

AUSTRIAN CONTRIBUTIONS TO UNESCO'S MAN AND THE BIOSPHERE PROGRAMME (MAB)

Summary Report for the Year 2017



The idyllic community of Raggal in the Biosphere Reserve "Großes Walsertal"
(Photo: G. Köck)

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1. NATIONAL COMMITTEE ACTIVITIES AND FUNDING:

In 2013 the Austrian MAB Programme celebrated its 40th anniversary. Since 2011 MAB-Austria is part of the new research structure “Earth System Sciences (ESS)”. ESS, an initiative of the Austrian Academy of Sciences (ÖAW), financed by the Federal Ministry of Education, Science and Research (BMBWF), aims at studying the physical, chemical, hydrological, biological, social, technological and economic processes of the Earth System and their interaction. ESS is an interface between Austrian science and international research and is directly integrated in international research programmes and cooperation (e.g. UNESCO’s MAB, IGCP and IHP programmes, WCRP, UNISDR, LTER, ISCAR, Future Earth) through its three National Committees (NC) *Global Change*, *Geo/Hydro-Sciences*, and *Man and the Biosphere (MAB)*. These NCs, made up of renowned scientists and representatives of several ministries and federal organizations, monitor the Austrian research scene, analyse its strengths and knowledge gaps and work out targeted new research foci.

The NC MAB supports and advises Austrian biosphere reserves, develops guidelines and criteria, stimulates and funds research projects and assists research in biosphere reserves.

Members of the Austrian MAB National Committee:

Chair:

Assoc. Prof. Dipl.-Ing. Dr. Arne Arnberger, Institute of Landscape Development, Recreation and Conservation Planning, Department of Spatial-, Landscape-, and Infrastructure-Sciences; University of Natural Resources and Life Sciences Vienna. Peter-Jordan-Straße 65, 1180 Vienna Austria. Phone +43-1-47654-85315, Fax +43-1-47654-85309, arne.arnberger@boku.ac.at;

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Vice Chair:

Prof. Dipl.-Ing. Dr. Marianne Penker, Institute for Sustainable Economic Development, Department of Economics and Social Sciences, University of Natural Resources and Life Sciences Vienna, Feistmantelstraße 4, A-1180 Vienna, Austria. Phone: +43-1-47654-73115; marianne.penker@boku.ac.at;
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Executive Secretary:

Dr. Günter Köck, Austrian Academy of Sciences, International Research Programmes, Dr. Ignaz Seipel-Platz 2, A-1010 Vienna, Tel. ++43 1 51581-2771, Fax: ++43 1 51581-1275; guenter.koeck@oeaw.ac.at;
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Other Members:

Em. Univ. Prof. Dr. Georg Grabherr (University of Vienna), Honorary Member of the MAB Committee

Em. Univ. Prof. Dr. Marina Fischer-Kowalski (University of Natural Resources and Life Sciences Vienna)

Univ. Prof. Dr. Norbert Weixlbaumer (University of Vienna)

Univ. Prof. Dr. Sigrid Stagl (University of Economics and Business Vienna)

Dr. Elisabeth Haring (Natural History Museum Vienna)

Dr. Harald Pauli (ÖAW - Institute for Interdisciplinary Mountain Research, University of Natural Resources and Life Sciences Vienna)

Dr. Volker Mauerhofer (Meiji University, Tokyo, Japan)

Mag. Gabriele Eschig (Austrian Commission for UNESCO)

Mag. Ernst-Peter Brezovsky (Ministry of Europe, Integration and International Affairs)

Dr. Karolina Begusch-Pfefferkorn (Ministry of Education, Science and Research)

Dr. Karl Kienzl (Environmental Agency Austria)

DI Maximilian Albrecht (Austrian Federal Provinces)

DI Arno Mohl (World Wildlife Fund for Nature)

In 2017 two meetings of the Austrian National Committee for MAB took place. The managers of the Austrian biosphere reserves (BRs) have participated in the meetings and reported about activities in their region and discussed future research strategies with the committee members.

For the year 2017 the total funding for MAB, provided by the Austrian Ministry for Science, Research and Economy, was

EURO 150.000,- = US\$ 176.404,¹

¹ Exchange rate per 22/05/2018

This funding was entirely used for research projects.

2. CURRENT RESEARCH PROJECTS WITHIN THE FRAMEWORK OF MAB:

According to the research agenda for the Austrian MAB Programme, and in response to the priorities set by the International MAB Council, the Austrian National MAB-Committee has focused its research activities predominantly on the needs of the biosphere reserves in Austria. However, to deepen the involvement of Austrian expertise in international MAB research, the MAB national committee is also funding international research cooperations with BRs and BR projects in foreign countries.

Currently five projects are funded through the Austrian MAB Programme. The projects will be finished by 2020 at latest. A new call for projects will be launched late 2018.

Project Title	Coordinator
Experimental networks for sustainability: Urban Biosphere Reserves as engines of transitions (ENESUS)	M. Coy (University of Innsbruck)
Biosphere Reserve Integrated Monitoring based on Social and Environmental ecosystem services (BRIMSEN)	T. Wrbka (University of Vienna)
Perception and Reality of Recreational User Conflicts in the UNESCO Wienerwald Biosphere Reserve (UserConflicts)	R. Eder (University of Natural Resources and Life Sciences Vienna)
Lessons Learned for the Management Policy of the Biosphere Reserve "Oxapampa-Ashaninka-Yanesha" (Peru) based upon the inhabitants' local knowledge and available global scientific knowledge (AGROBIO-K_NOW)	C.R. Vogl (University of Natural Resources and Life Sciences Vienna)
Samothraki as a Biosphere Reserve: Securing continuity of science-civil society collaboration in a systemic design (SamoMAB)	P. Petridis (University of Natural Resources and Life Sciences Vienna)

An additional MAB research project entitled "Alpine landscapes under global change - Impacts of land-use change on ecosystem services and human health and well-being" (T. Frank, University of Natural Resources and Life Sciences Vienna) is funded through the ESS research initiative.

4. CURRENT STATUS OF BIOSPHERE RESERVES IN AUSTRIA:

Since 2014, Austria has reduced the number of its BRs from seven to three. However, the remaining areas are very well functioning BRs with a broad range of scientific and educational activities.

Approved: three sites	
Großes Walsertal (approved 2000)	In Western Austria, reaching from mountain river alluvia, mountain farmlands to high alpine peaks; this reserve is designed and implemented according to the Seville Strategy. In 2011 the International Advisory Committee for Biosphere Reserves recommended that the site is considered as a model site, whose practices should be shared within the World Network of Biosphere Reserves.

<i>Wienerwald (approved 2005)</i>	The Vienna Woods are the largest contiguous area of deciduous woodland in Central Europe. The area is situated in close vicinity to the city of Vienna. The location of such a large area of woodland on the outskirts of a major city is unique.
<i>Salzburger Lungau und Kärntner Nockberge (approved 2012)</i>	The area consists of a representative example of inner-alpine landscapes with high mountains and deep valleys. The region is a cultural landscape far removed from large conurbations and major traffic routes. A large part of the agricultural land consists of alpine meadows and pastures, and the food specialties of the region – most of them organic and based on local bio-cultural diversity – are of a high quality.
In planning stage: one area	
<i>Danube/Drava/Mura</i>	Drava alluvia; trans-boundary biosphere reserve (Austria, Slovenia, Croatia, Hungary, Serbia). The Austrian MAB Committee is actively involved in the international Coordination Board.
At present, several Austrian regions are discussing chances and options of the biosphere reserve status for their communities.	

5. OTHER ACTIVITIES, AWARDS:

January 2017:

The Austrian MAB Committee has launched its new homepage: <http://www.biosphaerenparks.at/>.

April 2017:

A group of delegates from Austrian MAB Committee and Austrian biosphere reserves participated in the EuroMAB-Meeting 2017 held in the „Dordogne Basin Biosphere Reserve in France. G. Köck and co-authors have published a conference report in the scientific journal „eco.mont“ (see below).

June 2017:

The MAB Committee has organized a kick-off event (including press conference) for the projekt “Whatsalp” (<http://www.whatsalp.org>), a 120 days lasting scientific hiking expedition through the Alps from Vienna to Nice aimed at documenting the current state as well as the change of the Alpine regions.

The Austrian MAB Committee represented by G. Köck attended at the 29th meeting of the the MAB International Coordinating Council in Paris.

September 2017:

A group of young people from the Biosphere Reserve „Salzburger Lungau und Kärntner Nockberge“ participated in the 1st UNESCO-MAB Youth Forum which took place from 18 - 23 September 2017 in the „Po Delta Biosphere Reserve“ in Italy.

The Austrian MAB Committee has published a *Position Paper of the Austrian National Committee for the UNESCO Programme ‘Man and the Biosphere’ for Using Renewable Energies in Austrian Biosphere Reserves*. The 13 pages paper is an outcome of an international workshop held in autumn 2016 in the Großes Walsertal Biosphere Reserve. This position paper is intended to provide recommendations and guidelines on sustainable production of renewable energies for anyone involved in the administration of a biosphere reserve and for lawmakers, in strict accordance with UNESCO’s international criteria and our relevant national guidelines. This is to give biosphere reserves the chances and opportunities to guide and support Austria’s ‘energy transition’ in a way that is largely free from conflict and will enable them to become model regions for the socially and ecologically sustainable production of renewable energy. By achieving their development goals, Austrian biosphere reserves can contribute significantly to the implementation of Agenda 2030.

Download: <http://www.biosphaerenparks.at/index.php/de/blog/46-position-paper-of-the-austrian-national-committee-for-the-unesco-programme-%E2%80%98man-and-the-biosphere%E2%80%99-for-using-renewable-energies-in-austrian-biosphere-reserves>

November 2017:

The MAB Committee and its research projects were actively involved in the „6th International Symposium for Research in Protected Areas“, in Salzburg (Austria) with more than 400 participants from more than 20 countries. MAB Chair A. Arnberger and G. Köck have organized a successful session entitled „Protected areas' landscapes as resources for human health and well-being“. Furthermore, G. Köck presented the activities of the Austrian MAB Committee “Research in protected areas funded by the Austrian National Committee for UNESCO's Man and the Biosphere Programme”.

The MAB Committee significantly contributed to the design of the upcoming project call *Water in Mountain Regions* in the “Earth System Sciences” research initiative of the Austrian Academy of Sciences. Following a suggestion made by the Committee the projects should contribute to the realization of UN's Agenda 2030 / SDGs in Austria.

6. PUBLICATIONS:

The research projects funded by the MAB National Committee yield not only a series of research reports but also a range of research articles in scientific journals.

Based on a successful cooperation with the Austrian Academy of Sciences Press (AASP) almost all Austrian MAB project reports are published online at the AASP homepage. At present 29 documents can be downloaded from <http://epub.oeaw.ac.at/Projektberichte> or via the MAB-Austria website <http://www.biosphaerenparks.at/>.

Project reports:

Erhalt der biologischen und kulturellen Vielfalt. Modelle für nachhaltige Entwicklungsstrategien im 21. Jahrhundert. Orte der Forschung, Bildung und Umweltbeobachtung (doi: 10.1553/ibk; ISBN-13: 978-3-7001-3742-9)

Biosphere Reserves in Austria - Grundlagenerhebung und Stand der Forschung (ISBN-13 Online: 978-3-7001-3599-9)

Nachhaltiges Waldbiomassenmanagement im Biosphärenpark Wienerwald (doi: 10.1553/wald, ISBN-13: 978-3-7001-3839-6, ISBN-13 Online: 978-3-7001-3839-6)

EUROMAB AUSTRIA 2005 Meeting of the Euromab Biosphere Reserve Coordinators and Managers (doi: 10.1553/euromab_austria2005, ISBN-13 Online: 978-3-7001-3715-3)

Leben in Vielfalt (doi: 10.1553/3-7001-3337-5; ISBN-13: 978-3-7001-3337-7 ISBN-13 Online: 978-3-7001-3374-2)

Inspired by diversity (ISBN-13: 978-3-7001-3596-8 ISBN-13 Online: 978-3-7001-3612-5)

Leitfaden für Forschung und Monitoring im Biosphärenpark Wienerwald (doi: 10.1553/lfmbw, ISBN 978-3-7001-3742-9)

Leitfaden für Forschung und Monitoring im Biosphärenpark Großes Walsertal (doi: 10.1553/lfmbgw, ISBN-13: 978-3-7001-3717-7)

Re-designing the Research Agenda of MAB-Austria, in special consideraton of BRIM: A Feasibility Study Final Report (doi: 10.1553/rra_mab)

Monitoring von Luftschadstoffen (NOx und SO2, Schwermetall-, Stickstoff-, Schwefel- und PAH-Depositionen) mittels Moosen im "Biosphärenpark Wienerwald" (doi: 10.1553/luft, ISBN-13: 978-3-7001-3852-5, ISBN-13 Online: 978-3-7001-3852-5)

Integrated Sustainable Wildlife Management in the Biosphere Reserve Wienerwald (doi: 10.1553/ISWIMAB, ISBN-13 Online: 978-3-7001-6626-9)

Redesigning the Biosphere Reserve NeusiedlerSee (doi: 10.1553/rbrns, ISBN-13: 978-3-7001-6692-4, ISBN-13 Online: 978-3-7001-6692-4)

Ökologische und soziale Tragfähigkeiten als Managementherausforderungen für suburbane Biosphärenparke am Beispiel Untere Lobau (doi: 10.1553/MAB-OEST, ISBN-13 Online: 978-3-7001-6781-5)

Part_b: Partizipationsprozesse in Biosphärenparks – Interventionstheorie, Strategie-analyse und Prozessethik am Beispiel vom Biosphärenpark Wienerwald, Großes Walsertal und Nationalpark Nockberge (doi: 10.1553/mab-partB, ISBN-13 Online: 978-3-7001-6870-6)

Transboundary Information Exchange for Revision and Functional Improvement of Zonation of the Lower Morava Biosphere Reserve (Czech Republic) (doi: 10.1553/mab-tierafiz-lmbr-2010, ISBN-13: 978-3-7001-7025-9, ISBN-13 Online: 978-3-7001-7025-9)

Evaluating the zonation for the Biosphere Reserve Wienerwald: How well does the conversation zone contribute to biodiversity conservation? (doi: 10.1553/mab_biosphere_wienerwald, ISBN-13 Online: 978-3-7001-8136-1)

ChecKid - Kids entdecken die Kernzone (doi: 10.1553/Checkid2010, ISBN-13 Online: 978-3-7001-7038-9)

Geophysikalische Messungen in Tulum (Mexiko) - 2010 (doi: 10.1553/mab-geophys-tulum-2010, ISBN-13: 978-3-7001-6971-0 ISBN-13 Online: 978-3-7001-6971-0)

Biokulturelle Vielfalt: Biokulturelle Vielfalt – Vom lokalen Erfahrungswissen zu Pflanzen im Biosphärenpark Großes Walsertal (doi: 10.1553/MAB-MOBDIBRGW; ISBN-13 Online: 978-3-7001-7347-2)

Perspective Lobau 2020: Exploring management options of a heavily used urban biosphere reserve confronted with new urban developments in its neighbourhood considering a restricted potential for ecosystem development (doi: 10.1553/Lobau2020, ISBN-13 Online: 978-3-7001-7288-8)

Biodiversity and Ecosystem Services as scientific foundation for the sustainable implementation of the Redesigned Biosphere Reserve “Neusiedler See” (doi: 10.1553/bioserv-neusiedler-see, ISBN-13 Online: 978-3-7001-7289-5)

Integrative Sustainable Wildlife Management - Principles, Criteria and Indicators for Hunting, Forestry, Agriculture, Recreation (doi: 10.1553/ISWIMAN, ISBN-13 Online: 978-3-7001-7216-1)

IESP - Towards Integrated Ecological Spatial Planning for the Wienerwald Biosphere Reserve (doi: 10.1553/IESP-Wienerwald, ISBN-13 Online: 978-3-7001-7292-5)

Biosphärenpark School-Twinning (doi: 10.1553/MAB-BST, ISBN-13 Online: 978-3-7001-7691-6)

Reservas de la Biosfera de Chile Laboratorios para la Sustentabilidad (doi: 10.1553/ReservasBiosferas1, ISBN-13 Online: 978-3-7001-7624-4)

Biosphere Reserve Integrated Monitoring – Salzburger Lungau & Kärntner Nockberge (doi: 10.1553/MAB-BRIM, ISBN-13 Online: 978-3-7001-7753-1)

REPAnext - Regional Economic and Perceptual Analyses in an UNESCO Biosphere Reserve. Future strategies for regional development in the BR Großes Walsertal against the background of demographic change: What comes next? (doi:10.1553/MAB-REPA-Next, ISBN Online 978-3-7001-7992-4)

Biosphere People - Local residents' views on the Wienerwald Biosphere Reserve (doi: 10.1553/mab_biospherpeople, ISBN Online 978-3-7001-8083-8)

HealthSpaces - Biosphere Reserve Landscapes and Human Health Benefits: Analysing the Potential of the Biosphere reserve Wienerwald on life quality and psychological well-being (doi: 10.1553/mab_healthspaces, ISBN Online 978-3-7001-8056-2)

List of selected articles in scientific journals:

Egner, H., J. Falkner, M. Jungmeier and D. Zollner (2017). Institutionalizing cooperation between biosphere reserves and universities – the example of Science_Link^{nockberge}. eco.mont - Journal on Protected Mountain Areas Research 9(2), 77-80. http://epub.oeaw.ac.at/0xc1aa500e_0x00369c7b.pdf

Fischer-Kowalski, M. and P. Petridis (2017). Can socioecological research help to create a realistic perspective for a sustainable Samothraki. In: Sustainable Mediterranean (2017). Special Issue, No 73: Summer University of Samothraki 2016: Integrated Management Approaches for Biosphere Reserves and Other Designated Areas, 9-22 July 2016. <http://mio-ecsde.org/wp-content/uploads/2017/01/Sust-Med-73.pdf>

Köck, G., M. Spierenburg, P. Cupa and V. Debevec (2017). Report of the EuroMAB Conference 2017, *Building a sustainable future together*, Dordogne Basin Biosphere Reserve, Sarlat-la-Canéda (France), 4-7 April 2017. eco.mont - Journal on Protected Mountain Areas Research 9(2), 74-76.
http://epub.oeaw.ac.at/0xc1aa500e_0x00369c79.pdf

Köck, G. and A. Arnberger (2017). The Austrian Biosphere Reserves in the light of changing MAB strategies. eco.mont - Journal on Protected Mountain Areas Research 9(special issue), 85-92.
http://epub.oeaw.ac.at/0xc1aa500e_0x0034cb99.pdf

Köck, G. (2017). EuroMAB Meeting 2017, Dordogne Basin Biosphere Reserve, Sarlat-la-Canéda (France), 4–7 April 2017; www.euromab2017.org. eco.mont - Journal on Protected Mountain Areas Research 9(1), 43. http://epub.oeaw.ac.at/0xc1aa500e_0x0034c88b.pdf

Muhar, A., C. M. Raymond, R. J.G. van den Born, N. Bauer, K. Böck, M. Braito, A. Buijs, C. Flint, W. T. de Groot, C. D. Ives, T. Mitrofanenko, T. Plieninger, C. Tucker and C. J. van Riper (2017). A model integrating social-cultural concepts of nature into frameworks of interaction between social and natural systems. Journal of Environmental Planning and Management, 1-22.
<http://www.tandfonline.com/doi/abs/10.1080/09640568.2017.1327424>

Hülber, K., D. Moser, N. Sauberer, B. Maas, M. Staudinger, V. Grass, T. Wrbka and W. Willner (2017). Plant species richness decreased in semi-natural grasslands in the Biosphere Reserve Wienerwald, Austria, over the past two decades, despite agri-environmental measures. Agriculture, Ecosystems and Environment 243, 10–18. <https://www.sciencedirect.com/science/article/pii/S0167880917301573?via%3Dihub>

Walcher, R; Karrer, J; Sachslehner, L; Bohner, A; Pachinger, B; Brandl, D; Zaller, JG; Arnberger, A; Frank, T
Diversity of bumblebees, heteropteran bugs and grasshoppers maintained by both: abandonment and extensive management of mountain meadows in three regions across the Austrian and Swiss Alps.

LANDSCAPE ECOL. 2017; 32(10): 1937-1951. <https://link.springer.com/article/10.1007%2Fs10980-017-0556-1>

List of selected conference and workshop papers:

Allex, B., A. Arnberger, R. Eder, H.P. Hutter and P. Wallner (2017). Human Health Related Effects of Different Landscapes in the Wienerwald Biosphere Reserve. 3rd International Conference on Landscape and Human Health: Forests, Parks and Green Care, Vienna, AUSTRIA, MAY 17-19, 2017. In: Austrian Research and Training Centre for Forests, Natural Hazards and Landscape & Institute of Landscape Development, Recreation and Conservation Planning, University of Natural Resources and Life Sciences, Vienna (Eds.), Proceedings of the 3rd International Conference on Landscape and Human Health: Forests, Parks and Green Care; ISBN: 978-3-902762-79-5. http://www.landscapeandhealth.at/images/LHH-Proceedings_new.pdf

Arnberger, A., B. Allex, R. Eder, H.-P. Hutter and P. Wallner (2017): Forests, meadows or vineyards? Results of landscape effects on human health in the Wienerwald Biosphere Reserve. IUFRO 2017, 125th IUFRO Anniversary Congress, Freiburg, Sept. 18-22. In: Forstliche Versuchs- und Forschungsanstalt (FVA) Baden-Württemberg , 125th IUFRO Anniversary Congress - Book of Abstracts, 284; ISBN: ISBN 978-3-902762-8

Arnberger, A., R. Eder, B. Allex, H.-P. Hutter, N. Bauer, M. Hofmann, J.G. Zaller and T. Frank, T. (2017). Restorative effects of managed and unmanaged Alpine meadows . 3rd International Conference on Landscape and Human Health: Forests, Parks and Green Care, Vienna, MAY 17-19, 2017. In: Austrian Research and Training Centre for Forests, Natural Hazards and Landscape & Institute of Landscape Development, Recreation and Conservation Planning, University of Natural Resources and Life Sciences, Vienna (Eds.)., Proceedings of the 3rd International Conference on Landscape and Human Health: Forests, Parks and Green Care , p. 44; ISBN: 978-3-902762-79-5. http://www.landscapeandhealth.at/images/LHH-Proceedings_new.pdf

Arnberger, A., B. Allex, R. Eder, H.-P. Hutter, P. Wallner, N. Bauer, J.G. Zaller and T. Frank (2017). Protected areas' landscapes as resources for human health and well-being – case studies from Austria. 6th International Symposium for Research in Protected Areas, 2-3 November 2017, Salzburg (Austria). Conference Volume, 794 pp, doi:10.1553/np_symposium2017s1, 313-315.
<https://www.austriaca.at/0xc1aa5576%200x0037b188.pdf>

Köck, G. (2017). Research in protected areas funded by the Austrian National Committee for UNESCO's Man and the Biosphere Programme. 6th International Symposium for Research in Protected Areas, 2-3 November 2017, Salzburg (Austria). Conference Volume, 794 pp, doi:10.1553/np_symposium2017s1, 313-315. <https://www.austriaca.at/0xc1aa5576%200x0037b188.pdf>

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