European Public Policy Context.

Evan Williams
outline

• Public Policy in Europe
• Appeal of Ecosystem Services
• Case Studies
  – The value of Scotland’s Ecosystem services
  – Integrated coastal zone management
• New Priorities in Europe
  – Good ecological status
Public Policy in Europe

• Costs v’s benefits
• Private and public goods
• Costs of inaction
• Endowment to future generations
Appeal of Ecosystems

• (i) a holistic assessment

• (ii) inclusion of regulatory services, such as controls on fluxes of pollutants between land-water-air systems, which are currently under represented in EU policy;

• (iii) identification of ancillary benefits and trade offs of policy measures;

• (iv) true costs of policy measures.

» DEFRA (Department of Environment Food and Rural Affairs, UK)
benefits to people

ECOSYSTEM SERVICES

Provisioning
- FOOD
- FRESHWATER
- WOOD AND FIBER
- FUEL
- ...

Supporting
- NUTRIENT CYCLING
- SOIL FORMATION
- PRIMARY PRODUCTION
- ...

Regulating
- CLIMATE REGULATION
- FLOOD REGULATION
- DISEASE REGULATION
- WATER PURIFICATION
- ...

Cultural
- AESTHETIC
- SPIRITUAL
- EDUCATIONAL
- RECREATIONAL
- ...

Source: millennium ecosystem Assessment
Consequences

Source Millennium Ecosystem Assessment
Many services are public goods

Economic Valuation

- Difficult or impossible
- Easy

Private Benefit Capture

- Difficult
- Easy

<table>
<thead>
<tr>
<th>Service</th>
<th>Economic Value ($)</th>
<th>Private Benefit Capture</th>
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<tbody>
<tr>
<td>Spiritual &amp; religious</td>
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<td>Aesthetic</td>
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<td>Flood/Fire regulation</td>
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<td>Disease regulation</td>
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<td>Water purification</td>
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<td>Climate regulation</td>
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<td>Freshwater</td>
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<td>Genetic Resources</td>
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<td>Recreation &amp; tourism</td>
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<td>Fiber</td>
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<td>Food</td>
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Source: millennium ecosystem assessment
Case Studies

- Scotland estimate of value in 2002

- EU Integrated coastal zone management 2003
Value of Scotland

• Why bother?
• Isn’t the environment priceless?
• Costanza et al (1997)
  – World ecosystem services $33 trillion
  – 100 valuation studies worldwide
  – Ecological Economics special edition 2002
Approach

• 17 Services
• Only renewables
• Goods
  – Food production
  – Raw materials
• Services
  – Waste assimilation
  – Recreation
Habitat Types

• 16 Habitat types
• 9 in Scotland
• SNH National countryside monitoring scheme and SEGIS land and sea area calculations
• Non equivalence
  – Montane
  – Sand dunes
  – Scrub woodland
Values and Missing Values

• Conservative approach
• Biomes with no values
  – Urban areas
  – Ice and rock
• Services with no values
  – 66 non trivial blanks (values not available)
  – 22 trivial blanks (values likely to be virtually nil)
  – 55 calculated values
How Much?

- UK Environmental protection expenditure 2000
  - £4.2 billion
- GDP estimate for Scotland 1998
  - £62 billion
- Exports of Whisky 2000
  - £2.2 billion
- Tourism in Scotland (STB estimate)
  - £4.5 billion
How Much?

• Base value
  – £17 billion

• Range
  – £10 – £24 billion

• Include equal share of open oceans
  – £23.6 billion
Integrated Coastal Zone Management

• Benefits
  – Private co-ordination benefits
    • % growth
  – Private Tourism benefits
    • Bb
  – Habitat damage / Fragmentation
    • Effects on ecosystem
    • Avoided fragmentation
New Priorities in Europe

• Good Ecological Status

• Carbon / Climate Change
The EU Water Framework Directive

**ECOLOGICAL STATUS**

- **HIGH**
- **GOOD**
- **MODERATE**
- **POOR**
- **BAD**

**Physico-chemical Quality Standards**

- **Slight**
- **Moderate**
- **Major**
- **Severe**

No or very minor

Prevent deterioration

Restore
Value

Sum of the parts or

the whole thing
What we need to know

What are the critical issues?
Evan Williams

evanmw@ntlworld.com