

## Editorial

Summer is approaching – time for the next issue of TransEcoNet News. In the past three months a number of project activities were finalised and are still running. The introducing article illustrates the 5th transnational project meeting in Szklarska Poręba/ PL which paved the way for the last year of project work. Participants in the workshop got manifold impressions about the spatial and protected area management of the Giant Mountains National Park and about the work of the Ecological Education Centre of the park where the meeting took place. We interviewed Dorota Wojnarowicz, the local coordinator of TransEcoNet on the spot, about her tasks and experiences within the project.

Further TransEcoNet activities, like a school workshop or an exhibition on cultural heritage, are presented in this issue. Regarding the series of national ecological network systems this time the focus is on the Czech Terrestrial System of Ecological Stability. In addition, other transboundary projects dealing with ecological connectivity or harmonised geo-



data infrastructures are introduced. We hope you enjoy reading and wish you a nice summer time!

The Team of TransEcoNet

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## 5th Transnational TransEcoNet Meeting in Poland

### The value of historical maps for today's spatial planning

For the recent project meeting the TransEcoNet partner consortium came together in the tourism destination Szklarska Poręba in the Polish Giant Mountains. The meeting took place in the Ecological Education Centre of the Giant Mountains National Park (Karkonoski Park Narodowy) from 11 to 13 May 2011.

During the internal meeting the project partners had time to discuss and decide upon the structure and



shape of their case studies, field work and other tasks still to be implemented this year. Among others, topics talked about were how to realize different forms of (3D-)visualisations displaying landscape change and cultural heritage assets. The partners exchanged ideas of how to best create a strategic manual depicting the existing Central European national and regional political and juridical frameworks concerning ecological connectivity. Also tools and case studies were discussed how to implement and manage ecological networks and ecosystem services in border regions in a sustainable way.

Within an international workshop on the third day regional stakeholders from the Region of Lower Silesia were invited to give their input and to discuss the presentations afterwards. Under the title *"Historical changes in the light of contemporary spatial planning"* the workshop focussed on one main aspect of TransEcoNet: to analyse and assess landscape changes over time in protected area networks and

adjacent ecological valuable areas. The participants got an impression of landscape change in the area of the Giant Mountains National Park from the late 19th century until 2008, the timeframe which was investigated in the project. Information gained from the historical maps are very useful for tracing back the development of natural valuable landscapes and their current function as ecological corridors.

Scientists from biology, economy, forestry and spatial planning of universities in Wrocław and Gdąnsk provided an overview of the change of forest cover in the Giant Mountains over the last centuries and the raising conflicts between tourism and nature protection due to the construction of ski areas and other tourism facilities. The spatial development in the area of the foothills of the Giant Mountains over the last 75 years was traced back. Through the expanding urban area of Jelenia Góra, situated in the northern lowlands of the Giant Mountains, infrastructure like roads, settlements, industrial areas and a water reservoir was built and has a negative impact on the ecological network in the foothills of the Giant Mountains. These protected areas of the foothills are part of the buffer zone of the National Park. They are an important passage way for animals migrating between the mountainous area and the lowlands of Silesia.

Finally, a transboundary field trip along the Czech-Polish friendship trail followed the main ridge of the Giant Mountains. Participants of the excursion were impressed by the sub-alpine vegetation, like mountain pines, alpine meadows and subarctic peat bogs. They visited the spring of the Elbe river, the postglacial formations of Snowy Cirques and the Kamięczyk Waterfall. Scientific information as well as tales and myths about legendary figures of the Giant Mountains and their relation to nature and environmental issues were given by the staff of the Polish and Czech National Park administrations.



More utilization claims, like huge tourism complexes (above) and facilities for energy supply, like Sosnówka water reservoir (below), affect the migration of animals between the Giant Mountains and it's lowlands.



© Marco Neubert



Above: By means of old and current maps as well as orthophotos Polish and Czech National Park colleagues retrace the development of mountain pine vegetation on alpine meadows near the Elbe spring.

Left: hiking along the Czech-Polish friendship trail

## Sharing our project results with local communities, scientists and visitors

On the occasion of the TransEcoNet project meeting in Szklarska Poręba/PL we ask Dorota Wojnarowicz from the Giant Mountains National Park about activities as partner of the project and the situation of ecological connectivity and transnational cooperation in the field of nature conservation in the Giant Mountains.

*What kind of activities do you carry out within the project?*

The TransEcoNet project is the opportunity to enrich our GIS database with historical materials providing interesting information on the history of the region of the Giant Mountains. We catalogued available cartographic materials from Polish and German archives. We also obtained scans of topographic maps and aerial photographs. Like other project partners participating in Work Package 4 "History of ecological networks", we attempted to carry out a historical analysis of the Giant Mountains area in the context of dynamic changes within 120 years of land use and vegetation cover development. We also included areas outside the national park to see the development and transformation of villages in the foothills. We want to share the results of our work with local communities, scientists and employees of the national park in form of an information leaflet. We are also preparing a 3D-visualization with maps and historical photographs that will present the history of selected places in the Giant Mountains.

*What conclusions can you derive from your analysis regarding the development and maintenance of ecological corridors in the Giant Mountains?*

Analysing the historical development of settlements in the area of the Giant Mountains we can see that rural areas are shrinking. The areas are migration corridors for animals and plants between the Giant Mountains National Park and the Lower Silesian lowlands. The maps show that the areas have always been a mosaic of habitats (grasslands, minor crops, field borders, shrubberies), so we may assume that they are stable local ecological corridors which need to be protected. Unfortunately, the areas are located outside the national park or in its buffer zone, so the only thing we can do is to move proposals concerning the protection of these ecological corridors to the local spatial development plans. We also intend to include the need for conserving and sustainable development of these areas in the national park management plan.



*How do you further utilize the results of your case study analysis within the daily protected area management?*

Without doubt the collected database of historical materials will be exceptionally useful to specialists who would like to use them for their research purposes. An interesting thing is a catalogue of places where land use methods have not changed, leaving rich, varied and untransformed habitats, mainly grassland and forest ecosystems. Such information might make specialists initiating protective actions like preventing ecological succession on overgrown grasslands which are not used agriculturally. We also would like to use the results of the project within the educational work of the park including issues connected with historical changes of the landscape and the history of ecological networks of the region. The visualisations, another result of the project, will promote GIS systems as tools for spatial development.

*As the Giant Mountains are a transboundary protected area of great importance for Central Europe, you strongly need to cooperate with your Czech colleagues. To what extent does a transboundary management exist and what do current cross-border projects aim for?*

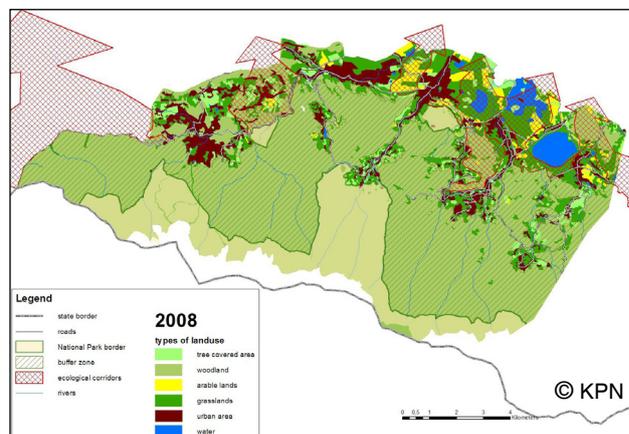
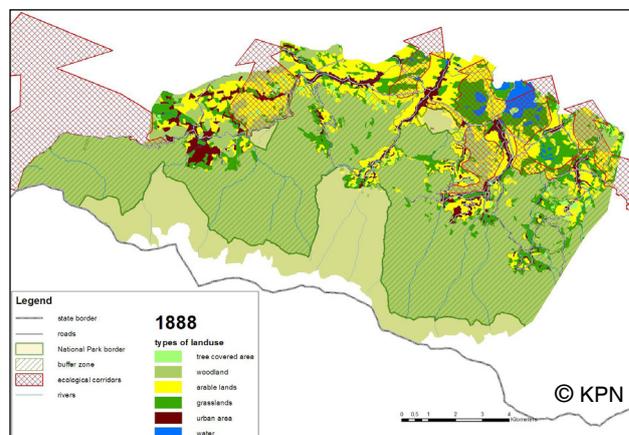
We cooperate with the Czech national park on the basis of cooperation contracts concerning protection, management, sustainable development of both parks, as well as the bilateral biosphere reserve. It is important that we also involve tourism and education interests in our activities. We also try to develop our

common policy of nature protection and use uniform monitoring methods. Currently, the Giant Mountains National Park is involved in five Czech-Polish projects including “Karkonosze in INSPIRE – Common GIS for Nature Protection” which is coordinated by our GIS team. The project aims at producing a common management system in both parks, so that the Giant Mountains could become a transboundary area seen as a whole in terms of ecological planning and management. The base of the system will be homogeneous thematic layers, which ignoring the state border will describe animate and inanimate components of nature in both parks. In order to strengthen the effectiveness of management over the transboundary region we must standardize both countries’ classification systems and map symbology. In this way they will be easily understood by people who make important decisions in the field of nature protection.

*In your opinion, what is the most interesting topic of TransEcoNet, which might be worth to be further developed and worked on in the future on a more regional and/or transboundary level?*

Within the TransEcoNet project we analysed land cover change on the basis of topographical maps with a 1:25 000 scale. The analysis shows that the woodland area dominating the landscape of the Giant Mountains has not changed significantly for the last 120 years. However, this does not mean that the structure, content or species of the stand of trees has not changed. Our next step would be restoration of the former forests. We would like to know methods and principles of management of the region before the national park

was established in 1959. We would consider it especially precious if we could find documents made by German foresters who managed the area before 1945. So far, we have not yet found a complete documentation by means of forest and habitat maps.



Land use development between the and 2008 and impacts on existing ecological corridors in the management plan of the national park



Typical alpine vegetation of the Giant Mountains

© Marco Neubert

An analysis with geographical information systems for students

## Transnational ecological networks for the protection of wild animals

In April 2011 students of a secondary school in Dresden/Germany had the opportunity to analyse a transnational ecological network by means of a geographical information system (GIS). The two-day workshop took place in the framework of the project days of the school and was initiated by the Leibniz-Institute of Ecological Urban and Regional Development (IOER), an active partner of TransEcoNet. As introduction to the workshop the principals of geographical information systems and the software were explained. The students worked with the free software Quantum GIS. The border triangle between Germany, Poland and the Czech Republic was selected as investigation area.

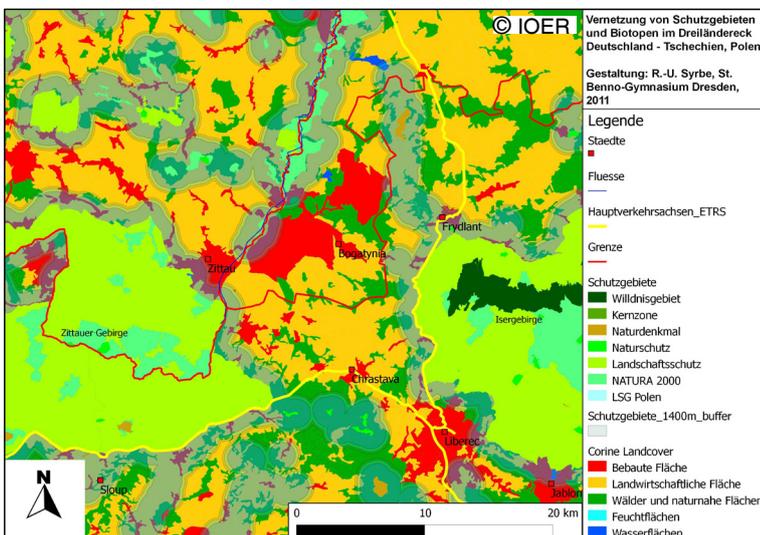
The first task was to study and to analyse the transboundary ecological network and its different protected area categories (wilderness areas, national parks, nature protection areas, biosphere reserves, nature parks, landscape protected areas and Natura 2000 areas). On the basis of selected migratory species like wood mouse, natterjack toad, fat dormice, middle-spotted-woodpecker the students calculated possible migration routes between the protected areas by means of a buffer analysis.

In a second step the land use between the protected areas was analysed and classified according to connecting land use (e.g. woodlands, natural areas, water bodies) and dissecting land use (artificial surfaces, main roads and railways, homogenous land use). The students intensively discussed possible migration corridors between the protected areas and suggested measures to improve connectivity, such as green bridges, woody islands, hedgerows and land use changes. In the end they prepared a map which illustrated their results.



During the workshop the students became acquainted with transnational ecological networks, their gaps, species movement, the use of GIS software and about the layout and design of maps. Although the work with a geographical information system was a new experience for them, they familiarised quickly with the technical requirements and gained an overview about the software and its application. The school decided to use the software for further projects, for example, during geography lessons.

The organisation team of the IOER elaborated a detailed work plan in English, which can be used as guideline for other interested institutions who plan to arrange similar workshops with students in other Central European regions.



Map illustrating the results of the workshop

Depicting grandparents' young days

## School children prepared exhibition on cultural heritage in Slovenian focal areas

During May and June 2011 an exhibition on Slovenian cultural heritage is being implemented within TransEcoNet. The exhibition "*The young days of my grandparents*" is set up at two places: in castle Grad, the administration and information centre of Goričko Nature Park in Northeastern Slovenia and in Podšreda situated in Kozjanski Regional Park in Eastern Slovenia.

In the last months pupils of local schools in both regions have compiled numerous materials regarding the cultural heritage of their home region. They investigated landscape situations as well as working and living conditions of their grandparents in the middle of the 20th century. Photos and historical postcards on a series of posters reflect old traditions and working methods, for instance, during hay or vine harvesting. Historical tools which were used by workers in the past can also be viewed. Additionally, within small workshops with children films and presentations were prepared showing the cultural assets and narrations of contemporary witnesses. The children were very engaged to discover and practice traditional customs and crafts and became aware the contrasts to today's modern society.

The Slovene project partners of TransEcoNet, the Regional Development Agency Mura, the University of Nova Gorica and the Geodetic Institute of Slovenia, are working closely together in organising this series of exhibitions focussing on cultural heritage in natural valuable and protected areas in border regions. From 15 April to 13 May 2011 the first station of the exhibition was already in the castle of Beltinci/SI in the Pomurje region.



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National ecological networks in Central Europe

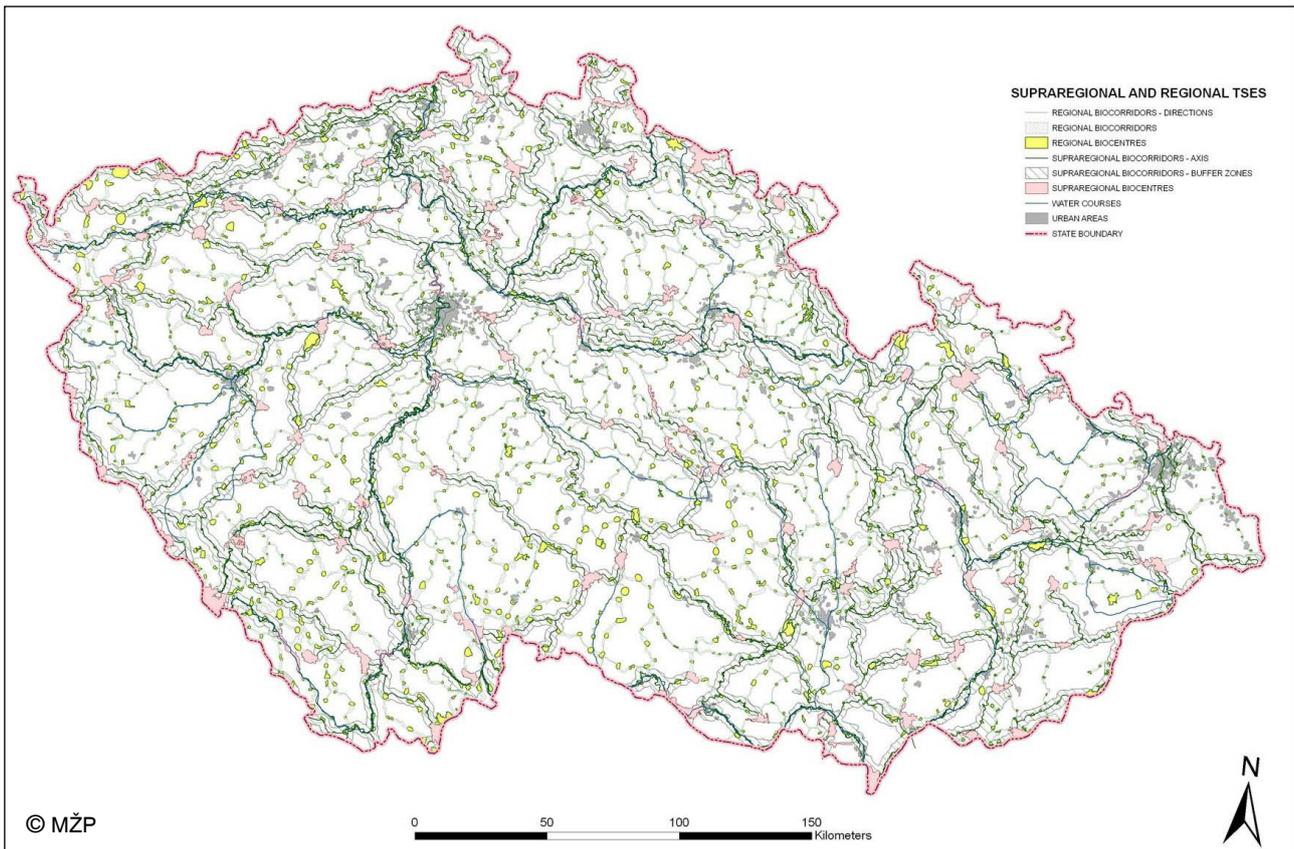
## The Czech Terrestrial System of Ecological Stability

The Czech Terrestrial System of Ecological Stability is regarded as an invaluable tool of nature conservation policy. In Czech known as *Územní systém ekologické stability* (ÚSES) it is defined by the national Act of law on nature conservation (114/1992 Coll.) as a network of natural and semi-natural ecosystems maintaining ecological stability of the landscape.

### Why ÚSES

ÚSES can be viewed as an answer to the current state of the Czech landscape, which was deeply affected by forced collectivisation of the agricultural sector in the socialistic times. This period brought about the

transition from small farms to large state-owned co-operatives, abolition of private land tenure and damage of ecologically stabilising landscape elements, like field margins, shrub stripes, hedges and wild vegetation. Amongst other measures, the restoration of the Czech landscape can be achieved by the creation and management of the ÚSES network. This approach has been anchored in the Czech environmental legislation as an activity of public interest requiring the participation of municipalities, other public authorities as well as private persons. The main aim is to create a network of ecologically stabilised parts of the landscape enhancing the preservation and



Supraregional and regional elements of the Czech Terrestrial System of Ecological Stability

restoration of land-scape and supporting biodiversity conservation.

#### Structure of ÚSES

ÚSES elements are recognised at local, regional and supraregional levels. The supraregional network elements are the country's contribution to the European level of EECNET, the European Ecological Network.

Like any other ecological network derived from the theory of island biogeography, ÚSES is formed by three parts: biological centres (valuable biotopes), biological corridors (connection elements) and interaction elements (minor segments of vegetation, stepping stones).

#### Planning of ÚSES

The creation of ÚSES is a long-term process. It requires the preparation of project documentation resulting in the establishment and management of particular parts of the system. ÚSES on a particular location is binding as soon as it becomes part of the spatial planning documentation.

Public authorities are responsible for the spatial proposals of ÚSES, the so-called *delimitation of ÚSES*, in their regions of activity. Proposals of ÚSES are also



Above: biological corridor of local ÚSES near Kutná Hora in Central Bohemia formed by several species of shrubs

Below: the corridor from inside



binding when they become part of the “complex land consolidation process”, allowing private owners to regain particular land parcels and access to land they lost between the 1950s and 1980s. The delimitation of land parcels for ÚSES approved by all state authorities, private owners and other stakeholders is the ultimate aim of this stage of ÚSES planning often resulting in so-called *realisations*. Currently, the process of delimitation covers nationwide the regional and supra-regional levels of ÚSES as well as the vast majority of local ÚSES.

#### *Realisation of ÚSES*

ÚSES is being realised in certain projects following spatial delimitation. Projects designed are mostly implemented on publically owned land, but private owners, especially farmers, are also very important stakeholders. Among the most common “realisations” are the change of farming management, creation of permanent grassland, or, above all, plantings of auto-

chthonous woody species combined with an at least three-year management of the restored site. In order to accelerate the implementation of ÚSES projects, applicants can ask for financial aid from various sources, either the national nature conservation support programmes or the schemes of the European Union.



Another corridor with ash, maple and rowan trees, thriving grasses and weeds, 13 years after plantation

#### GREENNET

### Strengthening the ecological network of the Central European Green Belt

Approved within the third Call of the CENTRAL EUROPE Programme the GREENNET project strives for the conservation and sustainable development of the peripheral regions and ecological valuable areas along the Central European Green Belt, one of the most important ecological corridors and known as Iron Curtain throughout Europe before 1989.

The project is mainly based on results and outputs from the forerunner project *Green Belt* implemented within the INTERREG IIIB CADSES Programme from 2006-2008. The project investigated the gaps in the Green Belt and called for innovative approaches in the fields of nature protection, rural development and land management in order to include new areas into the Green Belt and to secure them as stepping stones for species in the ecological network.

GREENNET supports and strengthens policies, strategies and approaches to safeguard an interlinked ecological network with a special focus on legally non- or low protected but ecologically valuable areas in the Central European Green Belt. The focus is on the implementation of informal planning instruments and management strategies to strengthen and further develop the ecological network. Voluntary-participative approaches in the fields of nature protection and rural development, like round tables and workshops, will be implemented in the areas concerned. Further ob-



Striving for a sustainable regional development along the Central European Green Belt: The Nature Park Geschriebenstein-Irrotkő in the Austrian-Hungarian borderland

jectives of the project are to develop and implement a joint transnational strategy for management and conservation of non- or low protected areas in the Central European Green Belt and to contribute to the coherence of the Natura 2000 network by the closure of gaps between protected areas.

For further information:

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## Cross-border homogenisation of spatial base data between the Free State of Saxony and the Czech Republic



Cross-border spatial planning needs homogeneous cross-border data bases. Spatial base data as collected and provided by the respective surveying agencies offer a good basis but often refer only to the related national territory. Furthermore, they feature different geographic projections, data formats and models, geometries (e.g. of the national boundary), languages and semantic meanings of the content. Thus, the objective of this project is to develop methods which allow the surveying agencies to adapt their data to be compatible seamlessly along the national boundary and comparable regarding the content.

As a result tools are being developed which allow the cross-border harmonisation of spatial base data within a Geographical Information System (GIS). The implementation will be realised exemplary using vector data of the German ATKIS Basis DLM (Authoritative Topographic Cartographic Information System, Digital Basis Landscape Model) and the Czech ZABAGED data (Fundamental Base of Geographic Data/Základní báze geografických dat). Both serve as the mostly used spatial base data on either side of the border. The transfer of the developed methods to further geodata relevant for planning and environment as well as to other border regions will be analysed. The project serves to implement national (GDI-DE) as well as European spatial data infrastructure aims (INSPIRE), especially regarding the generation



Homogenous geometries of the national boundary are needed for compatible cross-border spatial datasets

of cross-border compatible and interoperable useable geodata.

The project will last until December 2011 and is jointly realised in close cooperation between the Leibniz Institute of Ecological, Urban and Regional Development and the surveying agencies of Saxony (Staatsbetrieb Geobasisinformation und Vermessung Sachsen, GeoSN) and the Czech Republic (Zeměměřický úřad, ZÚ). It is part-financed by the European Union within the Cross-Border Cooperation Programme 2007-2013 between the Free State of Saxony and the Czech Republic.

For further information: <http://www.geodat.ioer.info>

### Event calendar

**18-23 August:** IALE World Congress, Beijing, China [\[more\]](#)

**4-9 September:** 10th International NCCR Climate Summer School - Climate Change, Extremes and Ecosystem Services, Grindelwald, Switzerland [\[more\]](#)

**6-9 September:** Border regions in transition (BRIT) XI: The mobile borders, Geneva, Switzerland, and Grenoble, France [\[more\]](#)

**14-16 September:** Conference "Deltas and wetlands", Tulcea, Romania [\[more\]](#)

**15-16 September:** European Territorial Cooperation – 13 Programmes, 1 Goal: to improve quality of life in regional Europe, Katowice, Poland [\[more\]](#)

**21-23 September:** Landscape and Tourism: The dualistic relationship, Valmiera, Latvia [\[more\]](#)

**22-23 September:** International Conference on Orchards in Austria-Hungary-Slovenia, Castle Tabor, Neuhaus am Klausenbach, Austria [\[more\]](#)

**22-23 September:** VITAL LANDSCAPES Midterm Conference, Ljubljana, Slovenia [\[more\]](#)

**26-28 September:** ECONNECT Final Conference, Berchtesgaden, Germany [\[more\]](#)

**6-8 October:** 4. Anwendertreffen GIS in Nationalen Naturlandschaften (German), Hohenzieritz, Germany [\[more\]](#)

**12-14 October:** IALE-D Jahrestagung - Modelle, Monitoring und andere quantitative Methoden in der Landschaftsökologie (German), Berlin, Germany [\[more\]](#)

### Imprint

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