

Phil Holden
AONB Partnership meeting 9/2/10
Low Carbon and Resilience



Low Carbon and Resilience - content

- Recap briefly on Management Plan approach
- Update members on some of key local activity
- Discussion and ways forward/ roles for the Partnership

- **Low Carbon** – community groups, household energy surveys, business advice, farm emissions surveys, strategic directions
- **Adaptation & Resilience** – Natural England Character Area study and follow up, Shropshire Council adaptation work, West Midlands adaptation framework, broader approaches
- Stepping up action in an integrated way

Five strategic priorities 2009-14



- Valuing, conserving and enhancing what we have
- Keeping the Shropshire Hills countryside thriving
- Shifting to low carbon
- Adapting for the future, working alongside nature
- Helping people to connect with the AONB



Five strategic priorities 2009-14



- **Valuing, conserving and enhancing what we have**
Conserving habitats, heritage and quality; appropriate and high quality development
- **Keeping the Shropshire Hills countryside thriving**
Land management, especially farming; sustainable communities
- **Shifting to low carbon**
Taking the right action to mitigate climate change
- **Adapting for the future, working alongside nature**
Landscape scale conservation; functioning ecosystems; social and economic adaptation
- **Helping people to connect with the AONB**
Awareness; enjoyment and wellbeing; community involvement

Shifting to Low Carbon in the Management Plan



- Lowering carbon emissions should influence all areas of decision making
- Energy conservation should be given the highest priority
- Low carbon community initiatives are supported
- Biomass based on wood energy is especially compatible with the AONB
- Seek to lower transport emissions (with other benefits)
- Minimise emissions and maximise carbon sequestration through land management

Statistics on carbon re AONB

- CO₂ emissions per capita (2006 data) – South Shropshire 9.9 tonnes per capita (c.f. UK national average 8.78 t/c)
- Climate Change Act – legally binding 80% cut target by 2050 (from 1990 levels)
For the AONB = 4,000 tonnes/yr (equiv 300 people of 19,000)
- Stern Review 1% of GDP should be invested to tackle (now thought needs to be more)
= £4.36m for AONB (£229 per person = £66m for Shropshire)

Other greenhouse gases:

- Methane 20x GHG equivalent to CO₂, nitrous oxide 310x

Community Low Carbon groups

- Bishop's Castle – [The Wasteless Society](#)
- Shropshire Council/MEA [Low Carbon Communities](#) – Cleobury Mortimer, Ellesmere and Severn-Vyrnwy floodplain
- [Stretton Climate Care](#)
- [Sustainable Wenlock](#)
- [Ludlow 21](#)
- [Rea Valley Environmental Network](#)
- [Cleobury Country Environment Forum](#)

Links, networks. Shropshire Council role, Area Partnerships

[MEA Low Carbon Leadership toolkit](#)

Household Energy Surveys

- A key method for influencing the domestic sector
- Works best where follow-up or group support
- Variety of different tools, on-line methods
- Increasing voluntary activity, e.g. Stretton Climate Care
- Light Foot Enterprises (a CIC) [Household Energy Service](#)
Recently won £300k in national Big Green Challenge
- LEADER applications. Encourage to work together.
Only a proportion of LEADER – other sources of funding too

Business energy advice

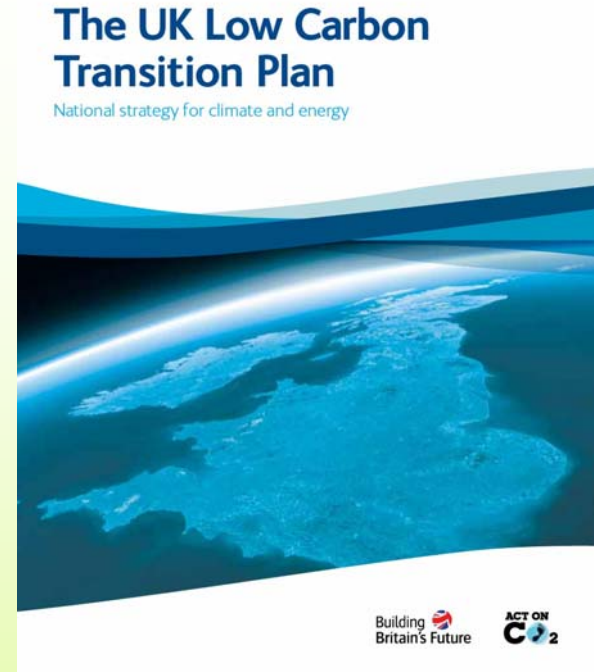
- MEA SDF project 09-10
3 sessions to train volunteers how to undertake a small business audit, an online auditing tool developed, 30 + businesses direct carbon management assistance and a mentoring service for volunteers
- [MEA project energy advice for tourism businesses 2007-8](#)
- Woodfuel
[Heartwoods Wood for Heat project 08-9](#), now part of RDPE
- [Shropshire Hills Sustainable Business Scheme](#)
Sustainability audit, not full footprint
- [ReThink energy grants](#)
renewable energy installations for SMEs

Farm emissions surveys

- Light Foot SDF project 09-10, led by Dave Luckhurst
- Less developed than domestic - more of a gap in activity
- Uses CLA's [CALM](#) tool (Carbon Accounting in Land Management)
Can update own information and try different scenarios.
- 23 farm surveys. Information more than advice.
- Main emissions from land management – N fertiliser, livestock, grassland/arable/woodland - more significant than energy
- LEADER application for larger 2 year programme

Strategic directions on Low Carbon

- [UK Low Carbon Transition Plan \(July 09\)](#)
- [Regional Climate Change Action Plan](#), Regional Economic Strategy, RSS -> SIRS
- Ian Austin, West Midlands Regional Minister *“The central lesson from the Stern Report is that the sooner we act on climate change, the lower the costs we will face in the future”*
- LDF, Community Strategy, [Shropshire Council Action Plan](#)
- Some sectors slow to pick up



Shropshire Hills Area of Outstanding Natural Beauty
Working together to conserve and sustain the landscape

Resilience and Adaptation

- **Resilience** – is defined formally by IPCC as “the ability of a social or ecological system to absorb disturbances while retaining the same basic structure and ways of functioning, the capacity for self-organisation, and the capacity to adapt to stress and change.” This definition has its origins in ecology and, in practice, improving the resilience of human systems may involve some changes to structure and function. A much simpler description is the ability of a system to recover from the effect of stress.
- **Adaptation** describes the actions that we take to reduce the negative consequences and enhance the beneficial consequences of weather and climate events. We have found it useful to distinguish between Building Adaptive Capacity and Delivering Adaptation Actions. The IPCC defines adaptation as “**adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.**”

Natural England Climate Change Impact Assessment and Response Strategy: [Shropshire Hills Character Area](#) (2009)

One of four Character Areas studied representing a range of landscape types:

- Cumbria High Fells (montane impacts)
- Shropshire Hills (typical fragmented landscape)
- Dorset Downs & Cranborne Chase (drought)
- The Broads (wetland, sea level rise)

Method

- Identify key natural assets
- Assess likely impacts of climate change
- Propose adaptation responses

Some of the impacts predicted

- Species composition will change (noting that some species are significant for functioning of ecosystems)
- Phenological effects (timing of life cycles)
- Decrease in summer rain - reduced water resources. Increase in winter rain - flooding frequency and magnitude – knock on higher risk of soil erosion, impact on water quality
- Species move upwards or towards north facing slopes
- Increase in fire
- Predicted increase in recreation & consequent effects
- **“The impacts of climate change are likely to exacerbate existing pressures in the Character Area. It is possible that the combined effects of climate change and other pressures will exceed the ability of the natural environment to adapt.”**

Natural England study - adaptation responses

- Maintain existing habitat networks
- Extend habitat networks, especially at pinch points
- Expand habitat patches within weaker networks and hostile environments
- Increasing tree cover – multiple benefits. Use different species – beech, sweet chestnut, sycamore.
- Improve catchment management – for water quality, habitats, flood attenuation
- Rural payments more tied to the provision of ecosystem services.
- *“Changing conservation objectives may require a radical shift in the current paradigms of conservation; species not currently considered native to the region may have to be favoured and the attitude towards alien and invasive species may have to change.”*

Agriculture

- “Climate change may have a greater impact on natural assets through changes in agriculture than through direct biophysical impacts. Changes to the types and varieties of crops, sowing dates, irrigation, pests, diseases and soil erosion are all likely. This report does not try to assess these, although they will have significant implications for the area and any proposed adaptation measures.”
- Longer growing season, but more climatic extremes
- Increase in cultivation. Intensification. Different crops?
- Summer drought reduce biomass available for grazing
- Increase in / different pests and diseases

Limitations

- “Good adaptation requires engagement of an informed community with a willingness and ability to adapt.” (UKCIP)
- “Communities and their livelihoods are vital considerations ... the report does not attempt to cover these issues... because our role is primarily in relation to the natural environment.” (Natural England)

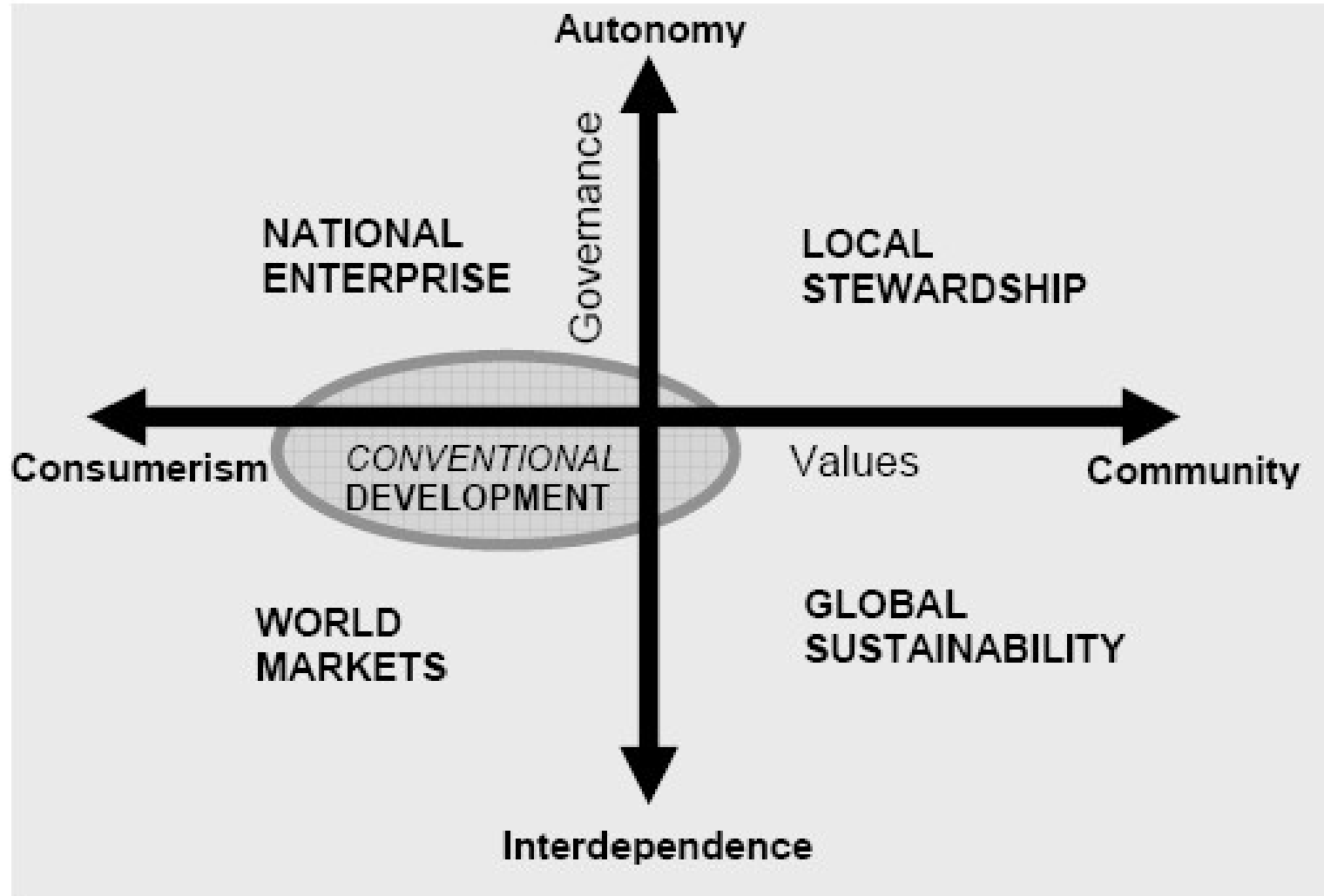
Shropshire Council adaptation workshop



- National Performance Indicator NI 188 Adapting to Climate Change
 - Level 0 Getting started
 - Level 1 Public commitment and impacts assessment
 - Level 2 Comprehensive risk assessment
 - Level 3 Comprehensive action plan
 - Level 4 Implementation, monitoring and continuous review
- Focussed on [service delivery](#).
- [LCLIP](#) derived from UKCIP 09 projections – local detail for 3 different greenhouse gas emissions scenarios (high, medium and low)
- Government guidance – Direct effects of climate only. Adaptation *“in the narrower sense of planned responses aimed at minimising the threats and maximising the opportunities of a changing climate”*

UKCIP Socio-economic scenarios

Four socio-economic scenarios for the UK



Critique of UKCIP socio-economic scenarios

- **Not much used** *“A key insight from the socio-economic scenarios was that for many sectors the socio-economic factors were shown to be as or more important than climatic factors. For many researchers this insight was empowering ...”*
- **Caricature** *“mainstreaming of sustainable development agenda... this kind of 'multi-objective' planning is not reflected in the UKCIP scenario grid.”*
- **Adaptation not just an environmental issue!** Economic & social too. Language used is important. Fragmented approaches.
- **Socio-economic uncertainty.** Ignoring this risks giving a wrong impression of main likely impacts – indirect effects, risk of conflict

West Midlands Adaptation Framework, 2009



- “Climate change presents society with massive challenges which go far beyond ‘business-as-usual’ responses. As society responds, we need to figure out how to maintain economic activity, provide essential services and meet basic human needs in a vastly changing climate and energy economy. The undeniable truth is that we do not have all the answers on how to do this.”
- “The levels of awareness that are needed to develop responses that are proportionate to the urgency and scale of the climate change challenge are very high indeed, and this brings with it significant emotional challenges. This emotional struggle is able to turn people away from the agenda, overwhelming them, reinforcing their rationale to do nothing. It can also bring people even closer to the agenda.”

W Mids Climate Change Adaptation Framework



- “People know that they need to progress, to change gear, but many do not know how to go about doing so. In the absence of clear guidance, many simply try harder; better carbon accounting, better reporting, different targets, and so on. However, this approach often only produces more of the same. It maintains the status quo. It is really only factoring climate change into what we are already doing (i.e. business-as-usual). This may be a strong platform on which to launch into doing things in a different way, but is in itself not enough to deliver the scale of change that is required.”
- “Many of the key actors appreciate that the challenge will move on from incorporating climate change into a ‘business-as-usual’ model, to learning how to do things differently.”

Response levels of organisations (PACT)



RL 1 Core business focussed

RL 2 Stakeholder responsive

RL 3 Efficient management

RL 4 Breakthrough projects

RL 5 Strategic resilience

RL 6 The champion organisation

Need to embed within wider programme of learning and activity

Networks of organisations with the capacity to act

Adapting for the future, working alongside nature

Wildlife & Landscape

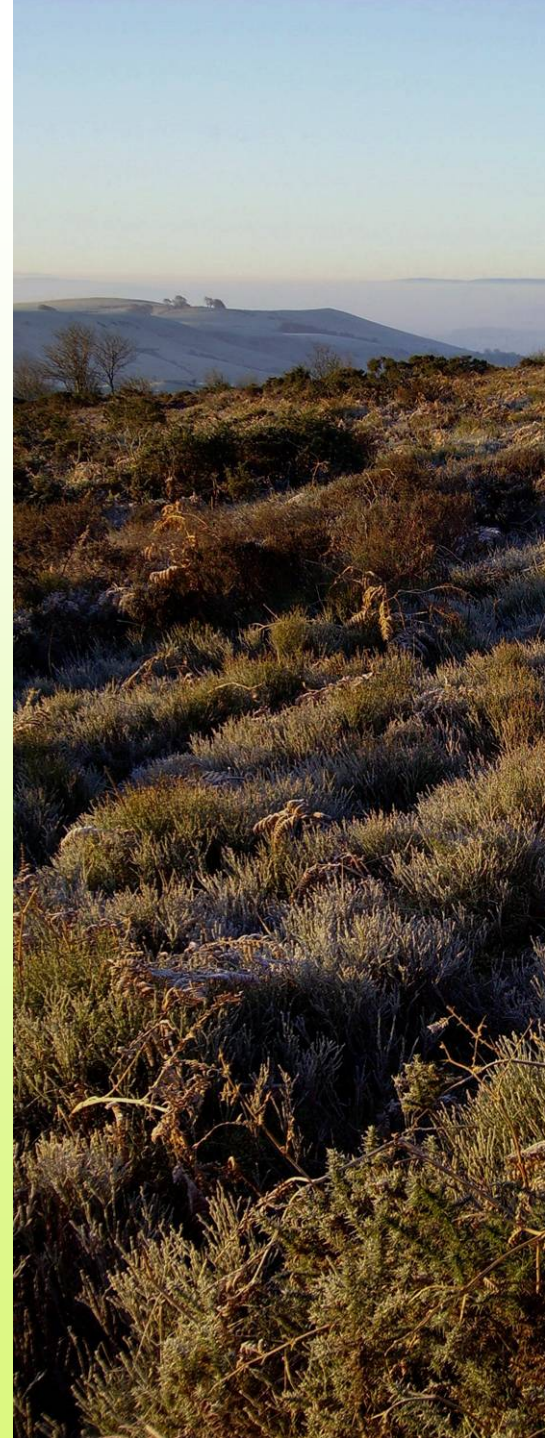
- Conserve existing biodiversity
- Restore and recreate habitat networks

Ecosystem services




- Food, energy, raw materials
- Air, climate, soil and water

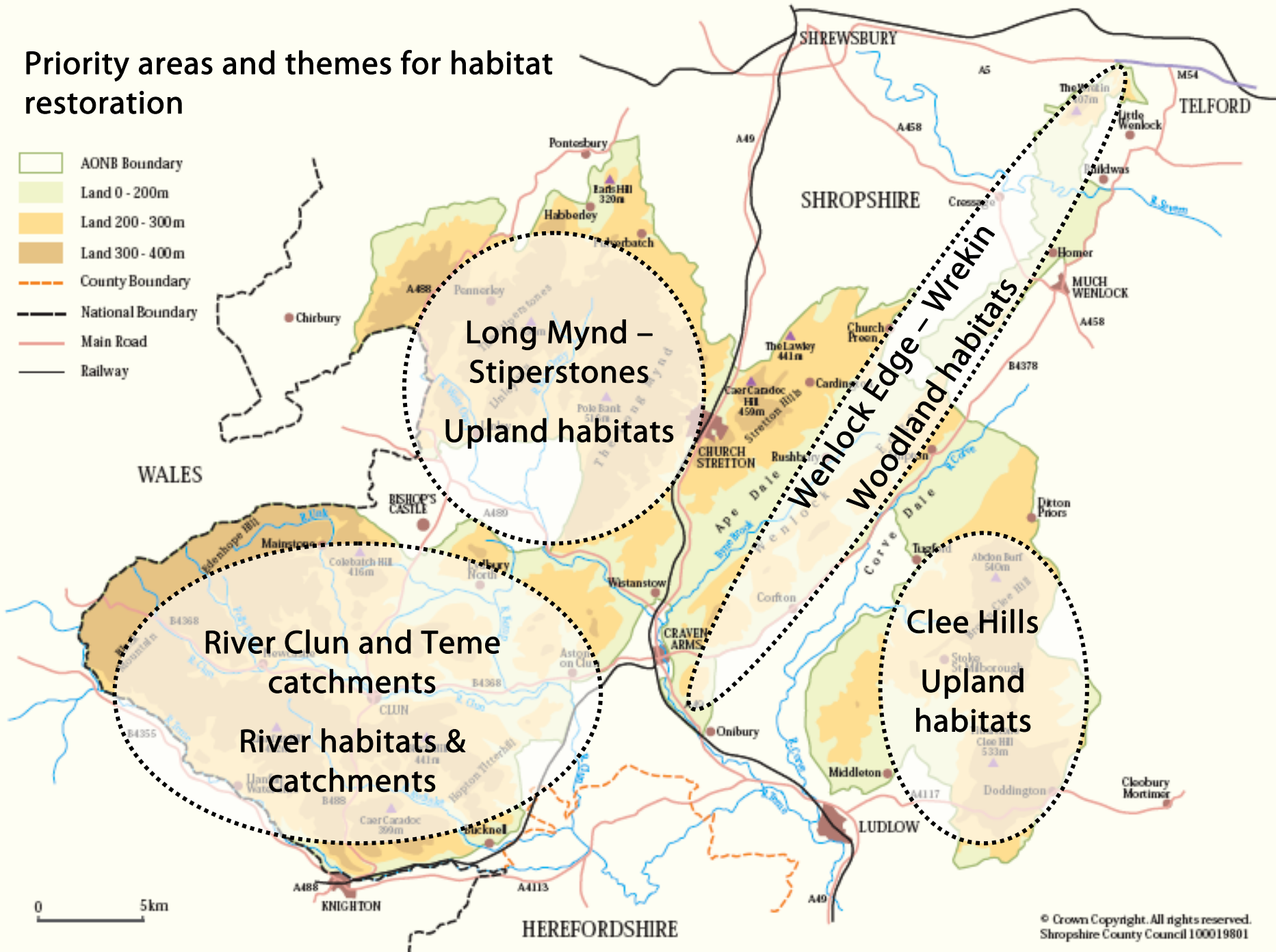
Social & economic adaptation

- Improving resilience of infrastructure
- Community cohesion



Priority areas and themes for habitat restoration

-  AONB Boundary
-  Land 0 - 200m
-  Land 200 - 300m
-  Land 300 - 400m
-  County Boundary
-  National Boundary
-  Main Road
-  Railway



Long Mynd –
Stiperstones
Upland habitats

River Clun and Teme
catchments
River habitats &
catchments

Wenlock Edge – Wrekin
Woodland habitats

Clee Hills
Upland
habitats

Ecosystem services

(Defra approach)



- Provisioning
 - Food
 - Freshwater
 - Wood and fibre
 - Fuel
- Regulating
 - Climate regulation
 - Flood regulation
 - Disease regulation
 - Water purification
- Cultural
 - Aesthetic
 - Spiritual
 - Educational
 - Recreational
- Supporting
 - Nutrient cycling
 - Soil formation
 - Primary production

Broader approaches to resilience

- Cotswolds AONB [study of impacts of climate change and globalisation on farming and forestry](#)
- [Transition Towns movement](#)
- Food security – '[Food 2030](#)' strategy Defra
- [Tourism 2023](#) (Forum for the Future & top industry players)
- How far do we go in accepting or looking at alternative approaches?
- Cultural barriers and behavioural issues – not just technical

Most serious world environmental problems: (Diamond, 2005)



- Loss of natural habitats, wild food sources, biological diversity and soil
- Ceilings on energy resources, freshwater, photosynthetic capacity
- Generation and movement of toxic chemicals
- Movement of alien species
- Generation of atmospheric gases
- Growth of human population, and in per capita impact of humans

"Most or all of these will become acute within the lifetime of young adults now alive. ... We have to solve them all."

"Sustainable land use is the first 'tipping point' to be faced over the whole globe..." Tim O'Riordan, Emeritus Professor of Environmental Studies, University of East Anglia

Principles for AONB Partnership approach



- Maximise connections between climate change mitigation & adaptation
- Consider longer term, 'big picture', different economic and social situations, and indirect effects of climate change, e.g. changing pressures on land use, 'peak oil'
- Use ecosystem services framework - environment meeting human needs
- Integrate Low Carbon and Resilience into our mainstream work
- Participative approach, increase capacity to make progress
- Link and contribute to other relevant structures and processes –
 - planning and the new Local Development Frameworks,
 - natural environment work by a variety of bodies,
 - Local Strategic Partnerships along with Sustainable Community Strategies and Local Area Agreements,
 - Parish and Community Plans and other community initiatives.

Roles for the AONB Partnership

- **Information** – raise awareness, understanding and capacity to take action and advocate to others. Use the local environment as a means of engaging people in wider issues.
- **Help** those who are active, to network and share experience
- **Champion** Low Carbon and Resilience themes in strategic visions
- Optimise uptake of existing schemes and grants
- Proactive **support** for development of relevant projects (grants, advice)
- Identify next steps forward and support development of new initiatives and projects to fill gaps
- Build into our **own projects**