



Photo: BR Management Großes Walsertal

” Together with the local population we will break new ground for a sustainable interaction between mankind and nature ... “

III) Best-practice examples

Participation processes

Großes Walsertal – the emergence of a vision

In 1999 it was decided to integrate the Großes Walsertal as biosphere reserve into the worldwide UNESCO network of model regions. The inhabitants were hoping that this step would help develop the former “valley of the paupers” into a future-proof economic and living space. A year before this decision, a visit to the biosphere reserve Rhön, Germany, had been organised. REGIO Chair Josef Türtscher, district head Leo Walser, provincial conservation expert Max Albrecht and representatives from all six communities explored in situ the opportunities that the UNESCO designation had opened up for an underdeveloped region. On the way back all agreed, “We can do this too!” Back at home, the “Agency for development issues” of the provincial government of Vorarlberg organised the first information events, which went down extremely well with the local residents. The evening talks were attended by 60 to 120 people each. Josef Türtscher and Max Albrecht also campaigned tirelessly for the biosphere reserve and explained the benefits of the concept that seemed tailor-made for the situation in the Großes Walsertal. The remote mountain valley has no industry and with 17 people per square kilometer it is the least populated

area in the whole of Vorarlberg. At the same time it boasts many natural landscapes that are particularly worthy of protection and rich in species. The cultural identity of the Walser people is also very pronounced. Old customs and traditions are still being observed and they speak a special dialect. In the course of planning the biosphere reserve, the pessimistic assessment of the valley and its small development potential gave way to a general mood of optimism. The motto was: “We want to make life more enjoyable and work more profitable”.

The Großes Walsertal is populated by only 3360 people in six villages. Having a planning area of manageable proportions made it easier to involve all interested parties from early on in the process. After some five introductory events, there was a big presentation of the concept in the Walsershalle, chaired by representatives of the provincial government. Lists were put up for people to enter their names for various working groups on agriculture, forestry, tourism, economy and trades, culture and customs, leisure and education, as well as housing and traffic. In the course of several meetings, committed citizens in these working groups formulated overarching prin-



To cope with the demanding requirements the biosphere reserve concept continuously has to be filled with new life. The photo shows participants in a photovoltaic project in the valley.

Photo: BR Management Großes Walsertal

ciples and development objectives for the next five years. These visions were orientated on a “landscape vision” that had previously been created by the conservation department of the Vorarlberg provincial government with expert considerations in mind. In June 1999, the phase of developing visions was completed. The population celebrated their vision for the future with music and culinary delicacies.

It announced the objective of the inhabitants, “to maintain and develop the Großes Walsertal as a valuable living space and a strong region for future generations through effective co-operation between society, economy, ecology and culture”. Since then, the “vision for a biosphere reserve Großes Walsertal” functions as a formulation of principles setting the general direction that is heeded as much as possible in all political decisions. In 2003, the vision was reviewed and reworked a year later. Some 25 active Walser citizens – again subdivided into working groups – adapted the formulated principles to current needs. Objectives that had since been reached were taken out, others made more concrete. In essence, most of the ideas were retained, but the initial mood of optimism has given way to the reality of everyday life. It has transpired that the hoped for benefits would not emerge overnight just because of the label UNESCO biosphere reserve. Instead it is an ongoing process that has to be filled with life again and again by all involved.

Biosphere reserve Vienna Woods – public relations and participation

Combining the conservation of biodiversity with the development needs of a region is central to the concept of biosphere reserves.

With the Seville Strategy human economic activity is moving to the front. For biosphere reserves to become model regions for a considerate interaction of man and nature, the various interest groups must be informed from the start and included in the planning phase. In the Großes Walsertal with its six villages and some 3360 inhabitants such a task remained within manageable proportions, but in the Vienna Woods with a planning area of over 105,000 ha and more than 750,000 residents it becomes an extraordinary challenge. How can a small team of decision-makers include all 51 affected communities in Lower Austria, the seven affected districts of Vienna and the diverse scene of interest groups and actors into the planning and debate in a meaningful way?

“The importance of intensive public relations efforts in the process of preparing for a biosphere reserves cannot be underestimated,” emphasises Günther Loiskandl, co-ordinator of the biosphere reserve Vienna Woods management. This is all the more true, since the concept of biosphere reserves as an instrument in their modern form since Seville is relatively young in Austria and as yet not well known. The decisive factor is motivating the people from the word go to take an active part in shaping the future of their region. In numerous information events, in small venues and big halls, Loiskandl faces the fears and doubts of the people with energy and personal conviction and points out the opportunities that the UNESCO designation opens up for the region. The audience, mainly rep-



Participation processes are a great challenge in an area of about 105.000 hectares and with more than 750.000 inhabitants.

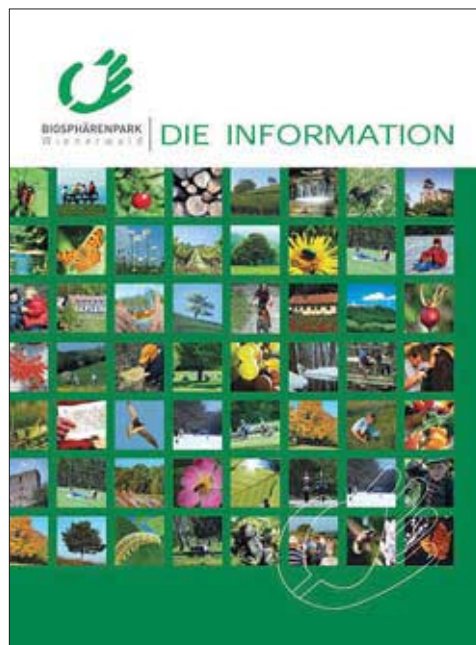
Photo: BR Management Vienna Woods

representatives of the communities, landowners, farmers and foresters, usually have had some previous information and are more or less affected by the establishment of an international conservation category. Some fear further restrictions on utilisation – objectively unfounded in most cases – others expect positive effects for conservation and regional development. Essential for Loiskandl is building up personal contacts and networks with regional opinion leaders and decision-makers, multipliers and “pioneers”. This triggers a snowball effect in the dissemination of information and motivation in the region. Early successes in this respect are the fruit of intensive efforts to make and maintain contacts. Nowhere has the biosphere reserve concept hit on total opposition yet. The proponents of the concept have been able to overcome initial doubts of some interest groups by providing detailed information. The initiative for the biosphere reserve Vienna Woods is lucky to have the combined support of the provinces of Lower

Austria and Vienna. Despite such targeted dissemination of information it is impossible to reach all 750,000 inhabitants. In order to reach a broader public, intense media work is necessary. Given the available resources, the achievements in the Vienna Woods are impressive: so far some 200 articles or reports have appeared in regional and national print media, numerous articles in specialised journals and community newsletters as well as several TV and radio features. Various homepages on the internet are dealing with the topic. For external presentation of the biosphere reserve, a logo and a corporate design for all printed communications have been developed. The web site (www.biosphaerenpark-wienerwald.org) and a folder offer information on the major activities in the area. A biosphere reserve Vienna Woods newsletter is produced regularly and sent out to all households within the UNESCO region. Despite all efforts one should not ignore the fact that only a small proportion of the local population will so far have become aware of plans to set up a biosphere reserve.



Info-folder for the biosphere reserve Vienna Woods.



Brochure about the activities in the biosphere reserve Vienna Woods.

Institutionalised participation

Ongoing PR efforts were complemented by setting up the consultative forums “Forest and forestry” and “Open land and agriculture” as initial instruments of institutionalised participation processes. A further consultative forum on hunting emerged from the planning process. These bodies consisted of 30 people each, chosen to gather representatives from all relevant interest groups covering as wide an area as possible, both in a spatial and a thematic sense. This includes farmers and foresters, functionaries of chamber organisations, representatives of conservation organisations, well-known scientists as well as representatives of the government agencies and the planning team for the biosphere reserve. Especially useful is the involvement of multi-

pliers such as farmers representing different parts of the region and types of farm, who are also heads of associations or hold a political function. The consultative forums convene on the invitation of the biosphere reserve management. Whereas in the past the exchange of information on the current state of the biosphere reserve planning (in particular the zoning of natural habitats) was a priority, the body now increasingly takes up its real core function of formulating objectives and working out concrete measures that will provide vision and direction for the future development of the Vienna Woods. Similar consultative forums on other thematic areas such as regional development are being planned. This form of intensive involvement of representatives of diverse social groups is a long process and needs sufficient resources and personnel to maintain the bodies thus created. It does however make it more likely that the biosphere reserve Vienna Woods will be developed, and lived as a long-term model project for sustainability and that it will have the broad support of active citizens.



In a planning area of more than 105,000 ha and over 750,000 inhabitants in 51 communities in Lower Austria and seven districts of Vienna, involving diverse interest groups poses an extraordinary challenge. Therefore, parallel to the ongoing PR efforts the consultative forums on forest and open land were set up.

Graphic: Biosphere reserve management Vienna Woods

The consultative forums "Forest and forestry" and "Open land and agriculture" are meeting on the invitation of the biosphere reserve management. Together the members formulate objectives and concrete measures as a vision for the future development of the Vienna Woods.

Photo: Biosphere reserve management Vienna Woods





Photo: Artur Müller

” Together for more added value and a higher quality of life in the region ... “

Sustainable regional development in the Groβes Walsertal

The Groβes Walsertal has been a designated UNESCO biosphere reserve since November 2000. Its inhabitants do not consider their region a conservation zone from which man should withdraw. Quite the contrary, they see its natural resources as capital for developing tourism and the economy and hope this will enable them to maintain the remote valley as a living and economic space for existing and future generations. As is the nature of the Walser people, they do not rush on the path to a lived-in model for sustainable regional development, but four years after gaining the UNESCO label, numerous successful initiatives exist that add value to the region.

The “Bergholz” project

Joinery has a very long tradition in the valley. For many centuries, wood was the only available building material. Sustainable working of the forests on the steep slopes contributed greatly to maintaining the diversity of natural habitats in the region. The “Bergholz” initiative, an association of forestry and wood processing businesses and some communities in the valley, seeks to continue this task into the future. When it became increasingly difficult to sell wood from the steep valley at fair prices, the initiators saw their only chance in marketing high-quality “eco-wood” of certified origin from the Walsertal. The Walser people define ecological forestry as taking out individual trees and only a few big stems. The trees

are chosen for optimum rejuvenation of the forest in that particular place. The wood is then processed and turned into a high-quality product by specialists in the valley. The raw materials cycle stays in the region, no long-distance transport between producer and processor is necessary. The joiners use only organic waxes and oils for conserving the wood, if at all necessary, and refrain completely from using chemical substances. In the harsh mountain climate the wood grows slowly and therefore has a very fine grain (close annual rings). At higher altitudes in particular, many stems have a good and a rough side. In the saw mill the good side of the wood is selected, the customer can watch their wood being cut. The product range includes eco-houses, the renovation of older properties and solid wood furniture. Such high-quality criteria come at a price, therefore the initiative is campaigning for a higher acceptance and appreciation of indigenous woods among ecologically aware customers and the local population. By buying a Bergholz product, the buyer makes a major contribution to maintaining the mountain forest in its natural make-up. People benefit as well because on the steep slopes of the Walsertal the forest fulfils an important protective function against avalanches, which have caused severe damage in the past. At the same time, qualified jobs are being created for the people of the valley. By using indigenous woods in an ecological way and processing them locally, the Bergholz initiative is contri-



A new house in the valley – constructed with local wood by local companies.

Photo: Artur Müller

buting to the sustainable development of the biosphere reserve Walsertal.

Marketing association „BERGHOLZ“

Secretary: Artur Müller

A-6721 Blons, Großes Walsertal

Phone: 0043-(0)5554/20080

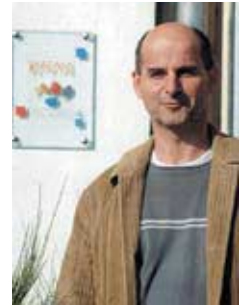


Partners in tourism

In the 1960s and 70s, the unspoilt natural resources drew tourists into the mountainous landscape of Vorarlberg. At the time of economic recovery, the Großes Walsertal was a popular easy to reach recreation area for southern Germany. By the early 1990s, the boom in tourism began to falter. More and more tourists now went further abroad. By comparison, the Großes Walsertal was not very attractive and relatively unknown. Instead of resigning themselves to slumps in turn-over, some restaurateurs/hoteliers jumped into action. Among them was Bruno Summer, owner of the Johannishof inn and mayor of St. Gerold.

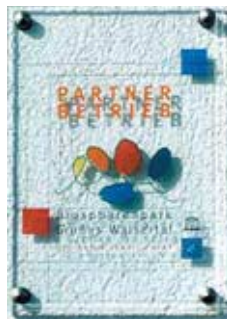
As project leader he campaigned for using aspects of food and accommodation as a medium for popularising the biosphere reserve concept. This led to the emergence of partner houses, who committed themselves to make the special quality of the UNESCO designated area Großes Walsertal visible in their inns and restaurants. The menu boasts typical food of the Walsertal such as cheese gnocchi made with the flavourful gruyere-type cheese Walserstolz. A jug of fresh spring water is always provided for the guests and the partners try to operate as ecologically responsible as possible. They separate their rubbish, do not use paper table covers and other one-way products and inform their

overnight guests about possibilities of saving laundry. All inns display information on the biosphere reserve and walking maps for their guests. If a business commits itself to adhering to the 18 obligatory criteria for tourism partners, then it can obtain the glass plaque “Partner of the biosphere reserve” and put it up in a prominent spot on the outside of the building. After the initial certification, an annual membership fee has to be paid. Adherence to the criteria is being checked regularly. So far 34 businesses have taken part in the project. All of them are hoping to enhance their image, but it may be years before the desired effect materialises. After an initial euphoria, the restaurateurs/hoteliers have sobered up a little. In the long run, Bruno Summer hopes to win new customer groups with his initiative. He is convinced that the excellent quality of the local produce will prevail in the end. Anyway, short-lived fast-paced mass tourism would destroy the tranquillity of the valley.



Bruno Summer, innkeeper and mayor of St. Gerold, is the project leader of the initiative „partners in tourism“.

Photo: Sigrun Lange



If you see this sign in front of a restaurant in the Walsertal you can be sure to enter one of the participating inns of the tourism initiative.

Photo: Sigrun Lange

The Johannishof in St. Gerold is one of the 34 partners in tourism.

Photo: Sigrun Lange



Certified high quality wines – a co-operation of the biosphere reserves Walsertal and Neusiedler See

If you have a look at the wine list at the Johannisof inn in St. Gerold you wonder at the included “biosphere reserve wine”. Since when has wine been cultivated in the rough climate of the Northern Limestone Alps? The criteria that the tourist partners in the Walsertal adhere to call for at least one “biosphere reserve wine” on their wine list. Since the climate in the mountain valley is unsuitable for wine growing, an exchange with the biosphere reserve Neusiedler See was initiated. Burgenland and Lower Austria make up the largest Austrian region of viticulture, the so-called “Weinland”, known for its sweet white wines. The mosaic of diverse soils and the high average length of sunshine offer excellent conditions for cultivating high-quality wines. In 1997, the administration of the Neusiedler See national park and an interest group of landowners agreed on the production and marketing of a special label national park wine. In co-operation with the wine-growers, special criteria for production and quality control were drawn up. For example, the wine-growers commit themselves to including all their vineyards in the EU environmental programme ÖPUL, which encourages non-polluting methods of agricultural production. Only wine-growers who have rented out vineyards to the national park and grow wine in a national park community are entitled to bottle a limited amount as “national park wine”. The range offers the characteristic grapes of the region: Welschriesling, Blauer Zweigelt and a high-quality Beerenauslese. A neutral jury assesses the proposed wines and if a wine is passed by the jury, it may be distributed under the special national park label, thus enhancing the image of the business. Experience has shown the consumers that by buying a national park label wine they are getting a particularly good wine with the typical characteristics of its

grape. The Winkler family from Illmitz is one of about 25 national park wine-growers in the region. The full time wine-growers work an area of some ten hectares in integrated cultivation. They do not completely refrain from using chemicals for pest control, but use them only as a last resort. The integrated cultivation seeks to maximise productivity while keeping environmental impact minimal. The business is focusing on quality and not on yield per hectare. The Winkler family is lucky: with currently almost 3000 bottles, they own the largest contingent for distributing national park wines. In the year 2000, with the designation of the biosphere reserve Walsertal, a new marketing opportunity arose for the business in Illmitz. After an internal wine tasting by restaurateurs from the Walsertal, their Blauer Zweigelt from the national park line was chosen for distribution in the tourist partner businesses. In Bludenz, Vorarlberg, the winery Rieder labels the bottles from Illmitz as “Biosphere reserve wine Neusiedler See”. The Tschida family, also from Illmitz, provides a white Chardonnay to complement the list.

National park and biosphere reserve wine therefore are identical, which is not really surprising as the biosphere reserve overlaps partly with the Neusiedler See-Seewinkel national park. They are labelled differently depending on the region in which they are sold. In both cases labelling serves as a successful method to market regional quality produce better.



The province of Burgenland is well-known for its high-quality wines. In the Walsertal valley red and white wines from the biosphere reserve Neusiedler See are on offer.

Photo: NP Neusiedler See-Seewinkel

The “culinary crate”

Support for organic farming and direct distribution of regional products are part of the vision for the biosphere reserve Großes Walsertal. With the distribution of the “culinary crate” (Köstliche Kiste) both goals are met in one. The crate is made from local wood and filled with tasty natural produce such as flavoursome cheese, juicy ham or lamb salami. For those with a sweet tooth there is jam and dried fruit. What better to round the selection off with than home-made schnapps – or herbal tea, for which a women’s initiative gathers the leaves on the mountain slopes. There is a great choice of variations and sizes for all tastes and occasions. The crate is available from the farm shop of the dairy world in Sonntag-Boden to give away or to keep for one’s own consumption.



Every cheese is produced by hand in the traditional way (top) and sold together with other regional products in the „culinary crate“ (bottom).

Photo: BR Management Großes Walsertal

Renewable energies

In a model region for sustainable development such as the Großes Walsertal, energy production is an important theme. Local resources include biomass, water, and sun. The long-term objective is to produce all heat and electricity from renewable energy sources. One step in this direction is the new biomass heating plant at Faschina, which was officially opened in spring 2004. It uses wood chips, a by-product in saw-mills, and provides heating for 20 businesses and private households in the village. Biomass is CO₂-neutral. Wood grows back in the valley, transport is minimal. In their vision for the biosphere reserve, the population of the valley formulated the goal to install thermal solar panels on the roofs with every renovation or new building activity. Already the area of installed solar collectors is double the figure for Vorarlberg. When it comes to photovoltaic modules, the Großes Walsertal leads the way with 310 Watts Peak

of installed energy per inhabitant, that is 160 times the average for Austria. Since 2003, the communities in the valley have also been supporting the installation of biomass heating plants, solar modules, as well as energy-saving renovations and new buildings. The subsidies are paid in addition to existing provincial and federal grants for energy-saving. With this additional subsidy, the biosphere reserve won the “Co-existence and Solar Award” of the province of Vorarlberg. At the same time the Großes Walsertal achieved the European Energy Award in the course of their e5 certification programme. Of the required energy-political measures, 57 percent were implemented successfully in the Großes Walsertal. With the population and the decision-makers on board, it will be possible to provide the valley with energy without having to rely on imports of fuel oil.



The biomass heating plant in Faschina processes wood chips from the region.

Photo: Sigrun Lange



Photo: BR Management Großes Walsertal

” Discovering the world with all one’s senses... “

(Environmental) Education in the Großes Walsertal

“Wilde Walser Wege” – adventure days for schools

Biosphere reserves are model regions for sustainable human economic activity in nature. They also serve as places of research and education on environmental issues and the biosphere reserve Großes Walsertal is no exception. Young people here have an opportunity to get to know natural and cultural resources in a special way. “Wilde Walser Wege” is the name of an excursion week that the biosphere reserve management has created for schools. The education package is conceived in a holistic manner. The children and young people interact with nature, culture, history, economy and the people of the valley. Trained guides accompany the classes on their hikes. The event is structured using plays, role play, flights of fantasy, dancing and singing games. The pupils roam the forests, meadows and caves, draw up a fief agreement with the Earl of Montfort and try their skills in milking cows or fixing fences. In the course of the adventure week the participants learn a lot about themselves and their interaction with a group, but it is also meant to be fun and to communicate in a playful way the holistic concept of the biosphere reserve. Preliminary talks can prepare the classes specifically for this week and integrate its content into the curriculum. In addition to the 3 or 5-day programmes with overnight stay at an Alpine pasture, customised programmes can be put together on specific themes.



Children discover nature in the unspoilt nature of the valley.

Photo: BR Management Großes Walsertal

Farmers actively involved in ecotourism: show-case farms

With the UNESCO designation a new era has begun for the Großes Walsertal in tourism too. The label “biosphere reserve” allows the region to develop a profile of its own and to distinguish itself more clearly from various other tourist destinations. What used to be seen as a disadvantage – for instance the low level of prepared skiing areas in comparison to neighbouring regions – suddenly turns out to be an advantage. Unspoilt nature and landscape are an essential capital for developing “soft tourism”.

The mountains are not degraded into an adventure park, rather the people in the valley hope to engage the guests with natural beauty



Discovering nature in the Walsertal: The excursions for school children are an adventure and fun.

Photo: BR Management Großes Walsertal

spots and inform them about history, culture and customs in the region. And the Walser people are spot on with this strategy: according to a travel market survey carried out in Switzerland in 2002, the most important motives for coming here include experiencing the landscape and nature.

In 2002, the environmental agency of the province of Vorarlberg, together with the biosphere reserve management, initiated a “Conservation plan on the level of the whole farm”. The pilot project was an attempt to implement ÖPUL, the Austrian programme for encouraging non-polluting extensive agriculture, in an exemplary fashion in this mountain farming region. 28 farms participated in the project. They refrain from using artificial fertiliser, producing silage or using genetically manipulated feeds and practise a pattern of meadow cultivation with varying degrees of intensification, a mix of extensive, medium intensive and intensive use of meadows. The pilot project aims to sensitise the farmers to conservation issues and to the ecological impact of their farming practices. In two seminars experts showed in situ on selected land which types of meadows occur in the Großes Walsertal and how to harmonise the economic (as much high-quality feed as possible) and ecological (high biodiversity) requirements in the use of these Alpine meadows. The training covered topics like the use of fertiliser, the regulating effect of grazing, suitable seeding material and problem plants in meadow cultivation. The farmers were also made aware of the wealth of species that occur in their meadows. Each participant received a conservation plan folder with portraits of selected animal and plant species from their meadows, such as bird-foot trefoil (*Lotus corniculatus*), montane butterfly orchid (*Platanthera chlorantha*) or the common viper (*Vipera berus*). This was to make the mountain farmers aware of the

natural resources offered by an extensively used meadow. This knowledge opened up a new source of income for the farmers: nine conservation plan farms have opened their doors to interested guests and offer insights into their daily work. The programme includes tours of the farm, visits to Alpine pastures and excursions through the meadows with information about their natural history. In this way the cultural landscape in the biosphere reserve can be experienced by the visitors, who find out how the mountain farmers produce healthy food and help preserve biodiversity at the same time.



Typical meadow in the valley, full of blooms.

Photo: BR Management Großes Walsertal



The nine show-case farms are presented in a brochure.

In the community of Blons Dr. Walter Dietl explains to the participants of the pilot project the high biodiversity of the mountain meadows.

Photo: BR Management Großes Walsertal



The “Walserherbst” festival – a cultural bond

Apart from its natural beauty the Großes Walsertal also boasts an independent culture, philosophy and a proud population. For three weeks during autumn 2004, the valley presented itself with a varied selection of art, nature and culinary specialities, true to the vision of the biosphere reserve that seeks to “maintain and develop the Großes Walsertal as a valuable living space and a strong region for future generations through effective co-operation between society, economy, ecology and culture”. This festival, called “Walserherbst”, balanced tradition and innovation and offered impressions of the Großes Walsertal in its diversity of natural and living spaces, its tradition and history. The programme included yodelling and creative writing workshops, an international documentary and feature film programme on the idea of “home-land”, sound creations in the mountain chapels of the area, photo exhibitions by Nikolaus Walter and Jörg Heieck, theatre productions and a practical seminar on “wild vegetables”. The autumn market in Thüringerberg offered culinary and artisan products from the region. The festival aimed not only at providing a space for engaging with the local culture but also with foreign cultures. The participants



Photo: Nikolaus Walter



were given the opportunity to try their hand at African clay house building or practise the Australian national sport “Australian rules football”. The organisers, in co-operation with the local population, engaged with local customs and traditions while allowing other cultures in. The festival wanted to make people from outside curious about this original valley with its proud traditions and its inhabitants, who open themselves to the world and show their hospitality.

The “Walserherbst” was organised by Sieglinde Müller-Eberhart, Dietmar Nigsch and Michael Mäser (from the left). The festival took place in the Großes Walsertal and ran from August 28 until September 19, 2004.



Photo: Dietmar Nigsch

Nikolaus Walter works as freelance photographer in Vorarlberg. He is known for his long-term documentaries with highly symbolic features. His current work, “The Großes Walsertal - a steep heritage, photographs from 25 years” (left), paints a fascinating picture of the life of the people in the Walsertal. During the festival an exhibition showed examples from this photo series.



Photo: National park Neusiedler See-Seewinkel

» Biosphere reserves – ideal instruments for the integration of different land-use and conservation interests ... «

Biosphere reserves: Instruments for the integration of diverse conservation categories – Example Neusiedler See (Burgenland)

The Neusiedler See comes not only with a very long conservation record, on its site it combines a host of protection categories. As early as 1932, the newly founded Republic of Austria issued a protective “ban” on the lake. Thirty years later it became a nature conservation area by regulation, the areas east and west of the lake were designated as landscape conservation area. From the 1970s followed designations as biosphere reserve (1977), Ramsar wetlands (1982), biogenetic reserve (1988), national park Neusiedler See-Seewinkel (1993) and Natura 2000 site (2000). In 2001, UNESCO included the cultural cross-border landscape Fertő/Neusiedler See into its World Heritage Network. In its wake a management plan was created for the region in 2003. As if to complete the list of protective categories, there are currently plans afoot to gather the areas west of the lake in a nature park Neusiedler See-Leithagebirge. The necessary documentation was handed in to the provincial government of the Burgenland, the approval is expected for this year. Apart from the nature park plans there are several initiatives to secure sustainable development for the region.

As early as 1994, Prof. Gälzer presented the regional landscape concept Neusiedler See West and pointed out the ecological poten-

tial of the arable and vineyard region west of the lake and its importance as recreational and economic space. Since then one concept after another has been drawn up for the long-term conservation of old village centres, for traffic reduction and for linking agriculture with tourism.

There are eight existing conservation categories in the Neusiedler See area, soon to be followed by a ninth:

Since 1932 the Neusiedler See has been nominated as landscape and nature conservation area (1932 a protective ban was issued for the area, since 1962 it has been protected under a special conservation and land-use regulation)

1977 Neusiedler See plus reed belt designated as UNESCO biosphere reserve (~25,000 ha)

1982 Neusiedler See and Lacken (occasional pools) in Seewinkel nominated as Ramsar wetlands (~60,000 ha)

Biogenetic reserve since 1988

1993 Creation of cross-border national park Neusiedler See-Seewinkel (~33,000 ha in Austria and Hungary)

2000 Designation as Natura 2000 site (~41,735 ha)

2001 Inclusion into the cross-border cultural landscape Fertő/Neusiedler See as UNESCO world heritage site (~75,000 ha in Austria and Hungary)

2005 (forthcoming) Nature park Neusiedler See-Leithagebirge



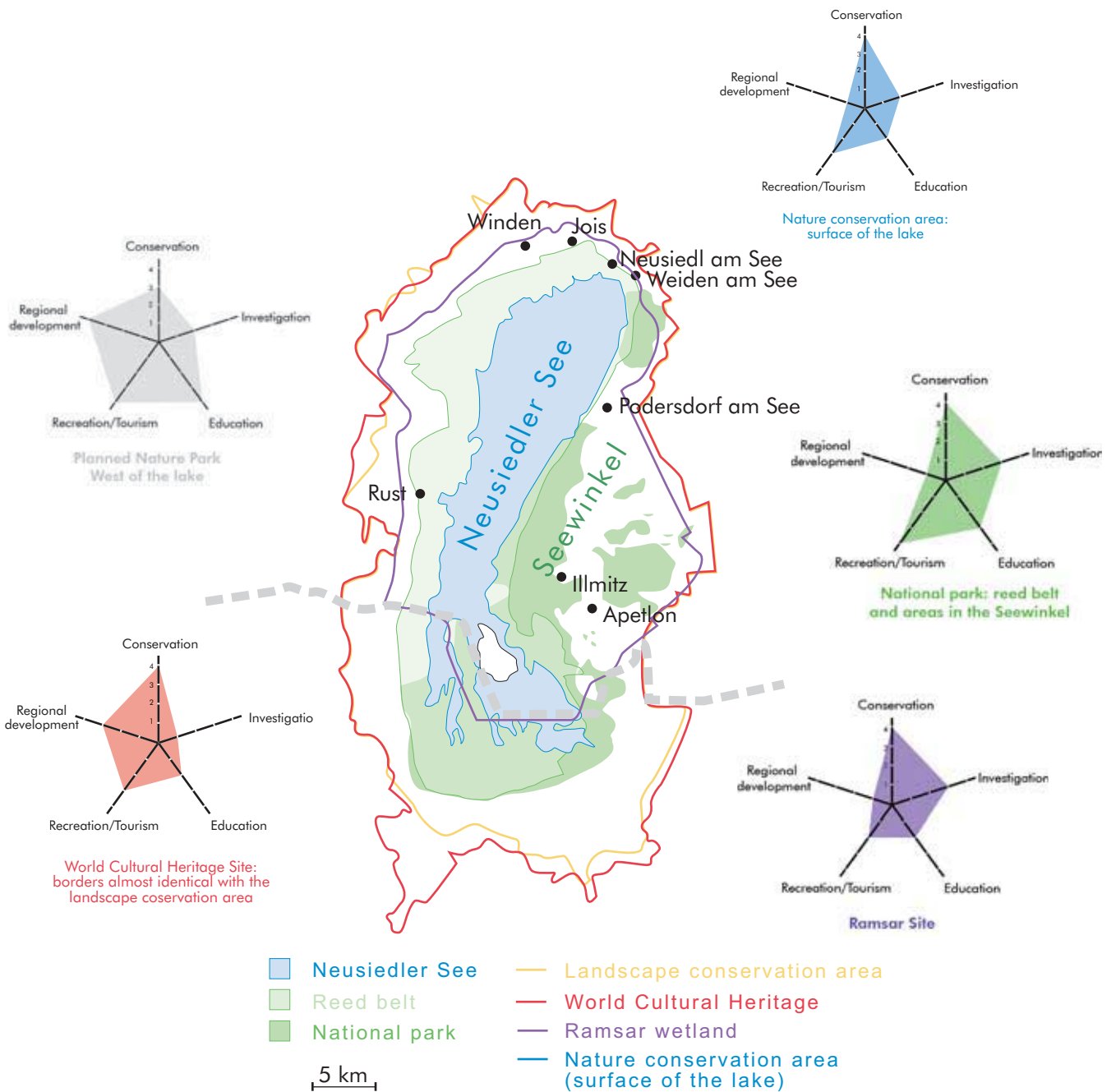
National park Neusiedler See is internationally known and a favoured destination of tourists and ornitologists.

Photo: National park Neusiedler See-Seewinkel

On the basis of the diverse approaches to preserving the special cultural area, the question arises whether the steppe landscape is sufficiently protected by the many and varied conservation categories. At the moment, conflicts of use occur mainly with regard to HGV through traffic along the west bank of the lake. Extensions of the road network such as the proposed trunk road to Schützen or the addition of outer lanes to the road between Jois and Winden fragment the landscape further. HGV traffic along the B50 between Neusiedl am See and Eisenstadt is a major contributor to the high level of pollutants in the region. Housing development is also problematic. The Burgenland is among the provinces with the highest housing subsidies in Austria. Until a few decades ago, this led to the creation of numerous holiday homes in the reed belt and the creation of new holiday villages. No conservation category can guarantee the preservation of an area across longer periods of time and changes in the political landscape. Not even many conservation categories amassed in one region can achieve this. But the Neusiedler See-Seewinkel national park is an internationally known conservation area and a popular destination for locals, tourists, day trippers and bird watchers. With such a high-profile image it is less likely that the biodiversity of the region will be sacrificed to short-term interests. The existence of the other categories is much less well known in the region. In general, the area covered by the lake itself, the reed belt and areas to the south and the southeast of the lake are strictly protected as nature conservation area, national park and Ramsar wetlands. Conserving biodiversity, research and education are top priorities here (see spider diagrams on page 77). The areas west of the lake are covered by the categories “landscape conservation area”, “world heritage site” and the proposed “nature park”, all of them instruments

of sustainable regional development rather than straightforward conservation. Agriculture and tourism use small-scale structures here, renting out rooms is often just a second income besides viticulture or market gardening.

Close co-operation between the protected areas is essential for preserving the entire region in terms of natural landscape AND as an area of economic activity, even though – or all the more so – because they sometimes pursue different interests. As yet a co-ordinating body is missing that would encourage communication and co-operation between the people responsible. The concept of UNESCO biosphere reserves seems to be tailor-made for this task. In the case of the Neusiedler See however, the existing biosphere reserve covers only the lake with its reed belt, i.e. the smallest of all existing conservation categories. The management structures are insufficient, the label exists only on paper but is not being implemented. In an extended form, a biosphere reserve that reaches from the range of the Leithagebirge to the Seewinkel area and in the south crosses into Hungary, could form a feasible super-structure around the host of conservation categories and could – with suitable management structures in place – enhance co-operation between the people responsible and so create synergies. A vibrant UNESCO model region opens up great opportunities for economic success of its population and at the same time high quality of living. From a co-ordinated co-existence of conservation, tourism, viticulture, arable farming, and market gardening, new perspectives emerge for the entire region.



The Neusiedler See and its surroundings are covered by guidelines from eight different conservation categories with partly overlapping areas. This year a ninth category is being added with the nature park Neusiedler See-Leithagebirge. Conflicts of interest between the different conservation concepts are unavoidable. An extended biosphere reserve Neusiedler See could form a feasible superstructure for the existing conservation areas, encourage communication and co-operation and allow close co-existence of conservation and development in small structures, thus securing the cultural landscape in the longer term.

Graphic: Sigrun Lange (for an assessment of conservation priorities see appendix from page 86).

The spider diagrams were drawn up on the basis of estimates from the Austrian Umweltdachverband (environmental umbrella organisation): 4= primary objective, 3= secondary objective, 2= included potential aims, 1= negligible).



Photo: Christian Plössnig

” Biosphere reserves provide answers to challenging questions of mankind ... “

Research and environmental monitoring in biosphere reserves

Biosphere reserves are in many ways testing grounds for a harmonious co-existence between man and nature. Apart from their task of preserving biodiversity and developing regions in a sustainable fashion, they also serve as a research and monitoring network. They exist on all continents, from the tropics to Alaska, from sea level all the way up into dizzy heights.

Their different characters and the subdivision into core, buffer and transition zones by degree of human utilisation make them ideal sites for monitoring the environment and studying the role of man in nature. They also act as early warning systems for assessing the reaction of ecosystems to global environmental change.

Research project Obergurgl – site of excellence in the MAB programme



Prof. Walter Moser was the life and soul of the MAB6 project. After receiving a call to the university of Alberta, Canada, he was presented at the farewell ceremony in Obergurgl with a painting of the Gurgler Kamm.

Obergurgl today is among the leading tourist destinations in the Alps. At the beginning of the 20th century, only some 16 farming families lived in the then extremely remote Gurgler Hochtal. After the Second World War however, a veritable tourist boom started up. In the 1970s, about 40,000 guests came every year, totalling between 280,000 and 300,000 overnight stays. The local population invested heavily in tourism and achieved prosperity. Then as now, pistes, ski-lifts and hotels dominated the image of the village and its surrounding landscape. Around this time, in 1973 to be exact, Obergurgl was chosen out of nine European research sites as model site for the newly established, large-scale UNESCO MAB programme. The so-called MAB6 project focused on the role of man in nature and the human impact on Alpine ecosystems that are used in a variety of ways. As the Austrian

contribution to the MAB programme, the village in the Tyrolean Ötztal should serve to study – on a manageable scale – the global problem of rapid growth alongside increasing shortage of resources. After the buoyant mood of the 1960s and triggered by the famous study on “The limits of growth” – initiated in 1972 by the Club of Rome and carried out by scientists from the MIT – in Austria too doubt started to creep in about continued growth in tourism. The Obergurgl “microcosm” seemed a fitting arena to explore the resilience of Alpine ecosystems and their utilisation in a representative fashion, so the research assumption went. After persistent efforts in parish council meetings, the initiator and scientific co-ordinator of the project, Dr. Walter Moser, Ötztal-born himself and assistant at the Alpine research station Obergurgl of the University of Innsbruck, managed to

win the population over to supporting the research project. First, a computer model was created on the basis of existing data. It should show up gaps in knowledge and help to define clear research objectives. Botanists, zoologists, soil specialists, meteorologists, geographers, sociologists, economists and land-use planners contributed countless bits from their respective disciplines to the total mosaic. With nearly 150 variables – from parking space to the birth-rate of the chamois – the researchers simulated at the computer a total of 30 development scenarios for a period of 50 years. At the first international workshop at the International Institute for Applied System Analysis in Laxenburg near Vienna – at the time a leading research institute in systems analysis world-wide – researchers from Austria and abroad debated with hotel owners from Obergurgl about the future of their village on the basis of the computer models. This was a case of science not happening in an ivory tower but as a real meeting point of all interested parties. An MAB6 commission consisting of all project leaders plus one representative each of the inhabitants of Gurgl and the provincial government of Tyrol coordinated the research efforts. The commission defined the research activities and distributed the funds. Among other insights the research found that with increasing development of the mountain slopes, the density of the black grouse population decreases and the capercaillie disappears altogether. Botanists proved that the alpine sedge *Carex curvula*, which forms grass cover, can withstand mechanical impact from ski-pistes and from being trodden on for a long time, but, if damaged, takes many years to build up a new sward and thus prevent erosion.

With the help of photographic montage, opinion pollsters explored how far you can build up a village before it reaches the “pain

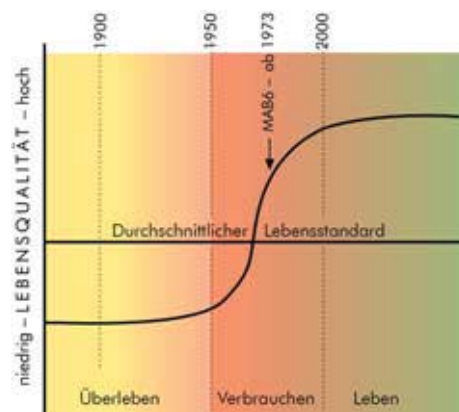
threshold” for holiday guests and local people. This showed that, once you excluded areas potentially endangered by avalanches, there was only a very small amount of land to build on. Hence all further tourist development had to bear this essential restraining factor in mind if one was to avoid bad investment.

Later the model was reduced to its most important components and presented at a second workshop that triggered a fierce debate among the locals about the future of this tourist village. For five years no new buildings were erected, a breathing space for careful planning. Hotel owners started to invest increasingly in quality over quantity. A land development plan for Obergurgl was drawn up to prevent uncoordinated development of the area. Ski-pistes were planted up, a biological purification plant was built



The alpine grassland in the Gurgler mountain valley is mainly made up of the alpine sedge *Carex curvula*. The species can withstand mechanical impact for a long time – once the sward is damaged, however, the soil is open to erosion.

Photo: Franz Michael Grünweis



Graph from the chronicles of the MAB6 project, led by Prof. Walter Moser.

“Do you really think you can change our lives and tell us what to do?”

– Comment of an Obergurgl resident on the MAB6 programme

Earlier generations in Obergurgl had lived far below the usual living standards of their time. Within a short time, tourism enabled the rise to prosperity. It was a short step from “survival” to “economic success”. Once the limits of growth became visible, the population was confronting the question how to live and be economically active and yet respect the existing limited resources. The MAB6 project undoubtedly contributed to a re-orientation towards long-term stability and to paying closer attention to nature and landscape.



*In the research project Ober-
gurgl the gap between research
and application was bridged
successfully and priorities shifted
from unhampered growth to
long-term stability.*

Photo: Franz Michael Grünweis

and individual traffic within the core village limited. The tourist association subsidised the farmers to support continued livestock farming. In 1977, the nearby Gurgler Kamm was included in the international network of UNESCO biosphere reserves. At that time the concept aimed primarily at creating research sites world-wide to document the impact of human utilisation activities. To that end and to co-ordinate all academic work in the Obergurgl area, an area plan was drawn up and the database AFODAT was installed at the computing centre of the University of Innsbruck. Four years later the provincial government of the Tyrol designated the Ötztaler Alps as “tranquillity zone”.

So despite the essential orientation towards basic research, the MAB6 project succeeded in getting directly and indirectly noticed and heeded in the village. Still, a synthesis of the entire project that was to serve as a model for similar cases, could not be completed. In 1979, on the strength of his earlier botanical research in the International Biological Programme project on Mt. Hoher Nebelkogel, Dr. Moser was called to take up a chair for plant ecology at the University of Alberta and moved to Edmonton, Canada. With his departure, the project lost its “soul” and in summer 1979, the Ministry for Education, Science and Culture closed down the whole project on financial grounds. The natural sci-

ence work had yielded comprehensive results, but ongoing studies in the humanities could not be completed. The MAB6 project Obergurgl was one of the first UNESCO programmes to enter new ground and has since been recognised as a milestone of this type of research. From the start, the local residents were involved in the project and a tentative bridge built between research and application. Of course this attracted a lot of media interest: numerous articles appeared in domestic and foreign newspapers, several TV-stations broadcast reports on the activities. Many organisers of academic conferences in Europe and overseas invited the participating researchers to report on the project. The Obergurgl tourist marketing grabbed the opportunity and produced black-and-gold leaflets showing Obergurgl as UNESCO model village. Quite in line with the MAB concept, the project encouraged the use of MAB research sites as testing grounds for the co-existence of man and nature, the implementation of scientific insights in practice and a shift of priorities from unimpeded growth to long-term socio-economic and ecological stability. In 1979, research in Obergurgl changed its orientation and interest in the biosphere reserve faded. Now, with the UNESCO Seville Strategy, the central question is in how far the biosphere reserve Gurgler Kamm can be adapted and what kind of research in close co-operation with the population is effective and beneficial to both sides.

*Today the question arises
which kind of research is
desirable and adequate in
the biosphere reserve.*

Photo (below): Georg Grabherr



Alpine lakes as indicators for global environmental change

Prof. Roland Psenner of the Institute of Zoology and Limnology at the University of Innsbruck sees alpine lakes as particularly sensitive indicators for global changes in the environment. When they hear the buzz-word “global change”, many people think mainly of the greenhouse effect. The scientist from Innsbruck, however, applies this term not just to a rise in medium air temperature and a change in weather activity but also to an increase in UV-radiation and the immission of acids and poisonous substances like DDT, which cluster in the cold regions of the earth. Alpine lakes at high altitudes are among the few ecosystems that – apart from stocking them with fish – have not suffered any direct human intervention. The research benefits from the fact that these lakes react very quickly to variations in climatic conditions and immissions of substances and seal testimony of past conditions over a long time in their sediments. The Gossenköllesee is situated at an altitude of 2400 m in the Stubai Alps in the Tyrol and has been the focus of scientific interest for some 30 years. In 1977, UNESCO designated the alpine lake and its drainage area as a biosphere reserve to secure it for scientific studies in the long term. Due to the work of the Limnological Research Station Kühtai at the edge of the lake it became a centre of alpine research within the European Union. Climatic and hydrological data are collected here regularly. A small laboratory is available for extensive analyses.

Global warming versus acidification

In the 1980s, acid rain was the key topic for scientific research. Diatoms, which are very sensitive to environmental change, were used as main bio-indicators. From diatom shell deposits in the sediment it was possible to work out the degree of acidity (pH) of the water at the time the deposit occurred and

thus reconstruct the environmental conditions of the last 200 years. The researchers found that the acidification in the Alps was not as strong as in more northern regions (Norway, Scotland), but stronger than in more southern mountain ranges like the Pyrenees. The reason for this phenomenon is dust from the Sahara, which in the Pyrenees buffers the acid at a full 100 per cent, while its effect in the Alps is reduced to between 20 and 30 per cent and does not reach Norway at all. The research also led to the conclusion that global warming counteracts acidification in alpine lakes. From the middle of the 1980s, the pH levels of some alpine lakes have increased continuously, because the immission of acids from the atmosphere was greater than the buffer capacity from rock erosion. During the same period the median air temperature rose by about one degree Celsius. At Gossenköllesee, the rapid climate warming not only made the ice cover melt earlier than before but also led to the disappearance of permanent snow fields in the drainage area. This caused higher temperatures on the surface of the rocks and increasing erosion. The increased immission of dusts and nutrients neutralised the immission of acid in the Gossenköllesee. Thus global warming counteracted the acidification caused by air pollution.



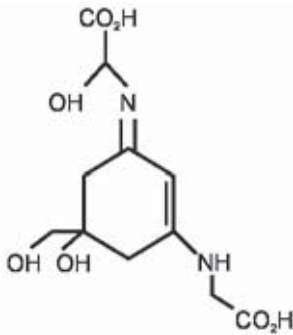
In the 1980s the acid rain was one of the most important environmental problems. By means of test series in high-mountain lakes like the Gossenköllesee, the immission of acids can be observed.

Photos (both): Roland Psenner



UV-protection in alpine lakes

Another exciting area of research is the survival of organisms in an environment characterised by intense UV-radiation. Because they are situated above the tree line and are low in dissolved organic matter, alpine bodies of water are generally exposed to high UV-levels. In recent times, this situation has worsened because of changed climatic conditions and a dwindling ozone layer in the stratosphere, commonly known as the “hole in the ozone”. Scientists wanted to know how organisms in alpine bodies of water would react to the increased UV-exposure. At the Gossenköllesee, a tiny copepod (*Cyclops abyssorum taticus*) was the main subject of research. The animal is one to two mm long and protects itself against some of the harmful effects of the sun with carotenes that give it a bright red colour. This got it into trouble some 500 years ago, when Emperor Maximilian stocked the lakes with trout. Due to its striking colour the copepod was an easy prey and only survived because its eggs pass through the fish intestines without being destroyed. What surprised the researchers: cyclops contain other substances, mycosporin-like amino acids or MAA, invisible to the human eye. In the 1960s mycosporines had first been discovered in fungi. They are extremely stable, ring-shaped molecules that absorb UV-A and UV-B-radiation. Until then they had only been found in sea organisms. The discovery of MAA in alpine lakes by the team of Prof. Sommaruga (University of Innsbruck) caused great public excitement. The copepod cannot produce these colourless substances itself but ingests them with its food via algae. Soon scientists were asking themselves whether this natural sun protection might also be utilised by humans. So far, experiments with mice have been unsuccessful - the precious compounds were simply digested. A more realistic application might be externally as “sun lotion”.



Mycosporin-like amino acids (MAA) absorb short-waved radiation (300-340 nm). Small animals like cyclops protect themselves by means of MAAs against the dangerous UV-radiation in high-mountain regions.

For the UV-blockers to be beneficial to humans, the scientists must first build MAA successfully in the laboratory.

The examples show that biosphere reserves like the Gossenköllesee provide important data for environmental monitoring and deepen our understanding of the reaction of ecosystems to changed environmental conditions. Linking the research in an international network is vital to allow comparative studies and to discover long-term trends. The Gossenköllesee is part of numerous international projects and played a central role in the MOLAR survey (Mountain Lake Research, 1997–1999) that compared high mountain lakes from 13 European countries. As part of the GLOCHAMORE initiative it was included as major monitoring site in a group of only 26 biosphere reserves world-wide (see also page 31).



Up to six researchers can live and work at the Limnological Research Station Kühtai.

Photo: Roland Psenner

Land-use conflicts

Gossenköllesee – Ski-lifts versus research and conservation

The area of the biosphere reserve Gossenköllesee is situated at altitudes reaching from 2400 to 2800 metres in the Stubai Alps. The Schwarzmoos ski-lift ends just short of the boundary of the reserve, but hardly any skier knows that only a few metres past the lift station, hidden behind a moraine bank, a hub of European Alpine research is located, i.e. the limnological station of the University of Innsbruck. Here, at the edge of the lake, scientists have been studying since 1975 how bodies of water react to environmental change. They have access to data on climate and hydrology covering a period of some 30 years. In 1994, substantial renovation and extension lifted the station into an international league. Many MA and PhD theses were completed here and their results published in well-known journals. Countless articles appeared in the printed press and on European radio and TV. Over the period since the establishment of a station on Gossenköllesee, ca. 5,7 million euros have been spent on it, because alpine waters are very well suited to act as indicators for the impact of global environmental change. They react fast and sensitively to factors such as global warming or the immission of substances. An important precondition is the absence of any direct human intervention in the water or its drainage area and monitoring must be secured over a period of decades. In 1975, the old research station at nearby lake Vorderer Finstertaler See had to give way to a hydroelectric dam after only 16 years of operation. Important series of measurements were lost at the time. Today the new station is under threat again: plans for a ski-lift project are endangering the valuable research site



Photo (top): Christian Plössnig, Graphic (below): Josef Essl

Skiing fun from December till May

The operators of the ski-lifts in Kühtai, Austria's highest ski resort, are marketing their area with absolute guarantees of snow cover. Pistes at altitudes above 2020 m and snow-making systems promise uninterrupted skiing fun from December until May. With a forecast warming of up to 5.8 degrees Celsius until 2100, this is a vital advantage. Rolf Bürki, who studies the effects of climate change on tourism at the University of Zurich, assumes that lower lying ski resorts will soon be uneconomical because of lack of snow. Even

today, competition for the much sought after skiing tourists is driving the sector to improve and extend their offerings continuously. The Kühtai is no exception: it offers skiers 34 kilometres of pistes and 12 ski-lifts. Not much, compared with competing areas such as Kitzbühel (Tyrol) or Hochkönig (Salzburg) commanding fivefold capacities. Since 1998 plans exist to extend the skiing area of Kühtai in the direction of the Pirchkogel (2828 m a.s.l.). The newly proposed track for the ski-lift would cross the drainage area of the Gossenköllesee and thus the biosphere reserve.

Economic development versus conservation and research

Biosphere reserves per definition are places of coexistence between man and nature. Unrestricted protection of biodiversity in the core zones is just as desirable as the implementation of economic interests in the transition zones. Ski-lifts therefore are not so rare in UNESCO model regions and can be found in the Großes Walsertal as well as at the Gurgler Kamm. The Gossenköllesee however, with just 85 ha, is the smallest

biosphere reserve in the world and consists only of the lake itself, which is protected as a nature reserve, and its drainage area, without any zoning. When it was nominated as a UNESCO area in 1977, the only objective was to preserve the untouched Alpine lake for long-term scientific research and for environmental monitoring. Erecting a ski-lift, smoothing out pistes, putting up avalanche protection structures, plus the emission of exhaust fumes and particles, the pollution from fuel and lubricants of the snow groomers and the increasing number of visitors would make it impossible to retain the objectives and the status of this biosphere reserve.

When the Tyrolean cable car guidelines were revised in 1996, the provincial government designated the Pirchkogel and the Feldringer Böden as potential areas for developing new skiing regions. This encouraged lift operators to hand in plans two years later for expanding the lifts in Kühtai via the Pirchkogel to Silz in the Inn valley. Four new lifts should link the skiing areas Kühtai and Hochötz-Balbach. The applicants argued that such a solution would alleviate the traffic in the Sellrain valley as well as traffic between Ötz and Kühtai. In 1999, once the plans of the lift operating companies were available, the conservation agency of the provincial government of Tyrol initiated a conservation investigation. In 2002, Christa Gangl, member of the provincial assembly, opposed the ski-lift project on the grounds that “the interventions in their entirety would destroy a unique landscape ensemble and the impact of such interventions on nature would be permanent and irreversible”. The conservation agency rejected the plans, the continued existence of research at the Gossenköllesee was secured for the time being. Since then, the lift operators have been fighting this decision at the administrative court in Vienna. To date, two years later,

Chronology of events

- 1959 *Limnological Research Station Kühtai was built at the southern shore of lake “Vorderer Finstertaler See”*
- 1974 *Research at the Vorderer Finstertaler See ends due to the erection of a hydro-electric dam, station razed*
- 1975 *New limnological station erected at Gossenköllesee*
- 1994 *Renovation and extension of the station by TIWAG energy company*
- 1996 *Mt. Pirchkogel designated planning area for development as a skiing area by the provincial government of Tyrol*
- 1998 *Lift operator hands in plans for developing a skiing area at Mt. Pirchkogel; the plan aims to link this skiing area with the existing skiing area Hochötz-Balbach in the Inn valley*
- 1999 *Conservation investigation starts*
- 2000 *Environmental impact assessment*
- 2002 *Project rejected by provincial assembly member Gangl*
- 2004 *New project application*

no final decision has yet been issued from Vienna. The lift operators are putting their hopes into the changed political situation in the country. If the development and the link with the Inn valley goes ahead, then not only the area around the Pirchkogel, popular for walking and ski-tours, but also the Natura 2000 site in the Inn valley near Silz would be under threat. This stretch of the Inn valley with the communities of Silz, Haiming and Stams has been designated in line with the birds directive to conserve the last breeding grounds of the otolan bunting (*Emberiza hortulana*). By establishing biosphere reserves, Austria grabbed the opportunity to become part of a world-wide co-ordinated network

of conservation areas and to provide answers to urgent questions for the human race. For nearly 30 years, information about past and present processes has been gathered at the Gossenköllesee with the aim of applying the insights to the requirements of the future. There is only one such station in the whole of Europe. Developing the drainage area of Gossenköllesee thus is of a wider dimension than “normal” extensions of skiing areas. However, it is generally true that transforming alpine regions into skiing areas not only endangers the quiet dignity of isolated peaks but also causes massive damage to complex ecosystems and that each individual intervention could trigger unforeseeable chain reactions.