

Research Challenges

Dr Keith Duff
Chief Scientist
English Nature

Policy drivers for biodiversity



- EU Habitats Directive
- EU Gothenburg target
- SSSI PSA target
- UK Biodiversity Plan

The Ecosystem Approach

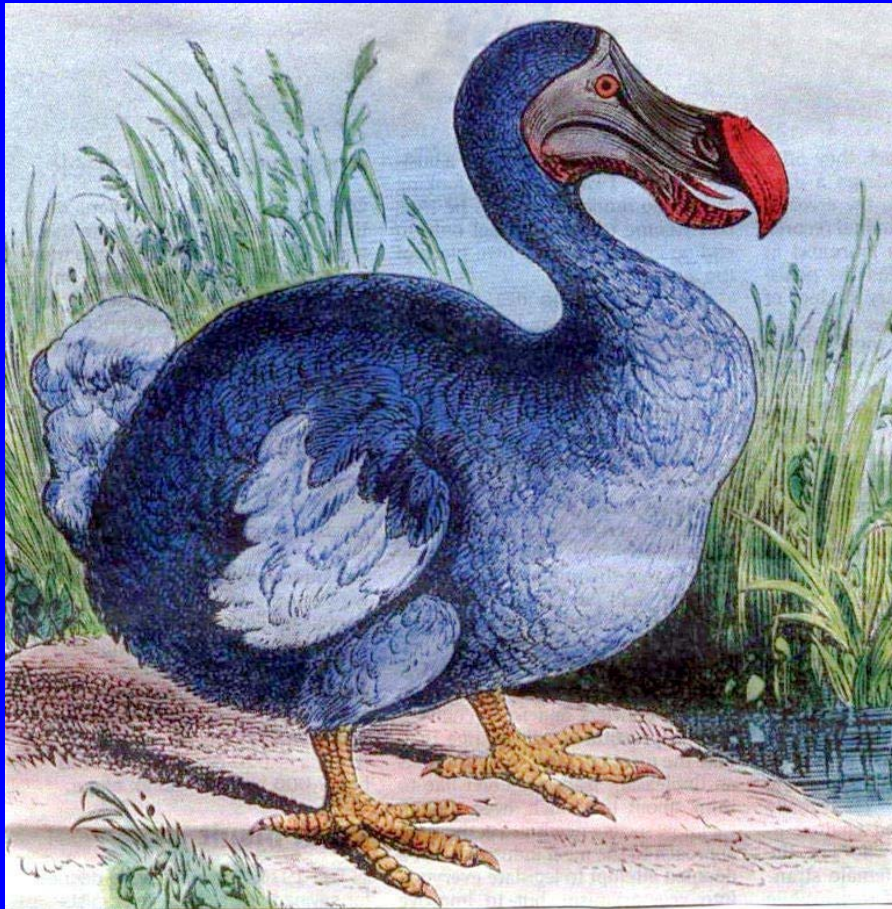


- **UNEP Convention on Biological Diversity**
- **12 principles**
- **SSSIs aren't enough**
- **Philosophical challenge of dynamism**
- **Soils**

Principles of the Ecosystem Approach

- Societal choice
- Decentralised mgmt
- Adjacent effects
- Internalise environmental costs
- Ecosystem services
- Manage within functional limits
- Scale is important
- Plan for long term
- Inevitability of change
- Balance and integrate conservation and use
- Involve stakeholders, and use their knowledge
- Cross-disciplinary

Pressures on Biodiversity



- Agricultural change
- Development and economic pressure
- Climate Change
- Compartmentalisation

Research needs (1)



- Impacts of agricultural change as a consequence of CAP reform
 - actual change
 - scenario building and testing
 - role of linear habitats
 - modelling at landscape scale
 - social and economic change

Research needs (2)



- Potential impacts of renewable energy on land use, landscape and biodiversity
 - biomass, biofuels, windpower
 - implications of EU & UK targets
 - ensure link to Defra RPG review

Research needs (3)



- Cumulative impacts of economic regeneration and infrastructure
 - housing expansion
 - water supply
 - waste management
 - transport

Research needs (4)



- What would motivate the adoption of high energy efficiency in our new building stock?
 - incentives to encourage small scale renewable supplies?
 - Energy White Paper sees move towards more local scale generation

Research needs (5)



- **Species management and control**
 - **invasive (non-native) species**
 - **how to reconcile the public's views**
 - **native species and predation**
 - **animal welfare and rights**

Research needs (6)



- Climate change impacts on land use, land management, and biodiversity
 - model and test direct effects
 - model, observe indirect effects
 - observe and understand change
 - new crops
 - catchment responses to land use
 - carbon sequestration

Generic issues



- Effective Knowledge Transfer is essential
- Large scale experimentation is increasingly needed
- Powerful links with the EU Water Framework Directive
- Investment in field skills vital

Let's talk!



- The power of integration between the social and natural sciences
- Use existing biodiversity fora
- Engage with agencies and Govt.
- “Integrated Agency” on the way