



Revealing the value of nature

A summary



working today
for nature tomorrow

Revealing the value of nature

Healthy, functioning natural systems provide significant benefits to people.

Many of nature's services are fundamental to our existence, yet their importance for our lives is often unrecognised. Some have tangible economic values, while others improve our general well-being.

English Nature's report, *Revealing the value of nature*, illustrates how the many services provided by the natural world sustain and improve our quality of life. This report is available free from our enquiry service - telephone 01733 455100.

Nature conservation can provide important benefits for your region's economy

These include:

- A more attractive place to work and live
- Better opportunities for tourism and recreation
- Environmental improvement as a catalyst for economic regeneration
- A healthier population
- A resource for cultural inspiration and expression
- A sense of place and symbols of local identity
- Locally distinctive food and natural products
- A resource for education
- Reduced pollution
- Better flood control
- Better water quality
- A better quality of life!



Otter *Lutra lutra*. M J Hammett/English Nature 24,710

The Social functions of nature

Appreciation

1. Better living surroundings (eg healthy environment, well-being from local walks and views).
2. Places for recreational visits (eg day visits and tourism).
3. Distant appreciation (eg nature in magazines, books, TV etc).
4. Cultural, spiritual and historic meanings (eg folklore, sense of place, local distinctiveness, historic settings).
5. Artistic inspiration (eg nature in poems, literature, music, visual arts, sculpture, and marketing images).
6. Social development (eg conservation volunteers, ecological surveys, skills for work, building community spirit).

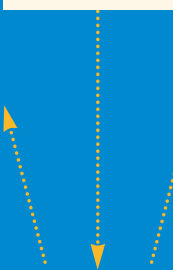
Products from sustainable use

12. Food and drink (eg organic meat and vegetables, sustainable fisheries, fruit, berries, natural drinks).
13. Fuel, fibre and construction (eg thatch, coppice, charcoal, etc).
14. Medicinal and cosmetic products.
15. Ornamental and other products (eg responsibly collected fossils, flowers for floral ceremonies, seeds for ornamental meadows).

General motivations for nature conservation

- A. Maintaining the **unknown** potential benefits of nature.
- B. Making our **contribution** to global conservation.
- C. **Stewardship** for future generations.
- D. Wanting to maintain nature's **existence**, irrespective of its specific usefulness.
- E. An **intrinsic** sense of nature's worth.
- F. Maintaining biodiversity and geodiversity as **insurance** to help ensure the proper functioning of natural systems.

Biodiversity and healthy, functioning natural systems.



The social functions of nature:
A checklist of benefits.

Knowledge

7. Scientific discovery (eg medicine, genetics, forensic science, behavioural studies, etc).
8. Historical analysis (eg archaeological finds in peat, evolution).
9. Environmental monitoring (eg climate change, pollution monitoring).
10. Educational resource (eg for school and college visits).
11. Natural science research (eg UK resources important for ecological and geological knowledge worldwide).

Ecosystem services

16. Global life-support services (eg atmosphere and climate regulation, carbon storage).
17. Flood and erosion control (eg flood water storage).
18. Water quality and quantity (eg aquifer recharging).
19. Pollution control (eg land preparation, physical health from pollution capture properties, noise and wind reduction).
20. Soil provision (eg soil formation processes and soil erosion prevention).
21. Landscape formation (eg river and coastal geomorphological processes).
22. Waste decomposition and disposal (eg micro-organism processes and scavenging).
23. Pollination (eg crops and flowers).
24. Biological control (eg pest reduction through predators).
25. Habitat provision (eg spawning grounds for commercial fish).

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Appreciation:

National Nature Reserves are for people as well as wildlife

As well as conserving the finest examples of the country's geology and wildlife, English Nature increasingly promotes National Nature Reserves as places for people. The reserves are used for walking, school outings, settings for sculptures, photography, painting classes and many other activities.

Broad estimates of annual visitor numbers to the most popular National Nature Reserves (2000/01):

Richmond Park (847ha):	4,000,000
Sutton Park (812ha):	2,500,000
Holkham (3,851ha):	750,000
Burnham Beeches (220ha):	750,000
Lindisfarne (3,580ha):	500,000
Dungeness (500ha):	500,000
Chobham Common (517ha):	300,000
The Lizard (1,662ha):	250,000
Dunkery & Horner Wood (1,604ha):	250,000
Derbyshire Dales (350ha):	200,000
Gibraltar Point (429ha):	187,000
Ainsdale Sand Dunes (508ha):	100,000
Ingleborough (989ha):	100,000



Saltfleetby - Theddlethorpe Dunes NNR, Lincolnshire. Paul Glendell/English Nature 24,135

Revealing the value of nature

Appreciation:

Nature and the cultural landscape

As well as its outstanding wildlife features, Moccas Park National Nature Reserve, Herefordshire has very strong cultural links. The park is part of Herefordshire's Georgian parkland legacy. It has been shaped by active management over the years. Its look was influenced by such 18th century landscape figures as Capability Brown and his successor, Humphrey Repton. Moccas is a jewel in the 10-20,000 hectares of England that are classified as actively managed lowland wood-pasture and parkland, a priority habitat in the UK Biodiversity Action Plan.



Ornamental pond at Moccas Park NNR, Herefordshire. Peter Wakely/English Nature 17,676

Revealing the value of nature



Fire Bugs *Pyrrhocoris apterus* mating.
B Borrell/FLPA 409040-00001-020

Knowledge:

Insects and science

Insects are a major source of knowledge for pharmaceutical product development, especially those that use defensive chemicals. The rove beetle *Paederus* (a UK species) produces an extremely toxic substance - Paederin - that is being used in minute quantities to cure chronic ulceration - especially on feet.

Chemical defence peptides from the red and black bug *Pyrrhocoris apterus* (a UK species) have been identified as having highly specific antibacterial properties with good potential for targeting drug resistant superbugs. Scientists are looking for specific genes to transfer elsewhere.

The applied study of insect defence biochemicals is still in its infancy and in situ conservation will provide the best way to maintain the information archive.



Visiting teachers search for fossils at Wren's Nest NNR, West Midlands. Peter Wakely/English Nature 11,444

Knowledge:

The educational value of our geological heritage

- Many areas of England are studied by large numbers of visitors because of their relevance to international geological learning. For

example, Dudley, Dorset, Dorset Coast, Ludlow and Wenlock.

- Palaeontological study provides key insights into evolutionary biological processes. Some of these are of great public interest and economic value, for example the 'dinosaur industry'.

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Sustainable products:

Living from the wild

The Centre for Economic Botany at Kew Gardens has examined the commercial uses of wild and traditionally managed plants in England and Scotland today. Species include seaweeds (*Porphyra sp.*) and marsh samphire (*Salicornia europaea*) for food, bilberries (*Vaccinium myrtillus*) and sloes (*Prunus spinosa*) for syrups and liqueurs, coppice wood (eg *Salix spp* and *Alnus glutinosa*) for charcoal, and bracken (*Pteridium aquilinum*) for fertilizer. These studies are revealing some interesting data on the economic value of habitats.

Ecosystem Services:

The importance of washlands and coastal habitats

Floodplains can be managed in a way which reduces risk to people and the built environment, and at the same time provide additional habitat and other benefits. An actively managed washland can, in the right circumstances, provide benefits including conservation, recreation and productive uses (such as the production of reed/sedge or biofuel). Inter-tidal habitats can soak up wave energy, providing an important coastal defence function.



Samphire *Salicornia sp.* Peter Wakely/English Nature 18,617A



Nene Washes SSSI, Whittlesey. Peter Wakely/English Nature 15,596



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