Pearls in Peril

NATURE’S BENEFITS

Seeing The Bigger Picture
1. What are nature’s benefits or so called Ecosystem Services?

2. How did we analyse those benefits?

3. What have we analysed?
   1. Improving habitat       RESTORE
   2. Boosting populations    SECURE
   3. Engaging people         COMMUNICATE

4. What did we get out of it?
What are Ecosystem Services?

ES = direct and indirect benefits people obtain from ecosystems

- **Ecosystem Functions**
  - Biophysical Structures
  - Biophysical Processes

- **Ecosystem Services**
  - Provisioning
  - Regulation & Maintenance
  - Cultural

- **Socio-Economic Impacts / Human Wellbeing**
  - Monetary
  - Non-Monetary
### How did we analyse those benefits?

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<td>Crops &amp; Reared Animals</td>
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<td>Wild Plants &amp; Animals</td>
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<td><strong>Regulation &amp; Maintenance</strong></td>
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<td><strong>Cultural</strong></td>
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<td>Existence &amp; Bequest</td>
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Valuating the benefits

Water purification & Regulation of Waste
Erosion control
Lifecycle maintenance
Climate regulation
Science & Education
Cultural heritage
Existence & Bequest

Monetary
Quantitative
Qualitative
What have we analysed?

RESTORE habitat

Benefits from in-stream restoration

- increased safety through waste removal
- flood mediation through re-connection of river and floodplain
- increased biodiversity through improvement of riparian habitat
What have we analysed?

Dead wood slows the flow of water, creating pools for spawning and shelter from predators.

Trees cast shade over the water surface, reducing water temperature and excessive weed growth.

Tree roots and ground vegetation help stabilize the bank, reducing erosion and siltation.

Trees and shrubs form a barrier between stream and adjacent land use, keeping livestock out and providing habitat for wildlife, e.g. otter and water vole.

Leaf litter and invertebrates falling into the river provide an important food source for fish and mussels.

Dead wood slows the flow of water, creating pools for spawning and shelter from predators.
What have we analysed?

SECURE mussel populations

Adult mussels can filter up to 50 litres/day

- small ones 20l/d
- large ones 40l/d

The River Dee provides drinking water for over 300,000 people every day.
What have we analysed?

COMMUNICATE and engage people
What have we analysed?

COMMUNICATE and engage people

“Cultural Services”:
- Recreation & Tourism
- Science & Education
- Cultural Heritage
- Landscape
- Existence & Bequest

Minimum value of Pearls in the Classroom sessions
£39,000
What did we get out of it?

• A tool to
  – compare actions on national & international level
  – assess money spend

• A way of
  – acknowledging impacts on surrounding communities
  – acknowledging long-term impacts of decisions
  – making nature’s benefits visible
Seeing The Bigger Picture