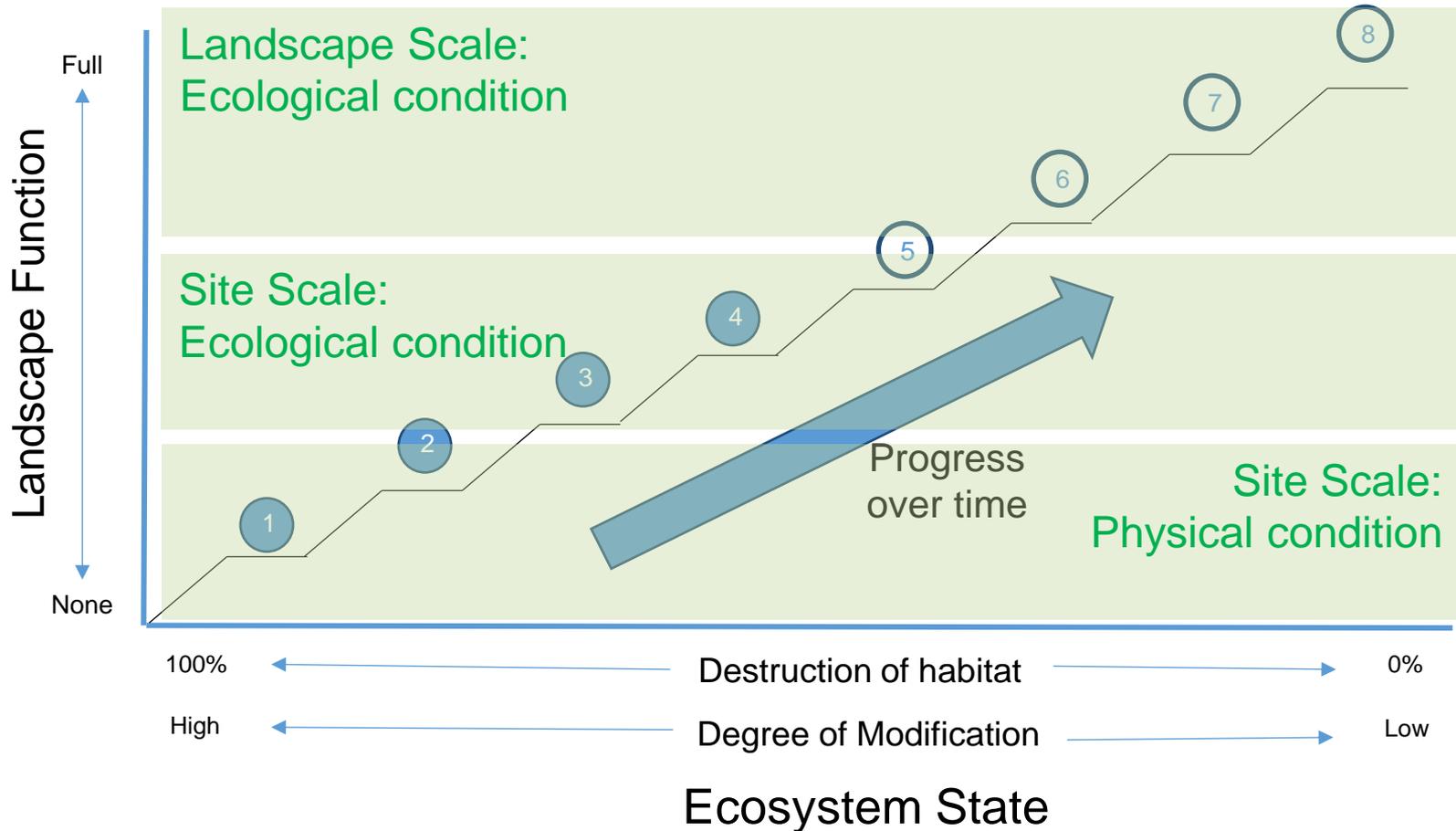
- Measuring and communication success
- More people engaged, valuing and taking action for nature.

Condition Data and Scoring

- Common Standards monitoring
- LWS survey
- NE Structured Surveillance methodology
- Phase 1 Survey



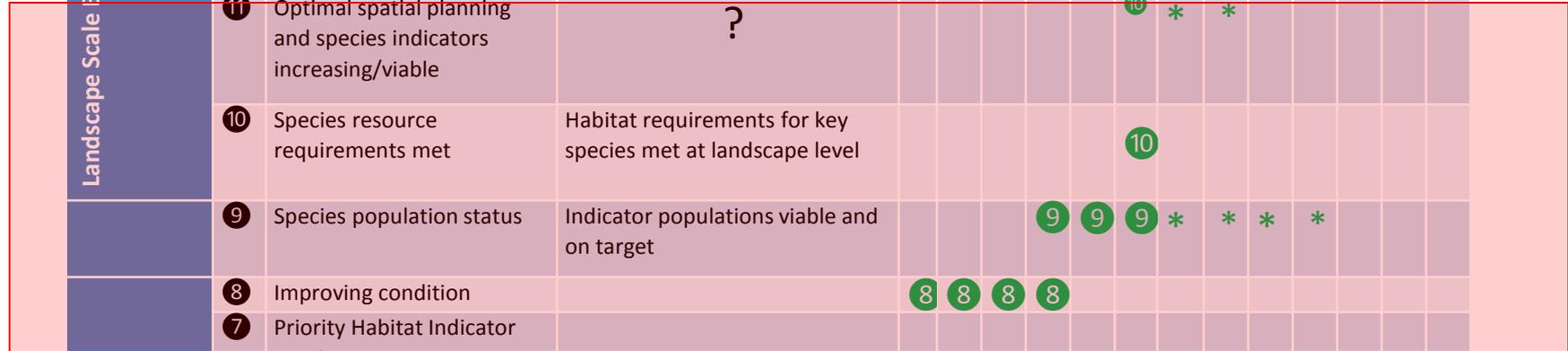
Conceptual Model for Restoration

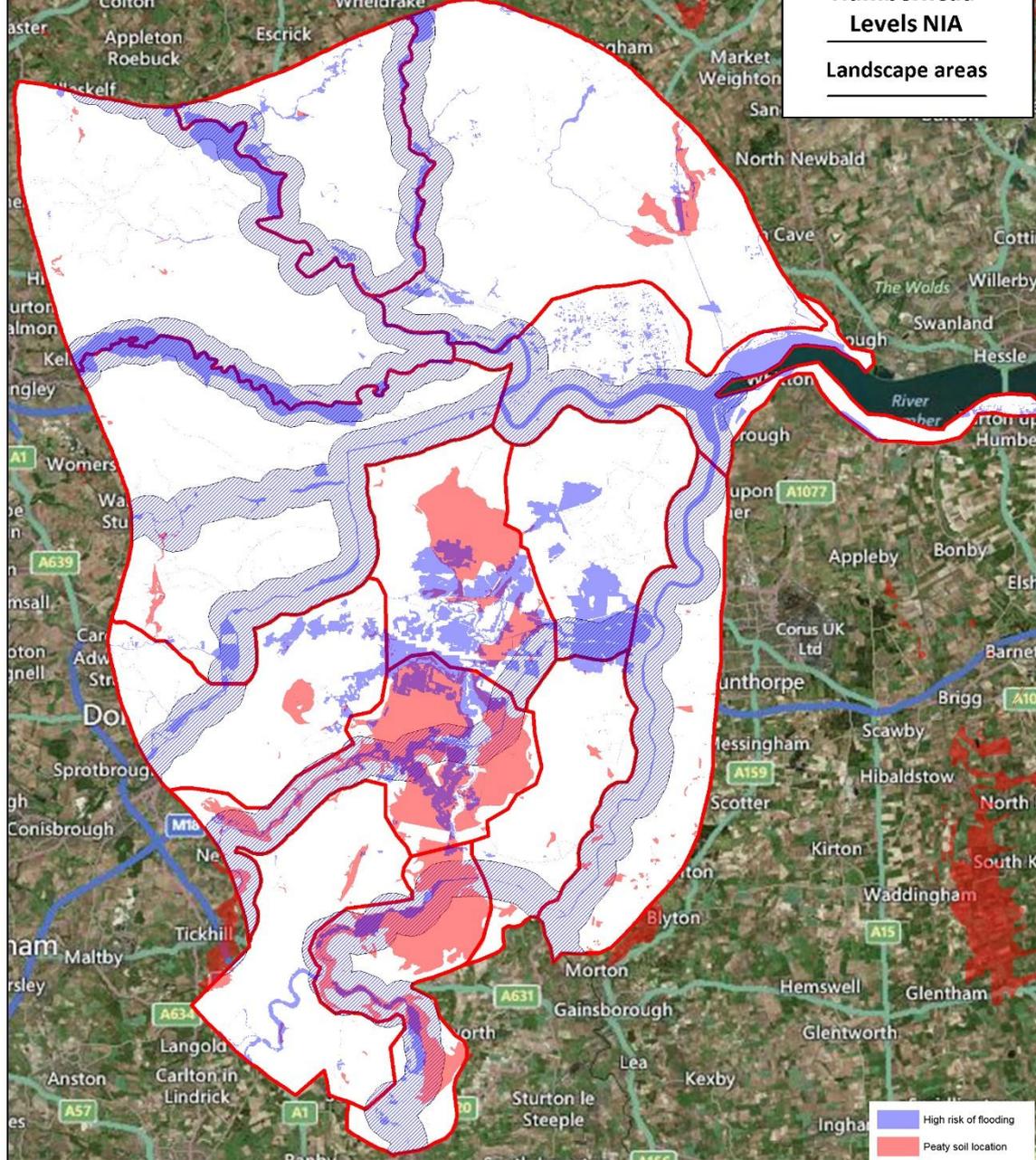


(Modified from Hobbs and Harris, 2001)

Reporting across the Partnership

Ecosystem State	Possibly Indicator Type	Measurable	2015	2016	2017	2018	2019	2020	2022	2025	2030	2035	2040	2045	2050
Beyond HHL capacity?	15	No or minimal intervention landscape													
Landscape Scale Ecological Condition	14	Landscape process: optimal habitat change and adaptation						*	*	*	*	*	*	*	*
	13	Landscape process: flood plain					*	*	*	*	*				
	12	Landscape process: sediment and WFD								*	*				
	11	Optimal spatial planning and species indicators increasing/viable								10	*	*			
Landscape Scale Ecological Condition	10	Species resource requirements met								10					
	9	Species population status					9	9	9	*	*	*	*		
	8	Improving condition		8	8	8	8								
Landscape Scale Ecological Condition	7	Priority Habitat Indicator species													
	6	species assembly and structure													
	5	Vegetation establishment													
Site Scale Physical Condition	4	Hydrological planning													
	3	Land forming earth works													
	2	Bedrock and soil reformation													
	1	Extraction cessation													





Levels NIA
Landscape areas

High risk of flooding
 Peaty soil location

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Thank You – Any Questions?

