



## Ecological network in Cheshire, UK

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# Scope of presentation

- Part 1 Motivation for an ecological network
- Part 2 Science behind the network
- Part 3 Delivering the ecological network
- Part 4 Key points



# Cheshire



- 208,344 hectares / 2,083.4 sq. km
- 678,700 population (2003)



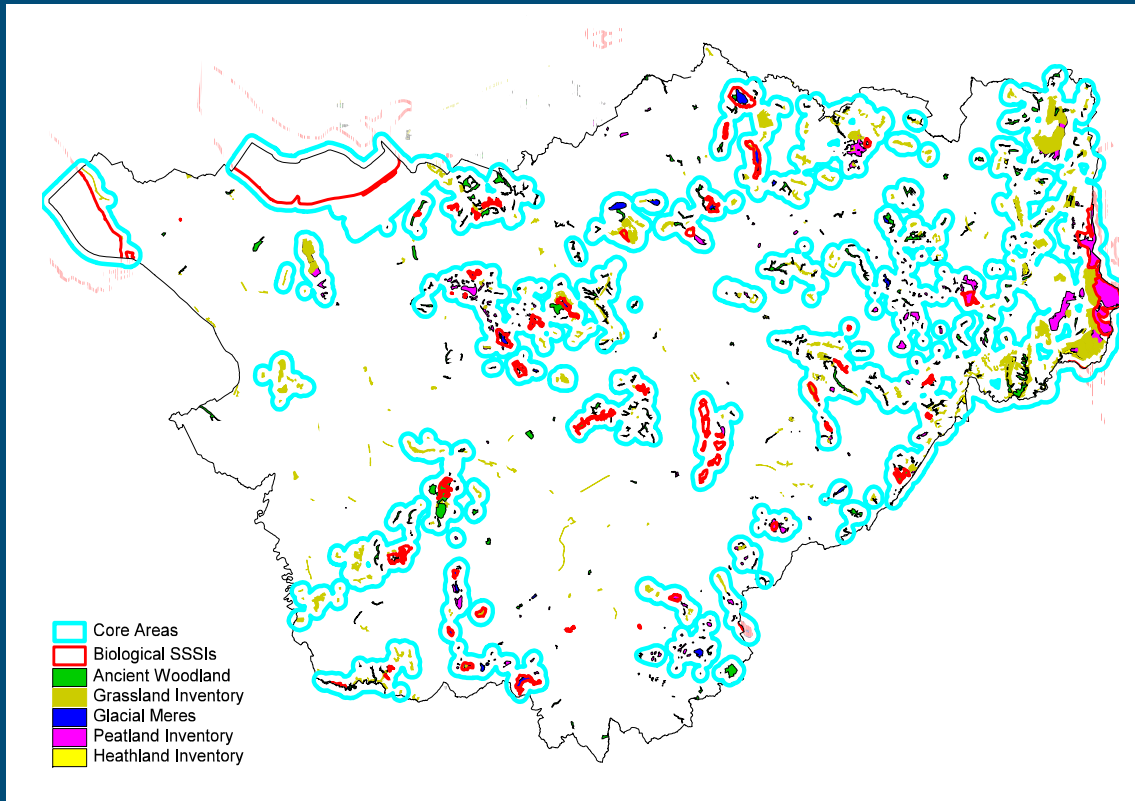
# Cheshire



- 70% agricultural
- 12% urban
- 12% transport
- 4% woodland



# Cheshire's natural resource



- EU SAC/SPA 1713ha
- Sites of Special Scientific Interest 2831ha (1.34%)
- Sites of Biological Importance 10,624ha (5%)

# Part 1

## Motivation for an ecological network



# The ecological challenges



# The inspiration





# Advantages of an ecological network approach to nature conservation

## Traditional UK approach

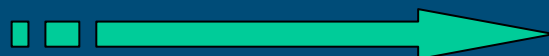
## New approach

Sites



Landscape-scale

Isolation



Connection

Defensive



Pro-active

Sectoral



Integration



# Purpose of the Cheshire EONet



*“To create a sustainable network of habitats and species for people and wildlife by 2020”.  
Cheshire’s Agenda 21*



# Key stages

1996-99	Inception (EN, CCC)	Data collation, GIS mapping, initial spatial analysis
1999-2003	<i>Life</i> EONet Project (EU)	Demonstration project: definition of a strategic ecological network Establishment of a social network; integration in land management; incorporation of the concept in land use policies; Communicated the vision
2003-04	Feasibility Study (NWDA)	Assessed and quantified the economic, social and environmental benefits
2004-05	Development Plan (HLF)	Further studies & formulation of projects Landscape Partnership Scheme application
<b>2005-10</b>	<b>Implementation 1<sup>st</sup> phase</b>	<b>The mid-Cheshire Sandstone ridge</b>
2010-15	Implementation 2 <sup>nd</sup> phase	East of Cheshire
2015-20	Implementation 3 <sup>rd</sup> phase	Creation of east-west links



# Science behind the network



# Life ECOnet Project 1999 - 2003



*“Demonstrating the concept”*



# Method for designing ecological networks

## Steps in designing process:

**1. Choose habitats / spatial analysis**



**2. Choose target species / species modelling**



**3. Generate spatial options / scenario development**



**4. Ranking of options**

## Required information:

**Inventories, spatial data**



**Local expert knowledge, eco-profiles, ambition level**



**Abiotic conditions, stakeholders opinion**



**Compatibility with other functions**



# Choosing priority species

Area requirement for key population (km<sup>2</sup>)

Network distance (dispersal capacity, km)

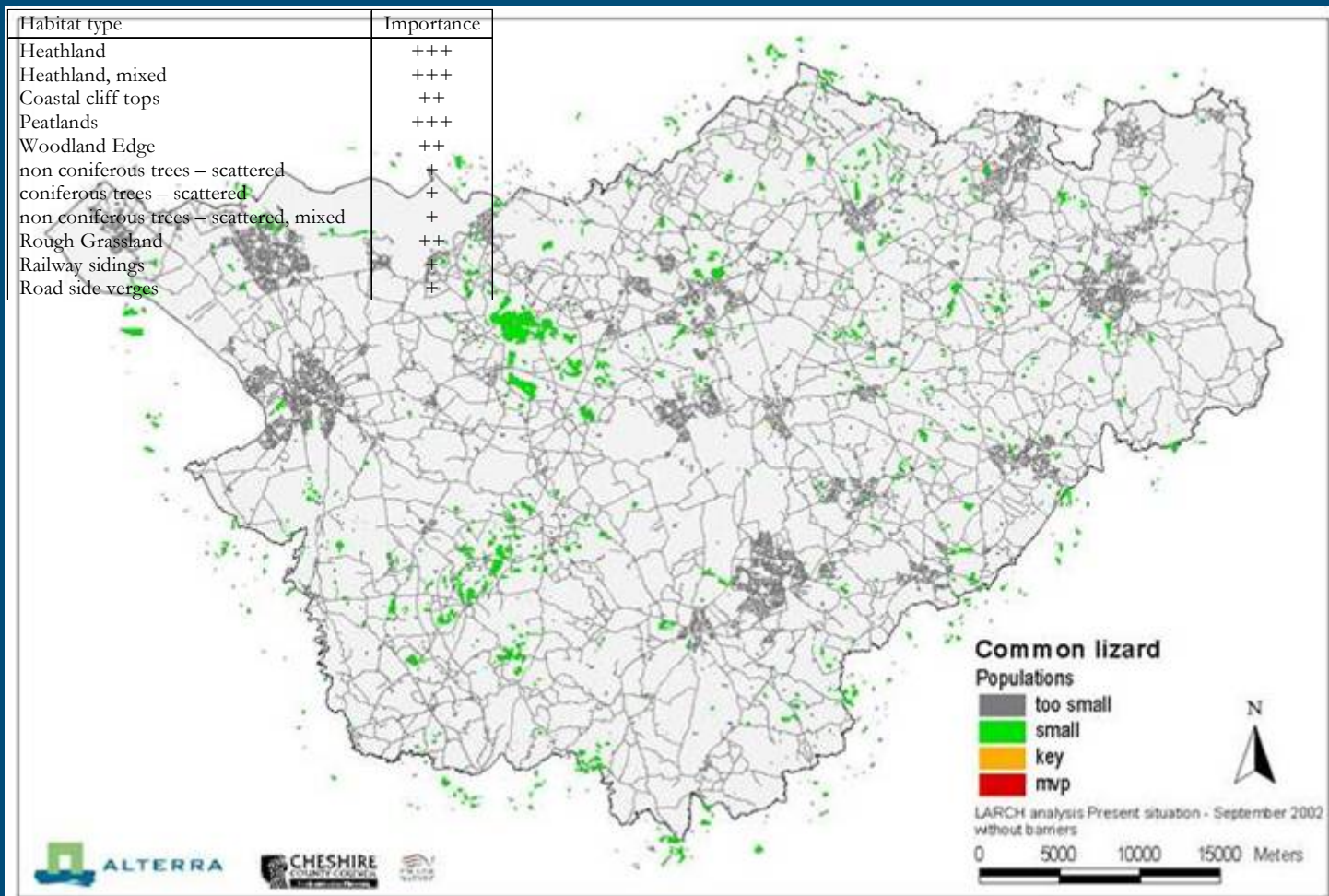
Ka \ Nd	<1	1-3	3-7	7-15	15-25	25-35	>35
0-0.1		Purple hairstreak	Common Blue	Banded demoiselle			Four-spotted chaser Black darter
0.1-1	Common Lizard Great crested newt	Dormouse	Nuthatch Water Vole Small heath Green hairstreak				
1-5				Sedge warbler			
5-10							
10-50				Stonechat			
50-150							Barn owl
>150							

Woodland, Grassland, Marshland/rivers, Heathland, Peatland



# LARCH present situation

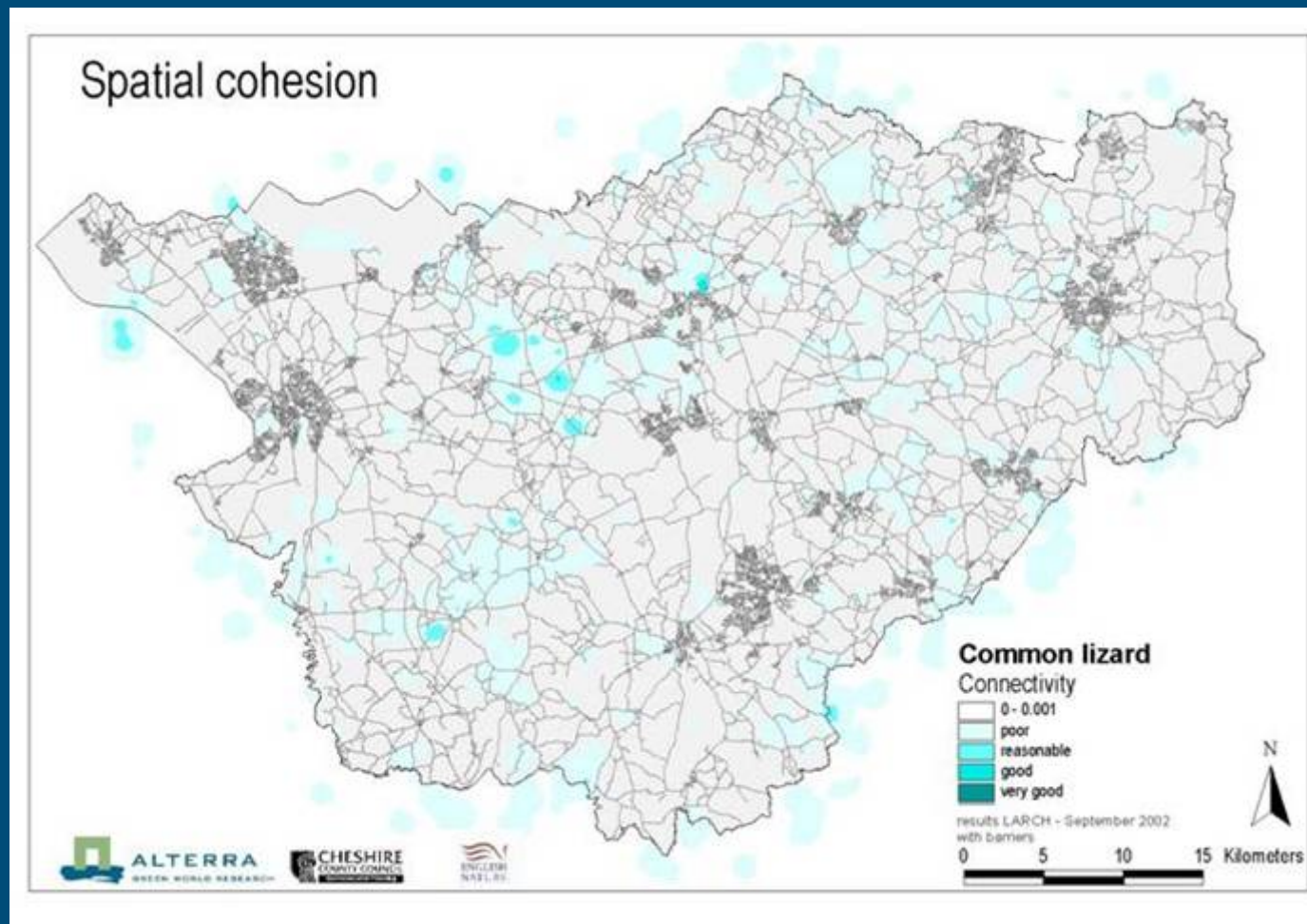
## Common lizard - *Lacerta vivipara*



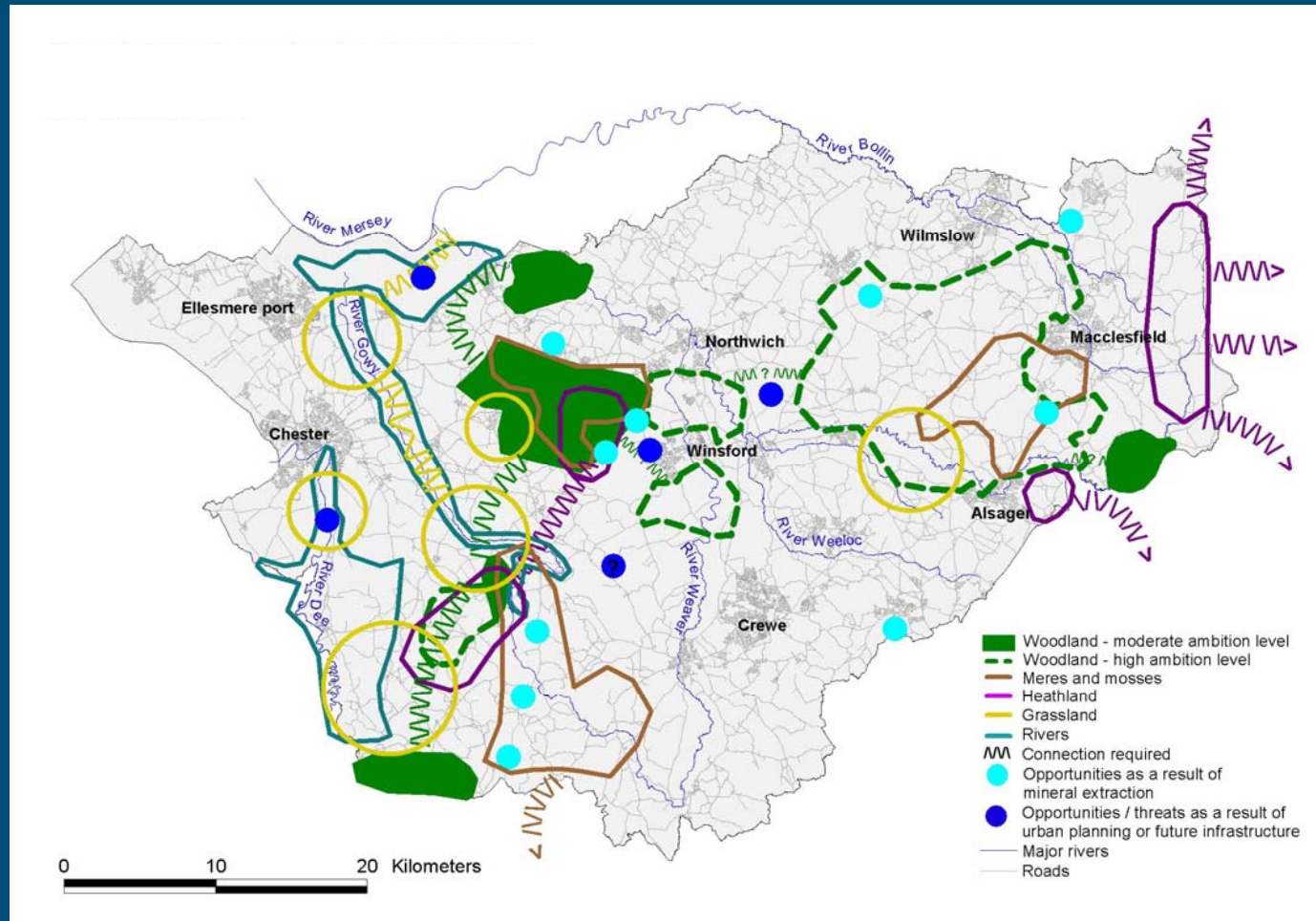


# LARCH present situation

## Common lizard - *Lacerta vivipara*



# Final design of the ecological network scenario for Cheshire



# Ecological network targets, Cheshire

Habitat	ECONet <u>minimum</u> targets (hectares)
Lowland heathland	Total added to present situation = <b>367 ha</b>
Peatlands	Total of restored and buffered peatlands added to presented situation = <b>375 ha</b>
Wetland	Total added to present situation = <b>1200 ha</b> wetland Total added to present situation = <b>240 ha</b> “natural” bankside vegetation
Grassland	Total added to present situation = <b>180 ha.</b>
Lowland mixed broadleaf woodland	Total added to present situation = <b>784 ha</b>



# Indicative map

Priority sites and features, areas of potential expansion and the linking corridors

- Stimulates political, public and scientific discussion
- Provides a tool for integrating nature conservation priorities in economic and land use sectors
- Links into strategic planning and land use issues
- Defines nature conservation priorities at the strategic level
- Provides a focus for future local delivery of the ecological network



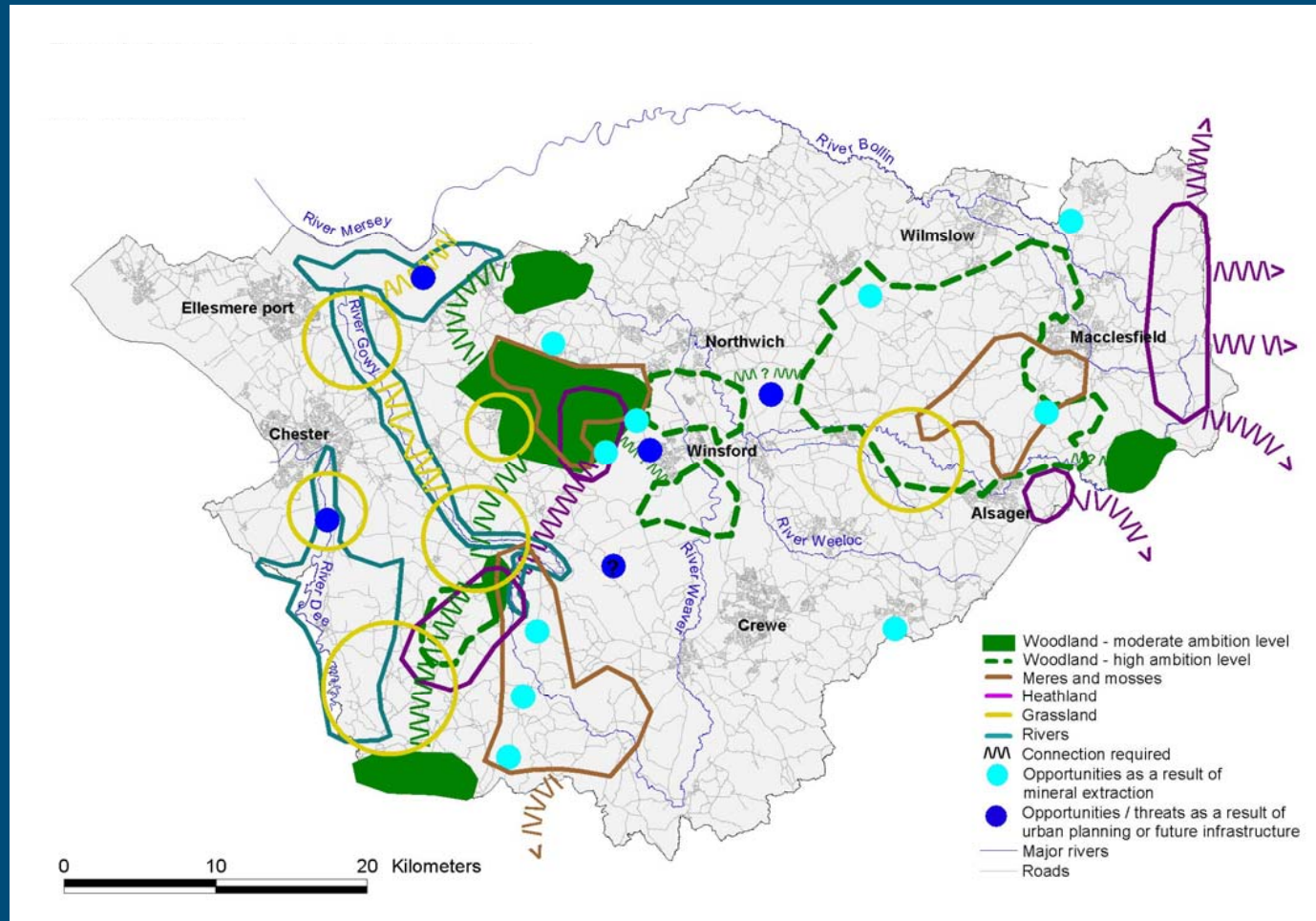
# Part 3

## Delivering the ecological network

### Phase 1 (2005 – 2010)

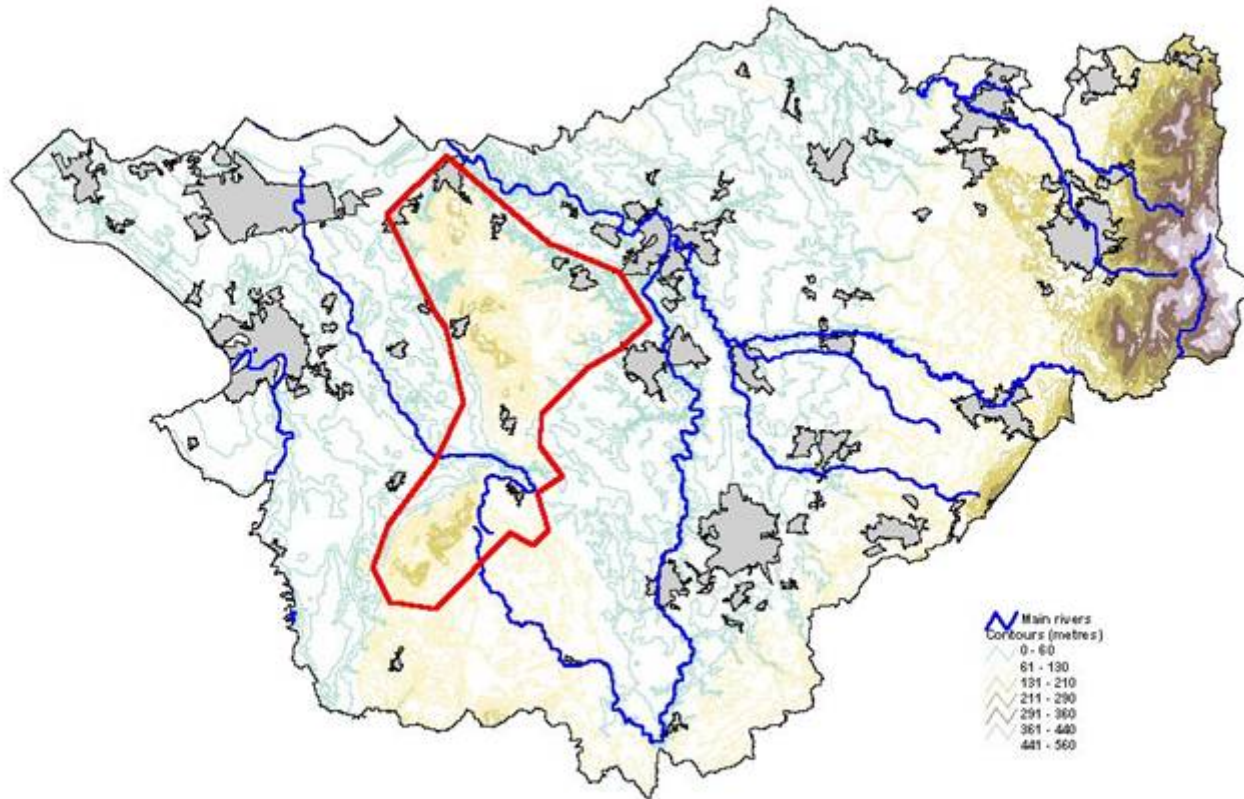


# Ecological network for Cheshire

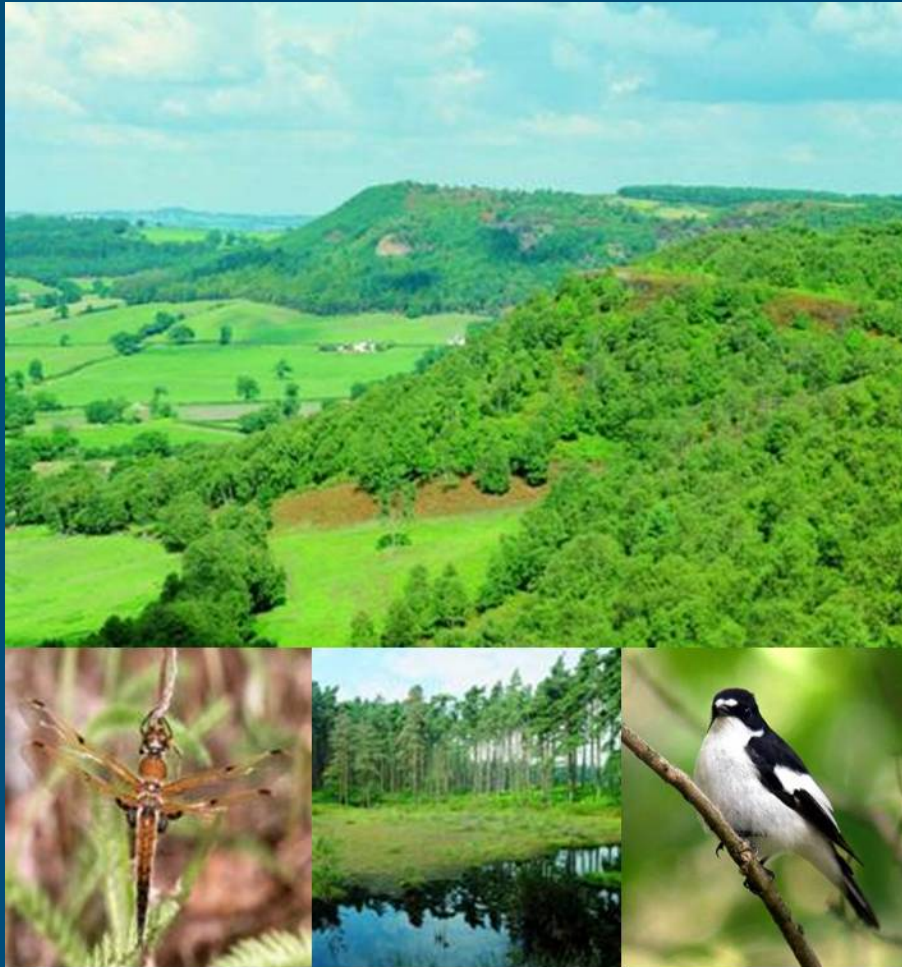


# Prioritising implementation: Sandstone Ridge

## Cheshire EONet Phase 1 Area



# Cheshire's Sandstone Ridge



- 20,000 hectares
- 14 SSSI (7 EU)
- 74 Sites of Biological Importance
- >78 meres & mosses
- 28 ancient woodlands
  
- Population 34,000
- ~ 400 farmers & landowners
- ~ 1000 businesses
- 44 village and town parish councils
- Joint Character Area No. 62





# Sandstone Ridge EONet Partnership



**To expand & link areas for wildlife  
and people along  
the mid Cheshire Sandstone Ridge**



# Sandstone Ridge EConet Partnership Board



# The 'tea and cake' process



- Identify and prioritise stakeholders
- Personal contact for key stakeholders
- Farm walks
- Community & parish evenings
- Practical initiatives
- Perception questionnaires

# Programme Themes



# Funding sources

## Local:

- Cheshire County Council 260,000 euros
- Cheshire Rural Enterprise
- Private & voluntary contributions

## National:

- Agri-environmental schemes
- Aggregates Levy Sustainability Fund
- Heritage Lottery Fund



# Hedge planting



# Peatland restoration



# Land acquisition for heathland restoration



**Bickerton Hill SSSI**



# Sandstone wall restoration



# Meadow creation



# Education and visitor facilities



# Natural and historic interpretation



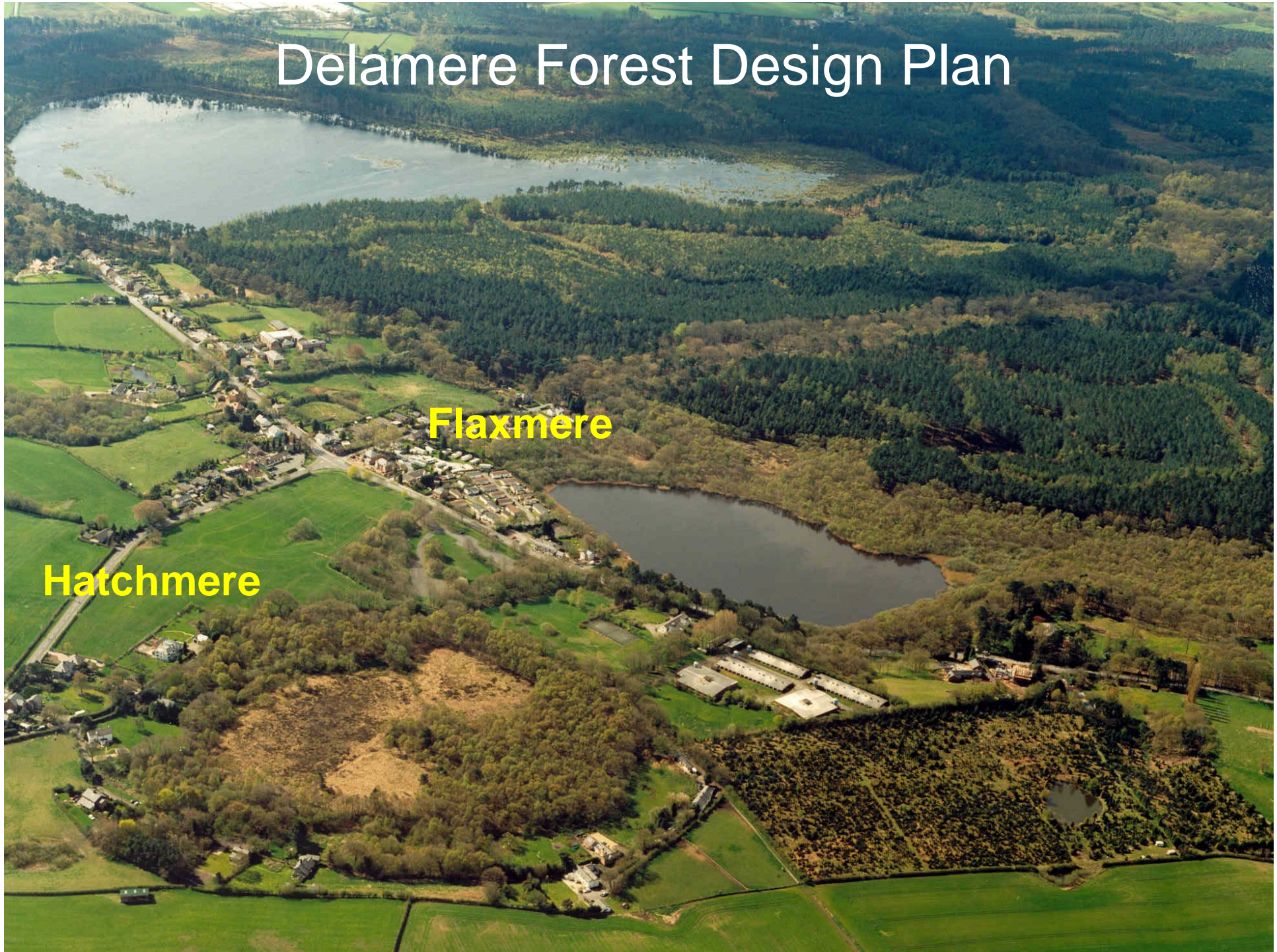
# Quarry restoration for heathland



# Delamere Forest Design Plan

**Flaxmere**

**Hatchmere**



# Achievements 2004 - 2008

Habitat	Hectares
Woodland planting	11.39
Woodland restoration	51.5
Meadow creation	1
Meadow restoration	3.84
Heathland creation*	5
Heathland restoration	20
Peatland/fen/mere restoration	14.27



# Heritage Lottery Fund Landscape Partnership Scheme

- Habitats & Hillforts project
- 2008 - 2011
- 4 main programmes
- HLF grant £1.3m





# Issues

- Lack of fit with Regional & Sub-regional Economic Strategies
- High land prices
- Other land use demands
- One full time project officer
- Long term funding



# Essential requirements

- Sound ecological knowledge and models to develop the spatial vision
- Communication between science, policy and stakeholders
- Integration between sectors (nature conservation, planning, forestry, agriculture, transport)
- Use of a range of delivering mechanisms
- Sell the multiple environmental, social and economic benefits
- Secure & maintain local support
- Be prepared for the long-haul!





## Questions

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