

CREATING NFM SCENARIOS

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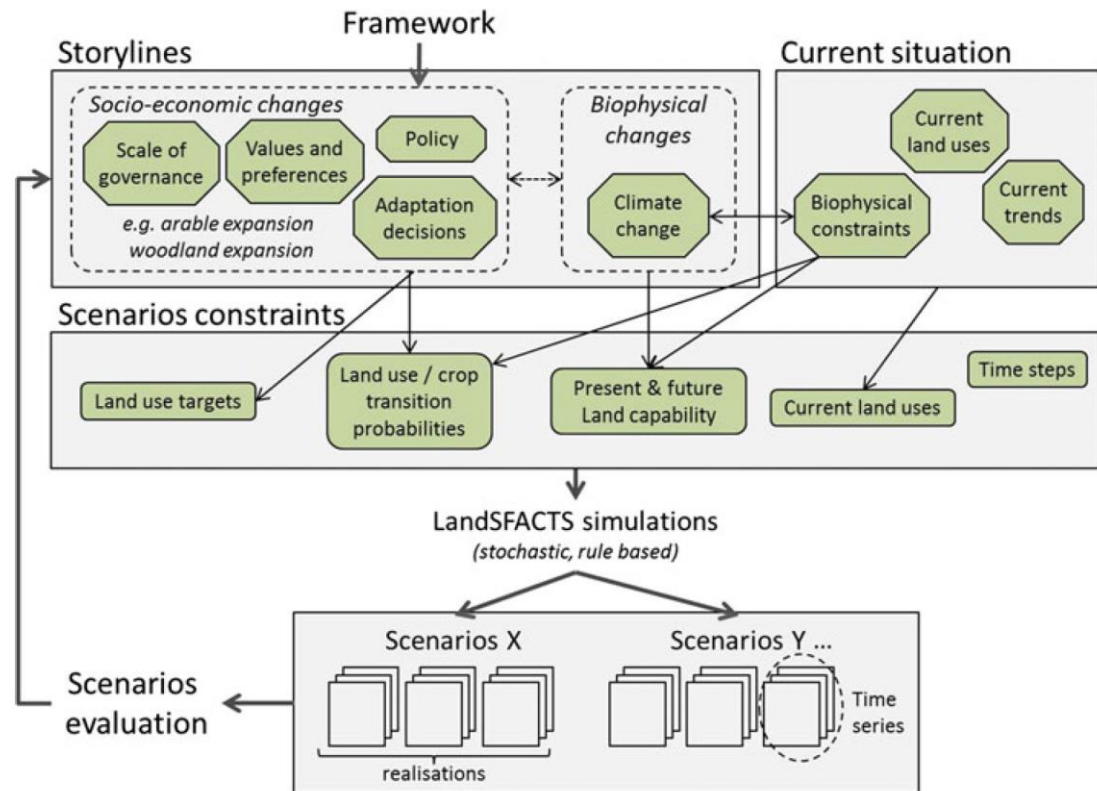


**RIVER
RESTORATION**

LANDWISE Conference
20th February 2020

WHY CREATE SCENARIOS?

- Aim to identify possible future landscape conditions from **co-construction of knowledge**
- ‘Bottom up’ fine grained local knowledge complements ‘top down’ landscape-scale LUC scenarios, strengthening the validity
- E.g., landscape-scale models have difficulty incorporating key social/cultural info that can influence land-use behaviour
- It is ultimately land-owners/managers that decide how land is used



REGIONAL NFM WORKSHOP 2018

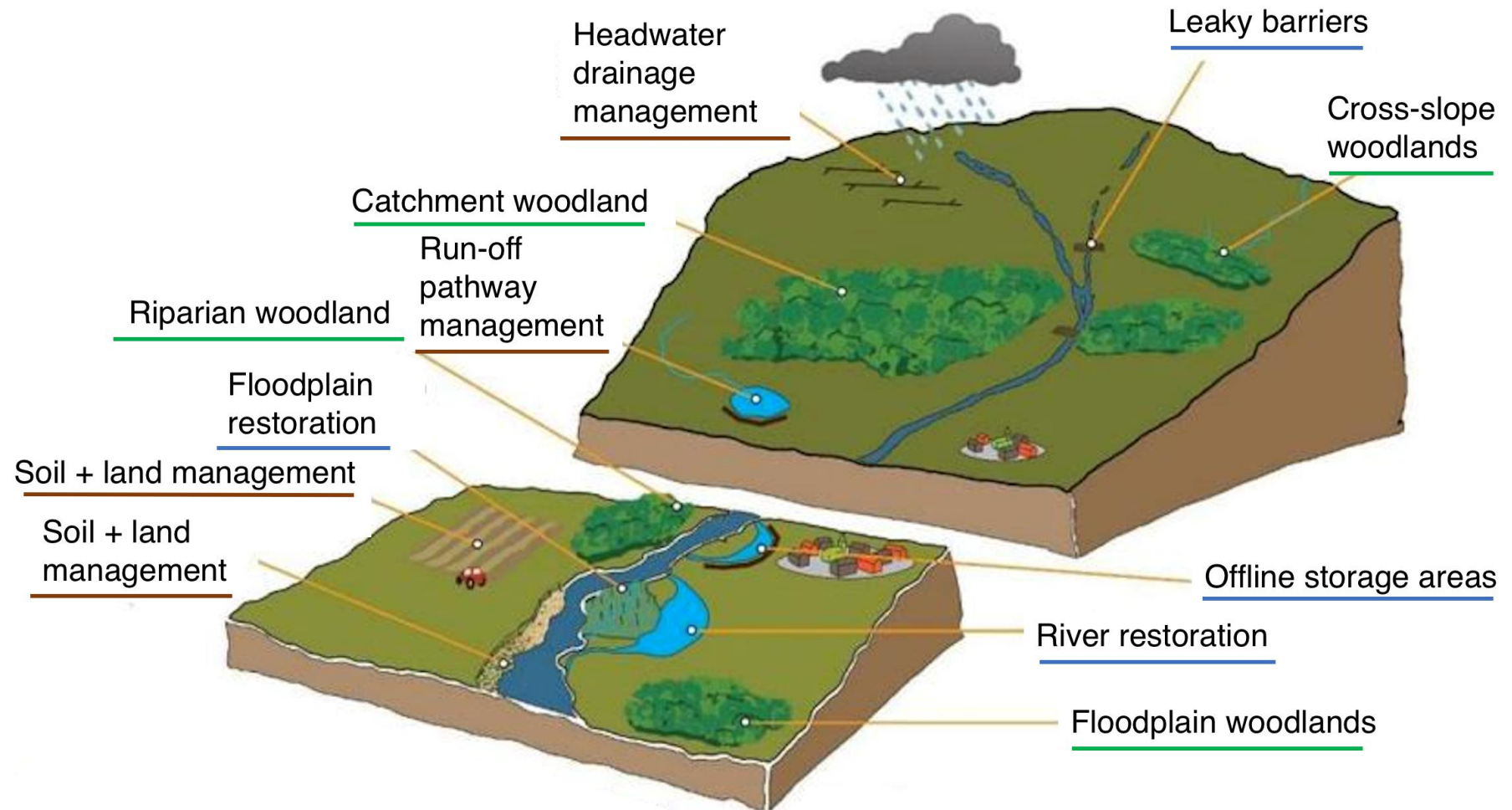
- **51 Participants**
- **5 Expertise groups:** Government, NGO, Research/Consultancy, Farmers/Landowners, Communities at Risk
- **3 Sectors:** Agriculture, Conservation, Communities
- **3 Landscape types:** Chalk Downs, Clay Lowlands, Cotswold Limestone



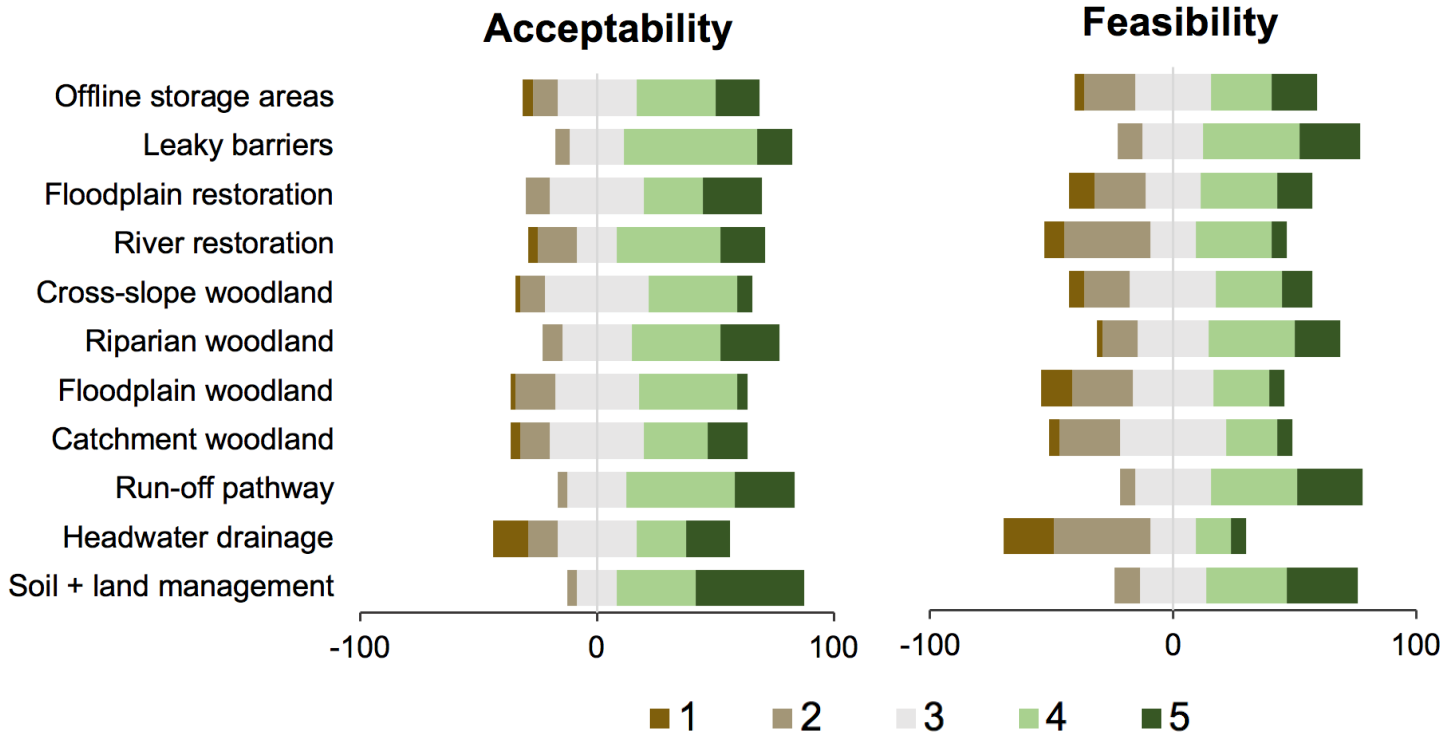
Aim:

Understand from different groups what types of NFM measures they believe are culturally or socially **acceptable** and most **feasible** (i.e. which are easiest to deliver, and which need more support)

SCORING NFM MEASURES



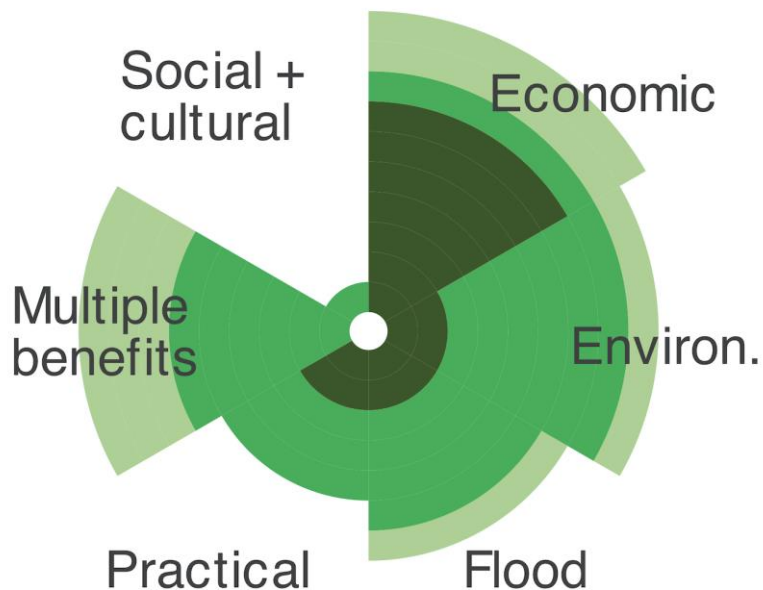
REGIONAL NFM SCORES



- Limited range in A and F scores (most more acceptable than feasible)
- SLU ranked in top 3 most A and F across all landscape types and expertise
- SLU more acceptable by Farmers compared to Communities
- Floodplain woodlands more feasible by Research compared to Communities

POSITIVE DRIVERS

Soil + land-use management



Environment:

“Supports farmland dependent species - invertebrates and birds in particular”
(Conservation)

Multiple benefits/Environment:

“Builds up soils and organic matter”.
(Conservation)

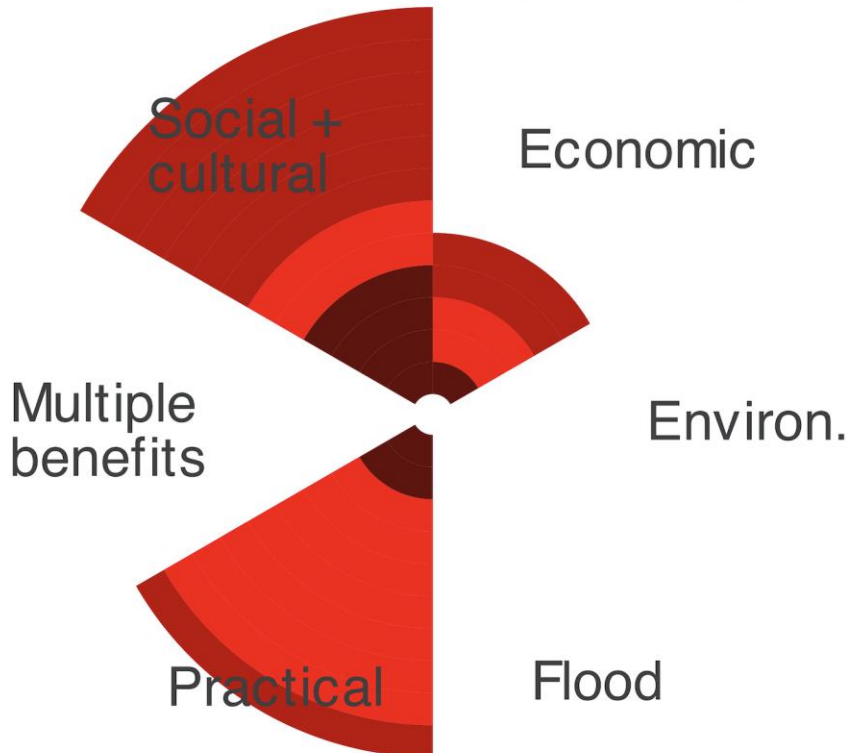
Practicality:

“Easier to do and to integrate into farm systems.” (Agriculture)

Economic: *“Will provide many benefits for productivity.”* (Agriculture)

NEGATIVE DRIVERS

Catchment woodlands



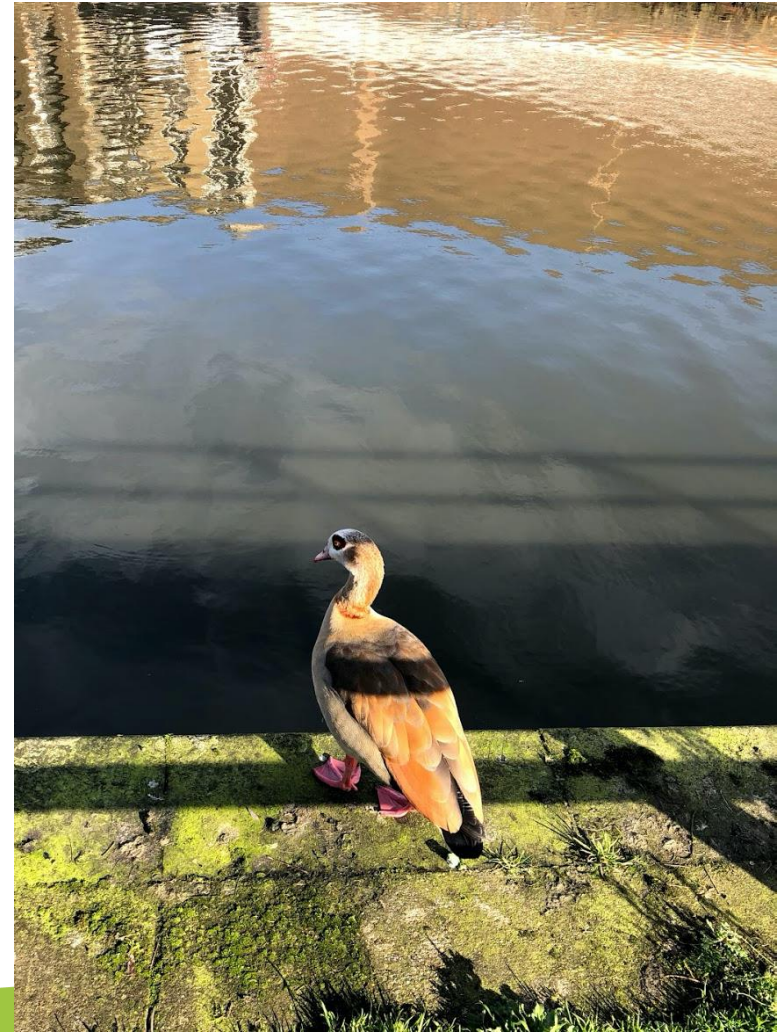
Social + cultural (aesthetics):

“Many chalk catchments are protected landscapes and there will be some resistance to large-scale afforestation.”
(Conservation)

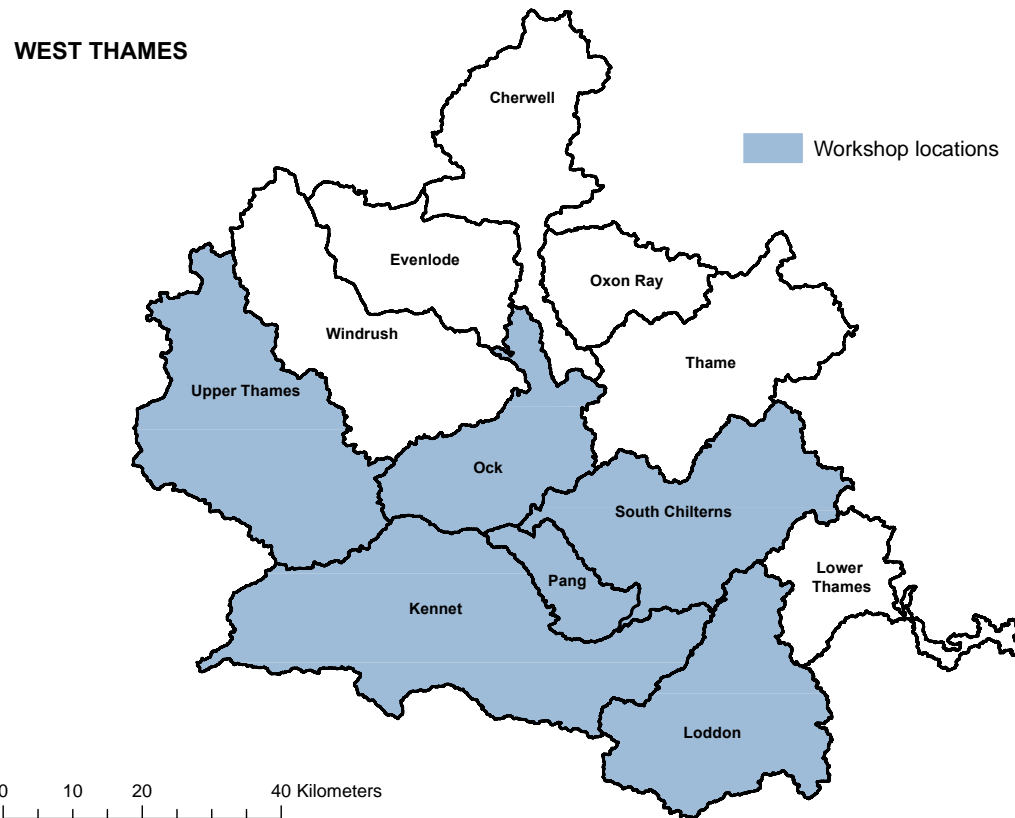
“Acceptability of widescale woodlands likely to be low in AONB.” (Community)

SOME KEY POINTS

- Social/cultural, multiple benefits (environ, wildlife), economic, practicality factors strong drivers of NFM A-F
- A-F depends on own experience of NFM and what matters on individual basis
- **Policy/Research:** interested in flood risk benefits of NFM
- **Wildlife Trusts:** measures designed to provide biodiversity benefit
- **Communities:** more motivated by social/cultural drivers
- **Farmers:** economics and farm productivity
- Confidence in flood risk mitigation? - Are we using NFM to reduce flood risk or to provide multiple benefits?



LOCAL NFM WORKSHOPS 2019-2020



Aim: Create catchment scale scenarios for NFM that reflect the type of measures the local community and organisations want to see

LOCAL CATCHMENT WORKSHOPS

- 5 workshops, ~20-25 participants per workshop
- Landowners, farmers, farm advisors, flood groups, EA, Rivers/Wildlife Trusts, communities at risk, fisheries consultancy, local authority, water company..



TOP SCORING NFM MEASURES

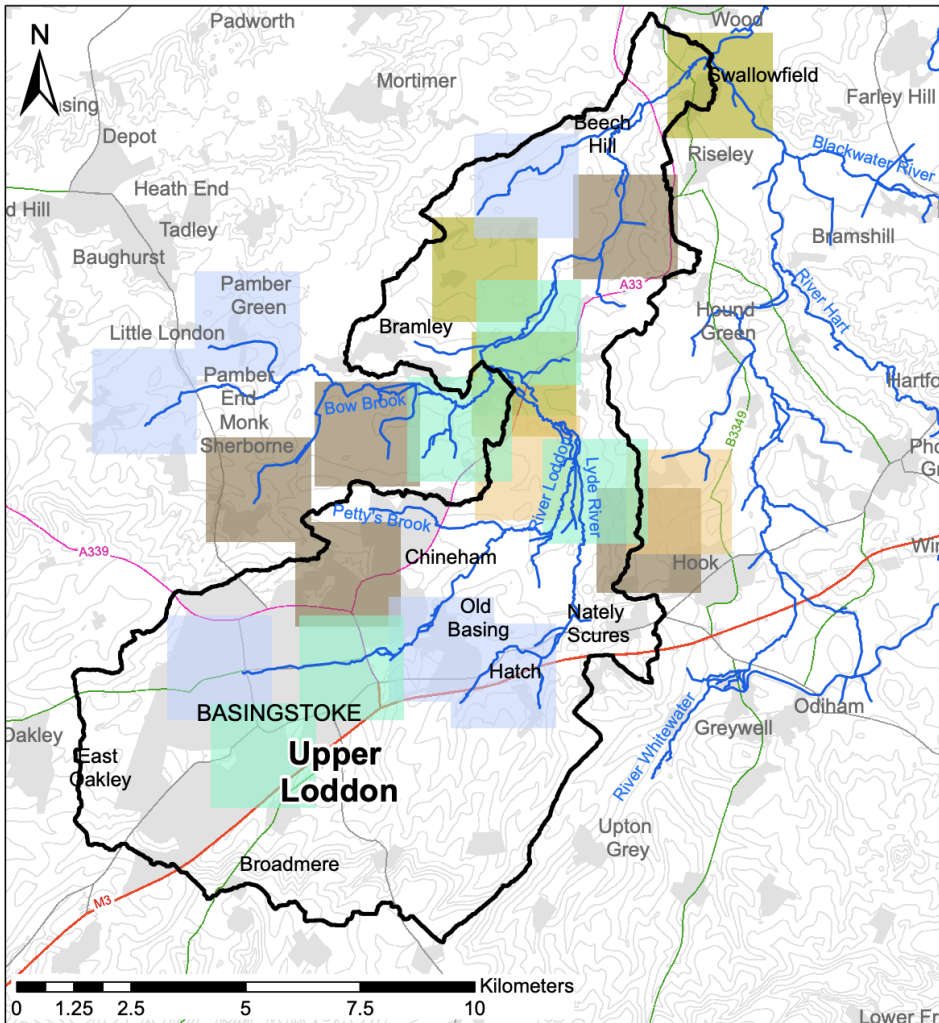
NFM MEASURE	REGIONAL	LOCAL												
		Upper Thames				South Chilterns			Kennet			Loddon		
		1	2	3	4	5	6	7	8	9	10	11	12	13
Soil + land-use	■		■	■	■	■	■	■	■	■	■		■	■
Run-off pathway	■			■			■		■		■			■
Leaky barriers	■		■				■	■	■					■
Catchment woodlands		■			■	■		■		■	■		■	
Floodplain woodlands					■					■				
Cross-slope woodlands														
Riparian woodlands	■				■							■	■	
Offline storage areas	■		■			■								
River restoration		■		■				■		■				■
Floodplain restoration		■	■	■								■		■
Headwater drainage												■		

Upper Thames: Upper Churn & Coln (1,2), Lower Churn & Coln (3), Cole (4); South Chilterns: Thames Corridor (5), Pang (6), Wye (7), Kennet: Lower Lambourn & Winterbourne (8), Upper Lambourn & Winterbourne (9,10); Loddon: Blackwater (11), Lower Loddon (12), Upper Loddon (13).

NFM MAPPING

Upper Loddon

- River restoration
- Floodplain restoration
- Soil + land management
- Run-off pathway
- Leaky barriers



LOCAL PREFERENCES

Upper Thames: Soil + land-use

‘Goes hand in hand with good farming practice’; ‘good soil management is economically beneficial to farmers’, ‘positive ecological impacts’

South Chilterns: Catchment woodland

‘Woodland planting in valleys more acceptable [than hillslopes] within the AONB considering local landscape setting values’; ‘Acceptability depends on how woodland looks and how it can be used by the community’; ‘Opportunities for planting on low quality agricultural land and on clay where production value is low’

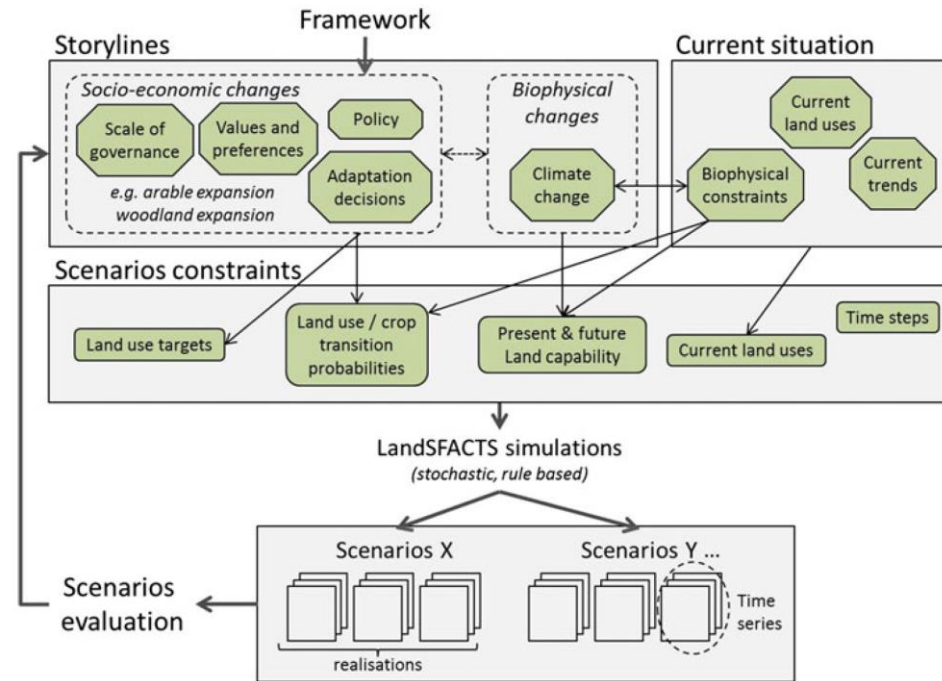
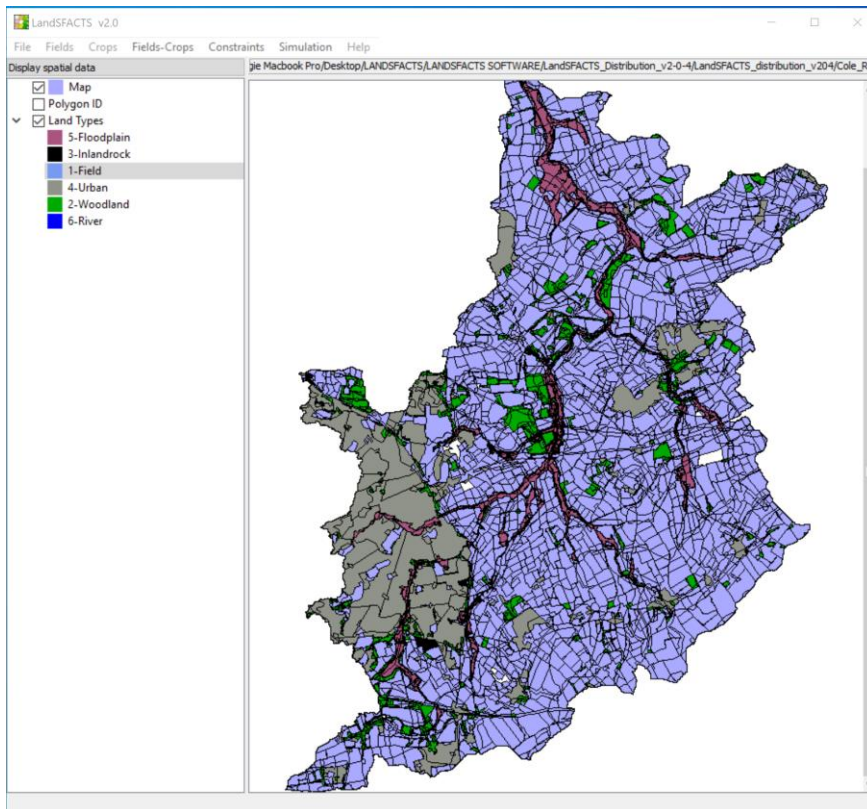
Kennet: Soil + land-use

‘Enhances biodiversity and natural habitat’; ‘increases carbon sinks, improves air quality and bird migration groups’; ‘enhances soil health and fertility’; ‘does not require dramatic LUC and Countryside Stewardship payments are available’

Loddon: Leaky barriers

‘Reduces water velocity and run-off downstream, non-intrusive, easy to remove and relatively cheap’; ‘enhances wildlife, aesthetically attractive’; ‘opportunities on NT land where they could be used for teaching about natural processes’

NEXT STEPS – BUILDING SCENARIOS



- Constrain landscape options - LANDSFACTS - participatory scenario planning
- Run scenarios through models to 'test' how effective they are at reducing flooding

THANK YOU

