



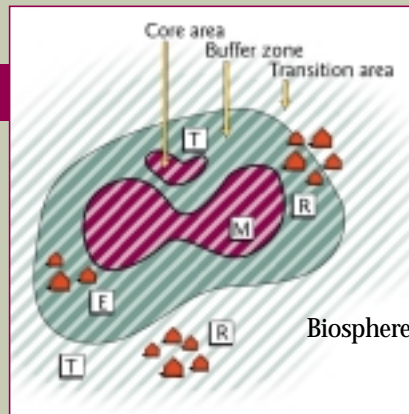
Biosphere reserves

On-ground testing for sustainable development

Biosphere reserves are sites established by countries working with the UNESCO-MAB Programme to promote biodiversity conservation and sustainable development, based on local community efforts and sound science. As places which seek to reconcile economic development, social development and environmental protection, through partnerships between people and nature, they are ideal to test and demonstrate approaches to sustainable development at a regional scale.

The main characteristics of biosphere reserves are:

- ▶ Having a zonation pattern for conservation and development;
- ▶ Focusing on a multi-stakeholder approach, with particular emphasis on the involvement of local communities in management;
- ▶ Forming a tool for conflict resolution of natural resource use, through development of dialogues;
- ▶ Integrating cultural diversity and biological diversity, especially the role of traditional knowledge in ecosystem management;
- ▶ Demonstrating sound policies based on research and subsequent monitoring;
- ▶ Being sites for education and training; and, importantly,
- ▶ Participating in a World Network.



- Human settlements
- Research station or experimental research site
- Monitoring and research
- Education and training
- Tourism and recreation

Biosphere reserve zonation helps to accommodate different forms of land use.



A tool for integrated management

Biosphere reserves aim to achieve integrated management of land, fresh and marine waters and living resources, by putting in place bioregional planning schemes, based on integrating conservation of biological diversity into sustainable development through the appropriate zonation. This zonation includes strictly protected *core areas*, typically surrounded by *buffer zones* where conservation is emphasized, but where people also live and work, and the whole is surrounded by a *transition area*, or area of co-operation, which promotes sustainable development.

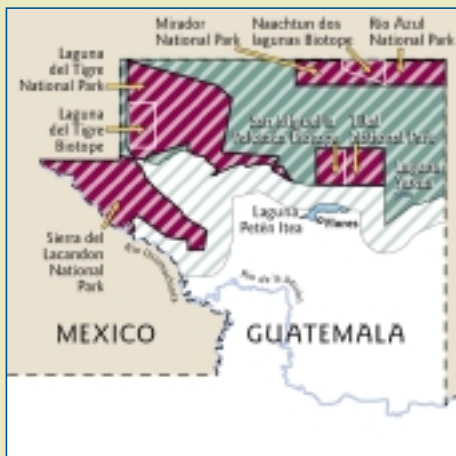
Large biosphere reserves, which are used as tools for land use planning, incorporate ecological networks and corridors.

The establishment of transboundary biosphere reserves (TBR) facilitates transfrontier co-operation for the management of shared ecosystems, such as in the East Carpathian Biosphere Reserve in central Europe.



Biosphere reserves are increasing in scale and entire islands, archipelagos or large coastal areas are managed under this scheme (El Hierro or Minorca in Spain, the Boloma-Bijagos Archipelago in Guinea-Bissau),

as well as extended forests (Maya Biosphere Reserve in Guatemala), mountains (Issy Kul in Kyrgyzstan), wetlands (Pantanal in Brazil) or areas with urban systems (Golden Gate Biosphere Reserve in the USA).



Biosphere reserves are strongly rooted in cultural contexts and traditional ways of life, land use practices and local knowledge and know-how; biosphere reserves thus contribute to the maintenance of cultural values while conserving biological diversity.

Man and the Biosphere (MAB) Programme of the United Nations Educational, Scientific and Cultural Organization (UNESCO)

Biosphere reserves and the Ecosystem

The World Network of Biosphere Reserves provides some of the best examples of the Ecosystem Approach, adopted by the Convention on Biological Diversity, in action. A comparison of some key principles of the Ecosystem Approach and the Seville Strategy, which governs the application of the biosphere reserve concept provides some evidence:

The Ecosystem Approach should seek the appropriate balance between conservation and use of biological diversity

Biosphere reserves constitute a tool for the conservation of biological diversity and the sustainable use of its components



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This is the main objective of biosphere reserves. Examples of the search for an appropriate balance can be found all over the world, such as **Arganeraie** in Morocco (Argan oil), **Tonle Sap** in Cambodia (fisheries), Clayoquot Sound in Canada (timber), or Entlebuch in Switzerland (cattle breeding).



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The Ecosystem Approach should consider all forms of relevant information, including scientific indigenous knowledge, innovations and practices



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Approach

Key principles of the Ecosystem Approach

What the Seville Strategy for Biosphere Reserves says

At the **Dana** Biosphere Reserve, in Jordan, the major thrust has been the development of income-generating schemes (dried fruits, medicinal plants, jewellery based on plants and animals, ecotourism) made possible by a societal agreement of all stakeholders to work together.

Management objectives are a matter of societal choice

All local authorities have to be consulted and approve the nomination; the management of a biosphere reserve should be promoted as a pact with society as a whole...



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Ecosystems must be managed within the limits of their functioning

Biosphere reserves should be extended to take into account fragmented habitats, threatened ecosystems and vulnerable environments; transboundary biosphere reserves should be established



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The **Gulf of Mannar**, India, has many coastal/marine components, including coral reefs and mangroves. The interdependence of these systems means they need to be managed together.

In the **Boucle du Baoulé**, Mali, situated in arid Sub-Saharan Africa, the management takes into account farmers and pastoralists needs. In Brazil, the management of the Cerrado Biosphere Reserve takes into account seasonal variations of savanna systems.



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Management should be decentralized to the lowest level

Support and involvement of local people has to be secured for the definition and implementation of management policy and biosphere reserves have to be integrated into regional planning



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In the **Sierra Nevada de Santa Marta** Biosphere Reserve, Colombia,

the participatory system is facilitated by an NGO, the Foundation Pro-Sierra Nevada de Santa Marta, which has established mechanisms of consultations on issues such as agro-ecology, fish farming, environmental health, revitalization of prehispanic cultures, rural housing, etc.

The Ecosystem Approach should involve all relevant sectors of society and scientific disciplines

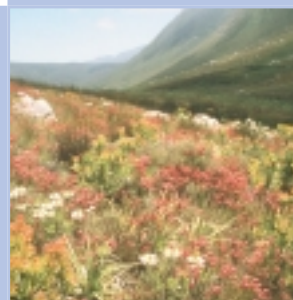
All interested groups should be brought together in a partnership approach to biosphere reserves

Information should flow freely among all concerned; the role of traditional knowledge in sustainable development should be recognized and encouraged

In **Uluru-Kata Tjuta** Biosphere Reserve, Australia, the Aboriginal burning practices are an integrated part of the management plan. In the French **Cevennes**, the traditional technique of dry stone walls and terraces for agriculture is being revived.



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A partnership with the energy sector (E7) has led to promoting solar energy in the **W** Biosphere Reserve in Niger.

A committee of all stakeholders, including landowners and local authorities, manages the **Kogelberg** Biosphere Reserve in South Africa.

The **Xishuangbanna** Biosphere Reserve, China, involves the local community in ecotourism and other economic activities.



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The World Network of Biosphere Reserves includes more than 400 sites in 94 countries.

It promotes North-South and South-South partnerships and represents a unique tool for international co-operation, through sharing of knowledge, exchanges of experiences and promotion of best practices.

Co-operative activities of scientific research, global monitoring and training of specialists are promoted.



Biosphere reserves also are a perfect foil for the UN Secretary-General's "WEHAB" initiative for sustainable development in that they:

- W_(water)**: act as foci of research and management on water and ecosystems, including large rivers;
- E_(energy)**: are sometimes sites for experimenting with alternative energies;
- H_(health)**: can be sources of potential new drugs, but more importantly by promoting ecosystem health and thereby human wellness;
- A_(agriculture)**: assist in the maintenance of autochthonous breeds of livestock and land races of crops;
- B_(biodiversity)**: form an incomparable force for biodiversity conservation through a network of globally representative ecosystems.

For additional information on MAB and the World Network of Biosphere Reserves, please contact :

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