

**CONCLUSIONS OF THE EUROMAB WORKSHOP ON
"THE ROLE OF WETLANDS IN BIOSPHERE RESERVES",
Mikulov, Czech Republic, October 13 - 18, 2002**

This EuroMAB Workshop with 70 participants from 19 countries (Armenia, Austria, Belorussia, Bulgaria, Canada, Croatia, Czech Republic, Germany, Great Britain, Kyrgyzstan, Latvia, Moldova, the Netherlands, Poland, Romania, Slovakia, Spain, Switzerland, Ukraine) was organised jointly by the Czech MAB/UNESCO and Czech Ramsar Committees and by the Palava Biosphere Reserve. Altogether 42 papers and 22 posters were presented at the workshop.

Cross-theme papers in the opening session introduced the main wetland types, pointing out the salient problems encountered in each wetland type with respect to each of the four workshop topics:

- (a) Wetlands as sources of biodiversity in biosphere reserves
- (b) Buffering effects of wetlands on water budget and water quality in biosphere reserves and the role of water resources (including ground water) in wetland maintenance
- (c) Management (also including restoration) of wetlands for sustainable functioning in biosphere reserves
- (d) Resolution of conflicts between economic use and environmental quality of wetlands in Biosphere Reserves: towards the application of the 'wise use' concept.

Working groups were set up for the topics A, B and C+D, respectively. Each of the four sessions was introduced by an invited key speaker. In conclusion, the respective working groups presented their reports. The workshop conclusions and recommendations, elaborated on the basis of the working group reports, were discussed and eventually adopted. The Czech members of the scientific advisory committee, headed by Jan Kvet, were charged with the task to edit these conclusions and recommendations.

Working Group A: Biodiversity

Wetlands provide a great variety of habitats at the dynamic interface of water and land. These habitats host many specialised species, the extinction of which would be irreversible. Our knowledge of the life-forms in wetlands is insufficient at the species level and the other levels of biotic organisation. At the species level, accurate taxonomic identification and inventory are crucial.

Recommendations:

- All still remaining wetlands should be urgently protected as important sources of biodiversity. The inclusion of wetlands into existing or new Biosphere Reserves should be considered as the highest priority.
- It is strongly recommended to expand inventories and research in wetlands to a wider range of plant and animal life forms.
- Long-term monitoring of biodiversity should be considered an essential tool for the management of Biosphere Reserves and particularly of the dynamic wetland ecosystems.

- Control or even eradication of invasive alien species should be encouraged while native species should be promoted by the protection of habitat diversity and by native species re-introduction. Production systems should be obliged, where possible, to make use of indigenous species or traditional varieties, and phase out exotics.
- The use of genetically modified species should be banned from BRs, and their use in associated river basins should be discouraged, especially upstream of such sensitive habitats as wetlands.

Working Group B: Hydrology and Water Quality

Water is the precondition of the functioning of the Biosphere and of the very existence of wetlands. The necessity of water for the existence of wetlands is so much taken for granted that little attention is often paid to wetlands hydrology, perhaps with the exception of North America. It is necessary to make hydrological evaluations of wetlands present in each Biosphere Reserve. Inappropriate water management and neglect of the role of wetlands in water cycling distinguished most previous civilisations and these mistakes are unfortunately also characteristic of our present civilisation. Wetlands (undisturbed floodplains, marshes and swamps, fishponds, etc.) can play an important role in flood prevention/control, as it was exemplified by the wetlands in the Trebon Basin BR during the summer 2002 floods in Central Europe.

Recommendations:

- For each wetland type, and each particular wetland, it is necessary to ensure a proper water balance and/or water movement dynamics.
- The main consequence of inappropriate water management and of the destruction or degradation of wetlands (drainage and irrigation systems, landfilling, peat extraction, reservoirs replacing wetlands, channelization of rivers, etc.) is the loss of life-supporting functions of wetland ecosystems, especially evident in:
 - a) enhanced mineralization of soil organic matter resulting in CO₂ release to the atmosphere, matter losses from large areas and nutrient enrichment of water bodies (leading to their eutrophication and enhanced ageing),
 - b) desiccation, or even desertification, of the wetland surroundings and sometimes of whole catchments or regions,
 - c) loss of habitat diversity in wetlands, especially loss of habitats for species requiring a well defined hydrological regime (e.g., a hydroperiod of a certain duration, or a certain prevalent water-flow velocity),
 - d) loss of wetland resources which support sustainable living of peoples dependent on them.

All these undesirable consequences should be avoided particularly in Biosphere Reserves by various means including the sustainable management and/or conservation of all wetlands occurring in each Biosphere Reserve.

- The appropriate wetland management includes, among others, the enhancement of evapotranspiration from wetlands which supports local or regional water recycling. Fulfilment of this requirement is crucial for wetland restoration. Recycling of water helps to recycle mineral nutrients by minimising their losses from wetlands and their

catchments. It also helps to avoid the impact of excessive nutrient load on the quality of water discharged from wetlands.

- Wastewater from small settlements and villages situated in Biosphere Reserves should preferably be treated using low energy and low cost technologies such as constructed wetlands with marsh plants. If the treated wastewater is safe from the sanitary point of view, it can be discharged to natural wetlands provided the quality of treated water meets local requirements. Biosphere Reserves ought to demonstrate the feasibility and sustainability of this approach to wastewater treatment.
- It is essential to prevent the deterioration of valuable wetlands, especially in the core and buffer zones of Biosphere Reserves, by pollution with both untreated and treated wastewater and from pollution and/or eutrophication from non-point sources. Wetlands that have already been deteriorated should be restored to a near-natural state by both technical and biological means, sometimes even at the cost of temporarily changing their hydrology.

Working Group C & D:

Management, Conservation, Restoration, Education, Policy Issues

This working group made **recommendations** concerning the following aspects:

Wise Use

- The wetlands in the BRs (esp. those under the protection of the Ramsar Convention) should be protected, managed and used properly and consistently as outlined in the “wise use of wetlands” formulated by Ramsar. In this context, all existing principles and tools of MAB/UNESCO and Ramsar should be applied (zoning, legal obligations, pilot projects, revision of BRs, etc.). In addition, the EU Water Framework Directive (WFD) should be used as a tool for promoting wise use of wetlands in BRs, because maintaining ecological quality is a central concept of the EU-WFD. National, regional and local specifics should, however, be respected.
- Suitable wetlands should be incorporated into integrated production systems, so that they benefit the local and regional communities.
- Sustainable traditional land use should be promoted, also focused on new sustainable ways of land use (artificial wetlands as renewable sources of energy, etc.).
- BRs should be used as models of sustainable socio-economic-ecological systems, and may also be considered as models for dealing with ‘big issues’ of wetland management, for example sustainable economic use, control of invasive species and effects of climate change.
- BR management plans should incorporate concepts such as carrying capacity, maximum allowable change and optimum quality, and establish transparent limitations to human impact on wetlands. The management plans should also provide guidelines as to where natural processes should be allowed to take their course, and when management intervention is permitted or required.

Awareness, education and training

- Public awareness of the Biosphere Reserves should be raised by means of direct involvement of the public in BR activities and environmental educational programmes. Wetlands should be given a prominent position, by focussing on flagship wetland species, or by initiating pilot projects in these areas. The public should be made aware of the multitude of benefits derived from wetlands, and the concept of wise use of wetlands should be promoted.
- The MAB/Ramsar platform should be used to encourage wider dissemination and translation of existing guidelines and sources of information, as well as sharing of experience and “lessons learned” among managers and stakeholders in BRs. Expertise in BR management should be developed by means of training and exchange of experience. MAB principles of sustainable development should be promoted and at least broadly specified for various types of wetlands, also outside the Biosphere Reserves.

National and international policy issues

- There should be a better co-ordination and closer co-operation between international organisations and programmes involved in wetland conservation and management.
- Governments need to be “educated” with respect to sustainable and ecologically acceptable water management and, in the context of wetlands, should be taught to “retain water instead of draining it”.
- Governments should be obliged to apply strategic environmental impact assessments to all policies and plans, and to integrate environmental concerns into their policies and plans, especially with respect to wetlands.
- Financial mechanisms should be developed to stimulate the sustainable use of wetland resources (e.g., self-sustaining management considering local traditions and interests of local people), and MAB should pressure governments into providing economic/financial incentives for sustainable resource use, to ensure or speed-up the incorporation of these approaches into their policies of resource management.

MAB/Ramsar co-operation – proposals to improve efficiency and synergies

- More co-ordination and cross-pollination between MAB and Ramsar is needed, e.g., application of the Seville Strategy to Ramsar wetlands, and Ramsar Wise Use principles to Biosphere Reserves.
- The existing guidelines (e.g. Ramsar Wise Use, MAB Seville Strategy) should be made accessible to Biosphere Reserve managers, who should make full use of them.
- Create site-specific management committees with links to administrative authorities and committees at national level
- Launch “outreach” programmes of information, communication, and education to increase public awareness
- Show “good examples”, organise exchange visits, on-the-job training, and create site twinnings and sub-regional site networks

- Search for international assistance, prepare multilateral project proposals and seek financial support
- Regular – but simple – revisions of Biosphere Reserves and Ramsar Site networks are encouraged to be carried out rigorously.
- A special grant programme for the management and restoration of wetlands in BRs that are listed as Ramsar sites should be developed jointly by MAB and Ramsar and made accessible to all participating sites.

Stakeholder involvement

- Local people are to be involved in Biosphere Reserve management at all levels, including decision making processes and conservation/management of wetlands
- Nevertheless, the final decisions or recommendations are to be made by the BR management, within the national legal and statutory framework.
- There should be regular communication with local stakeholders – they should be informed or reminded about the Biosphere Reserves and the Ramsar Convention principles, both of which take into account the well-being of the stakeholders.
- We should try to involve a wider scope of stakeholders in workshops such as the one that took place at Mikulov, if we want to be honest about MAB principles.

Biosphere Reserves in a broader context

- Management strategies should take into consideration that wetlands (in BRs or elsewhere) are not isolated “islands”, and should be managed in the context of their respective catchments/river basins. They need to be considered in a landscape context, and research and management programmes ought to focus on this scale wherever it is appropriate.
- Ecological corridors between protected areas with wetlands should be preserved, especially if they connect BRs with other natural areas. Where these corridors do not yet exist, their creation should be stimulated. Networks need to be truly connected.
- Co-operation between already existing BRs with wetlands, and creation of transboundary BRs should be promoted, especially in areas where wetlands are shared by BRs in two or more neighbouring countries.

Wetland restoration

- In Biosphere Reserves, there should be place for wetland restoration, the creation of constructed wetlands, and provision of sufficient space for wetlands. Large-scale relevant wetland restoration programmes are to be encouraged, especially if there is a transboundary effect.

Research and BR management

- The research conducted in Biosphere Reserve wetlands should be subject to analyses aimed at identifying knowledge gaps, and pointing out priority studies. Encouraged should be research that is useful from the management point of view. Researchers should be educated in the 'wise use' concept. Basic research should also be encouraged. Databases are to be established in BRs, so that data remain accessible, especially to BR managers. BRIM is a useful tool also in the assessment of wetland values.
- The communication between scientists and the local societies should be improved.

EIA (Environmental Impact Assessment)

- All wetlands should be considered as sensitive areas, and EIA procedures should be used for the assessment of all activities that could influence the integrity, diversity and functioning of any wetland in any BR. National procedures for EIA should be adapted to fit this aim.