LIFE-Project

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Life vein – Upper Drau River

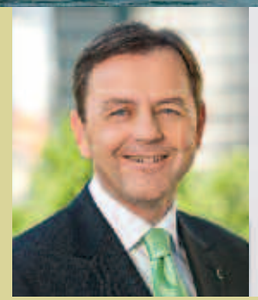
Carinthia's Largest Nature Restoration Campaign (2006-2011)

NATURA 2000

Life

PREFACE

The Upper Drau - A Model Project



The Upper Drau is a superlative model project.
It is one of the largest revitalisation projects, within in the framework of the EU LIFE-Nature Conservation that has ever been implemented in Austria.

Together with local partners, project managers, nature conservation and agricultural authorities, which appointed themselves for the necessary land transactions, a lot has been achieved for the people living in the Drau Valley as well as for the Drau and its living creatures.

The river can conquer new territories and the ecology has been improved hand in hand with flood protection. The measures play an important role for the protected animal and plant world in the Upper Drau European protected area as well as reaching good ecological conditions as defined by the EU Water Framework Directive. Additionally, they also improve flood protection in the Drau Valley, by expanding the run-off area and stabilising the Drau river bed.
Finally, new nature recreational rooms were created for the general public. These important measures were supported with intensive communication and by raising public awareness.

This project is convincing proof that ecologically oriented flood protection in the true sense of the word pays-off. Projects, such as the Upper Drau are good examples that it is possible to achieve several goals: improve the protection of the general public, create more room for ecology and stimulate impulse for regional economy and development, especially in economic difficult times,

Sincere thanks, to all of those who have contributed to the success of this project and continued strength on the still upcoming tasks.

DI Niki Berlakovich, Environmental Minister
Dr. Beate Prettner, Advisor for Environmental and Water Management, Carinthia

CONTENT

The Upper Drau

A Natural Jewel

The Upper Drau in Carinthia (Austria) is rich in natural resources. As early as 1998, the river with its riparian zones was placed under protection as a Natura 2000 site. Since 2011 the Upper Drau is a European protected area. It covers, running in west-east direction, the approximate 68 km long river section of the Drau from Oberdrauburg to the Drau dam near Paternion, east of Spittal an der Drau (illustration right).

The approximate 1,100 hectare sized Upper Drau European protected area is an entirely public water body. It accommodates numerous natural resources, for example:

- The last free-flowing, meaning not dammed stretch of the River Drau
- The largest grey alder riparian forest in Austria
- 19 native fish species, among them European-wide endangered species such as the Danube salmon or vairone
- Endangered plant species such as the German tamarisk or Dwarf Bulrush; both have been successfully reintroduced
- Over 140 species of birds, including 51 red-listed species; the importance of the Upper Drau Valley for birds is correspondingly great for the bird world, among other reasons as a resting place during their migration over the Alps
- Typical bird communities of inner alpine branching rivers with the kingfisher, sandpiper, grey wagtail and white-throated dipper, in the riparian forests one can find species such as the golden oriole and spotted woodpecker and near Baldramsdorf, the white stork has been successfully breeding for years
- The otter which had temporarily disappeared has redeveloped a small population thanks to river revitalisation.

UPPER DRAU PROFILE

Protection status: ***Natura 2000, European protected area***
Size: ***1,060 hectare***
Length: ***68.5 km***
Altitude: ***540 - 620 meters above sea level***
Run-off (water level Sachsenburg):
- Mean-flow conditions: ***73.8 m³/s***
- Mean annual high waters: ***391.2 m³/s***
- 100-year flood waters: ***1,029 m³/s***
River bed width: ***20 - 60 m***
Gradient: ***1.5 – 2.9 ‰***
Regime type: ***nivo-glacial*** *i.e. fed from snow and glaciers, maximum run-off in June*

River course (until 1870):
branched, oscillating, naturally stretched
River course to-date:
stretched to arched
Biological water quality: ***I-II***
Fish region: ***grayling region***

Municipalities: ***Oberdrauburg, Irschen, Dellach, Berg, Greifenburg, Steinfeld, Kleblach-Lind, Sachsenburg, Lurnfeld, Lendorf, Baldramsdorf, Spittal /Dr.***

The Upper Drau European Protected Area *(green) in Overview.*

The Drau in the Spittal *Area harbours the largest inner alpine grey alder riparian forest in Austria.*

Yellow-bellied toad: *protected Europe-wide, still frequently occur on the Upper Drau.*

Rarities: *Dwarf Bulrush (right), German tamarisk (left).*

Vairone: *protected Europe-wide small fish species, at home on the Upper Drau.*

Danube Salmon: *largest predatory fish of the Drau, threatened by extinction.*

The Drau changes

Path to the LIFE-Project

Until approximately 140 years ago the Drau ruled the wetlands with its annual floods. A wide branching river and wetland water body system, large gravel surfaces, willow brushwood, grey alder wetlands, widespread pastures and damp meadows characterised the valley floor.

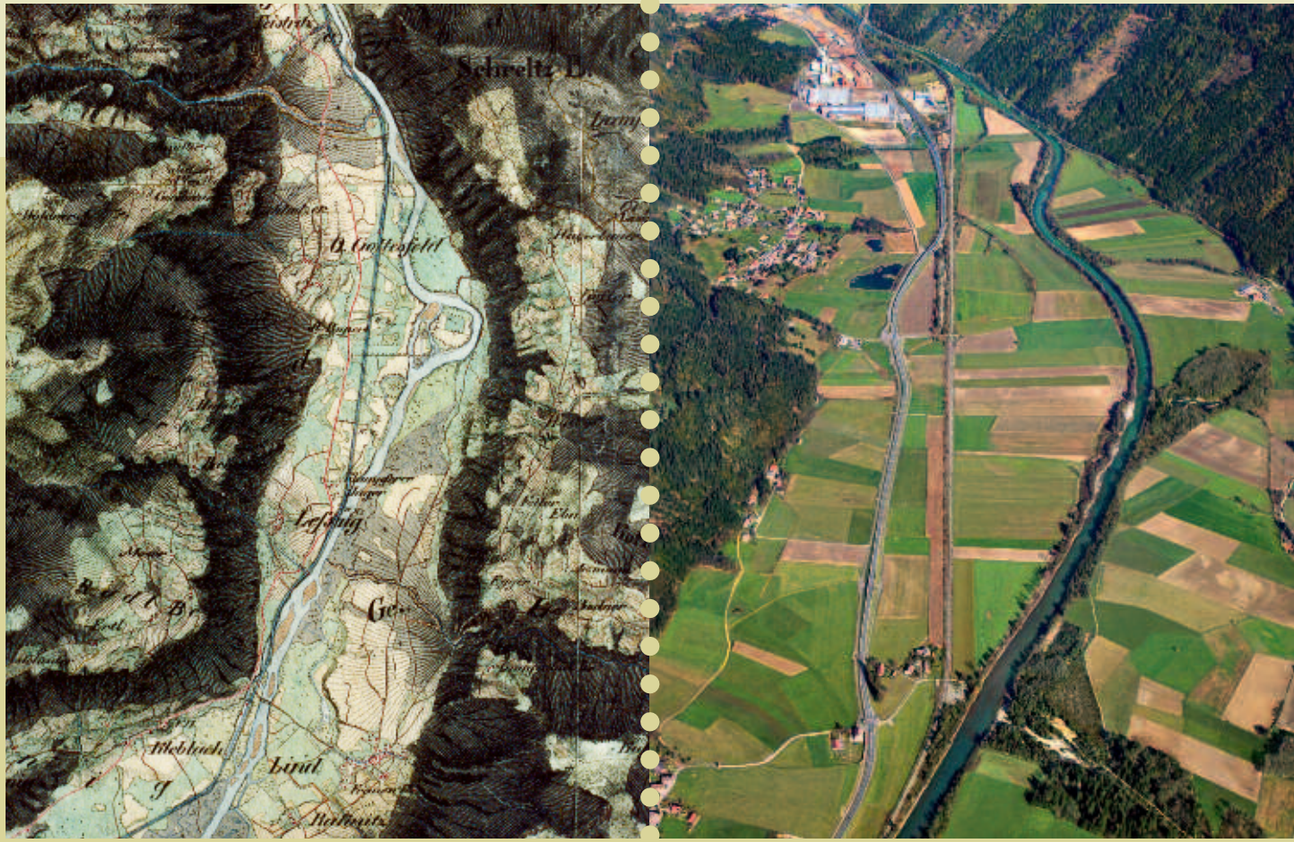
With the building of the **rail road line** through the Upper Drau Valley (about 1870) large changes began to take place. Regulatory procedures set the rivers course, in order to reduce flood danger and for intensive agricultural use and to make it possible to expand settlement areas. The original wetlands valley floor shrank.

After the **100-year floods** in 1965 and 1966 a new problem arose: River bed erosion. Severe river bed erosion occurred in the Drau, due to decreased bed load influx from the obstructed torrents, gravel removal from the river and narrowing the river bed. The river bed deepened even further, many wetland water bodies went dry with the sinking groundwater level. Agriculture and the stability of the bank protection structures also suffered.

At the beginning of the 1990's, hydraulic engineers and environmentalists recognised their common interests about the Upper Drau. It came to an intensive collaboration, where both water management as well as the nature conservation standpoint, brought their vantages. As early as 1993, on the basis of a water management concept, the first renaturation measures began in the form of river widening.

1999-2003 under the title "Restoration of the wetland and riparian area on the Upper Drau River" the first EU-sponsored LIFE-Project, among other things 10 river kilometres were revitalised, 100 wetland water bodies were created and approximately 100 hectares of riparian forest were secured. Thereby, many positive aims were achieved, but also new goals were made clear which could only be reached within the framework of the LIFE-Project, "Life vein – Upper Drau River".

- Further stabilisation of the Drau river bed through widening and strengthening of bed load influx from tributary brooks
- More pristine, dynamic shaped river habitats
- Improved information and visitor management on site
- International cooperation with the respective authorities of the Drau neighbouring states



The Drau bei Obergottesfeld around 1850 and 2009. *The loss of floodplains became obvious. The LIFE-Project wants to work counteract this with large river widening. (More starting at page 12)*

Problem: *Due to increased river bed erosion, the riverbank control structures become unstable and threaten to collapse. Simultaneously, the groundwater level sinks. A problem for the wetlands, agriculture and flood protection.*

Problem: *Oxbow lakes and anabranches are threatened of drying-out.*

Problem: *Due to increasing tourism use sensitive animal species, such as the sandpiper are disturbed.*

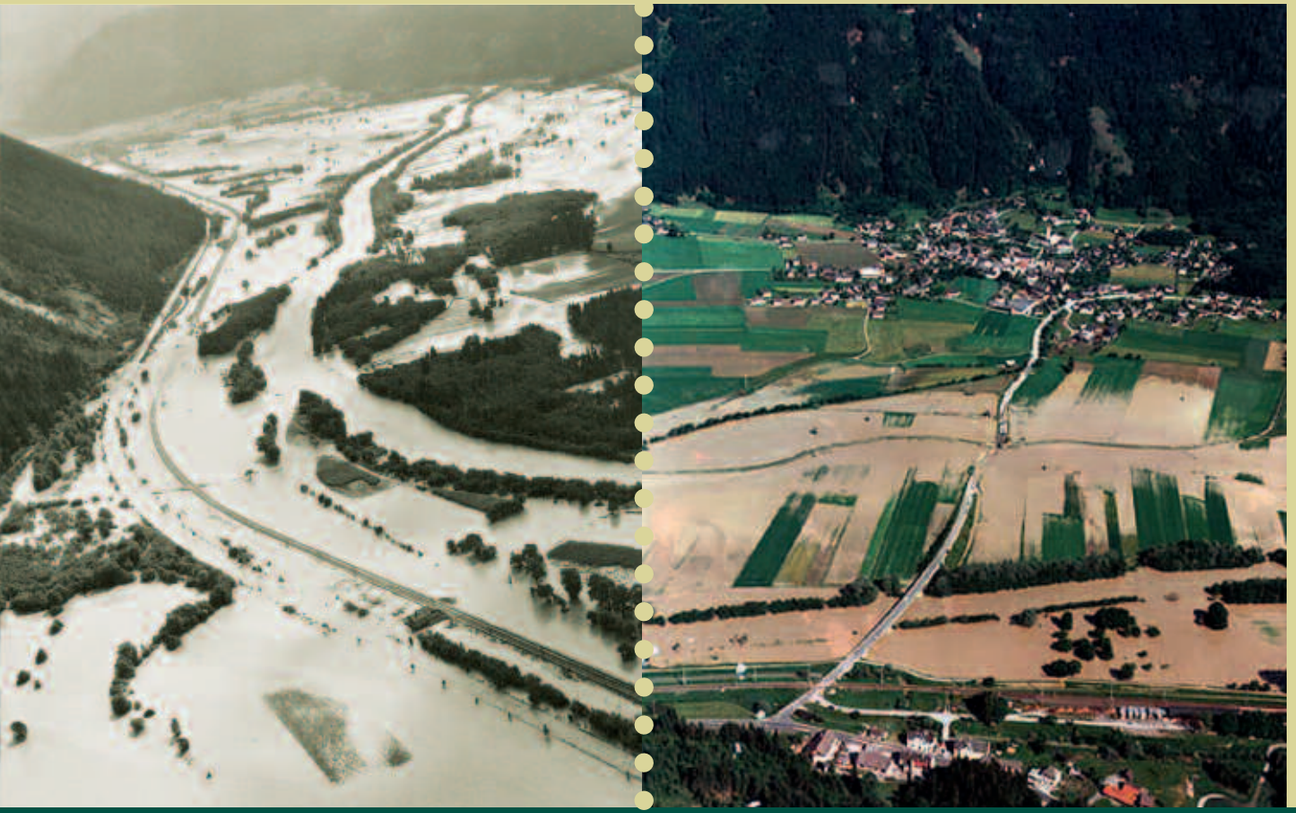
Flood Protection through River Revitalisation

Goals of the LIFE-Project

The **flood protection concept** on the Upper Drau provides that (in the case of 10-annual events) floodwaters overflow the banks quite soon and spread out over the wide valley area. As a result, so much water is retained that downriver locations remain free of flooding. Endangered towns are locally protected.

However, this European-wide trend-setting concept is becoming uncertain. A too narrow river bed and failure to replenish gravel and crushed rock accelerate the deepening of the river bed. The result: bank control structures became unstable, floodplains lost their function.

The LIFE measures on the Upper Drau are to counteract this trend: River bed widening is supposed to stabilise the Drau bed, retain water and at the same time form new wetland habitats and pristine local recreation areas. A win-win-situation for both human beings and nature.



◀◀ ***The flood disasters of 1965 and 1966*** *are still painfully fresh in the memory of many people. The Upper Drau Valley was cut off from the outside world, and the valley area was devastated.*

◀ ***Last big flood in the Upper Drau Valley*** *in 1991: flood retention areas prevented greater damage from happening.*

Goal: *River widening stabilises the Drau bed and creates added value for flood protection, ecology and local recreation.*

Goal: *The varied alpine river landscape with anabranches, gravel banks, undercut slopes and slip-off slopes will be repaired.*

Goal: *Initiate instead of modeling. The principals of the Upper Drau LIFE-Project are to intervene as little as possible and let the river shape itself. The task for human beings is it to create the necessary conditions and set boundaries.*

Goal: *The LIFE measures enhance the Drau as an adventure and recreation region. At the same time, the Drau-visitors will be informed and "guided" on behalf of nature.*

Goal: *New wetland water bodies secure existence to threatened animal species.*

The LIFE-Project: Life vein – Upper Drau River

Carinthia's largest "Nature Restoration Campaign"

The visible success of the first LIFE-Project "Restoration of the wetland and riparian area on the Upper Drau River" (1999-2003) was an incentive follow-up project prepared for all involved under the title "Life vein Upper Drau River". Following sponsorship funds and admission of the project into the EU LIFE- Aid Programme, three further major river widening measures were carried out along a total length of approximately 5 km from 2006 until 2011 (see page 12).

This time, the new partners involved were from the torrent and avalanche control; section Carinthia, who rebuilt the bed load retention dam on Berger Feistritzbach, which rendered an important contribution for the offset of bed load balance on the Upper Drau.

Up until now, this "Nature Restoration Campaign", was the largest measured revitalised river length in the history of river engineering in Carinthia.

THE LIFE-PROJECT: THE UPPER DRAU - A LIVING ARTERY

PROJECT PARTNERS

- Federal Ministry of Agriculture, Forestry, Environment and Water Management (Federal Water Engineering Administration) represented by the Carinthian state government, department 8 – Competence Centre environment, Water and Nature conservation, subdivision Water Management – (SchWW)
- Federal Ministry of Agriculture, Forestry, Environment and Water Management (rural development section), department II/4 (nature and protection of species, national parks)
- Torrent and avalanche control, section Carinthia, regional management supervision 4 - Upper Drau Valley and Möll Valley
- Carinthian state government, department 8 - competence centre environment, water and nature protection, subdivision Nature Conservation and National Park Law (NSch)

DURATION: 2006-2011

COSTS: 4.6 million Euros

FINANCING:

- Federal Ministry of Agriculture, Forestry, Environment and Water Management (Federal Water Engineering Administration) 2.6 million Euros
- European union: 1.5 million Euros
- Carinthian state government, department 8 – subdivision Nature conservation and national park law: 0.2 million €
- Torrent and avalanche control: 0.2 million Euros
- Federal Ministry of Agriculture, Forestry, Environment and Water Management (department II/4): 0-1 million Euros

THE MOST IMPORTANT MEASURES:

- River widening; total length approx. 5 km
- Rebuilding of the bed load retention dam on Berger Feistritzbach
- Visitor information measures (water adventure areas, brochures)
- International symposium "Drava River Vision"
- Public information: excursions, action days, posters, videos, Webcam etc.

At the start...
On the 20th September, 2006, with a large attendance from the general public and politicians, the official ground breaking ceremony took place, for another 5 years of nature and flood protection on the Drau between Oberdrauburg and Paternion.

...and at the end
A festive atmosphere prevailed at the closing ceremony on 4th May, 2011. High-ranking politicians, first and foremost with Environmental Minister, Niki Berlakovichv as well as 500 visitors from the region gathered, among them many schools. Symbolically, the last LIFE-measure, a new Drau-branch near Obergottesfeld flooded.

What is Natura 2000?

The Upper Drau is actively involved in the European Nature Reserve Network **Natura 2000**.
The aim is to conserve,Europe's wealth of wild animals, plants and their habitats.

What is LIFE?

LIFE is an EU aid programme for the support of Nature conservation projects in Natura 2000 sites.

River widening measure at Obergottesfeld

Far and wide: a unique project

The Life Project at Obergottesfeld is 3 kilometres long and is the largest river revitalisation project in Carinthia

Since May 2011, the upper Drau between Klebach/Lind and Sachsenburg has been seen in a new, more natural-looking „outfit". Three kilometres of the narrow and no longer up-to-date embankment was removed. Instead, there are now hidden built-in breakwaters to protect the banks during floods. The water's new freedom of movement is seen in several river bed widening measures, tributaries, oxbow lakes and standing bodies of water. A new tepid brook will help ensure in the future that the Drau near Obergottesfeld offers an attractive habitat for fish. A land reclamation process added another 25 hectares to the public water resources.

Construction period: February 2010-May 2011

Mass movement. *During the river widening at Obergottesfeld, a total of 200.000 m³ of soil and gravel were moved.*

Provisional bridge. *A temporary bridge was built over the Drau between January and April 2011 to help with the construction work on the right bank of the river.*

The Drau as a master builder. *After a first small flood, the river doubled the width of its tributary.*

First signs of nature. *New alluvial forest waters will allow the numbers of amphibians in the region to grow.*

Breakthrough
on the large tributary in celebration of the closing ceremony on was on May 4, 2011.

◂◂ ◂ ***Before (2009) – and After (flight from 20.4.2011).*** *The Drau section at Obergottesfeld before and right after the implementation of the LIFE project measures. In the area surrounding the river, land reclamation efforts obtained large parcels for the Drau. The project builders received valuable support from the agricultural authorities in Villach.*

River widening measure at Rosenheim

A new home for Kingfishers and Co.

On the Drau near Rosenheim above Spittal, the river bed was widened for a one-kilometre stretch. A new side channel of the river, several wetland bodies of water and a system of bayous came into being. Typical river habitats now once again offer a home for rare species or species that were once thought to have vanished. The kingfisher is one such brilliant example. Since 2007, kingfishers have been breeding again in the steep rock banks of the Upper Drau. In addition, flood protection has also benefited. The river widening measure stabilised the river bed; which means that in an emergency the river bed can now take on more water.

Construction period: November 2006 – June 2007

Go to www.life-drau.at for live up-to-date pictures of the river widening measure at Rosenheim

◀ ***Before ...*** ***... and after*** ▶

① ***New side channel of the river:*** *Habitat for many types of small fish.*

② ***Revitalised dead channel system:*** *safe retreat area for fish, nursery for young fish and amphibians.*

③ ***Steep embankments:*** *Special attention was paid to create steep river banks while building the side channel system. Steep banks are rare on the Drau and are especially important as nesting areas for kingfishers.*

④ ***Gravel bank:*** *Here the rare and shy Sand Piper can breed. They are perfectly camouflaged.*

⑤ ***Wetland ponds:*** *Some of the first inhabitants were the yellow bellied toads.*

Impressions *from the flooding celebration on June 6, 2007:*

The flooding celebration begins with a ***campaign day for the schools****.*

Symbolic flooding. *From the left: provincial parliament members Rohr and Scheuch and the mayors of the local communities.*

Mimi Hughes, *marathon swimmer and environmental activist from the United States, swam through the new tributary during her Drau-Tour. She reached the Danube on June 28, 2007.*

River widening measure at Amlach/St. Peter

Nurseries for young fish and frogs

On the upper Drau near Amlach below Spittal **60,000 cubic metres** of soil and gravel were moved. The result: The river bed is now 20 metres wider. There is a new tributary and several more wetland bodies of water. In the next decades, 2 hectares of alluvial forest will be able to develop.

The development of the new, large tributary has created a valuable sanctuary for many types of fish. The new alluvial ponds also serve as "nurseries" for young fish and amphibians. Recent ecological studies confirm that, thanks to this measure, the number of amphibian species has dramatically increased from one type to seven species.
That is a positive trend!

Construction period: April - October 2009

Before - after. *The LIFE-project measure by Amlach/St.Peter before construction 2009 and one year after completion in April 2011.*

Already in the first year after construction, 7 amphibian species were spotted again.

Construction *on the new tributary (August 2009).*

After the flooding *in November 2009.*

Water for the wetlands: *On October 27, 2009 the first water flowed through the new Drau tributary branch.*

Many guests *accepted the invitation to the opening celebration.*

The new diversity of natural habitats *along the tributary branch is landscaped by the powerful water.*

The Great Crested Newt *is a very rare salamander and is one of the 7 amphibian species now living in the area.*

Juvenile fish: *the new tributary waters serve as nurseries for many types of young fish.*

Open check dam at Feistritzbach

The Drau needs “feeding”

A new 8.5 metre-high bed load dosing dam at Berger Feistritzbach protects the town below from flooding, landslides and debris flow. The special feature here is that the dam is partially open. A large driftwood rake holds back alluvial driftwood and debris but lets the crushed rock and gravel pass through during times of flooding. The nearby Drau is “fed” again with this material. This “feeding” with gravel prevents the bed of the Drau from going too deep into the subsoil.

This project measure not only increased flood safety in the Drau valley, but it also helps stabilise the groundwater level in the valley and to preserve the near-natural character of the lower courses of the Feistritzbach brook. Many protected plant and animal species benefit from these measures in the European designated protection area on the Upper Drau.

Construction period: October 2008 – May 2009

***The old dam** shown here before construction started.*

***Flooding** on the old dam in 2008*

***Construction** of the new dam (November 2008)*

***Completion** of the project (September 2009)*

***Impressions** from the opening celebration on September 25, 2009:*

***Explaining the project measures:** Erwin Ferlan from the WLV.*

***The celebration on the Feistritzbach** brook in the Berger Ochsen gorge was also well-attended.*

***Musical performance** by the Berg i. Dr. primary school. A poem written especially for the occasion was also read.*

***Open up dam!** After the official opening, the process of gradually removing the old dam was started.*

The new bed load retention dam can retain up to 15,000 cubic metres of bed load debris and driftwood.

***The new bed load retention dam in July 2011:** The old dam was removed; the retention storage area was emptied. The Feistritzbach brook has washed up 28,000 cubic metres of bed load downstream so far and 16,000 cubic metres of bed load have already reached the Drau.*

LIFE Unlimited

The DRAVA RIVER VISION Symposium

From the 23th to the 25th of September 2008, environmental protection and hydraulic engineering experts from the Drau's bordering countries of Italy, Austria, Slovenia, Croatia and Hungary met in Maribor, Slovenia for an intense exchange of experiences.

For two days, participants discussed problems and solutions for flood protection construction measures, ecological issues and energy efficiency questions concerning the Drau.

The high point of the symposium was the signing of the **Drau Declaration** by the state representatives of the International Danube Protection Commission.

In the declaration, the Drau's bordering countries commit their countries to a 10-point program for sustainable management of the Drau. With the organisation of this symposium, the LIFE-Project "The Upper Drau-a Living Artery" made an important contribution to the development of transnational goals and visions for the Drau.

Over 100 experts and representatives *from 5 neighbouring countries participated.*

In 30 specialised lectures, *the countries' representatives dealt with their concerns for the Drau.*

The signing of the Drau Declaration *by the countries' representatives from the International Danube Protection Commission.*

At the junction of the Drau and the Mur: *The lower Drau, "Europe's Amazon", is still surrounded for long stretches by wetlands. Here there can be conflicts of interest over power generation and gravel extraction.*

DRAVA RIVER VISION

DECLARATION

concerning common approaches to water management, flood protection, hydropower utilization and nature and biodiversity conservation in the Drava River basin

Based on the holding, from 23 to 25 September 2008 in Maribor, Slovenia, of the international Symposium "Drava River Vision", in which representatives from water management and nature conservation bodies, education institutions and non-government organizations (NGOs) from the Drava River riparian states Italy, Austria, Slovenia, Croatia and Hungary participated,

in response to popular demand for the protection and maintenance of the riverine landscape of the Drava River across the different national borders concerned, and in order to strive for a good status of the river,

aspiring to support and strengthen existing strong common approaches to water management, flood protection, hydropower utilization and biodiversity conservation in the river basin,

affirming our intention to cooperate in the conservation, administration and further appropriate development of the Drava River and its associated topographical, hydrological and ecological systems,

To secure the values and ecological functions of the Drava River basin for generations to come, WE AGREE the following ten objectives as priorities for the future:

1. **To promote the Drava River as a model for integrated implementation of EU policies on water and nature protection**
2. **To enhance flood protection through the improvement of flood warning systems and through increased information exchange**
3. **To enhance flood protection through protection and restoration of water retention areas along the Drava River**
4. **To continue and further develop restoration of the Drava River and its floodplains**
5. **To maintain and further develop the Drava River as an "ecological backbone"**
6. **To re-establish the ecological connectivity of the Drava River for migratory fish**
7. **To establish the Drava River as a cross-border recreation area**
8. **To use opportunities for the Drava River to be a connecting lifeline for different nations**
9. **To undertake integrated river basin management rather than fragmented sectoral measures**
10. **To undertake further development of the Drava River area in partnership with its resident human populations**

Signed as a signal for full support at the Drava River Vision Symposium, by the Heads of Delegation of the International Commission for the Protection of the Danube River from the Danubian States Austria, Croatia, Hungary and Slovenia and by the Director of the Department for Hydraulic Engeneering of Bolzano, South-Tyrol in Italy,

Richard Stadler	Zelko Ostojic	Gyula Hollé	Mitja Bricelj	Rudolf Pellinger
Austrian HOD to the ICPDR	Croatian HOD to the ICPDR	Hungarian HOD to the ICPDR	Slovenian HOD to the ICPDR	Italian Representative Hydraulic

and adopted by the Participants at the Drava River Vision Symposium,
Maribor, 23rd - 25th September 2008.

Let us join forces in the conservation and sustainable development of the Drava River - an aquatic ecosystem functioning as a corridor of recovery in the heart of Europe!

INŠTITUT ZA VODE REPUBLIKE SLOVENIJE | Institute for Water of the Republic of Slovenia

“River Oasis” Upper Drau

Measures for local recreation and tourism

Outdoor activities on rivers such as barbequing, hiking, biking and canoeing are very popular-even on the Upper Drau. In order to avoid utilisation conflicts between humans and nature, a **visitor management concept** was developed and implemented in the framework of the LIFE project. A water adventure area, many information points on the Drau bicycle path and an informative brochure were completed.

The goal of the visitor management concept is to concentrate appropriate leisure and recreational activities at selected, optimal sites. In addition, ecologically sensitive riverbanks will be protected from visitor usage.

Drau Oasis at Dellach. *As the first part of the visitor management concept, the water adventure area at Dellach was opened in 2007. Visitors can enjoy a play and bathing area on the river with adjoining sunbathing lawn, barbeque area and tree house with lookout and information point.*

Visitor management: *The dedication of the Upper Drau as part of the European protection area requires special care for this natural resource. In order to help the Drau’s visitors understand this, an information brochure was published in conjunction with the LIFE project about leisure and recreational activities on the Upper Drau. All of the places described in the brochure offer visitors a chance to relax and enjoy the river.*

Info-Points *inform visitors about the natural treasures along the Upper Drau. Following the motto, “Man protects what he knows,” the information points encourage visitors to treat nature with respect.*

Impressions from the opening celebration at the water adventure area at Dellach i.Dr. on September 20, 2007:

Musical greeting *was performed by the primary school from Dellach i.Dr.*

The ***official opening ceremony*** *was performed by political representatives.*

Planting project *with school children from the schools in Dellach i.Dr.*

Trying out the Drau “Plette,” *a wooden boot.*

Presentation by the volunteer firemen: *a special highlight.*

The LIFE-Flag *waved over the Drau Oasis at Dellach as the water adventure area was enjoyed for the first time.*

Monitoring the Upper Drau

The results are optimistic

Monitoring stands for **"progress control"**. As required by the LIFE-projects, scientists examined the effects of the measures implemented between the years of 2006-2011. The following topics, representative of the Drau ecological system, are on the "test bench":

- **River morphology**
- **Bed load influx from Berger Feistritzbach**
- **Fish**
- **Amphibians**
- **Arachnids and insects.**

The results were impressive, but also illustrate, that there is still a lot to do:

Continual **river bed measurements** show that the river widening measures make an important contribution to the stabilisation of the Drau river bed.

The number of **amphibian species** significantly increased in the restoration areas. For example, in the St. Peter/Amlach area, from one species to six species and counting.

The LIFE-measures are also beneficial for **fish**. Just in the Rosenheim area alone, 14 species were established, among them many small fish such as the vairone, stone loach, minnow, Gibel carp, Crucian carp or burbot. This shows that the LIFE-measures clearly increase the habitat quality for the Drau fish species. However, at the same time is quiet clear that deficits exist, primarily in the form of water level fluctuations and migration obstacles outside of the European protected area.

Spiders and ground beetles are respectively represented with over 100 species in the project area; some species are greatly endangered and threatened by extinction, for example the river bank-wolf spiders. Their existence and the increased variety of species in the new river widening areas are considered indications of success of the measures taken. However, in order to for these species to be permanently maintained, there must be future self-perpetuating development of the river, even more room needs to be granted.

Already in the first year after rebuilding the dam, the **bed load erosion** amounted to over 6 metres in front of the dam. By mid-2011 28,000 m³ of bed load had been mobilised and transported downstream. 16,000 m³ of it found its way into the Drau. The measure worked satisfactorily and serves as an exemplary function for other rivers, by contributing to improving the bed load balance and the stabilisation of the river bed and the ground-water level.

Grass frog: *Most abundant amphibian species in the Upper Drau Valley.*

Trial fishing *of the Upper Drau with an electrical fishing boat.*

A ***burbot*** *is measured.*

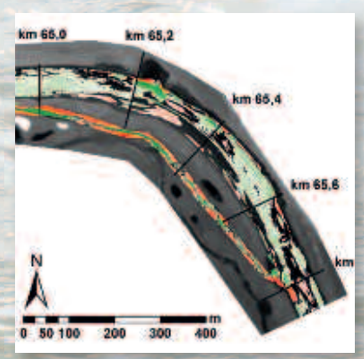
Scientist *in search of ground beetles.*

Rarity: wolf spider *on the river bank.*

Modern laser scan *equipment in use, to determine of the bed load transport movements.*

Evaluation of the bed load balance *above the dam (2008-2011). The bed load erosion amounted to over 6 m in some places!*

High tech in a measuring boat. *Measurement of the Drau river bed with the use of sonar.*



Previous morphologic development *of widening near Amlach/St. Peter.*

More information

Films, folders, folding maps…

“Rittlingers Dream – A New Life on the Upper Drau”

The poetic film “Rittlingers Dream” is a philosophical and at the same time scientific reflection about the current revitalisation of the Upper Drau in Carinthia.

Herbert Rittlinger, the “Poet in the Paddle Boat” (1909-1978), was not only a well-known travel writer, but also a progressive thinker and idealist. In his book “The Soon-lost Paradise” he tries to warn people of the imminent devastation to the Drau. In vain …

Today - 65 years after Herbert Rittlingers canoe trip on the Drau, his dream and vision of an unobstructed free-flowing glacier Drau has partially become true.

With a camera.
The Carinthian film producer Thomas Miklautsch compiled a remarkable film about the LIFE-Project.

DVD, duration: 29 min.; Languages: German & English
The film can be ordered free of charge through: ***Abt8.PostSP@ ktn.gv.at***

Free of charge
available at municipal
offices and tourism offices.
Order through
Abt8.PostSP@ktn.gv.at

LIFE Drau postcard with tilting effect
For the occasion of the Drau revitalisation near Amlach/St. Peter a unique postcard with a hologram effect was published. By tilting the postcard shows the state after the building completion (2010) in contrast to original state (2006). Try for yourself!

Folding map “People & Nature”
The practical folding map, in pocket-sized format gives valuable tips and hints for nature-compatible free time use and local recreation in the Upper Drau, European protected area.

LIFE-touring exhibition
Until the end of 2012, the Upper Drau LIFE-Project is on tour through the region. The 9-piece mobile poster exhibition will be shown in schools and public buildings. If interested, just contact.

Folder
For the occasion of the LIFE-Project “Life vein Upper Drau" a folder was published available in German, English and Italian.

The participants

Many helped

All for One - One for All: The Upper Drau

A total of 70 project team meetings, 13 action days and 25 excursions accompanied the LIFE-Project. Only with the support and big commitment from so many people was the success of this project possible. To all of you, a sincere thank you.

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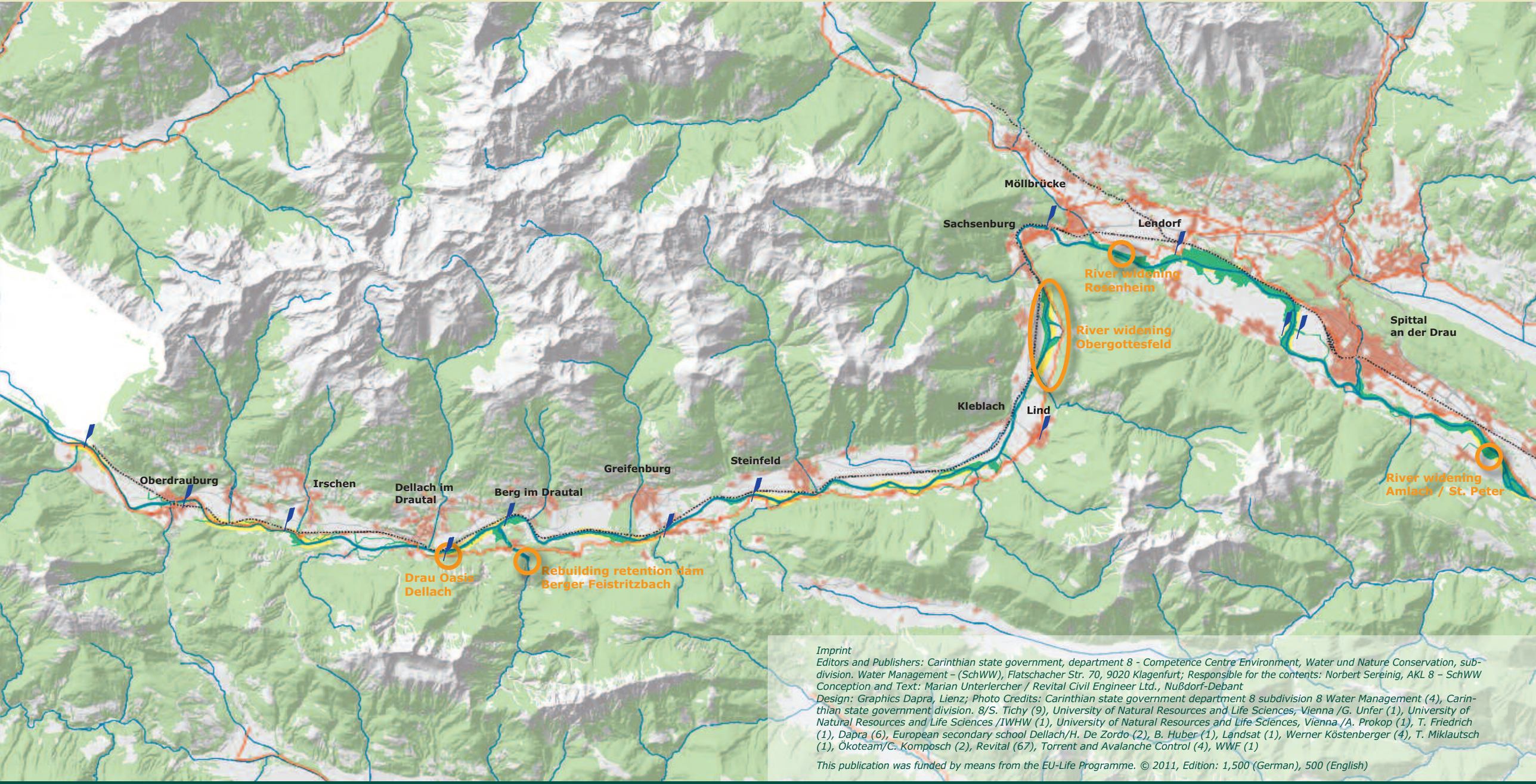
The LIFE-Measures on the Upper Drau 2006 - 2011

Nature Zones: Particularly sensitive rivers and riparian forest areas

Natura 2000-Sites/ European Protected Areas: Particularly valuable rivers and riparian forest areas

Drau bike path R1 Toblach – Maribor

Info-Point with a quick glance at Nature and Flood on the Upper Drau



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LIFE VEIN - UPPER DRAU RIVER

The Upper Drau European Protected Area was the setting of the largest "Nature Restoration Campaign" in Carinthia from 2006-2011. In the context of the LIFE-Project "Life vein Upper Drau" approximately 5 km of river were revitalised. Simultaneously, measures for the rivers bed load balance, flood protection and the preservation of the natural heritage site were met.

The project was represented by the Federal Water Engineering Administration, Carinthia, implemented by the Carinthian state government department 8 subdivision Water Management in collaboration with the subdivision Nature Conservation and Torrent and Avalanche Control, section Carinthia.

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www.life-drau.at