LIFE15 NAT/AT/000167



# **DYNAMIC RIVER SYSTEM LECH**

Final Report

01/09/2016 - 30/09/2022

MIT UNTERSTÜTZUNG VON BUND, LAND UND EUROPÄISCHER UNION







**Bundesministerium** Land- und Forstwirtschaft, Regionen und Wasserwirtschaft



### LIFE 15 NAT/AT/000167

### Final Report Covering the project activities from 01/09/2016 to 30/09/2022

**Reporting Date** 

## 09/30/2022

### Dynamic River System Lech LIFE Lech

	Data Project
Project location:	Austria, Tyrol, Bavaria
Project start date:	01/09/2016
Project end date:	31/12/2021 Extension date: 30/09/2022
Total budget:	6,093,220 €
EU contribution:	3,655,932 €
(%) of eligible costs:	60.00%
	Data Beneficiary
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# 1 List of keywords and abbreviations

ATLR U	Office of the Provincial Government of Tyrol, Division for Environmental Protec- tion (Amt der Tiroler Landesregierung, Abteilung Umweltschutz)
BML	Federal Ministry of Agriculture, Forestry, Regions and Water Management (for- mer: BMLRT, BMNT)
BWV T	Federal and Provincial Water Engineering Administration of Tyrol (Bundeswas- serbauverwaltung Tirol)
HD	Habitats Directive
ha	hectares
BD	Birds Directive
PL	Project lead
PC	Project coordinator
N2000	Natura 2000
NPTL	Tiroler Lech Nature Park
WLV	Austrian Service for Torrent and Avalanche Control for Tyrol (Forsttechnischer Dienst für Wildbach- und Lawinenverbauung Tirol)
WFD	Water Framework Directive
WWA	Water Management Administration Kempten (Wasserwirtschaftsamt Kempten)

### 2 Executive Summary

### 2.1 **Objectives**

The Tyrolean Lechtal in the political district of Reutte (Austria) is home to the last large wild river landscape in the northern Alps and one of the most important wild river areas in Central Europe. Nevertheless, there is great potential for the restoration of dynamically shaped habitats. These are necessary to ensure the survival of highly specialized, highly endangered species like German tamarisk *Myricaria germanica* (within 3230), dwarf bulrush *Typha minima* (in 7240, 3230, 3240), common sandpiper *Actitis hypoleucos* or the grasshopper *Bryodema tuberculata* etc. Therefore the project focuses on a total of 13 hydraulic engineering measures to re-introduce natural river dynamics (additional 25 ha aimed). A further aim is to improve habitats for amphibians (northern crested newt *Triturus cristatus*, European tree frog *Hyla arborea* etc.) and dragonflies (Siberian bluet *Coenagrion hylas*). Enhanced information (website, media relations, excursions, action days, visitor information, films, various print materials, touring exhibition etc.) shall support awareness raising and visitors "guiding" and at the same time increase the acceptance of the Natura 2000 protected area among the local population.

### 2.2 General Progress

The LIFE Lech project was started on 01/09/2016. At the beginning, the project organisation was defined. The steering group, consisting of representatives of the project financiers and a representative of the municipalities, made strategic and award decisions. It was informed about the project progress several times a year by the PL and the PC. The project team, consisting of the project partners, PL, PC and a representative of the NPTL was responsible for planning and implemention according to the timetable. A total of 9 steering group meetings and 43 project team meetings took place.

Concerning <u>A. Actions</u>, all detailed plans (A.1) are completed, all permits obtained, including additional actions C.13 and C.14. The study for species protection actions (A.3) was completed in 10/2018, the Natura 2000 management plan (A.2) was finished 03/2022, including stakeholder involvement.

<u>Action B.1</u> Purchase of land for C.3 was no longer carried out, as the required area meanwhile became public property of the municipality of Elbigenalp and therefore was not any more relevant for LIFE funding. The purchase was made through national funds.

The <u>concrete conservation actions C.1-C.11</u> have also been completed more or less according to the timetable. The additional "actions in reserve" C.13 (which also included the construction of the suspension bridge in Forchach) and C.14 Lechaschau got fully implemented in 09/2022.

For <u>C.12 - species protection actions</u> - the total budget was about  $\notin$  600.000 instead of  $\notin$  200.000, as  $\notin$  400.000 could be saved with other C-Actions. C.12 actions started in 2019 with the planting of dwarf bulrush (*Typha minima*). At 7 locations, from Unterpinswang to Ehenbichl, amphibious measures were implemented for toads (*Bufo calamita*), newts (*Triturus cristatus*) and tree frogs (*Hyla arborea*). A total of 38 ponds were built. The costs are around  $\notin$  350.000  $\notin$ . To improve existing and create new habitats for the Bilek's/Siberian bluet (*Coenagrion hylas*) approx.  $\notin$  52.000 were spent in 8 designated areas. In 2021, the conservation measures for the rare butterfly species scarce heath (*Coenonympha hero*) in Musau, Vils and Pinswang were also completed. For multiple de-bushings, approx.  $\notin$  93.000 were used.

After <u>Pre-monitoring</u> actions in 2017-2018, in 2020-2022 the <u>post-monitoring</u> for abiotic parameters, Typha minima, amphibians, small fish, insects and arachnids, birds and vegetation were carried out. In addition, the ecosystem functions (D.5) and the socio-economic monitoring (D.6) have been closed. The main results are summarized in a synthesis draft report (for results see chapter "impacts"). D.4 LIFE Project Performance Indicators was continually carried out.

Within the obligatory <u>public relations work</u> (E.1) the project website <u>www.life-lech.at</u> was continuously updated, including videos of the conservation actions sites. In total 17 LIFE information boards (E.1.2) have been put up. Under Action E.2 due to the corona pandemic the number of visitors to the Nature Park House halved within the last 2 years (around 4,000 instead of 8,000 people). For the same reason in 2020-2021 the excursion program had to be restricted. The organisation of the Austrian LIFE Platform (E.4.3) was cancelled in consultation with CINEA.

Action E.2.4 visitor facilities (in connection with C.13), E.3.2 Tilt Effect Postcard and E.3.4 Video/Film LIFE Lech were completed in 09/2021 (see <u>https://www.life-lech.at/ser-vice/downloads/</u> or <u>https://www.youtube.com/channel/UCEOdm3\_G\_rULPUMoPFB-BEw/playlists</u>)</u>. They were presented for the first time at the 2. Wild River Symposium Tiroler Lech (E.2.5), which took place after several postponements successfully from 22.-24. September 2021 in Breitenwang (Tirol). Around 80 scientists and interested people participated the event. The layman's report (E.1.3; post-poned due to the project extension) was finalised in 08/2022 and distributed at the LIFE closing ceremony on August 19, 2022.

Project coordination (F.1.2), reporting (F.1.3) and GIS data management (F.2) were commissioned in 01/2017 and ended in 12/2022. F.1.4 Audit was awarded to MOORE BG&P Wirtschaftsprüfung GmbH in Graz. For the report see Annex.

#### 2.3 Problems encountered

- <u>No species protection measures for the stone crayfish:</u> Sadly, the stone crayfish (*Austro-potamobius torrentium*) became extinct in the project area at the beginning of the LIFE project owing to the crayfish plague which ravaged the protected area. This is an enormous loss not only for Natura 2000 area Lechtal, but for the whole of Tyrol and Austria. The actions originally planned were now no longer possible in the LIFE project. Instead, within a nationally funded captive-breeding project young stone crayfish were put into suitable waters in July 2020. They were still living in the stocking water in 2022, so the project will be continued at national level.
- <u>C10 Forchach:</u> Resistance to action C.10, which aimed to re-dynamize a quarry pond used for recreational purposes, dissipated after joint meetings at which the project was adjusted to be acceptable to both sides, so that the work could be completed by the end of 2020.
- <u>2 project amendments for an extended project duration until 30/09/2022</u>: Due to unexpectedly high revenues from the sale of gravel and timber, the budget for reserve measures could not be fully utilized. The project team therefore decided to apply for additional "actions in reserve" C.13 and C.14 including 2 amendment request and a project extension of 9 months. This meant additional administrative and coordination work and uncertainty about how to proceed. At the end the additional actions paid off. They were well accepted by local people (municipalities, fischermen, tourism) and pushed the LIFE project.
- <u>Delays in the implementation of species protection measures (C.12)</u>: The selection, detailed planning and cost estimate of the species protection measures for amphibians and Siberian bluet took more time than expected, especially since there was more budget available and more measures had to be prepared. The implementation of the extensive

construction measures could therefore only begin in winter 2020. Thanks to the commitment and experience of the BBA Reutte's own personal staff, all measures could be completed on time in autumn 2021.

• <u>Repeated postponement of the wild river symposium (E.2.5)</u>: Due to the Covid19 pandemic, the International Wild River Symposium had to postponed two times, but it was finally held in September 2021. However, invitations and participants had to be limited to Central Europe. Neverthe-less, there were interesting presentations and an intensive professional exchange.

### 3 Introduction

#### 3.1 Description of background, problems and objectives

#### 3.1.1 Overall and specific objectives

The Tyrolean Lech in Austria including the border stretch with Germany with its dynamically braided course forms large-scale gravel and sand bars, and still features unimpaired stretches of wild river, which type is among the most threatened types of landscape in Central Europe.

Once before, the Natura 2000-Area Tyrolean Lech had been the focus of a LIFE conservation project called "Wild River Landscape Tyrolean Lech" (2001-2007). It was a first successful step towards the reintroduction of natural dynamics into the river habitat, but a consistent continuation is necessary to ensure lasting success of habitat and species conservation.

The aim of the project was to continue at the Lech's upper reaches as well as on German territory in the border area the successful river revitalisation measures, which were introduced at its middle and lower reaches in the first LIFE project. These aim to counteract the recession of the dynamically shaped gravel bars, which began with the regulation in the 19<sup>th</sup> century.

#### 3.1.2 Which sites are involved

The project focuses on a total of 13 hydraulic engineering measures to re-introduce natural river dynamics, especially in the upper reach of the Lech between Holzgau and Vorderhornbach, but also on selected stretches in middle and lower part, especially on German territory south of Füssen (Figure 1). The measures are based on the river development concept Lech, which was developed in an interdisciplinary fashion as part of the first LIFE project. In the course of the measures, bank stabilization structures were removed, the river widened, side streams created and groynes shortened, thus affording spaces for the river to re-develop its natural dynamics.



Figure 1: Areas with river revitalisation actions within LIFE Lech.

#### 3.1.3 Main conservation issues, habitat types and/or species being targeted

Especially at the upper reaches there is great potential for the restoration of dynamically shaped gravel bars and pioneer habitats. These are necessary to ensure the permanent survival of highly specialized, highly endangered species using these gravel bars as habitats, like the German tamarisk *Myricaria germanica* (within 3230), the miniature bulrush *Typha minima* (in 7240, 3230, 3240), the common sandpiper *Actitis hypoleucos*, the little ringed plover *Charadrius dubius*, the grasshopper *Bryodemella tuberculata*, the grayling *Thymallus thymallus* etc.

Additionally, conservation measures were implemented for specific species such as the miniature bulrush (*Typha minima*), fish (the European bullhead *Cottus gobio*) bird species of the gravel bars (the common sandpiper *Actitis hypoleucos* and the little ringed plover *Charadrius dubius*) as well as insects and spiders of the gravel bars (e.g. the rattle grasshopper *Psophus stridulus* or the rose-winged grasshopper *Bryodemella tuberculata*), amphibians (the northern crested newt *Triturus cristatus* and the European tree frog *Hyla arborea*) and dragonflies (the Siberian bluet *Coenagrion hylas*).

A further aim was to improve visitor management in the protected area. Enhanced information, raising of awareness and "guiding" visitor offers are supposed to relieve the breeding areas of disturbance-sensitive bird species (common sandpiper, little ringed plover) and at the same time to increase the acceptance of the Natura 2000 protected area among the local population.

#### 3.1.4 Socio-economic context

The discharge capacity of the Tyrolean Lech will be increased by the river widening and the riverbed will be stabilized and raised. The surrounding areas of the river are thus further and permanently available for the retention of potential floodwaters, which, as a result of climate change, occur more frequently or with more force. The retention effect in the project area has an attenuating effect on the flood wave and reduces negative effects further downstream. The extreme floodwater at the Tyrolean Lech in the year 2005 impressively proved the synergetic effect of the river revitalisation (river widening) on floodwater retention. The large-scale river widenings, implemented as part of the first LIFE project at the LECH (2001-2007), were a major contribution to the reduction of damage. This led to an increased acceptance of river revitalisation measures among the local population.

The LIFE project secures valuable jobs in a peripheral region. On average, 6 employees of the BBA Reutte work at the LIFE construction sites, and the Tiroler Lech Nature Park has increased their staff in order to take on further tasks for the LIFE project. As far as tourism is concerned, there are noticeable indirect effects. The Lechweg, a popular long-distance hiking path, originated from an idea in the first LIFE project. In the meantime, it has become a valuable brand in tourism. The LIFE project contributes to further increasing the attractiveness of the Lech and its landscape.

#### 3.2 Expected long-term results

The main results laid out in the proposal were achieved or even surpassed. In particular:

- As abitotic monitoring (see deliverable D.2) shows, <u>13 river revitalisation stretches</u> meanwhile led to a total of 14 km of "soft" banks (without stabilisation structures) and additional 23 ha of dynamically shaped river areas (3220, 3230, 3240 in Annex I of the Habitats Directive). However, the potential is far higher. In connection with larger floods, up to 62 ha of additional dynamically shaped areas are possible (see D.2).
- These <u>additional habitats</u> will improve the living conditions for <u>species which depend</u> <u>on gravel bars</u> (e.g. the common sandpiper *Actitis hypoleucos*, the little ringed plover *Charadrius dubius*, grasshoppers like the rose-winged grasshopper *Bryodemella tuberculata*, Spotted Snark Cricket *Bryodema tuberculata*, Gravel Bar Grasshopper *Chorthippus pullus*, Turk's thorn cricket *Tetrix tuerki* or arachnoides like the riverside giant wolf spider *Arctosa cinerea*) in a long term, although this could not be sufficiently proven in the monitoring (see deliverable D.3.5). The birds's monitoring 2021-2022 indicates that populations of common sandpiper *Actitis hypoleucos* are rising, while the little ringed plover *Charadrius dubius* is on a constantly high level (see deliverable D.3.3)
- <u>3 additional side channels</u> (Grünau, Griesau, bullheadnbach), the new tributary mouth in Kraichen (C.8) and the newly structured riverbanks at C.11 led to a strong increase in small fish populations, among others for the European bullhead *Cottus gobio*. In the next few years, the positive development should continue, as the potential of the bullheadnbach and the reconnected backwaters near Lechaschau (C.14) as spawning areas is not yet exhausted (see deliverable D.3.2).
- With the creation of <u>38 (!) additional spawning waters for Amphibians</u> the LIFE-project set good preconditions for a positive development of amphibians in the Lech Valley. Within the monitoring (see deliverable D.3.4) a tendency towards an increase in tree frog *Hyla arborea* calls could be determined. There was also evidence of reproduction at more than half of the spawning sites. The number of observed crested newts *Triturus cristatus* also increased in 2021 compared to 2018. Natterjack toad *Bufo*

*calamita* populations have been stagnating at a low level for several years. In 2021, however, youngsters were able to develop again.

- Under guidance of the expert Prof. Norbert Müller, more than <u>1000 young plants of</u> <u>the dwarf bulrush *Typha minima*</u>, which had been propagated in the Innsbruck Botanical Garden, were planted in the LIFE revitalization sections C.5, C.6, C.9 and C.10 in 2019 and 2020. Furthermore, sods of the dwarf bulrush were taken from a stock near Forchach and used again at suitable locations. This transplantion was the first of its kind within the Alps and the EU. The newly applied dwarf bulrush plants are well established and spread via root suckers. However, whether self-sustaining stocks can develop will become apparent in the next few years and will depend on the flood dynamics at the locations.
- <u>Cross-border cooperation and LIFE experience exchange</u>: The LIFE project laid an excellent basis for future cross-border cooperation with the WWA Kempten. Both sides benefited from the cooperation. Contacts were made to other river revitalization projects in Austria via the national LIFE platforms and expanded through excursions. The international wild river symposium and the exchange of experiences with those responsible and stakeholders of the upper Isar further increased awareness of the Tyrolean Lech as a best-practice example for large-scale river revitalization, especially in the neighboring state of Bavaria.
- <u>Public Relations and Raising of Awareness:</u> The Tiroler Lech Nature Park was closely involved in the LIFE project and the implementation of measures for Public Relations and Raising of Awareness like website, media work, touring exhibition, excursions, action days, etc. right from the start. This ensures that the LIFE Project message is conveyed to locals and visitors on a lasting basis.
- <u>Management plan</u>: The next steps are specified in the current management plan for the Tiroler Lech Nature Park, which was created as part of the LIFE project (see deliverable A.2). In a participatory process, stakeholders from the fields of nature conservation, forestry, agriculture, tourism, water management and fisheries agreed on 175 individual measures on the "pillars" of nature conservation, environmental education, recreation, regional development and research in several working group meetings. They are to be realized in the next 10 years and thus continue the positive development of the wild river landscape of the Tyrolean Lech.

### 4 Administrative part

#### 4.1 **Project Management**

The project LIFE Lech started on 01/09/2016, in accordance with the proposal. The project lead, the steering group and the project team were nominated and commenced work. The constituting meeting of the steering group took place on the 28/11/2016 in Innsbruck. In this meeting, the project organisation outlined in the proposal was modified. The <u>steering group</u> now consists solely of representatives of the project financiers, as well as one representative of the municipalities. It is informed at least once a year about the progress of the project by the project lead (PL) and his external project coordinator (PC, provided by Revital). It is responsible for the strategic and financial level. The project team is responsible for planning and implementation (see Figure 2).

Wolfgang Klien (BBA Reutte/BWV-T) was project manager until his retirement on 31/12/2020. Bernhard Kogelbauer (former second name: Müllebner) succeeded him as project manager from 01/01/2021. However, W. Klien is still available for advisory activities. His successor at the BBA Reutte is Florian Keller. He is the deputy project manager.



Figure 2: Organisation chart LIFE Lech (as of 30/09/2022).

#### 4.2 **Project meetings**

Since the start of the project, 9 meetings of the steering group and 43 meetings of the project team have taken place.

#### 4.2.1 Meetings of the steering group:

- 1. 28/11/2016: Steering group meeting 01 in Innsbruck; focus: project status
- 2. 17/05/2017: Steering group meeting 02 in Innsbruck; focus: project status
- 3. 11/10/2017: Steering group meeting 03 in Innsbruck; focus: project status
- 4. 04/10/2018: Steering group meeting 04 in Innsbruck; focus: project status
- 5. 14/10/2019: Steering group meeting 05 in Innsbruck; focus: project status
- 6. 20/10/2020: Steering group meeting 06 video conference; focus: project status
- 7. 17/11/2020: Steering group meeting 07 video conference, preparing Lech river symposium
- 8. 15/04/2021: Steering group meeting 08 video conference; focus: project status
- 9. 19/05/2022: Steering group meeting 09 video conference; focus: project status



Figure 3: Participants in the constituting meeting on 28/11/2016 in Innsbruck (Photo: BWV Tirol/Müllebner).



Figure 4: Participants in the 9th meeting on 19/05/2022 via video conference (screenshot).

Due to the covid 19 pandemic, the project meetings were held mainly as video conferences since March 2020. This procedure has proven to be very effective and has reduced the effort for project meetings for everyone involved.

#### 4.2.2 Project team meetings

At each of these meetings, the then-current project status and planning was presented and discussed. Time and place of the project team meetings:

- 1. 07/12/2016: Project team meeting 01, Reutte; Project visit by Ms Cornelia Schmitz
- 2. 17/01/2017: Project team meeting 02, Innsbruck
- 3. 22/02/2017: Project team meeting 03, Innsbruck
- 4. 15/03/2017: Project team meeting 04, Innsbruck
- 5. 19/04/2017: Project team meeting 05, Innsbruck
- 6. 17/05/2017: Project team meeting 06, Innsbruck
- 7. 12/07/2017: Project team meeting 07, Innsbruck
- 8. 21/09/2017: Project team meeting 08, Innsbruck
- 9. 23-24/10/2017: Project team meeting 09, Reutte, project visit by Ms Cornelia Schmitz
- 10. 14/12/2017: Project team meeting 10, Innsbruck
- 11. 01/02/2018: Project team meeting 11, Innsbruck
- 12. 20/03/2018: Project team meeting 12, Innsbruck
- 13. 03/05/2018: Project team meeting 13, Innsbruck
- 14. 11-12/07/2018: Project team meeting 14, Reutte, project visit by Ms Cornelia Schmitz
- 15. 12/09/2018: Project team meeting 15, Innsbruck
- 16. 29/11/2018: Project team meeting 16, Innsbruck
- 17. 20/03/2019: Project team meeting 17, Innsbruck
- 18. 06/05/2019: Project team meeting 18, Innsbruck
- 19. 03/07/2019: Project team meeting 19, Innsbruck
- 20. 22/07/2019: Project team meeting 20, Reutte, project visit by Ms Cornelia Schmitz and Ms Theresia Holzamer
- 21. 14/10/2019: Project team meeting 21, Innsbruck
- 22. 12/12/2019: Project team meeting 22, Innsbruck
- 23. 05/02/2020: Project team meeting 23, Innsbruck
- 24. 06/03/2020: Project team meeting 24, video conference
- 25. 22/07/2020: Project team meeting 25, Reutte, project visit by Ms Theresia Holzamer and Ms Rosi Hingsamer (EASME, via video link)
- 26. 15/09/2020: Project team meeting 26, video conference
- 27. 03/12/2020: Project team meeting 27, video conference
- 28. 03/02/2021: Project team meeting 28, video conference
- 29. 26/03/2021: Project team meeting 29, video conference
- 30. 03/05/2021: Project team meeting 30, video conference
- 31. 07/06/2021: Project team meeting 31, video conference
- 32. 09/07/2021: Project team meeting 32, Reutte, project visit by Ms Theresia Holzamer
- 33. 31/08/2021: Project team meeting 33, video conference
- 34. 05/11/2021: Project team meeting 34, video conference
- 35. 29/11/2021: Project team meeting 35, video conference
- 36. 17/12/2021: Project team meeting 36, video conference
- 37. 24/01/2022: Project team meeting 37, video conference
- 38. 08/03/2022: Project team meeting 38, video conference
- 39. 26/04/2022: Project team meeting 39, video conference
- 40. 27/06/2022: Project team meeting 40, video conference
- 41. 10/08/2022: Project team meeting 41, video conference
- 42. 17-18/08/2022: Project team meeting 42, Reutte, project visit by Ms Theresia Holzamer and Ms Rosi Hingsamer (CINEA)
- 43. 10/10/2022: Project team meeting 43, final meeting

#### 4.3 Communication with the Agency and Monitoring team

The cooperation with EASME/CINEA and the Monitoring team worked excellently from the beginning over the entire project period. Ms. Cornelia Schmitz supervised the project from 2016 to 07/2019, followed by Ms. Theresia Holzamer from 07/2019-12/2022. The advice and support from Mrs. Holzamer from the monitoring team was extremely valuable, especially when the project was changed twice in 2019 and 2021 in connection with the extension of the project duration. This made the work much easier and thus contributed to the success of the project.



Figure 5: First project visit at the Lech by Conny Schmitz on 07/12/2016. Left to right: Reinhard Lentner, Daniela Pöll, Sophie Riccabona (all ATLR U), Conny Schmitz, Wolfgang Klien (BBA Reutte, project manager), Tobias Hiepp, Martin Mohr (WWA Kempten), Bernhard Müllebner (BWV Tirol) (Photo: Revital/Unterlercher)



Figure 6: At the meeting on 22/07/2019, Ms. Holzamer replaced Ms. Schmitz as EU Monitor. Mrs. Holzamer supervised the project until its completion and was helpful with two project amendments.



Figure 7: Visiting the new suspensionbridge near Forchach (action C.13 Forchach) together with the Monitoring team on 07/07/2020.



Figure 8: Final project visit with Ms **Rosi Hingsamer and Ms Theresia** Holzamer on 08/08/2022. Left to right: Marian Unterlercher (Revital, project-coordinator), Florian Keller (BBA Reutte), Theresia Holzamer (neemo), Bernhard Reiter (BBA Reutte), Bernhard Kogelbauer (BWV Tirol, project manager) Wolfgang Klien (former project manager BBA Reutte), Rosi Hingsamer (CINEA), Martin Mohr (WWA Kempten), Walter Michaeler, Felix Lassacher (beide Land Tirol Abteilung Umweltschutz); nicht am Bild: Martin Weinländer (Revital/coordinator); (Photo: Revital/Martin Weinländer)

#### 4.4 Changes due to amendments to the Grant Agreement

There were no relevant administrative changes due to the project amendments.

### 5 Technical Part

#### 5.1 Technical Progress per Action

#### 5.1.1 A.1 Detail planning of Construction Work

#### 5.1.1.1 <u>A.1.1 Planning for Lech Vorderhornbach (C.1):</u>

#### Responsible partner: BWV Tirol

State of implementation: Planning, including the documents needed for the application for authorisation under conservation law, has been completed, discussed and authorised. Authorisation decision issued on 27/07/2017.

Notes:

• The inclusion of the junction of the Hornbach, which is under the purview of the WLV, was not possible after all, despite their earlier statements to the contrary.

Attachments: see Mid-term report 31/12/2018

Schedule/status: Planning action A.1.1 was completed 1 year earlier than scheduled in the proposal. Reason: Attainment of national co-financing.

Proposed start date:	01/2018	Actual start date	01/2017	
Proposed end date:	09/2018	Actual/anticipated end date:		07/2017
Status:	Not yet started	started in progress		completed

#### 5.1.1.2 <u>A.1.2 Planning for Lech Grünau (C.3):</u>

Responsible partner: BWV Tirol

State of implementation: The planning process, carried out by DonauConsult and ARGE Limnology, was concluded, discussed and authorised. Authorisation decision issued on 13/10/2017.

Notes:

• The provisions outlined in the proposal were realised. Particular attention was paid to the creation of areas allowing for river dynamisation. According to the planning documents, their size is 2.0 ha.

Attachments: see Mid-term report 31/12/2018

Schedule/status: The planning task A.1.2 has been concluded. This is nearly 3 years ahead of the proposal's schedule. Reason: Attainment of national co-financing. Additionally, monitoring results become more meaningful.

Proposed start date:	01/2020	Actual start date:		01/2017
Proposed end date:	09/2020	Actual/anticipated end date:		10/2017
Status:	Not yet started	started in progress		completed

#### 5.1.1.3 <u>A.1.3 Planning for Lech Häselgehr-Griesau (C.4):</u>

Responsible partner: BWV Tirol

State of implementation: Planning, including the documents needed for the application for authorisation under conservation law, has been completed, discussed and authorised. Authorisation decision issued on 13/10/2017.

Attachments: see Mid-term report 31/12/2018

Status: Planning action A.1.3 was concluded 1 year ahead of the proposal's schedule. Reason: Attainment of national co-financing and more effective monitoring.

Proposed start date:	01/2018	Actual start date:		01/2017
Proposed end date:	09/2018	Actual/anticipated end date:		10/2017
Status:	Not yet started	started in progress		completed

#### 5.1.1.4 <u>A.1.4 Planning for Lech Elmen-Nussau (C.5)</u>:

Responsible partner: BWV Tirol

State of implementation: Planning has been completed, discussed and authorised.

Attachments: see Mid-term report 31/12/2018

Status: Planning action A.1.4 was completed 1 year ahead of the proposal's schedule. Reason: Attainment of national co-financing, more effective monitoring, and it was an ideal action for the groundbreaking ceremony.

Proposed start date:	01/2018	Actual start date:		01/2017
Proposed end date:	09/2018	Actual/anticipated end date:		05/2017
Status:	Not yet started	started in progress		completed

#### 5.1.1.5 <u>A.1.5 Planning for Lech Luxnach (C.6)</u>:

Responsible partner: BWV Tirol

State of implementation: Planning, including the documents needed for the application for authorisation under conservation law, has been completed, discussed and authorised. Authorisation decision issued on 14/11/2017.

Attachments: see Mid-term report 31/12/2018

Status: Planning action A.1.5 has been implemented and completed as scheduled in the proposal.

Proposed start date:	12/2016	Actual start date:		01/2017
Proposed end date:	09/2017	Actual/anticipated end date:		11/2017
Status:	Not yet started	started	in progress	completed

#### 5.1.1.6 <u>A.1.6 Planning for Lech Stockach (C.7)</u>:

#### Responsible partner: BWV Tirol

State of implementation: The project was developed until July 2018, then discussed within the project team. It was submitted for authorisation in August 2018. Authorisation was issued on 06/08/2018.

Attachments: see Mid-term report 31/12/2018

Status: Planning action A.1.6 has been implemented and completed 2 years ahead of the proposal's schedule.

Proposed start date:	01/2020	Actual start date:		01/2018
Proposed end date:	09/2020	Actual/anticipated end date:		08/2018
Status:	Not yet started	started in progress		completed

#### 5.1.1.7 <u>A.1.7 Planning for Lech Vorderfeld Kraichen (C.8)</u>:

State of implementation:

Planning, including the documents needed for the application for authorisation under conservation law, has been completed, discussed and authorised. Authorisation decision issued on 15/01/2018.

Notes:

- There were some changes from the proposal: The construction of side arm was not possible because of the terrain situation. Instead, the junction of the Modertalbach will be enlarged into a wide delta (see annex). In addition, 350 m of bank protection will be removed and ca. 5,000 m<sup>2</sup> of wood will be cleared and left to natural succession. This will result in an area allowing for dynamic river development ca. 0.5 ha large, which corresponds to the area outlined in the proposal.
- The costs remain approximately the same.

Attachments: see Mid-term report 31/12/2018

Status: Planning action A.1.7 has been implemented and completed 8 months earlier than scheduled in the proposal.

Proposed start date:	01/2018	Actual start date:		08/2017
Proposed end date:	09/2018	Actual/anticipated end date:		01/2018
Status:	Not yet started	started in progress		completed

#### 5.1.1.8 <u>A.1.8 Lech Alach-Rauchwand (C.9)</u>:

Responsible partner: BWV Tirol

State of implementation: Planning, including the documents needed for the application for authorisation under conservation law, has been completed, discussed and authorised. Authorisation decision issued on 12/02/2018.

Attachments: see Mid-term report 31/12/2018

Status: Planning action A.1.8 has been implemented and completed half a year ahead of schedule.

Proposed start date:	12/2016	Actual start date:		01/2017
Proposed end date:	06/2018	Actual/anticipated end date:		02/2018
Status:	Not yet started	started in progress		completed

#### 5.1.1.9 <u>A.1.9 Planning for Lech Downriver of Johannesbrücke (C.10)</u>:

#### Responsible partner: BWV Tirol

State of implementation: Planning, including the application documents necessary under conservation law, were concluded and submitted for authorisation. During the authorisation process, delays were incurred due to discussions regarding the size of the areas to be re-dynamised. Following several meetings and site visits, however, this action was implemented as laid out in the proposal. Moreover, it was combined with species conservation actions: a backwater ("bullheadnbach") was additionally constructed to serve as a habitat for fish (Cottus gobio) and re-introducing stone crayfish, among other benefits.

Attachments:

- Application documents see Mid-term report 31/12/2018
- Permit see Deliverables A.1.9

Status: Planning action A.1.9 was submitted for authorisation in 10/2017. During the process of authorisation, a side arm was planned during revision and subsequently submitted in 10/2018. Authorisation decision issued on 15/03/2019. Thus, this action was completed 1.5 years later than scheduled.

Proposed start date:	12/2016	Actual start date:		01/2017
Proposed end date:	09/2017	Actual/anticipated end date:		03/2019
Status:	Not yet started	started	in progress	completed

#### 5.1.1.10 <u>A.1.10 Lech Forchach Hängebrücke (C.13)</u>:

#### Responsible partner: BWV-T

State of implementation: This "action in reserve" was additional approved by EASME following an amendment request by BWV-T. Planning, including the documents needed for the application for authorisation under nature conservation law, has been completed, discussed and authorised. Authorisation decision for river widening issued on 15/03/2019 and 12/04/2021 (extension of revitalisation stretch), permit for the suspension bridge 30/01/2020.

Attachments

- Application documents see Mid-term report 31/12/2018
- Permits see Deliverables A.1.10

Status: Planning documents and permits for action A.1.10 (including extension of river restoration upstream supsensionbridge) finished.

Proposed start date:	-	Actual start date:		12/2018
Proposed end date:	09/2019	Actual/anticipated end date:		04/2021
Status:	Not yet started	started	in progress	completed

Notes on the detailed planning for C.2, C.11 and C.14:

Detail planning for C.11 Lech Staatsgrenze bis Lechschlucht was made by WWA Kempten without LIFE funding. Planning work for C.2 Hornberg and C.14 Lechaschau was carried out by BWV-T outside LIFE.

#### 5.1.2 A.2 Natura 2000 Management Plan Tiroler Lech

Responsible partner: ATLR U

In 2020–2021, representatives of the Tyrolean Regional Government, Department for Environmental Protection, the association Naturpark Tiroler Lech, and of local institutions (municipalities, tourism, agriculture, forestries, regional development, schools, NGOs, ...) met several times in working groups and for discussions within the LIFE project framework. With expert guidance, they defined goals and measures for the protected area for the next 10 years – and beyond.

Together, the participants developed 175 individual measures.

- 126 of them are concerned with nature conservation.
- 38 measures concern environmental education, recreation, regional development, and research.
- 11 overarching measures are meant to strengthen the Nature Park region Tyrolean Lech beyond the bounds of the protected area itself.

Note: The Standard Data Form will be adapted on basis of the new Natura 2000 Management Plan Tiroler Lech by ATLR U in 2023.

Attachment: see Deliverables

• A.2 Natura 2000-Managementplan Tiroler Lech (report and maps)

Schedule/status: A.2 started after tendering and awarding process in May 2020 with justified delay. Reasons for delay and meantime preparation works: Habitat mapping in the Natura 2000 area Lechtal (outside LIFE) was still running until 2019, which was an important basis for the management plan. For this reason, the tender of the main commission was postponed. End of 2021 a draft for final approval was available. End of March 2022 the management plan was finished. The processing, including stakeholder involvement, took around 1.5 years, so that the schedule was only exceeded by around 3 months in the end.

Proposed start date:	12/2016	Actual start date:		06/2017
Proposed end date:	12/2021	Actual/anticipated end date:		03/2022
Status:	Not yet started	started	in progress	completed

#### 5.1.3 A.3 Evaluation of Alternatives for Species Protection Actions

#### Responsible partner: ATLR U

In order to select effective and well-targeted LIFE species protection measures, the University of Innsbruck\*) conducted a study on species protection actions ("Studie Artenschutzmaßnahmen") at the beginning of the LIFE project.

For this purpose, the experts drew up a list of 108 species important for the Nature Park Tyrolean Lech and ranked them according to criteria such as protection status, endangerment, regional importance, or public appeal. The result was a "priority ranking" of species for the conservation measures.

Proposals for species protection measures were developed for the "top 20" species. These proposals were implemented either - if time and funding allowed - as LIFE species conservation measures under C.12 or became part of the management plan for the Nature Park Tyrolean Lech (A.2).

\*) By awarding the commission to the University of Innsbruck, which has been conducting research on species conservation at the Tyrolean Lech for decades, and which has broad professional qualifications and fundamental knowledge, it can be expected that the evaluation of alternatives will entail conservation research at the Tyrolean Lech beyond the LIFE project, and that further scientific research and projects will follow. Thus, sustainability is ensured. At the same time, the knowledge gained will be disseminated to students and, through courses and publications, to a wider public. This raises awareness of the Tyrolean Lech.

Attachment:

• see Mid-term report 31/12/2018 (A.3\_Variantenstudie\_Artenschutzmassnahmen\_Endfassung.pdf)

Schedule/status:

The River Conservation Research Group (Univ. Prof. Dr. Leo Füreder) at the Department of Ecology at the University of Innsbruck was commissioned with the implementation. Since it was seen that there was no basic survey data relevant to decisions (HD habitat types, conservation status of Typha minima, rose-winged grasshopper, amphibians), these surveys were then carried out in the later half of 2017 and the first half of 2018. Based on this data and the results of the pre-monitoring, it was possible to select the species to be protected and the ranking of actions. A.3 Evaluation of Alternatives for Species Protection Actions was completed in 10/2018.

Tendering and awarding were delayed by around 3 months. Consequently, the conclusion of the action was delayed by around 7 months. This does not influence the success of the project.

Proposed start date:	12/2016	Actual start date:		03/2017
Proposed end date:	03/2018	Actual/anticipated end date:		10/2018
Status:	Not yet started	started	in progress	completed

#### 5.1.4 B.1 Land purchase for the Revitalisation of Lech Grünau

#### Responsible partner: BWV Tirol

State of implementation: The action will not be implemented, because the area required belongs to the agricultural community of Unterbach-Grünau, which has in the meantime become a municipal land agricultural community, and which is now under the public ownership of the municipality of Elbingenalp. Therefore, the purchase through LIFE is no longer eligible for funding. Instead, national funds are used. This saved 142,000 euros.

Schedule/status:

No longer relevant for the implementation of the LIFE project.

Proposed start date:	12/2016	Actual start date:	Not relevant
Proposed end date:	12/2021	Actual/anticipated end date:	Not relevant
Status:	Not relevant		

#### 5.1.5 C.1 Revitalisation Lech Vorderhornbach

Responsible partner: BWV Tirol

Description: Linear and cross constructions were shortened or removed altogether on both banks over a length of 2 km. Because of this, the Lech will be able to reconquer space in this area. Apart from creating retention space for the case of a flood, the action also contributes to the long-term development of more than 2.0 ha of near-natural river, creating a habitat with dynamically shifting water and bank zones, gravel and sand bars, deadwood, scours, fords etc.

See Attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Implementation began in 09/2017 and was completed in 04/2019. So it was completed about a year ahead of the proposal's schedule.

Proposed start date:	04/2018	Actual start date:		09/2017		
Proposed end date:	03/2020	Actual end da	te:	04/2019		
Status:	Not yet started	started in progress		completed		
Expected results	Expected results		Achieved			
<ul> <li>2 km of dynamic riv</li> <li>2 ha of natural-near of ("active channel")</li> </ul>	er ("soft") banks dynamic river area	<ul> <li>1.5 km of dynamic river ("soft") banks</li> <li>3.17 ha of natural-near dynamic river area ("active channel")</li> <li>5.28 ha additional potential for dynamic river area ("active channel")</li> <li>2,28 ha of HD habitat type 3220</li> </ul>				

#### 5.1.6 C.2 Revitalisation Lech Hornberg

Responsible partner: BWV Tirol

Description: On a stretch of 800 m in the area of Hornberg, the Lech was widened towards the right bank by ca. 15 m. Thus, a near-natural river habitat sized 1.2 ha was initiated.

See Attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Because the action was authorised prior to LIFE, it was possible to implement it at the beginning of 2017. In 08/2018 the action was completed roughly in time.

Proposed start date:	09/2016	Actual start date:		01/2017	
Proposed end date:	06/2018	Actual end date:		08/2018	
Status:	Not yet started	started in progress		completed	
Expected results		Achieved			
• 1.3 km of dynamic r	iver ("soft") banks	• 1.30 km of dynamic river ("soft") banks			
• 1.5 ha of natural-near dynamic river area ("active channel")		• 1.71 ha of natural-near dynamic river area ("active channel")			
	• 1.07 ha of HD habitat type 3220		3220		

#### 5.1.7 C.3 Revitalisation Lech Grünau

Responsible partner: BWV Tirol

Description: The revitalisation of the Tyrolean Lech at Grünau in Elbigenalp included the creation of a flood channel on the left bank of the Lech and a new, 400 m long side arm. An old bank protection was demolished over a length of 150 m.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Forest clearing was completed in 05/2018. In 07/2018, construction work started, in 10/2019 it was completed, 2 years ahead of schedule.

04/2020	Actual start date:		05/2018		
09/2021	Actual end date:		10/2019		
Not yet started	started in progress		completed		
Expected results		Achieved			
<ul> <li>1.3 km of dynamic river ("soft") banks</li> <li>1.3 ha of natural-near dynamic river area ("active channel")</li> </ul>		<ul> <li>1.75 km of dynamic river ("soft") banks (incl. new side channel)</li> <li>2.64 ha of natural-near dynamic river area</li> </ul>			
	04/2020 09/2021 Not yet started ver ("soft") banks r dynamic river	04/2020Actual start da09/2021Actual end daNot yet startedstartedAchievedAchievediver ("soft") banks• 1.75 km of (incl. new")• 2.64 ha of ("active ch	04/2020       Actual start date:         09/2021       Actual end date:         Not yet started       started       in progress         Achieved       Achieved         iver ("soft") banks       • 1.75 km of dynamic river ("         (incl. new side channel)         ")       • 2.64 ha of natural-near dyna ("active channel")		

• 1.56 ha additional potential for dynamic river area ("active channel")
<ul> <li>loss of 0.07 ha 3240. Additional 0.81 ha of HD habitat type 3220, 7240*</li> </ul>

#### 5.1.8 C.4 Revitalisation Lech Häselgehr-Griesau

Responsible partner: BWV Tirol

Description: 425 m of old bank protections from the 1950s and 1970s were removed. An existing side channel at the Grießbach's mouth was expanded 400 m upstream and now serves as a habitat for fish. Additionally, a new amphibian pool was created.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Forest clearing was finished in 05/2018. Earth works began in 06/2018. In winter 2018/2019 the new side arm, 600 m long, was completed and the linear bank protection was removed. Completion was mid-2019, almost a year ahaead of schedule.

Proposed start date:	04/2018	Actual start date:		05/2018
Proposed end date:	03/2020	Actual end date:		06/2019
Status:	Not yet started	started	in progress	completed
Expected results		Achieved		
<ul> <li>1.2 km of dynamic ri</li> <li>1.0 ha of natural-nea area ("active channel</li> </ul>	ver ("soft") banks r dynamic river ")	<ul> <li>Achieved</li> <li>1.80 km of dynamic river ("soft") bar (incl. additional side channel)</li> <li>1.40 ha of natural-near dynamic river ("active channel")</li> <li>2.99 ha additional potential for dynamic river area ("active channel")</li> <li>0.7 ha of HD habitat type 3220, 3240, 7240*</li> </ul>		soft") banks el) umic river area for dynamic 220, 3240,

#### 5.1.9 C.5 Revitalisation Lech Elmen-Nussau

Responsible partner: BWV Tirol

Description: In the municipality of Elmen, downriver of the hamlet Klimm, 10 groynes on the left riverbank from the early 20<sup>th</sup> century were shortened by a total of 280 m. Because of this, the Lech will be able to reconquer space in this area and to transform the currently forested area into a natural riverbed. Apart from creating retention space for the case of a flood, the action also contributes to the long-term development of 0.7 ha of near-natural river, creating a habitat with dynamically shifting water and bank zones, gravel and sand bars, deadwood, scours, fords etc.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Implementation began in 08/2017 and was completed in 10/2017 almost one and a half year ahead of the proposal's schedule.

Proposed start date:	04/2018	Actual start date:		05/2017
Proposed end date:	03/2019	Actual end date:		10/2017
Status:	Not yet started	started	in progress	completed
Expected results		Achieved		
<ul> <li>0.7 km of dynamic ri</li> <li>0.7 ha of natural-nea area ("active channe?"</li> </ul>	iver ("soft") banks r dynamic river l")	<ul> <li>O km of dynamic river ("soft") banks (groynes removed)</li> <li>0.38 ha of natural-near dynamic river ar ("active channel")</li> <li>4.17 ha additional potential for dynamic river area ("active channel")</li> <li>loss of 0.76 ha 3220, additional 0,56 ha HD habitat type 3240, 7240*</li> </ul>		t") banks mic river area for dynamic ) onal 0,56 ha of *

#### 5.1.10 C.6 Revitalisation Lech Luxnach

Responsible partner: BWV Tirol

Description: In the area of Häselgehr / Luxnach, there were three rock groynes on the right bank of the Lech. These have been dismantled, so that the Lech can retake space in this area. In the long term, 0.5 ha of near-natural river habitat will develop. The riverbed of the Lech has been widened by ca. 10–15 m on a stretch of 150 m below the camping site in Häselgehr, returning an area of 0.2 ha to the river. Furthermore, flood discharge is improved by the elimination of this bottleneck.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- ▶ 13 Photo documentation C.1-C.14.pdf

Schedule/status: Construction work on action C.6 began in 12/2017 and was finished in 02/2018, according to the timetable.

Proposed start date:	06/2017	Actual start date:		12/2017
Proposed end date:	03/2018	Actual end date:		02/2018
Status:	Not yet started	started in progress		completed
Expected results		Achieved		
• 0.5 km of dynamic river ("soft") banks		• 0.15 km of dynamic river ("soft") banks		
• 0.5 ha of natural-near dynamic river area ("active channel")		• 0.79 ha of natural-near dynamic river area ("active channel")		mic river area

• 3.47 ha additional potential for dynamic river area ("active channel")
<ul> <li>0.73 ha of HD habitat type 3220, 3240, 7240*</li> </ul>

#### 5.1.11 C.7 Revitalisation Lech Stockach

Responsible partner: BWV Tirol

Description: Upstream of the Lech bridge at Stockach 350 m of bank protections were removed. Downstream of the bridge the riverbed was widened (12.300 m3 removed!). It now provides more space (about 1 ha) to benefit everyone: The characteristic flora and fauna of the Lech gained new habitats, people find opportunities for recreation at the easily accessible banks, and the nearby settlement and commercial area is protected through higher discharge capacity in combination with additional flood embankments.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Construction work started in winter 2018/2019. In 04/2019 riverbed widening downstream of Stockach was realised, in 05/2020 the river widening was continued and finished in the upper part. Overall C.7 was implemented 1.5 years ahead of the proposal's schedule.

Proposed start date:	04/2020	Actual start da	08/2019				
Proposed end date:	09/2021	Actual end da	te:	05/2020			
Status:	Not yet started	started	in progress	completed			
Expected results	Achieved						
<ul> <li>0.8 km of dynamic ri</li> <li>0.8 ha of natural-nea area ("active channe)</li> </ul>	<ul> <li>0.95 km of dynamic river ("soft") banks</li> <li>1.60 ha of natural-near dynamic river area ("active channel")</li> <li>0.39 ha additional potential for dynamic river area ("active channel")</li> </ul>						
		• 1.17 ha of HD habitat type 3220					

#### 5.1.12 C.8 Revitalisation Lech Vorderfeld Kraichen

Responsible partner: BWV Tirol

State of implementation: The mouth of the feeder Modertalbach was extended to a delta. This will improve hydrological conditions, fish migration and dynamically shaped gravel habitats.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Action C.8 was started in 11/2018 and completed in 04/2019, 1 year earlier than assumed in the proposal.

Proposed start date:	06/2018	Actual start da	11/2018				
Proposed end date:	03/2020	Actual end da	te:	04/2019			
Status:	Not yet started	started	in progress	completed			
Expected results		Achieved					
<ul> <li>0.5 km of dynamic ri</li> <li>0.5 ha of natural-nea area ("active channe!")</li> </ul>	iver ("soft") banks r dynamic river l")	<ul> <li>0.35 km of dynamic river ("soft") banks</li> <li>0.62 ha of natural-near dynamic river area ("active channel")</li> </ul>					
	• 0 ha additional potential for dynamic river area ("active channel")						
		• 0.42 ha of HD habitat type 3220, 3240					

#### 5.1.13 C.9 Revitalisation Lech Alach-Rauchwand

Responsible partner: BWV Tirol

Description: A massive rock groyne in the river area was shortened by 40 m.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Construction work on action C.9 began in 01/2018 and was finished in 03/2018, 6 months ahead of schedule.

Proposed start date:	01/2018	Actual start date:		01/2018			
Proposed end date:	09/2018	Actual date:		03/2018			
Status:	Not yet started	started	in progress	completed			
Expected results		Achieved					
<ul> <li>0.1 km of dynamic r.</li> <li>0.2 ha of natural-nea area ("active channe")</li> </ul>	iver ("soft") banks r dynamic river l")	<ul> <li>0.35 km of</li> <li>0.20 ha of ("active ch</li> <li>4.13 ha ad river area</li> <li>Loss of 0.1 HD habita</li> </ul>	f dynamic river (" natural-near dyna hannel") ditional potential ("active channel") l ha 3220, additio t type 3240, 7240	fsoft") banks amic river area for dynamic ) mal 0.35 ha of *			

#### 5.1.14 C.10 Revitalisation Lech Downriver of Johannesbrücke

#### Responsible partner: BWV Tirol

Description: On the Lech nearby the quarry pond in Forchach, the upper western groyne was shortened by 80 m and the lower groyne was completely removed. A shallow water area was created in the south. Some of the excavated material was used to make the bank of the quarry lake flatter. The former bed of the side water "Koppenbach" has been reactivated over a length of about 1,1 km, so that water flows continuously again. This creates new fish habitats and the opportunity to reintroduce stone crayfish, a native crayfish. The quarry pond is not changed by this measure. The Lech will shape its future appearance itself.

Note: For the implementation of C.10 Baggersee Forschach, a land exchange with the municipality of Forchach (public water property for municipal land) was completed in 09/2022, with zero costs per ha but some taxes.

See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Construction of action C.10 began in 08/2019. Resistance to C.10 from individual interested parties who use the quarry lake for fishing has dissipated after joint meetings at which the project was adapted in an acceptable way for both sides, so that work could be finished by the end of 2020, more than 2.5 years behind the schedule.

Proposed start date:	03/2017	Actual start date:		01/2019			
Proposed end date:	03/2018	Actual end da	te:	12/2020			
Status:	Not yet started	started	in progress	completed			
Expected results		Achieved					
<ul> <li>0.4 km of dynamic rf</li> <li>10.0 ha of natural-ne area ("active channe)</li> </ul>	<ul> <li>2.0 km of dynamic river ("soft") banks (reactivating Koppenbach stream)</li> <li>2.72 ha of natural-near dynamic river area ("active channel")</li> </ul>						
	• 22.96 ha additional potential for dynamic river area ("active channel")						
		<ul> <li>Loss of 1.15 ha 3240, additional 1.20 ha of HD habitat type 3220, 3230, 7240*</li> </ul>					

#### 5.1.15 C.11 Revitalisation Lech Federal Border

Responsible partner: WWA Kempten

Description: Action C.11 was planned by the WWA Kempten itself (outside LIFE) including successful coordination with the affected power station operator. Shortly before the Lech leaves Austria along the national border to Germany, six inclining groynes and a spur of stones steer the river to the opposite German riverbank, where it is intended to ensure more bank dynamics and transform the section back into a branched wild river landscape.

See attachments: Other annexes -> 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: The project was submitted for authorisation by the WWA Kempten in September 2018, concerning Austria. The on-site hearing on 25/10/2018 was successful. The statements were positive throughout. The permit was issued on 29/11/2018, the official groundbreaking ceremony took place on 13/12/2018 (see the invitation in the attachment to E.2.2.3). In 06/2019 action C.11 was completed successfully, a year behind schedule. Owing to the protracted coordination process, a delay was incurred. However, this did not influence the overall success of the project. The responsible partner (Martin Mohr of the WWA Kempten) noted that the general conditions for construction works were unfavourable in spring 2018 anyhow, owing to high water flow.

Proposed start date:	09/2017	Actual start date:		12/2018			
Proposed end date:	06/2018	Actual end da	te:	06/2019			
Status:	Not yet started	started	in progress	completed			
Expected results	Achieved						
<ul> <li>0.63 km of dynamic</li> <li>6.5 ha of natural-nea area ("active channel</li> </ul>	river ("soft") banks r dynamic river l")	<ul> <li>0.2 km of dynamic river ("soft") banks (estimated)</li> <li>1.0 ha of natural-near dynamic river area ("active channel")</li> <li>5.43 ha additional potential for dynamic river area ("active channel")</li> <li>Loss of 0.36 ha 3220, additional 0.6 ha of</li> </ul>					

#### 5.1.16 C.12 Implementation of Species Protection Actions

Responsible partner: ATLR U

Description: For C.12 - species protection actions - the total budget was about  $600.000 \notin$  instead of  $200.000 \notin$ , as  $400.000 \notin$  could be saved with C.1-C.11 and C.13.

C.12 actions started in 2019 with the planting of <u>dwarf bulrush (*Typha minima*).</u> Under the guidance of the expert Prof. Norbert Müller, more than 1000 young plants, which had been propagated in the Innsbruck Botanical Garden, were planted in the LIFE revitalization sites C.5, C.6, C.9 and C.10 in 2019 and 2020. In addition, sods of the dwarf cattail were removed from a stock near the Forchach quarry lake with an excavator and reused at suitable locations (the "bullheadnbach" near Forchach). The transplant was the first of its kind within the Alps and the EU.

At 7 locations, from Unterpinswang to Ehenbichl, amphibious measures were implemented for toads (*Bufo calamita*), newts (*Triturus cristatus*) and tree frogs (*Hyla arborea*). A total of 38 ponds were built under C.12. The costs are around 350.000  $\in$ . Overall (including ponds build under C.3, C.4, C.14) there are now more than 50 new ponds with a total area of ~1 ha along Tyrolean Lech (see Table 1 and attachment -> Implementation\_plans\_C.12 -> C12 Amphibians).

To improve existing and create *new habitats for the Bilek's/Siberian bluet (Coenagrion hylas)* approx. € 52.000 were spent in 8 designated areas (see Table 1 and attachment Implementation\_plans -> C12 Sibirian damselfly). From the examinations carried out in advance, it is

known that *Coenagrion hylas* flies up to 20 km. Therefore, it is expected that the dragonflies will find the waterbodies in the area, created in the project.

In 2021, the conservation measures for the rare butterfly species scarce heath (*Coenonympha hero*) in Musau, Vils and Pinswang were also completed. For multiple de-bushings, approx.  $93.000 \in$  were used.

See attachments: Other annexes

- > 04\_C.12\_Plans\_Permits\_Reports\_Other
- > 05\_C.12\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status: Action C.12 is based on action A.3 Evaluation of Alternatives for Species Protection Actions, which was completed with delay in 10/2018. Implementation therefore started with 1 year delay in early 2019 and was completed in 10/2021. As the LIFE project was extended for nine Month, this was no problem at all.

Proposed start date:	03/2018	A	ctual start date	:	03/2019
Proposed end date:	03/2021	A	ctual/anticipate	ed end date:	10/2021
Status:	Not yet started	st	arted	in progress	completed
Expected results			Achieved		
<ul> <li>stable populations of piper Actitis hypoleum plover Charadrius data winged grasshopper</li> <li>a minimum of 8 addities, of which <ul> <li>2 are dedicated to</li> <li>2 are dedicated to</li> <li>2 are dedicated to</li> </ul> </li> <li>2 are dedicated to</li> <li>2 additional locations bulrush (Typha mining)</li> </ul>	The common sand cos, little ringed ubius and of rose- tional water bod- amphibians crayfish small fish s with miniature na)	1-	<ul> <li>38 addition a total area</li> <li>8 additiona Bilek's/Sib</li> <li>4 additiona C.4, C.10, km were cr</li> <li>7.4 ha additiona (C.4, C.10, km were cr</li> <li>7.4 ha addition (T)</li> <li>4 revitalisa (C.10) with bulrush (T)</li> <li>23 ha of act ha addition sandpiper a plover Char winged gra</li> <li>Increase in ringed ploy</li> <li>Consistent Actitis hyp</li> </ul>	hal amphibian wa a of 1.05 ha (see T al waters for habit berian bluet ( <i>Coen</i> al tributaries for s C.14) with a total reated itional habitats (ri- he rare butterfly <i>C</i> ation sites (C.5, C 1.000 young plan <i>ypha minima</i> ). Iditional "active c hal gravel bars for <i>Actitis hypoleuco</i> . <i>uradrius dubius</i> at asshopper breeding pairs of ver <i>Charadrius du</i> population sizes <i>oleucos</i>	ter bodies with Table 1) tats for the <i>agrion hylas</i> ) mall fish (C.3, l length of 2.6 parian mead- <i>coenonympha</i> .6, C.9 and nts of dwarf channel", 7.1 common s, little ringed nd of rose- f common little <i>ubius</i> of sandpiper

# Table 1: Conservation actions for amphibians, fish and Siberian damsels – overview; for location see attachment Other annexes -> 05\_Implementa-tion\_plans\_C.12\_BBA\_Reutte

	Ponds tempo- rarily filled with ground- water	m2	Ponds permanently filled with ground- water t	m2	Ponds drainabler	m2	Rough ground sites m2	Side channel [m]	main target species	more target types
New ponds for AMPHIBIANS										
C.12 Unterpinswang, Erschbachweiher									Tree frog, Great crested newt	Newt
punktuelle Entlandung			2	15						
Tümpelkette Nord- und Ostufer	9	120								
C.12 Unterpinswanger Aue									Great crested newt, Natterjack toad, Tree frog, Newt, Alpine newt, Grass frog, Common toad	
Tümpel Nr. 1 Grundwassertümpel West			1	870						
Tümpel Nr. 2 Grundwassertümpel Mitte	1	1100								
Tümpel Nr. 3 Grundwassertümpel Ost	1	1750								
Buhnentümpel			2	270						
C.12 Oberpinswanger Aue									Natterjack toad	Tree frog, Great crested newt
Abschnitt 1 - Viehweide										
Tümpel Nr. 1 Grundwassertümpel NO	1	190								
Tümpel Nr. 2 Grundwassertümpel SO	1	360								
Tümpel Nr. 3 Grundwassertümpel W			1	660						
Abschnitt 2										
Tümpel Nr. 4 Ablassteich AT01					1	190				
Abschnitt 3										
Tümpel Nr. 5 Ablassteich AT05					1	225				
Tümpel Nr. 6 Ablassteich AT04					1	200				
Abschnitt 4										
keine Tümpel, nur Oberflächenabtrag							11708			

	Ponds tempo- rarily filled with ground- water	m2	Ponds permanently filled with ground- water t	m2	Ponds drainabler	m2	Rough ground sites m2	Side channel [m]	main target species	more target types
Abschnitt 5										
Tümpel Nr. 7 Ablassteich AT03					1	180				
Tümpel Nr. 8 Ablassteich AT02					1	190				
Tümpel Nr. 9 Ablassteich AT06					1	185				
C.12 Musau, Sababach									Tree frog, Great crested newt	Grass frog, Com- mon toad, Alpine newt, ev Water frog und Natterjack toad
Tümpel Nr. 1 Grundwassertümpel Ost	1	150								
Tümpel Nr. 2 Grundwassertümpel West	1	170								
Sabateich West - Ablassteich					1	15				
C.12 Lechaschau									Tree frog	
Deponie - Ablassteich Lechaschau					1	425				
C.12 Pflach - Oberletzen									Tree frog	
Tümpel Nr. 1 Grundwassertümpel West Mitte			1	80						
Tümpel Nr. 2 Grundwassertümpel SW			1	90						
Tümpel Nr. 3 Grundwassertümpel NW			1	55						
Tümpel Nr. 4 Grundwassertümpel Ost			1	100						
C.12 Pflacher Aue									Tree frog	
Tümpel Nr. 1 Grundwassertümpel OST			1	135						
Tümpel Nr. 2 Grundwassertümpel Mitte Süd			1	55						
Tümpel Nr. 3 Grundwassertümpel Mitte Nord			1	70						
Tümpel Nr. 4 Grundwassertümpel NW			1	295						
Tümpel Nr. 5 Grundwassertümpel SW			1	80						
Total	15	3840	15	2775	8	1610	11708			
New ponds for Siberian Dragonfly Coenagrion hylas										
C.12 Baggersee									Siberian Dragonfly	
Muldenlacke 30 m S Baggersee			1	100						

	Ponds tempo- rarily filled with ground- water	m2	Ponds permanently filled with ground- water t	m2	Ponds drainabler	m2	Rough ground sites m2	Side channel [m]	main target species	more target types
Schotterkegel Ost 100 m östlich Buhne			1	250						
C.12 Elmen Fischteich									Siberian Dragonfly	
Tümpel Nr. 1			1	54						
C.12 Martinau									Siberian Dragonfly	
Tümpel Nr. 1			1	107						
C.12 Stanzach Bach									Siberian Dragonfly	
Tümpel Nr. 1			1	710						
Tümpel Nr. 2			1	713						
C.12 Stanzach Kläranlage									Siberian Dragonfly	
Tümpel Nr. 1			1	200						
Tümpel Nr. 2			1	390						
Gesamt			8	1614						
New ponds in connection with measures C.1-C.11, C.13-C.14										
C.3 Grünau										
temporär benetzte Mulden und Tümpel	2	300								
C.4 Häselgehr-Griesau										
Grundwassertümpel bei Nebenarm			1	200						
C.14 Lechaschau,										
Tümpel bei Buhne			3	200						
Total	2	300	4	400						
New side channels in connection with measures C.1- C.11, C.13-C.14										
C.3 Grünau										
Nebenarm, km 214,83 – 215,25								400	bullhead, small fish	
C.4 Häselgehr-Griesau										
Nebenarm, unten angebunden, km 211,64 - 210,96								480	bullhead, small fish	
	Ponds tempo- rarily filled with ground- water	m2	Ponds permanently filled with ground- water t	m2	Ponds drainabler	m2	Rough ground sites m2	Side channel [m]	main target species	more target types
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C.10 Uh. Johannesbrücke, Baggersee										
Neugestaltung Brunnenwasser ("bullheadnbach")								1100	bullhead, small fish	
C.14 Lechaschau										
Altarm 1 - Neubau								290	bullhead, small fish, grayling, brown trout	
Altarm 2 - Neubau								170	bullhead, small fish, grayling, brown trout	
Zulauf zu Altarm 2 - Neubau								190	bullhead, small fish, grayling, brown trout	
Total								2630		
TOTAL	17	4140	27	4789	8	1610	11708	2630		
	Ponds tempo- rarily filled with ground- water	m2	Ponds permanently filled with ground- water t	m2	Ponds drainabler	m2	Rough ground sites m2	Side channel [m]		

New ponds for AMPHIBIANS C.12 total	38	pcs
New ponds C.1-C.14 total	52	pcs
New ponds C.1-C.14 total	10539	m2
New side channels C.1-C.14 total	2630	m
New ponds for Siberian Dragonfly	8	pcs

## 5.1.17 C.13 Revitalisation Lech Forchach Suspension bridge

#### Responsible partner: BWV Tirol

Description: Construction of action C.13 started in 08/2019. Downstream of the old suspension bridge the riverbed was widened from 40 to 110 m by lowering the foreland. At the same time the old, damaged pedestrian suspension bridge over the Lech was renewed and on this occasion extended to 130 m in 2020. In 2021 up to 03/2022, removal of bank protection continued upstream on the right bank. In total within C.13 2 km of bank protections werde removed. This eliminated the last bottleneck on the middle Lech and the river is more than 100 m wide over a distance of 11 km. With the income from the sale of the gravel, 1/3 of the measure could be financed. The new suspension bridge was officially openend on 09/08/2022 together with the closing ceremony for the LIFE project.

See Attachments:

Deliverables: A.1.10 Planning documents submitted for approval C13 -> Permits

Other annexes:

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- > 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status:

Proposed start date:	-	Actual start date:		08/2019	
Proposed end date:	-	Actual end da	te:	03/2022	
Status:	Not yet started	started	in progress	completed	
Expected results		Achieved			
• 1.3 km of dynamic ri	ver ("soft") banks	• 2.06 km of dynamic river ("soft") banks			
• 7 ha of natural-near of ("active channel")	• 6.59 ha of natural-near dynamic river area ("active channel")				
		• 6.5 ha additional potential for dynamic river area ("active channel")			
	<ul> <li>loss of 1.06 ha 3240, additional 6.23 ha of HD habitat type 3220, 3230</li> </ul>				

### 5.1.18 C.14 Revitalisation Lech Lechaschau

Responsible partner: BWV Tirol

Description: In this second "action in reserve", the left-side bank protection of the Lech river near Lechaschau was removed over a length of approx. 750 m. Also backwaters that had dried out were lowered. They are now fed by groundwater again and flown through in the case of high water level. This creates important new spawning and retreat areas for fish such as grayling, brown trout or bullhead.

The area where the side-water Lainmure (also called Mühlbach) flows into the Lech has also been optimised. The stream previously flowed into the Lech at an unfavorable angle. Due to the low flow rate, the lower section of the stream silted up. Now the Lainmure side-water flows back into the Lech more dynamically. See attachments: Other annexes

- > 03\_C.1-C.14\_Implementation\_plans\_BBA\_Reutte
- 13\_Photo documentation\_C.1-C.14.pdf

Schedule/status:

Proposed start date:	-	Actual start date:		12/2021	
Proposed end date:	-	Actual end da	te:	09/2022	
Status:	Not yet started	started	in progress	completed	
Expected results	Achieved				
<ul> <li>2.0 km of dynamic river ("soft") banks</li> <li>1.4 ha of natural-near dynamic river area ("active channel")</li> </ul>		<ul> <li>1.67 km of dynamic river ("soft") banks (0.8 km left river bank, plus 0.43 km x 2 reactivated old side channels)</li> <li>0 ha of natural-near dynamic river area ("active channel") (-&gt; estimated 0.8 ha; less time to monitor in 2022)</li> </ul>			
		• 5.12 ha additional potential for dynamic river area ("active channel")			
	• loss of 1.06 ha 3240, additional 6.23 ha of HD habitat type 3220, 3230				

#### Table 2: Actions C.1-C.11, C.13, C.14 - Expected and achieved results (overview)

No. Action nome		river-km		length	additional	additional dynamic river banks / "soft" banks [km]		additional near natural river area		river area
					/ "so:			("active channel") [ha]		
INO.	Action name	from	to	[km]	expected	banks	achieved	expected	achieved	additional
					results			results		potential
C.1	Revitalisierung Lech Vorderhornbach	197,70	199,20	1,50	2,00	1	1,50	2,0	3,17	5,28
C.2	Revitalisierung Lech Hornberg	181,20	182,50	1,30	1,30	1	1,30	1,5	1,71	0,00
C.3	Revitalisierung Lech Grünau - Section 1	214,80	215,40	0,60		1	0,60			
	Revitalisierung Lech Grünau - Section 1 side channel	214,80	215,20	0,40	1,30	2	0,80	1,3	2,64	1,56
	Revitalisierung Lech Grünau - Section 2 - Initialmulde	215,95	216,30	0,35		1	0,35			
C.4	Revitalisierung Lech Häselgehr-Griesau	211,20	212,00	0,80	1.20	1	0,80	1,0	1,40	2.00
	additional side channel	211,20	211,70	0,50	1,20	2	1,00			2,99
C.5	Revitalisierung Lech Elmen-Nussau	201,50	202,78	1,28	0,70	0	0,00	0,7	0,38	4,17
C.6	Revitalisierung Lech Luxnach	205,75	206,45	0,70	0,50	1	0,15	0,5	0,79	3,47
C.7	Revitalisierung Lech Stockach - Section 1	218,80	219,40	0,60	0.80	1	0,60	0.8	1.60	0.20
	Revitalisierung Lech Stockach - Section 2	219,55	219,90	0,35	0,80	1	0,35	0,8	1,00	0,39
C.8	Revitalisierung Lech Vorderfeld-Kraichen	217,45	217,80	0,35	0,50	1	0,35	0,5	0,62	0,00
C.9	Revitalisierung Lech Alach-Rauchwand	204,34	204,34	0,00	0,10	1	0,00	0,2	0,20	4,13
C.10	Revitalisierung Lech unterhalb Johannesbrücke	188,35	188,78	0,43	0.40	0	0,00	10.0	2 7 2	22.06
	reactivating Koppenbach stream		188,60	1,00	0,40	2	2,00	10,0	2,72	22,90
C.11	Revitalisierung Lech Staatsgrenze bis Lechschlucht	167,70	168,40	0,70	0,63	1	0,20	6,5	1,00	5,43
C.13	C.13 Revitalisierung Lech Forchach Suspension bridge - Section 1		192,37	1,34	1.20	1	1,34	7.0	6.50	6.50
	Revitalisierung Lech Forchach Suspension bridge - Section 2		193,09	0,72	1,30	1	0,72	/,0	0,39	6,50
C.14	Revitalisierung Lechaschau	177,12	177,93	0,81	2.00	1	0,81	1.4	0.00	5.10
	Revitalisierung Lechaschau - Reactivating old side channels	177,12	177,55	0,43	2,00	2	0,86	1,4	0,00	3,12
	Total			13,73	12,73		13,73	33,4	22,82	62,00

## 5.1.19 D.1 Monitoring LIFE Actions – Coordination and Synthesis

Responsible partner: ATLR U

## 5.1.19.1 D.1.1 Monitoring Concept

The monitoring concept analyses the objectives of the project and, based on this, specifies the work program for the monitoring, including the subjects to be examined, the methods to be used, the timetable and the areas to be examined. The monitoring concept also forms the basis for subsequent tenders and awards for the monitoring investigations.

The River Conservation Research Group (Univ. Prof. Dr. Leo Füreder) at the Department of Ecology at the University of Innsbruck\*) was commissioned with this action in 02/2017. Based on an analysis of current data and an expert workshop on 6-7/6/2017 at the University of Innsbruck, a monitoring concept was developed.

#### 5.1.19.2 D.1.2 Monitoring Synthesis Report

The Monitoring Synthesis Report was also prepared by the Department of Ecology at the University of Innsbruck (Univ. Prof. Dr. Leo Füreder). After the sectoral post-monitoring reports were available, the work began in autumn 2021 and was completed in September 2022.

The monitoring was accompanied by several workshops in which the monitoring experts were introduced to the topic and were able to network and exchange ideas. The following workshops took place:

- 07/07/2017: start workshop, topic: monitoring concept; University of Innsbruck
- 03/20/2018: Jourfixe, topic: Pre-Monitoring; University of Innsbruck
- 10/11/2020: Jourfixe, topic: post-monitoring; video conference

See Attachment: Deliverables

D.1.2\_Monitoring\_Synthesis\_Report (pdf)

\*) The University of Innsbruck was chosen because it is an independent scientific institution with extensive experience in the area of monitoring. The University of Innsbruck has worked and researched at the Tyrolean Lech for many years. It can therefore be expected that the monitoring will continue beyond the LIFE project and that further scientific work and research projects will follow. In this way, the monitoring knowledge gained can be disseminated to students and, through courses and publication, to a wider public. This ensures the sustainability of the LIFE monitoring.

Schedule/status:

<u>Monitoring Concept (D.1.1)</u>: As tendering and awarding were delayed, the completion of the monitoring concept was postponed by 6 months and finished in 07/2017.

Proposed start date:	11/2016	Actual start date:	02/2017	
Proposed end date:	01/2017	Actual end date:		09/2017
Status:	Not yet started	started	in progress	completed

Monitoring Synthesis Report (D.1.2): Due to the extension of the project, the completion was deliberately delayed by around 1 year in order to be able to carry out a second mapping run for monitoring D.3.3 (Bird species breeding on gravel banks). The synthesis report has been available since September 2022.

Proposed start date:	09/2021	Actual start date:	09/2021	
Proposed end date:	12/2021	Actual end date:		09/2022
Status:	Not yet started	started	in progress	completed

### 5.1.20 D.2 Monitoring LIFE Actions – Abiotics

Responsible partner: BWV

The contract was awarded to the local company of Dipl.-Ing. Josef Schönherr, based in A-6633 Biberwier. In accordance with the monitoring concept D.1, the project group modified the contents of work in the proposal and defined them as follows:

- Photographic documentation of all actions C.1-C.11 and C.13-C.14 prior to construction work, just after the implementation, before project completion and, optionally, during a flood.
- Survey and description of the morphological status of the actions C.1-C.11 and C.13-C.14 in the active channel (river system elements, aquatic meso-habitats, deadwood, substrate).
- Estimation of the entire potential for dynamically shaped river area ("active channel") within all action sites C.1-C.11 and C.13-C.14

In addition to the planned procedure, an interim monitoring was carried out in April 2020. The final post-monitoring took place in spring/summer 2021. Additional drone flights were carried out for measures C.10, C.13 and C.14, which were completed in 2021 and 2022. Meanwhile preand post-monitoring of Abiotics are finished.

The <u>results</u> show that around 14 km of "soft", unprotected river banks have been created so far, from which around 23 ha of new, dynamically shaped river areas have emerged. However, the potential is far higher. In connection with large floods, up to 62 hectares of additional dynamic areas are possible in the measures (see final report in the attachment).

See attachment: Deliverable

D.2 Monitoring Abiotics Final report (pdf)

Schedule/status: Monitoring Abiotics is finished

Pre-monitoring:

Proposed start date:	03/2017	Actual start date:	07/2017	
Proposed end date:	12/2017	Actual end date:		07/2018
Status:	Not yet started	started	in progress	completed

Post-monitoring:

Proposed start date:	01/2021	Actual start date:	04/2020	
Proposed end date:	09/2021	Actual end date:		02/2022
Status:	Not yet started	started	in progress	completed

## 5.1.21 D.3 Monitoring LIFE Actions – Biotics

Responsible partner: ATLR U

## 5.1.21.1 D.3.1 Monitoring Crayfish

Like other crayfish species in Austria, the stone crayfish (*Austropotamobius torrentium*) is extremely rare. Since 2017, the University of Innsbruck has had indications that the stone crayfish may have become extinct due to an outbreak of crayfish plague in the Tyrolean Lechtal. As part of the LIFE project, therefore, only potential bodies of water for resettlement were created. Species protection measures in the sense of reintroduction were not taken. However, parallel to the LIFE project, a nationally funded project dealt with the offspring and subsequent reintroduction of stone crayfish in the Tyrolean Lechtal. These efforts have so far been successful.

As part of the monitoring, it was examined whether and to what extent the tributaries C.4 (Häselgehr-Grießau) and C.10 (Koppenbach), newly created in the LIFE project, are potentially suitable for a successful reintroduction of the stone crayfish. The survey of the habitat characteristics allows the conclusion that the necessary physical-chemical conditions for the establishment of stone crabs are basically given. The goal of creating at least two suitable water bodies for crayfish was thus achieved. Further potential habitats also arise in the newly created side arm Grünau (C.3) and in the side channels near Lechaschau (C.14).

## 5.1.21.2 D.3.2 Monitoring Small Fish

The company ARGE Limnology from Innsbruck was awarded the contract. The company has extensive experience in the region and was already involved in the 1<sup>st</sup> LIFE project at the Lech (2002-2007). Pre-monitoring began in 09/2017, post-monitoring in 11/2020. The fishing was carried out in cooperation with Mag. Wolfgang Mark (University of Innsbruck, Department of Zoology), who carried out additional surveys on the bullheadnbach in autumn 2021.

The <u>results</u> are pleasing: the bullhead *(Cottus gobio)* was frequently present, particularly in the new, slow-flowing side arms. Redesigned stream mouths such as those in Kraichen (C.8) also showed high densities of juvenile brown trout. The low-water groynes, such as those used at the state border near Pinswang (C.11), also led to an significant increase in small fish stocks.

The positive development should continue in the years to come. Not only the widening of the river contributes to this, but also new bodies of water such as the bullheadnbach or the reconnected backwaters near Lechaschau (C.14), whose potential as spawning areas is far from exhausted.

### 5.1.21.3 D.3.3 Monitoring of Bird species breeding on gravel banks

According to the monitoring concept (D.1) the surveys by Eberhard (2012) and Lassacher (2012) were used as pre-monitoring. The post-monitoring was carried within a master's thesis at the University of Innsbruck, Department of Zoology, after project implementation in 2021 and (after LIFE project was extended to 09/2022) for a second time in spring 2022. The master thesis also analysed the development of the populations of little ringed plover (*Charadrius dubius*) and common sandpiper (*Actitis hypoleucos*) and discerned trends (see final report in the attachment).

The <u>results</u> show that the common sandpiper can be found in a total of more than 30 districts. This corresponds to more than double the comparative study in 2012. The little ringed plover was represented by around 20 breeding pairs. This corresponds to an increase of almost a third compared to the comparative study in 2012 (see Table 3).

Lech		
	Territories common sandpiper	Territories little ringed plover
	Actitis hypoleucos	Charadrius dubius

2022 3)

29-48

2012 2)

13

2022 3)

15-23

 Table 3: Territories of the common sandpiper and little ringed plover in the examined sub-areas of the Tiroler

 Lech

## 5.1.21.4 D.3.4 Monitoring Amphibians

Total

2012 1)

13-20

Pre-monitoring was tendered in 02/2018 and awarded in 03/2018 to the environmental planning consultancy Florian Glaser, A-6067 Absam. The fieldwork, which included qualitative surveys of all small water bodies, specifically on the occurrence of amphibians, began 03/2018 (pre-monitoring) and 03/2021 (post-monitoring) and has been completed in the meantime. Reports on the result have been provided.

<u>Results:</u> The amphibian monitoring has already shown positive trends for the protected species natterjack toad, tree frog and crested newt. A tendency towards an increase in tree frog calls could be determined. There was also evidence of reproduction at more than half of the sites. The number of observed great crested newts also increased in 2021 compared to 2018. Natterjack toad populations have been stagnating at a low level for several years. In 2021, however, youngsters were able to develop again.

In any case, the establishment of additional spawning waters and raw soil sites for amphibians as part of the LIFE project created good conditions for a positive population development of amphibians in the Lech Valley. A well-founded statement as to whether these measures were successful will only be possible in the near future. In any case, the first proofs of reproduction in the newly created water bodies make optimistic.

## 5.1.21.5 D.3.5 Monitoring of Insects and Arachnids (Invertebrates)

State of implementation: Tendered and contract awarded. The contract was awarded to zoologist Dr. Armin Landmann, Innsbruck. He possesses excellent knowledge of the project area and decades-long experience in the region. He was also involved in the 1<sup>st</sup> LIFE Project at the Lech (2002-2007). Pre-monitoring began in 08/2017, post-monitoring in 08/2020. Meanwhile reports are available (see Annex D.3.5).

<u>Results</u>: The indicator species spotted grasshopper (*Bryodema tuberculata*), gravel bank grasshopper (*Chorthippus pullus*), Turk's thorn cricket (*Tetrix tuerki*) and river bank giant wolf spider (*Arctosa cinerea*) were checked in the late summers of 2017 and 2020 in 11 LIFE sites between Stockach (C.7) and the Austrian-German border (C.11).

Due to the short recording period 2017-2020, the results are still not very meaningful. However, revitalization measure C.2 in Ehenbichl-Hornbach, which was completed in 2018 (pictures on the right), already showed positive developments.

Positive effects are also possible in the other measures. In order to prove this, further regular checks should be carried out. Above all, it is important to clarify to what extent the re-spreading of isolated stands can be further promoted through revitalization measures.

#### 5.1.21.6 D.3.6 Monitoring of the Vegetation of dynamic gravel bars

<u>Monitoring of HD habitats</u> along the river stretches where actions C.1-C.11 + C.13 were implemented, was conducted by the company Revital, based in Nußdorf-Debant. Pre- and post-monitoring have been completed (see Annex D.3.6).

Prof. Dr. Norbert Müller, hailing from Erfurt, is responsible for a <u>special monitoring program for</u> <u>the miniature bulrush (Typha minima)</u>. At the Tyrolean Lech, he has been carrying out species protection actions for Typha minima for over 20 years, commissioned by the Province of Tyrol and the Tiroler Lech Nature Park. The pre- and post-monitoring has been completed and reported (see Annex D.3.6).

#### Results HD habitats:

Durch die LIFE Actions C.1-C.11 + C.13 kam es zu einer Verschiebung der Flächenanteile zugunsten der dynamischen Austandorte 3220, 3230, 3240, 7240\*, jedoch teilweise auf Kosten der Wald-Lebensräume wie FFH-LRT 91E0\*, Kiefernauwald usw. Die Ziel-FFH-LRT 3220, 3230, 3240 und 7240\* haben neben quantitativen Flächenzunahmen häufig auch eine Aufwertung der Erhaltungszustände in den einzelnen Maßnahmenstrecken erfahren. Die Aufweitungen ermöglichten bis dato die größte Flächenvergrößerung beim FFH-LRT 3220 (plus 11,5 ha). Die dabei entstandenen Schotter- und Sandanlandungen bieten Potenzial für die Besiedelung von Tamariske (FFH-LRT 3230), Zwerg-Rohrkolben (FFH-LRT 7240\*) und Lavendelweide (FFH-LRT 3240; see Table 4).

The LIFE Actions C.1-C.11 + C.13 resulted in a habitat shift in favor of dynamic floodplain habitats 3220, 3230, 3240, 7240\*, but partly at the expense of forest habitats such as FFH-LRT 91E0\*, Pine floodplain forest, etc. In addition to quantitative increases the target FFH-LRT 3220, 3230, 3240 and 7240\* have often got an improvement in the conservation status. The river revitalisation actions enabled the largest area increase at FFH-LRT 3220 (plus 11.5 ha). The resulting gravel and sand banks offer potential for new stocks of tamarisk (FFH-LRT 3230), dwarf cattail (FFH-LRT 7240\*) and lavender willow (FFH-LRT 3240; see Table 4).

FFH-LRT	FFH-LRT (Name)	Prä-Monitoring 2017	Post-Monitoring 2021	Differenz
(Code)		Fläche (ha)	Fläche (ha)	Fläche (ha)
3220	Alpine Flüsse mit krautiger Ufervegetation	112,05	123,56	11,51
3230	Alpine Flüsse mit Ufervegetation von Myri- caria germanica	0,3	0,54	0,24
3240	Alpine Flüsse und ihre Ufervegetation von Salix eleagnos	12,72	13,04	0,32
7240*	Alpine Pionierformationen des Caricion bi- coloris-atrofuscae	0,09	0,63	0,54
Gesamt		125,16	137,77	12,61
91E0*	Auenwälder mit Alnus glutinosa und Fraxi- nus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	32,77	25,36	-7,41

#### Table 4: Balance of relevant FFH-Habitats

#### Results Dwarf bulrush (Typha minima):

The investigation of the stock development 2003-2021 as part of the LIFE monitoring shows that the total number of shoots has increased significantly over the years. However, those sub-stocks that are no longer subject to river dynamics are not viable in the long term.

The newly established stocks in Elmen (C.5), Alach (c.9) and Luxnach (c.7) have grown well and are spreading via root suckers. However, whether self-sustaining stocks can develop will become apparent in the next few years and will depend on the flood dynamics at the locations.

Attachment: see Deliverable D.3 Monitoring Biotics Final reports

- Fish: D.3.2\_Monitoring\_Kleinfische\_Endbericht.pdf
- Gravel-breeding birds: D.3.3\_Monitoring\_Vögel\_ Lech\_2022\_Sodja Version 2.pdf
- Amphibians: D.3.4\_Monitoring\_Amphibien\_Postmonitoring\_September 2021\_TB Glaser.pdf
- Insects and spiders: D.3.5\_Monitoring\_Arthropoden\_Post-Monitoring\_Endbericht\_2020.pdf
- FFH habitats: D.3.6\_Monitoring\_Vegetation\_FFH\_LRT\_Post-Monitoring\_2021.pdf
- Dwarf bulrush (Typha minima): D.3.7\_Typha minima\_Endbericht\_Typha Mueller Kollnig final\_2021.pdf

Schedule/status: Pre- and post-monitoring are completed, however, delayed for about half ayear, as the LIFE Project was extended.

Pre-monitoring:

Proposed start date:	03/2017	Actual start date:	07/2017	
Proposed end date:	12/2017	Actual end date:		12/2019
Status:	Not yet started	started	in progress	completed

Post-monitoring:

Proposed start date:	01/2021	Actual start date:		01/2021
Proposed end date:	09/2021	Actual end date:		07/2022
Status:	Not yet started	started	in progress	completed

#### 5.1.22 D.4 LIFE Project Performance Indicators

Responsible partner: ATLR U

Implementation was constantly carried out by the PC. The current state of the project was documented in an Excel spreadsheet. This sheet was continually being compared with the dates, deliverables and milestones set down in the proposal.

See attachment: Deliverable

D.4 LIFE\_Project\_Performance\_Indikatoren\_QIII\_2022\_end (xls, pdf)

Schedule/status: Action D.4 is completed, however, delayed for almost 9 months, as the LIFE Project was extended.

Proposed start date:	09/2017	Actual start date:		09/2017
Proposed end date:	12/2021	Actual/anticipated end date:		09/2022
Status:	Not yet started	started	in progress	completed

#### 5.1.23 D.5 Monitoring "ecosystem functions"

Responsible partner: ATLR U

The contract was awarded to the University of Innsbruck in 04/2021. The final report was presented in August 2022.

#### Results:

The revitalisation actions within the LIFE project also promoted the provision of ecosystem services. Creating new habitats, reducing bank protections and increasing habitat types of the dynamic river system the LIFE Lech project has promoted the natural regulation and purification capacity of the watercourse and supported the protection and conservation of populations and habitats. Promoting flagship species of the wild river landscape and various offers of the Tyrolean Lech nature park as well as new visitor facilities contributed to the cultural services. Natural flood protection by extending safely floodable area, which was supported by numerous LIFE Actions, promoted regulating ecosystem services.

See attachment: Deliverable

D.5\_Ecosystem\_functions\_Short\_report

Schedule/status:

Proposed start date:	01/2021	Actual start date:		04/2021
Proposed end date:	12/2021	Actual end date:		09/2022
Status:	Not yet started	started	in progress	completed

#### 5.1.24 D.6 Monitoring "socio-economic impact"

#### Responsible partner: ATLR U

After tendering the awarded company ÖAR GmbH (Ms Asamer; Vienna/Graz) examined the image and the acceptance of the LIFE measures on the one hand, and the economic effects of the project such as jobs, investments in the region, indirect profitability, monetary effects, etc.) on the other hand. Surveys and data evaluations served as tools.

#### Results:

Among other things, the following socio-economic effects were determined: 5 million euros for the regional economy, 10 jobs, 20 hectares of additional retention area, strengthening of the land-scape in terms of tourism, with acceptance among the population of around 70% according to an online survey.

See attachment: Deliverable

D.6\_Socio-economic\_impact\_Report

Schedule/status: Monitoring D.6 was completed in time.

Proposed start date:	01/2021	Actual start date:		01/2021
Proposed end date:	12/2021	Actual end date:		11/2021
Status:	Not yet started	started	in progress	completed

## 5.1.25 E.1 Dissemination of Results (Obligatory Part)

5.1.25.1 <u>E.1.1 Homepage</u>

Responsible partner: BWV Tirol

State of implementation:

- The Naturparkverein Tiroler Lech was assigned editorship, while the company webstyle (based in A-6414 Mieming) is responsible for the design and programming.
- The Coming-Soon-Page project homepage has been online under <u>www.life-lech.at</u> since 27/02/2017.
- In 2021 the project website www.life-lech.at was adapted according to an EASME letter and continuously updated.
- Since 12/2021 the contract with the NPTL was terminated, Ms Simone Knitel has been in charge of the website on behalf of the BWV Tirol until 12/2022. The website will then be online for another 5 years (until 30/09/2027) according to the guidelines. Subsequently, the contents of the website will be integrated into the online presence of the Tiroler Lech Nature Park.

<u>Results:</u> From 01/01/2018 until 28/09/2022, 8.856 user, 12.228 visits and more than 33.000 page visits were recorded. Mostly they came from Austria, Germany and USA (see attachment).

See attachment: Deliverable

E.1.1 Homepage (Analytics LIFE Lech website 20170101-20220928)

### 5.1.25.2 <u>E.1.2 LIFE Information Boards</u>

Responsible partner: BWV Tirol

State of implementation:

- The Naturparkverein Tiroler Lech was assigned editorship, while the company Artpress (now VVA, based in Höfen) is responsible for the design and printing.
- In total 17 LIFE information boards on the actions C.1-C.11, C.12 (4 different boards), C.13 and C.14 have been completed and installed on site (see attachment E.1.2\_LIFE-Infotafeln)
- The foundations for the LIFE information boards are constructed by the BBA Reutte.

See attachment: Deliverable

► E.1.2\_LIFE-Information\_boards

Schedule/status: According to the extension of the project, action E.1.2 was completed about 1 year after schedule. As the last infoboard, the board for C.14 Lechaschau was installed in 06/2022.

Proposed start date:	09/2016	Actual start date:	05/2017
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Proposed end date:	06/2021	Actual/anticipated end date:		08/2022
Status:	Not yet started	started	in progress	completed

## 5.1.25.3 E.1.3 Layman's report

Responsible partner: BWV Tirol

The company Revital, based in A-9990 Nußdorf-Debant, was assigned for concept, text, design and printing.

The "layman's report" in A4 format summarizes the most important goals and results of the LIFE project on the Tyrolean Lech on 32 pages. The report agreed in the project team was produced in a print run of 1,000 in German and 500 in English. Distribution started at the closing ceremony on August 19, 2022. In the meantime, further active distribution has taken place via the BBA Reutte, the Tiroler Lech Nature Park House and within the LIFE network (e.g. Austrian LIFE platform in Krems 2022) and in (inter)national expert groups (e.g. in connection with topics such as river restoration and sedimetn balance of rivers). The digital version of the lay report is available for download on the home page of the project website.

See attachment: Deliverables

• E.1.3\_Laymans\_report\_DE\_EN

Schedule/status: According to the extension of the project, action E.1.3 was completed 9 month after schedule in 08/2022.

Proposed start date:	06/2021	Actual start date:		06/2021
Proposed end date:	12/2021	Actual/anticipated end date:		08/2022
Status:	Not yet started	started	in progress	completed

### 5.1.26 E.2 Guided Tours and Events

Responsible partner: ATLR U

5.1.26.1 <u>E.2.1 Public Relations</u>

State of implementation:

- <u>Logo</u>: A logo for the project was designed (see Annex E.2.1 Logo LIFE Lech II). After a public tender, the commission was awarded to the company webstyle.
- <u>Logo bar</u>: A logo bar was created and repeatedly adapted, owing to the new name of the ministry (BML instead of BMLRT; BMLRT instead of BMNT, former BMLFUW) (see Annex E.2.1). It contains the logos of LIFE and Natura 2000 as well as those of the project partners and a recognition of the financial support by the partners.
- <u>Media information</u>: In total ~70 press releases were created (see Table 7 Number of articles in print media (e.g. newspaper and magazine articles):

See also attachment: Other annexes

- ➢ 07\_Media\_work\_2019-2022
- ➢ 08\_Press\_review\_2019-2022

Schedule/status: According to the extension of the project, action E.2.1 was completed 9 month after schedule in 09/2022.

Proposed start date:	09/2016	Actual start date:		12/2016
Proposed end date:	09/2021	Actual end date:		09/2022
Status:	Not yet started	started	in progress	completed

#### 5.1.26.2 <u>E.2.2 Visitor Information</u>

In 2017, 2018, 2019 and 2022 about 8,000 people who visited the Nature Park House in Elmen were informed about the LIFE project. Due to the corona pandemic the number of visitors halved in 2020 and 2021 (around 4,000). Detailled numbers of yearly visitors in the Klimmbrücke Nature Park House; 2017: 7243; 2018: 8401, 2019: 7937, 2020: 4031, 2021: 3431; 2022: 8.000\*; total: ~33.000;

\*Note: Due to a lack of human resources at the NPTL, the specific visitor information campaign for LIFE Lech was not contractually extended for 2022. However, information was still given as part of the usual information work in the nature park houses.

In addition to the ongoing information work in the Nature park house several specific presentations and informations on the LIFE project were given to interested people, e.g.:

- 20/07/2017: Presentation of the LIFE project at the Helfiade Elbigenalp, attended by 18 students of the primary school Elmen and ca. 250 students from the whole district (source: Simon Walch, headmaster of the primary school Elmen, see photos in the attachment).
- 26/10/2017: On the open house day at the Seat of the Provincial Government of Tyrol, the project LIFE Lech was presented by the coordinating beneficiary in the division of Hydraulic Engineering of the Provincial Government (Herrengasse 1-3, 1<sup>st</sup> floor).
- 06/02/2018: Lecture "Renaturierung des Lechs mit Unterstützung von EU-Life-Projekten" ("Renaturation of the Lech supported by EU LIFE projects") by Wolfgang Klien during the 1<sup>st</sup> Salzachsymposium in Burghausen;
- 02/08/2018: Lecture on the Tiroler Lech Nature Park and LIFE Lech for NABU (Germany), 39 participants, location: Elmen, Naturparkhaus;
- 20/09/2018: Presentation of the LIFE project Tyrolean Lech during a seminar of the ANL (Akademie für Naturschutz) Laufen in Nußdorf-Debant by PL Wolfgang Klien; around 40 participants;
- 30/09/2018: Presentation of the LIFE project Tyrolean Lech at the 1<sup>st</sup> European Rivers Summit in Sarajevo; by Anna Schöpfer; around 250 participants;
- 03/10/2018: Presentation of the LIFE project Lech in Lienz by Mag. Anette Kestler of the Tiroler Lech Nature Park; 40 participants;
- 04/12/2018: Lecture for guide training "LIFE Lech Das Projekt," 04/12/2018, Elmen, Naturparkhaus; these guides ("Naturführer") will henceforward present the LIFE project on their tours; 10 participants;

<sup>5.1.26.3 &</sup>lt;u>E.2.2.1 Continuous visitor information on the LIFE project in the nature park house</u> Elmen

- 07/12/2018: PL Wolfgang Klien presents "LIFE Lech Das Projekt, das Arten- und Hochwasserschutz vereint" ("LIFE Lech The project that combines conservation and flood protection"); 22 participants;
- 16/04/2019: Information for female CSU-Politicians; 8 participants;
- 02/08/2019: Information for company Brandstätter; 17 participants;
- 24/09/2019: Information for female farmers from the Bregenzerwald (Vorarlberg, AT) Forest; 56 participants;
- 16/06/2020: Support for journalists including a presentation of the LIFE Lech project; 2 participants;
- 12/09/2020: Presentation of the LIFE Lech project on the "Chroniclers' Day"; 23 participants;
- 27/07/2021: Lecture LIFE Lech project for Isar experts (re- invitation to the excursion to the Isar 05/2019); 10 participants;
- 17/09/2021: Lecture for "Verein Lechweg"; 20 participants;
- 23/09/2021: Lecture "LIFE and nature park go hand in hand" at the LIFE Lech Symposium; 80 participants

<u>E.2.2.2 Excursions / guided tours:</u> in total about 40 excursions took place within the LIFE project, e.g.:

- 05/05/2017: Landesbetrieb Gewässer Regierungspräsidium Freiburg (Baden-Württemberg, Germany), presentation of the previous and the current LIFE project at the Lech, 12 participants;
- 16/10/2017 and 19/10/2017: Student groups from the University of Innsbruck in the Nature Park House, course: Natural and Water Protection, winter semester 2017, fo-cal topic: LIFE project Lech (speaker: Reinhard Lentner);
- 30/04/2018: Tyrolean Lech Lecture and field trip of the University of Innsbruck Reinhard Lentner, Leopold Füreder, Konrad Pagitz;
- 15/05/2018: LIFE Lech Guided tour for the Hochschule Nürtingen Elmen / Vorderhornbach – 28 participants;
- 23/05/2018: LIFE Lech Umweltbaustelle (environment action day) Typha minima VS (elementary school) Pinswang 24 participants
- 25/06/2018: LIFE Lech Umweltbaustelle Typha minima Kieswerk Pinswang (a gravel quarry), unfortunately, the school NMS Pinswang cancelled owing to unfavourable weather. Thus, only Christine Schneider and the intern Theresa Preindl were actually carrying out care measures 2 participants.
- 04/08/2018: Excursion "Die Ufer-Tamariske" ("The German tamarisk"), with Helmut Kudrnovsky; 11 participants, location: Forchach / Weißenbach;
- 17/09/2018: Wild river excursion for the WWA Kempten, with Wolfgang Klien and Marlene Salchner; 11 participants;
- 02/05/2019: Excursion as part of Natopia's nature guide Training Course
- 17/05/2019: Excursion as part of the "Focus on Nature" training course organized by the Tyrolean Environmental Ombudsman's Office
- 22/05/2019: Guided tour for the Hochschule Nürtingen
- 31/05/2019: Excursion as part of Natopia's nature guide Training Course

- 07/06/2019: Excursion for Dept. 4 Environment and Climate, Government of Vorarlberg
- 17/06/2019: Excursion for NABU travel
- 01/07/2019: Excursion for the new middle school Fliess
- 09/07/2019: Local inspection of dwarf cattails with Donau-Auen National Park and Christina Kollnig
- 10/10/2019: Lecture and excursion for teachers
- 07/07/2020: Guided "Wild river tour" for students of the University of Salzburg
- 09/07/2020: Excursion as part of Natopia's nature guide Training Course
- 21/05/2021: Excursion as part of Natopia's nature guide Training Course
- 18/06/2021: Excursion as part of Natopia's nature guide Training Course
- 07/27/2021: Excursion with Isar experts and NGOs (re-invitation to the excursion to the Isar 05/2019)
- 24/09/2021: Excursion as part of the LIFE Lech Symposium



Figure 9: Excursion on the topic of the German tamarisk with expert Helmut Kudrnovsky, PhD (Photo: Justin Tauscher)



Figure 10: Excursion as part of the "Focus on Nature" training course organized by the Tyrolean Environmental Ombudsman's Office (Photo: NPTL)



Figure 11: Isar Experts and NGOs visit the LIFE project on 07/27/2021 (Photo: NPTL)

E.2.2.3 Action days / events: in total 11 actions days took place:

- 24/05/2017: A kick-off event was organised on 25/04/2017 in Elmen. Work on this included the coordination of the programme, inclusion of the press division of the Province of Tyrol (see attachment), design and circulation of invitations and informing the press. The kick-off event for LIFE Lech took place in area C.5 Elmen-Nussau and the Klimmbrücke Nature Park House. 80 participants.
- 04-06/06/2018: Contribution to the Forum Alpinum 2018 & 7<sup>th</sup> Water Conference Presentation of the LIFE project Lech by Wolfgang Klien, Presentation of the Tiroler Lech National Park Presentation of the survey A.3 Evaluation of Alternatives for Species Protection Actions by Leo Füreder and Anna Schöpfer; Excursions to the Lech and presentation of the LIFE project; see attachment;
- 16/07/2018: Information event on the LIFE project Lech in the municipality of Forchach; speakers: Wolfgang Klien, Reinhard Lentner, Josef Walch. See attachment.
- 30/07/2018: Public appearance during the programme "Sommerfrische" of the ORF-Radio Tirol in Hägerau. The LIFE project Lech was als also presented on this occasion. See attachment.
- 21/07/2019: Aktionstag LIFE Riverfest; 80 participants;
- 20/08/2019: ORF-Sommerfrische mit LIFE-Programm; 80 participants;
- 27/11/2019: Nature park action day at Elmen primary school, 30 participants;
- 10/10/2020: Action day Long Night of the Museums in the Ehrenberg Castle World; 10 participants;
- 09/06/2021: "Action day" of the working group NP management plan; 15 participants;
- 23/09/2021: Action day LIFE Lech at the LIFE Lech Symposium, 80 participants;
- 19/08/2022: Action day Closing event / Opening suspension bridge Forchach



Figure 12: On 24/05/2017, the official kick-off event took place at the site of action C.5 in Elmen. Representatives of the project partners from Austria and Bavaria, politicians, journalists and locals attended the event (Photo: Revital/Unterlercher).



Figure 13: The LIFE project represented in the Long Night of the Museums in the Ehrenberg Castle World in 10/10/2020: Action day (Photo: NPTL).



Figure 14: The closing event took place on 19/08/2022 (Photo: Revital/Unterlercher).

#### 5.1.26.4 <u>E.2.2.4 Miscellaneous</u>

- The following materials were purchased for events and visitor management:
  - Banner LIFE Lech (format: 300 x 100 cm)
  - 4 beach flags with the LIFE-Logo (motives: Siberian bluet, common sandpiper, Lech, German tamarisk)
  - Stickers LIFE Lech (format DIN A7 7,4 x 10,5 cm; 10,000 pcs)
- 20/09/2017: Support and scouting by local guides for the vegetation monitoring team (Christoph Langer, Revital), covering the area of the suspension bridge up to the gravel bar and the riparian forest in the direction of Schwarzwassertal in the Natura 2000 area.
- 04/10/2017: Support of the filming team of the company FF Furtenbach: searching for locations to film the LIFE Lech video.
- 02/11/2017: Support for Monitoring small fish (small fish) Christian Moritz, C.10 Forchach Baggersee
- 09/25/2019: Participation in the local inspection to select LIFE Lech species protection measures

Proposed start date:	09/2016	Actual start date:		01/2017
Proposed end date:	09/2021	Actual/anticipated end date:		09/2021
Status:	Not yet started	started	in progress	completed

Schedule/status: Action E.2.2 is on schedule.

## 5.1.26.5 <u>E.2.3 Touring Exhibition</u>

In a first phase in 2017, 3 rollups were created on the topics "The Project", "The Lech and its natural treasures" and "The Lech needs help" and sent on tour from 04/2018. At the beginning of 2020, 3 more rollups followed on the topics "The river in the flow of time", "Everything under control", "Species protection life". Since then, the 6 roll-ups have toured in ~20 places in the region and beyond as a traveling exhibition and provided information about the goals and measures of the LIFE project on the Tyrolean Lech. At the end of the project, the rollups are be shown as a permanent exhibition in the Elmen Nature Park House.

For more details see Attachment: Other annexes

➢ 09\_Exhibition\_on\_tour (Rollups, photos, places)

Schedule/status: Action E.2.3 started around 5 months behind schedule, but has launched successfully and is now completed.

Proposed start date:	06/2017	Actual start date:		11/2017
Proposed end date:	12/2021	Actual end date:		09/2022
Status:	Not yet started	started	in progress	completed

## 5.1.26.6 <u>E.2.4 Visitor infrastructure at the Lech</u>

According to the proposal, originally two visitor facilities were planned in the form of platforms, shore access points or similar. During discussions on the further approach, both project team and

steering group decided to combine the visitor infrastructure with the "action in reserve" Forchach (C.13) and the new hanging bridge for pedestrians.

Tender and award of Action E.2.4 visitor facilities (in connection with C.13) took place in February 2020. Pronatour was commissioned with the planning and imlementation of the visitor infrastructure. It was completed in August 2021. The official opening had to be postponed several times due to Corona and finally took place on 08/19/2022 as part of the LIFE closing ceremony.

The new information and relaxation area for locals and guests is located on the right bank of the Lech, directly at the entrance to the new suspension bridge near Forchach. It is divided into an entrance area, information zone on the topic of wild rivers, a quiet zone, a barbecue zone and an alluvial forest low ropes course (see Figure 15). The location in the middle of the Lech Valley was deliberately chosen: This is where hikers, walkers and cyclists meet a particularly impressive section of the Lech. – An ideal place to sensitize people to the protection of the Lech, but also to steer streams of visitors and in this way to relieve sensitive natural zones.



Figure 15: New Visitor infrastructure combined with the new hanging bridge in Forchach (Photo: Wolfgang Klien)

See Attachment: Other annexes

> 10\_Visitor facilities (reports, plans, documents, permits, photos)

Schedule/status: Action E.2.4 was completed on schedule.

Proposed start date:	open	Actual start date:		05/2018
Proposed end date:	09/2021	Actual end date:		08/2021
Status:	Not yet started	started	in progress	completed

## 5.1.26.7 <u>E.2.5 International Wild River Symposium</u>

After several postponements due to the Corona pandemic, the 2nd International LIFE Lech Symposium "Wild River Landscapes" could finally take place from September 22nd to 24th, 2021 in the Breitenwang Event Center (Tyrol, Austria; see Figure 16).

In their specialist lectures, experts and scientists presented new, exciting findings and research results on the subject of "wild river landscapes" from the perspective of flood, water and nature protection. The first results of the LIFE monitoring were also presented and challenges in view of

the climate crisis and conflicts of interest were discussed. The music group "Bluatschink" from the Lech Valley, which arose from an environmental initiative and knew a lot about the beginnings of the protected area, organized the convivial evening of the event.

The new LIFE Lech short film series (see E.3.4) also celebrated its premiere as part of the symposium. It focuses on the wild river Tiroler Lech as a model body of water for Europe.

The conclusion was a joint excursion to selected measures of the LIFE Lech project.

Attachment: Deliverables:

E.2.3\_Wild\_River\_Symposium\_Proceedings (pdf)

Other annexes

11\_Wild\_River\_Symposium\_Materials (invitation, program, abstracts of presentations)

Schedule/status: Action E.2.5 International Wild River Symposium was successfully completed with a delay of around 1 year despite the corona pandemic.

Proposed start date:	06/2020	Actual start date:		06/2020
Proposed end date:	10/2020	Actual end date:		09/2021
Status:	Not yet started	started	in progress	completed



Figure 16: Specialist lectures and an excursion to the Tiroler Lech were the focus of the 2nd International Wild River Symposium in September 2021 in Breitenwang. Around 80 people took part. (Photo: REVITAL/Unterlercher)

### 5.1.27 E.3 Information materials

Responsible partner: ATLR U

### 5.1.27.1 <u>E.3.1 Guidebook "Fluss-Erlebnisführer LECH – New Edition"</u>

Work commenced in 12/2017, a year later than scheduled. The new edition of the Fluss-Erlebnisführer LECH ("River Experience Guide LECH," E.3.1) was delayed to 05/2018 in order to include concrete information, plans and pictures concerning the revitalisation projects. At the end of 2018, the new Flusserlebnisführer was fully revised and finally printed in 01/2019 in an edition of 5000 pieces, in time for the start of the new summer season.

Attachment: see Deliverables:

E.3.1 Guidebook\_Lech\_New\_edition (print-version, web-version)

Proposed start date:	01/2017	Actual start date:		12/2017
Proposed end date:	04/2017	Actual end date:		01/2019
Status:	Not yet started	started in progress		completed

Schedule/status: Action E.3.1 was finished 2 years behind schedule.

### 5.1.27.2 E.3.2 Tilt Effect Postcard ("Kippeffekt-Postkarte")

The Tilt Effect Postcard uses aerial photographs of measure C.13 from 2019 and 2021 for the impressive before-and-after comparison of a revitalization measure on the Tiroler Lech. On the back, logos and short texts refer to Natura 2000 and the LIFE project.

The implementation of the postcard was delayed by around 9 months in order to be able to present finished C.13 action, which gives a particularly impressive before-after comparison.

After the Lech Wild river symposium (E.2.5) had been fixed in time, the production of the Tilt Effect Postcard was managed in a way that it could be presented and distributed for this event.

Attachment: see Deliverables:

E.3.2\_Tilt\_Effect\_Postcard

Schedule/status: E.3.1 was finished 9 month behind schedule

Proposed start date:	12/2020	Actual start date:		12/2020
Proposed end date:	12/2020	Actual/anticipated end date:		09/2021
Status:	Not yet started	started	in progress	completed

## 5.1.27.3 <u>E.3.3 Folder "LIFE Tiroler Lech"</u>

The implementation by the NPTL started in May 2019. By end of 2019, as planned in the application, a folder in the format 21x60 cm (leporello fold) was created in an edition of 5000 pieces, of which 4000 were DE and 1000 EN. In terms of content, the folder essentially summarizes the river experience guide.

Attachment: see Deliverables:

- E.3.3\_LIFE\_Lech\_Folder\_DE\_low.pdf
- E.3.3\_LIFE\_Lech\_Folder\_EN\_low1.pdf

Schedule/status: Action E.3.3 was realised on schedule.

Proposed start date:	12/2019	Actual start date:		05/2020
Proposed end date:	12/2019	Actual end date:		12/2019
Status:	Not yet started	started	in progress	completed

Dissemination of the information material:

The "River experience guide" (LIFE brochure) and the LIFE folder (8-page leporello) are published in the following ways:

• Distribution at public appearances of NPTL

- Distribution to all nature park municipalites
- Distribution to all nature park tourism partner companies (https://www.naturpark-tiroler-lech.at/naturpark-tiroler-lech/naturpark-partnerbetriebe.html)
- free availability in the Klimmbrücke Nature Park House
- distribution during excursions/lectures
- free availability on the websites <u>https://www.naturpark-tiroler-lech.at/</u> and <u>https://www.life-lech.at/</u>.

## 5.1.27.4 <u>E.3.4 Video/Film "LIFE Tiroler Lech"</u>

After tender, the Innsbruck-based company FF Furtenbach was commissioned with the production of the film. Work began at the kick-off event in 05/2017. At the suggestion of the environment educators of the Tiroler Lech Nature Park, four following 5-minute short films plus trailer were produced, instead of the one 20-minute film originally planned:

- Short film 1, documentation of the implementation of actions
- Short film 2, short portrait films of different plant and animal species
- Short film 3, acceptance among the local population
- Short film 4 "Wildfluss Tiroler Lech Ein Modellgewässer für Europa ("Wild River Tiroler Lech - A model water for Europe")
- Trailer

Reasoning: A single 20-minute film is too long for the visitors of the exhibition at the Nature Park House. Shorter films are easier to integrate into the exhibition and easier to for the visitors to digest.

The five films were presented for the first time at the 2. Wild River Symposium Tiroler Lech (E.2.5) on 23<sup>th</sup> of September 2021 in Breitenwang (Tirol). They are available under:

https://www.life-lech.at/service/downloads/

https://www.youtube.com/channel/UCEOdm3\_G\_rULPUMoPFB-BEw/playlists

In the future, the short films "LIFE Tiroler Lech" (E.3.4) will be integrated into a newly planned visitor center about Tyrolean Lech in the near village of Elmen. Topics: The Nature Park, projects and protected habitats and species, incl. the 2 LIFE projects, river and gravel bars, dynamics of riparian forests, geology of the Lechtal valley, video films from LIFE II project, ...). The exhibition is expected to open in the first quarter of 2023.

See attachment: Deliverables E.3.4 Video\_Film\_LIFE\_Lech:

- LifeLech Film01 Trailer\_final.mp4
- LifeLech Film02 Dokumentation Massnahmenumsetzung\_final.mp4
- LifeLech Film03 Kurzportrait Tier und Pflanzen\_final.mp4
- LifeLech Film04 Akzeptanz und Bedeutung\_final.mp4
- LifeLech Film05 Wildfluss Tiroler Lech Ein Modellgewässer für Europa.mp4E.3.4 Video/Film "LIFE Tiroler Lech"

Schedule/status: Action E.3.4 was implemented on schedule.

Proposed start date:	open	Actual start date:	05/2017
Proposed end date:	09/2021	Actual end date:	09/2021

Status: Not yet started	started	in progress	completed
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#### 5.1.28 E.4 Networking with other projects

Responsible partner: BWV Tirol

5.1.28.1 <u>E.4.1 Participation in the kick-off meeting</u>

The kick-off meeting for LIFE15 Nature and Biodiversity Projects took place in Brussels on 06/10/2016. Project lead Wolfgang Klien and Dr. Reinhard Lentner (ATLR U) participated on behalf of the LIFE project Lech. Reinhard Lentner gave a short presentation on the project.

See attachment: Other annexes

> 12\_Networking -> E.4.1 Kickoff-Meeting – Presentation

Schedule/status: Action E.4.1 was implemented on schedule.

Proposed start date:	09/2016	Actual start date:		10/2016
Proposed end date:	12/2016	Actual/anticipated end date:		10/2016
Status:	Not yet started	started	in progress	completed

#### 5.1.28.2 <u>E.4.2 Participation in 5 LIFE Platforms</u>

LIFE Lech representatives have so far participated in 5 LIFE platforms.

- The LIFE Platform 2017 took place from 02/05/2017 to 03/05/2017 in Seekirchen am Wallersee. From the project team, PL Wolfgang Klien, his deputy Bernhard Müllebner and PC Marian Unterlechner participated in the event. The LIFE project was presented by project lead Wolfgang Klien.
- The Austrian LIFE Platform 2018 took place from 05-06/06/2018 in Bad Mitterndorf (Styria). From the project team, PC Marian Unterlercher participated in the event.
- The Austrian LIFE Platform 2019 took place from 09-04/04/2019 in Marchegg (Lower Austria). From the project team, PL Wolfgang Klien, his deputy Bernhard Müllebner (Kogelbauer) and PC Marian Unterlechner participated in the event. The LIFE project was presented by project lead Wolfgang Klien.
- Unfortunately the LIFE platform in Laufen (June 2020) had to be postponed due to the corona pandemic. Instead, the Austrian LIFE Platform 2021 took place from 23-24/06/2021 in Anthering near Salzburg. From the project team, PL Bernhard Kogelbauer (Müllebner), his deputy Florian Keller, Wolfgang Klien (retired since 12/2020) and PC Marian Unterlechner participated in the event. The LIFE project was presented by Wolfgang Klien.
- From 24-25/05/2022, Wolfgang Klien took part in a conference on "30 years of LIFE in Austria" in Irdning-Donnersbachtal (Styria). There he presented the LIFE project Tiroler Lech and then answered technical questions from the participants in a discussion round.
- The Austrian LIFE Platform 2022 took place from 08- 09/09/2022 in Krems (Lower Austria). From the project team, PL Bernhard Kogelbauer (Müllebner), his deputy Florian Keller, Wolfgang Klien (retired since 12/2020) and PC Marian Unterlechner participated in the event. The LIFE project was presented by Wolfgang Klien.

See attachment: Other annexes

12\_Networking -> Participation in 5 national LIFE platform meetings (programs)

Proposed start date:	05/2017	Actual start date:		05/2017
Proposed end date:	06/2021	Actual/ end date:		09/2022
Status:	Not yet started	started	in progress	completed

Schedule/status: As project was extended to 09/2022, action E.4.2 was completed on schedule.

# 5.1.28.3 <u>E.4.3 Organisation of LIFE Platform</u>

State of implementation: The organisation of the LIFE platform by the LIFE Lech project Lech was canceled due to the corona pandemic. Why? The LIFE platform was originally supposed to take place in the Lech Valley in 2021. However, because the LIFE Platform Salzachauen 2020 was canceled and postponed to 2021 and the location for the 2022 platform had already been assigned to the LIFE project Donau Wachau, the LIFE project Lech decided to renounce. The cancellation was made in consultation with CINEA.

Schedule/status: Cancelled

Proposed start date:	03/2019	Actual start date:	03/2021	
Proposed end date:	09/2019	Actual/anticipated end date:	06/2021	
Status:	Cancelled in consultation with CINEA			

# 5.1.28.4 <u>E.4.4 Excursion to a different LIFE Project</u>

The networking-excursion took place on 07/05/2019 which took 30 participants from Austria and Bavaria to the upper Isar river accompanied by a remarkable experience exchange (see report in the Annex). On 27/07/2021 the participants came to the Tyrolean Lech for a return visit.

Even if there is currently no LIFE project on the Upper Isar, this river was nevertheless selected as the excursion destination for technical reasons, because it is a Natura 2000 area with a very similar initial situation and similar problems (deepening of the riverbed, lack of bed load, progressive succession of floodplain area, ...).

In addition, project manager Wolfgang Klien presented the LIFE project Lech to an Austria-wide audience on 20/05/2019 as part of the 1<sup>st</sup> LIFE IRIS networking meeting.

The national LIFE platforms in Austria (2017-2022) and the wild river symposium in Breitenwang 2021 (where contacts were made with the Lech related LIFE project "Stadt – Wald – Bäche Augsburg"), offered further opportunities to exchange experiences with other LIFE projects.

Attachment: see Other annexes

▶ 12\_Networking -> E.4.4 Excursion to LIFE Project (report, program, photos, ...)

Schedule/status:

Proposed start date:	03/2020	Actual start date:		03/2020
Proposed end date:	10/2021	Actual end date:		05/2019
Status:	Not yet started	started	in progress	completed

## 5.1.28.5 <u>E.4.5 Participation in nation-wide Riparian Forest Dialogue Forums</u>

At the national Riparian Forest Dialogue Forum, floodplain experts from all Austrian federal states meet once a year to discuss and develop an Austria-wide floodplain strategy 2030+. The results of the consultations are documented in minutes. A new floodplain strategy 2030+ does not yet exist.

The LIFE project Tiroler Lech was represented by experts at the following three nation-wide Riparian Forest Dialogue Forums:

- 21/11/2017 in Linz: Participation Daniela Pöll (ATLR U)
- 24/11/2020 via video conference (participation PL Bernhard Müllebner, Walter Michaeler (Abt U), Klaus Michor (REVITAL; with lecture about "Floodplain and river development in the alpine area")
- 26/06/2021 in Anthering: floodplain and moor workshop, Felix Lassacher (ATLR U) participated

Attachment: see Other annexes

12\_Networking -> E.4.5 Participation in nation-wide Riparian Forest Dialogue Forums (programs, lectures, minutes, ...)

Schedule/status:

Proposed start date:	open	Actual start date:		11/2017
Proposed end date:	12/2021	Actual/anticipated end date:		open
Status:	Not yet started	started	in progress	completed

### 5.1.29 F.1 Project Management

Responsible partner: BWV Tirol

### 5.1.29.1 F.1.1 Project Management by the BWV Tirol

State of implementation: Wolfgang Klien (BWV Tirol) began his work as project lead on 01/09/2016. In this capacity, he organised the constituting meeting of the steering group on 28/11/2016, the project team and the tender and award of the position of project coordinator (F.2). At the end of 2020, Wolfgang Klien retired. From 01/01/2021, the previous deputy project manager Bernhard Kogelbauer succeeded him as project manager. Mr. Klien's successor at the BBA Reutter was Florian Keller. He also assumed the role of deputy project manager. Even after his retirement, Mr. Klien continued to support the LIFE project as a consultant.

The project was successfully managed. The partner agreements have been concluded since 10/2017 (see annex). For details on the project organisation, see chapter 4.1.

Proposed start date:	09/2016	Actual start date:		09/2016
Proposed end date:	12/2021	Actual end date:		09/2022
Status:	Not yet started	started	in progress	completed

## 5.1.29.2 <u>F.1.2 Project Coordination</u>

State of implementation: After tender the commission was given to Revital Integrative Naturraumplanung GmbH, based in Nußdorf-Debant, which possesses extensive experience in the implementation of LIFE projects in Austria. The PC began work in 12/2016 and finished it on 09/30/2022 after extending the project by 9 months.

Schedule/status:

Proposed start date:	09/2016	Actual start date:		12/2016
Proposed end date:	12/2021	Actual/anticipated end date:		09/2022
Status:	Not yet started	started	in progress	completed

## 5.1.29.3 <u>F.1.3 Reporting</u>

State of implementation: Done.

After tender the task was awarded to Revital. The following reports were compiled:

- Progress Report I 31/12/2017
- Mid-term report 31/10/2018
- Progress Report II 31/12/2019
- Progress Report III 31/01/2022
- Final Report 30/09/2022

Proposed start date:	10/2017	Actual start date:		10/2017
Proposed end date:	12/2021	Actual/anticipated end date:		12/2021
Status:	Not yet started	started	in progress	completed

### 5.1.29.4 <u>F.1.4 Audit report</u>

State of implementation: Done.

F.1.4 Audit was put out to tender and awarded 2019 to MOORE BG&P Wirtschaftsprüfung GmbH in 8010 Graz Neufeldweg 93.

Since not only the BWV-T/BBA Reutte but possibly also ATLR U, whose project volume has increased, will ultimately receive more than 750,000 euros in funding, the project partner ATLR U was also subjected to the audit as a precaution.

Attachment: see Deliverables

► F.1.4 Audit report (2 reports for BWV-T and ATLR U)

Schedule/status:

Proposed start date:	01/2021	Actual start date:		01/2021
Proposed end date:	12/2021	Actual/anticipated end date:		10/2022
Status:	Not yet started	started	in progress	completed

## 5.1.30 F.2 GIS Data Management

#### Responsible partner: BWV Tirol

State of implementation: After tender the task was awarded to the company Revital. GIS data was reviewed, processed and provided to the project team when needed (e.g. for monitoring, detailed planning, homepage etc.). Finally, a digital final project was created and documented from the data collected during the project (see attachment).

Attachment: see Deliverables

F.2\_GIS\_Final\_digital\_project (incl. documentation)

Schedule/status:

Proposed start date:	12/2016	Actual start date:		12/2016
Proposed end date:	12/2021	Actual/anticipated end date:		09/2022
Status:	Not yet started	started	in progress	completed

## 5.1.31 F.3 After LIFE Plan

Responsible partner: BWV Tirol

State of implementation: The After LIFE Plan was put together by the PC in coordination with the project team in the period 06-09/2022. It explains how the measures carried out will be continued or maintained in the long term. CINEA requested a separate declaration for the maintenance of the new Forchach suspension bridge, which is now available in the form of a letter from the municipality of Forchach.

Attachment: see Deliverables

➢ F.3\_After\_LIFE\_Plan\_LIFE Lech (DE, EN)

Schedule/status:

Proposed start date:	open	Actual start date:		09/2021
Proposed end date:	12/2021	Actual end date:		09/2022
Status:	Not yet started	started	in progress	completed

## 5.2 Main deviations, problems and corrective actions implemented

- The <u>authorisations under nature conservation law</u>, needed for the detailed planning (A.1), initially required more time than expected. Reason: To the relevant official experts, static conservation was very important. Consequently, there was animated discussion on whether process-oriented, dynamic conservation or static conservation should have a higher priority at the Tyrolean Lech. In the meantime, official authorisations have been obtained after submitting detailed application documents which transparently elaborate the impact of the actions on the Natura 2000 area. Since planning and approval procedures began early enough, there were no delays in the schedule. Partly, the planning processes were even completed ahead of schedule.
- The process for obtaining national subvention for hydro-engineering projects was markedly more difficult than for the first LIFE Lech project. National funding was no longer granted as a comprehensive package by the Ministery. Instead, for every individual project, an application for funding had to be submitted to the funding division of the Kommunalkredit (KPC). There were only three meetings per year where funding decisions were made. Therefore, a longer lead time as well as exact timing regarding the creation and submission of application documents and the authorisations was necessary for each construction action. This caused considerable additional effort, high time pressure and an increased delay risk. In the course of the project, national funding had so far been successfully obtained on time for all construction actions, because the planning process commenced early enough sooner than scheduled, in fact.
- <u>As a consequence, the order of implementation of actions C.1-C.12</u>, for the most part, was not that of the proposal. In order to be able to be flexible with regard to authorisation and funding decisions, minor actions (C.5 Elmen, C.6 Luxnach, C.9 Alach, C.3 Grünau, C.4 Häselgehr-Griesau) were implemented before or alongside the major actions (C.1 Vorderhornbach, C.2 Hornberg). In contrast, actions C.10 Lech Downriver of Johannesbrücke and C.11 Lech Federal Border were pushed back owing to extended authorisation procedures. Also C.12 Implementation of Species Protection Actions was delayed. In the end, however, these shifts had no impact on the success of the project.
- <u>C.10 Lech Downriver of Johannesbrücke:</u> When the start of action C.10 for August 2019 was announced, there was surprisingly resistance from individual interested parties who use the quarry lake for fishing. They switched on the regional media and organized an information event against the measure. Joint meetings at which the project was adapted in an acceptable way for both sides (less reduction of the groyne, creation of a shallow water area ...) calmed the situation, so that work could be finished by the end of 2020. The lesson to be learned is that in future the submission documents for nature conservation projects in the state will be developed in more detail. Criticism must also be reacted to more quickly. Active public relations work is also required to inform the local population about the benefits and purposes of the measures early enough.
- In the course of the <u>study Evaluation of Alternatives for Species Protection Actions (A.3)</u>, conducted by the University of Innsbruck and headed by Univ. Prof. Dr. Leo Füreder, it transpired that the stone crayfish (*Austropotamobius torrentium*) could not be detected in the project area since recently. Suspected cause: Outbreak of crayfish plague in the Archbach and the Haldensee. Discussions on the selection and ranking of the protected goods and on the necessary species conservation actions were very extensive and detailed. As a result, completion of A.3 Evaluation of Alternatives for Species Protection Actions occurred around half a year behind schedule.
- <u>Delays in the implementation of species protection measures (C.12)</u>: The selection, detailed planning and cost estimate of the species protection measures for amphibians and Siberian bluet took more time than expected, especially since there was more budget available and

more measures had to be prepared. The implementation of the extensive construction measures could therefore only begin in winter 2020. Thanks to the commitment and experience of the BBA Reutte's own personal staff, all measures could be completed on time in autumn 2021.

- <u>No species protection measures for the stone crayfish:</u> Sadly, the stone crayfish (*Austropota-mobius torrentium*) became extinct in the project area at the beginning of the LIFE project owing to the crayfish plague which ravaged the protected area. This is an enormous loss not only for Natura 2000 area Lechtal, but for the whole of Tyrol and Austria. The actions originally planned were now no longer possible. Instead, within a nationally funded captive-breeding project young stone crayfish were put into suitable waters in July 2020. Because the results have so far re-mained below expectations, no further measures have been taken in the LIFE project.
- <u>Action B.1. Purchase of Areas was not implemented</u>, since the area required has since come under public ownership of the municipality of Elbingenalp, as it now belongs to a municipal land agricultural community. Therefore, a purchase through LIFE is no longer or only to a small extent eligible for funding. Instead, national funds were used.
- <u>Two project amendments for an extended project duration until 30/09/2022</u>: Due to unexpectedly high revenues from the sale of gravel and timber, the budget for reserve measures could not be fully utilized. The project team therefore decided to apply for additional "actions in reserve" C.13 and C.14 including two amendment request and a project extension of nine months. This meant additional administrative and coordination work and uncertainty about how to proceed. At the end the additional actions paid off. They were well accepted by local people (municipalities, fischermen, tourism) and pushed the LIFE project.
- <u>Repeated postponement of the wild river symposium (E.2.5)</u>: Due to the Covid19 pandemic, the International Wild River Symposium had to postponed two times, but it was finally held in September 2021. However, invitations and participants had to be limited to Central Europe. Nevertheless, there were interesting presentations and an intensive professional exchange.
- <u>Repeated postponement of the wild river symposium (E.2.5)</u>: Due to the Covid19 pandemic, the International Wild River Symposium had to postponed two times, but it was finally held in September 2021. However, invitations and participants had to be limited to Central Europe. Nevertheless, there were interesting presentations and an intensive professional exchange.
- Restricted implementation of visitor information, excursions and action days: Here too, due to the Covid19 pandemic, there were cancellations and repeated postponements. The number of informed visitors to the nature park house fell by around half in 2020 and 2021, and excursions had to be cancelled. The opening of the new suspension bridge at C.13 Forchach was also delayed by more than a year, but was finally rescheduled on 08/19/2022 together with a successful LIFE Lech closing ceremony.

In summary there were no problems which could prevent the LIFE Lech project from attaining its goals. Regarding the schedule, there were no time-critical problems or challenges.

# 5.3 Evaluation of Project Implementation

#### 5.3.1 Methodology applied – Lessons learnt

#### Interdisciplinary cooperation:

The LIFE project on the Tyrolean Lech has shown that large-scale river restoration on alpine rivers in Natura 2000 areas, in particular the creation of dynamically shaped gravel bars, can be efficiently implemented from an organisational, technical and financial point of view. Through the effective cooperation of water management authorities, nature conservation authorities and communities, it was possible to realise 13 river restoration projects or around 14 km of river revitalisation within 6 years. Of course, it must be taken into account that the Tyrolean Lech Valley is relatively sparsely populated and has space reserves. Nevertheless, what has been achieved is remarkable and not least due to the high commitment of everyone involved.

#### Preliminary Study A.3 Evaluation of Alternatives for Species Protection Actions:

Elaborating a study on possible species protection actions (A.3) to select efficient species protection measures against the background of a limited budget has also proven useful.

In order to select effective and well-targeted LIFE species protection measures, the University of Innsbruck conducted a study on species protection actions (A.3 "Studie Artenschutzmaßnahmen") at the beginning of the LIFE project. For this purpose, the experts drew up a list of 108 species important for the Nature Park Tyrolean Lech and ranked them according to criteria such as protection status, endangerment, regional importance, or public appeal. The result was a "priority ranking" of species for the conservation measures. Proposals for measures were developed for the "top 20" species. These proposals were implemented either - if time and funding allowed - as LIFE species conservation measures or became part of the management plan for the Nature Park Tyrolean Lech. This plan was developed within the LIFE project between 2020–2021 with the participation of the regional population.

#### Transnational cooperation:

The cooperation between the water management administrations responsible for the Lech in Austria (BBA Reutte) and Bavaria/Germany (WWA Kempten) has proven extremely successful. Both sides repeatedly emphasised in meetings that they had learned a lot from each other. Measure C.11, which was built by WWA Kempten on the Austrian side but has an effect on the German side, would probably not have been implemented without the LIFE project.

The good understanding between the Austrian and German LIFE partners as well as the great interest on the part of Bavaria in the LIFE project Lech is also reflected in the high-ranking participation of Bavarian government representatives in the opening ceremony in May 2017 as well as in the lively exchange of experiences during mutual excursions and at the wild river symposium 2021. From Partner WWA Kempten (Martin Mohr) was repeatedly emphasised that he wanted to enter into a project cooperation again at any time. He emphasised the good working atmosphere and the comparatively low bureaucratic effort caused by the LIFE project as particularly positive.

### Ecological advice during planning and implementation:

All C-actions were planned and implemented with ecological advice. Experts from the fields of ecology and nature conservation regularly visited the construction sites to discuss sensitive issues.

This has proven particularly useful with Action C.10. Here the ecological consultant was able to make a significant contribution to achieving a universally accepted solution in connection with the with the resistance of a private at the quarry pond.

#### Implementation of the construction work with own staff:

The implementation of the C-actions by the in-house staff of the water management authorities proved to be a key success factor. This made it possible to build flexibly and, above all, inexpensively. The construction machinery could be rented at low cost, and the stones from the removed bank protection (a total of 80,000 m3!) could be flexibly reused for other projects instead of being disposed of.

The use of the company's own staff and synergies in the construction process planning led to savings of around 0.8 million euros, which could be used for 2 further restoration actions C.13 and C.14 (see 5.3.3).

### Video conferences reduced carbon footprint:

Since the start of the project (09/2016), an attempt has been made to keep discussions and meetings with long journeys to a necessary minimum. Innsbruck was the main meeting place as the central location in order to minimise travel distances. Minutes and documents were created and sent electronically in order to save paper. Data was also exchanged electronically as far as possible.

With the COVID19 pandemic, the LIFE project meetings have also been largely replaced by video conferences since 03/2020. These have proven themselves extraordinarily. Since 03/2020, 17 project team meetings and 5 steering group meetings have been held as video conferences. Only the meetings with the EK monitoring team took place on site.

This saved around 20,000 kilometers (equivalent to around 1,000 liters of fuel or 2.5 tons of CO2) and 300 working hours!

### 5.3.2 Comparison of expected and achieved results

All proposed measures could be carried out successfully, with the exception of

- B.1 Land purchase for C.3 (land got semi-public in the meantime and was not eligible any more)
- E.4.3 Organization of LIFE platform (cancelled due to COVID19 pandemic)

Table 5 below compares the expected and achieved results.

#### Table 5: Comparison of expected and achieved results

Action	Foreseen in the revised proposal	Achieved	Evaluation
A.1 Detailed Plan- ning and Official Authorisations	<ul> <li>Objectives: Planning and official authorisation of the river engineering actions.</li> <li>Expected results: <ul> <li>9 + 1<sup>*</sup>) detailed plans and official authorisations</li> </ul> </li> <li>*) additional for C.13 after project amendment</li> </ul>	Yes, all plans and authorisations are available.	Owing to coordination with the authorities and to a complete set of submission documents, the authorisations were obtained in time. Own work by the BWV Tirol for planning lowered costs significantly. Results: see Deliverabled A.1 (incl. mide-term report) • Submission documents • Permits
A.2 Natura 2000 Management Plan Tiroler Lech:	<ul> <li>Objectives: Creation of a basis for efficient and goal-oriented management;</li> <li>Methods: Integrated approach factoring in the interests of water management, conservation, forestry, agriculture, tourism and fishery.</li> <li>Expected results: <ul> <li>Integrated Natura 2000 management plan</li> </ul> </li> </ul>	Yes, integrated Natura 2000 Man- agementplan for the Nature Park Tyrolean Lech was approved by ATLR U in 03/2022	<ul> <li>After preliminary work (basic surveys) works for Natura 2000 management plan started after tendering and awarding process in May 2020. End of 2021 a draft for final approval was available. End of March 2022 the managementplan was finished. Stakeholders were involved through several workshops and an excursion.</li> <li>Results: see Deliverable A.2 <ul> <li>Report and maps on the Natura 2000 Managementplan</li> </ul> </li> </ul>
A.3 Evaluation of Alternatives for Species Protection Actions:	<ul> <li>Objectives: Selection and priority ranking of possible species conservation actions.</li> <li>Expected results: <ul> <li>Report on the alternatives evaluation study.</li> </ul> </li> </ul>	Yes, study with priority ranking of protected goods and list of possi- ble actions was created.	Action completed. Methodology was published and presented by University of Innsbruck (Univ. Prof. Dr. Leo Füreder, Anna Schöpfer) on in- ternational conferences; Results: see Deliverable A.3 (mid-term report) • Report on the alternatives evaluation study

Action	Foreseen in the revised proposal	Achieved	Evaluation
B.1 Area Acquisi- tion for the Revital- isation of Lech Grünau	<ul> <li>Objectives: Land acquisition as a prerequisite for the implementation of Action</li> <li>C.3 Lech-Grünau.</li> <li>Expected results: <ul> <li>Purchase of 4.3 ha of private land.</li> </ul> </li> </ul>	No, action not im- plemented.	The action was not implemented, because the area required be- longs to the agricultural community of Unterbach-Grünau, which has in the meantime become a municipal land agricul- tural community, and which is now under the public ownership of the municipality of Elbingenalp. Therefore, the purchase through LIFE was no longer eligible for funding. Instead, na- tional funds were used.
C.1 Revitalisation Lech Vorderhorn- bach:	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>2 km of dynamic river ("soft") banks</li> <li>2 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> </ul>	Yes, action completed in 04/2019.	<ul> <li>Implementation was overall done as per the proposal, although the construction cost (proposal: 482,000 €) is probably slightly lower in practice (428,000 €). The action was moved ahead in schedule.</li> <li>Results Abiotic Monitoring (2021): <ul> <li>1.5 km of dynamic river ("soft") banks</li> <li>3.17 ha of natural-near dynamic river area ("active channel")</li> <li>5.28 ha additional potential for dynamic river area ("active channel")</li> </ul> </li> <li>Results Biotic Monitoring (2021): <ul> <li>2.28 ha of HD habitat type 3220</li> </ul> </li> </ul>
C.2 Revitalisation Lech Hornberg:	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>1.3 km of dynamic river ("soft") banks</li> <li>1.5 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> </ul>	Yes, action completed in 08/2018.	<ul> <li>Owing to synergy effects (in conjunction with C.1 - using material removed at one site at the other), the construction cost (248,000 €) was reduced drastically (savings: 297,000 €).</li> <li>Results Abiotic Monitoring (2021): <ul> <li>1.30 km of dynamic river ("soft") banks</li> <li>1.71 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> <li>Results Biotic Monitoring (2021):</li> </ul>

Action	Foreseen in the revised proposal	Achieved	Evaluation
			• 1.07 ha of HD habitat type 3220
C.3 Revitalisation Lech Grünau:	Objectives: River restoration. Expected results:	Yes, action completed in 10/2019.	Implementation is as per the proposal, but two years ahead of schedule. The construction cost (601,000 $\in$ ) was 237,000 $\in$ less than proposed.
	• 1.5 km of dynamic river ( soft ) banks		Results Abiotic Monitoring (2021):
	• 1.3 ha of natural-near dynamic river area ("active channel")		• 1.75 km of dynamic river ("soft") banks (incl. new side channel)
			• 2.64 ha of natural-near dynamic river area ("active channel")
			• 1.56 ha additional potential for dynamic river area ("ac- tive channel")
			Results Biotic Monitoring (2021):
			<ul> <li>loss of 0.07 ha 3240. Additional 0.81 ha of HD habitat type 3220, 7240*</li> </ul>
C.4 Revitalisation Lech Häselgehr- Griesau:	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>1.2 km of dynamic river ("soft") banks</li> <li>1.0 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> </ul>	Yes, action completed in 06/2019.	Implementation was nine months ahead of schedule. The expected cost (648,000) was now around 316,000 € lower than in the proposal.
			Results Abiotic Monitoring (2021):
			• 1.80 km of dynamic river ("soft") banks (incl. addi- tional side channel)
			• 1.40 ha of natural-near dynamic river area ("active channel")
			• 2.99 ha additional potential for dynamic river area ("ac- tive channel")
			Results Biotic Monitoring (2021):
			• 0.7 ha of HD habitat type 3220, 3240, 7240*

Action	Foreseen in the revised proposal	Achieved	Evaluation
C.5 Revitalisation Lech Elmen-Nus- sau	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>0.7 km of dynamic river ("soft") banks</li> <li>0.7 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> </ul>	Yes, action completed in 10/2017.	<ul> <li>Implementation was around 1.5 years ahead of schedule. The construction cost (92,000 €) was higher than proposed (37,000 €).</li> <li>Results Abiotic Monitoring (2021): <ul> <li>0 km of dynamic river ("soft") banks (groynes removed)</li> <li>0.38 ha of natural-near dynamic river area ("active channel")</li> <li>4.17 ha additional potential for dynamic river area ("active channel")</li> </ul> </li> <li>Results Biotic Monitoring (2021): <ul> <li>loss of 0.76 ha 3220, additional 0,56 ha of HD habitat type 3240, 7240*</li> </ul> </li> </ul>
C.6 Revitalisation Lech Luxnach:	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>0.5 km of dynamic river ("soft") banks</li> <li>0.5 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> </ul>	Yes, action completed in 02/2018.	<ul> <li>Both, materially and cost were in schedule. The construction cost (45,000 €) was significantly lower than proposed (88,000 €).</li> <li>Results Abiotic Monitoring (2021): <ul> <li>0.15 km of dynamic river ("soft") banks</li> <li>0.79 ha of natural-near dynamic river area ("active channel")</li> <li>3.47 ha additional potential for dynamic river area ("active channel")</li> </ul> </li> <li>Results Biotic Monitoring (2021): <ul> <li>0.73 ha of HD habitat type 3220, 3240, 7240*</li> </ul> </li> </ul>
C.7 Revitalisation Lech Stockach	Objectives: River restoration. Expected results:	Yes, action completed in 05/2020.	Implementation was around half a year ahead of schedule. The costs of $187,000 \in$ , were around a third of the estimate in the
Action	Foreseen in the revised proposal	Achieved	Evaluation
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	• 0.8 km of dynamic river ("soft") banks		proposal (613,000 €). Reason: Synergy effects with the concurrent flood protection project.
	• 0.8 ha of natural-near dynamic		Results Abiotic Monitoring (2021):
	river area ("active channel")		• 0.95 km of dynamic river ("soft") banks
			• 1.60 ha of natural-near dynamic river area ("active channel")
			• 0.39 ha additional potential for dynamic river area ("ac- tive channel")
			Results Biotic Monitoring (2021):
			• 1.17 ha of HD habitat type 3220
C.8 Revitalisation Lech Vorderfeld Kraichen	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>0.5 km of dynamic river ("soft") banks</li> <li>0.5 ha of natural-near dynamic river area ("active channel")</li> </ul> </li> </ul>	Yes, action completed in 04/2019.	The action was changed to the proposal, since the side arm as originally planned could not be built owing to the topological conditions. Instead, the mouth area is being widened into a delta shape. Overall, the habitat improvements were higher than originally expected. The costs dropped from 144.000 $\in$ to 50,000 $\in$ . Construction work was finished around a year earlier than proposed.
			Results Abiotic Monitoring (2021):
			• 0.35 km of dynamic river ("soft") banks
			• 0.62 ha of natural-near dynamic river area ("active channel")
			• 0 ha additional potential for dynamic river area ("active channel")
			Results Biotic Monitoring (2021):
			• 0.42 ha of HD habitat type 3220, 3240

Action	Foreseen in the revised proposal	Achieved	Evaluation
C.9 Revitalisation Lech Alach- Rauchwand	Objectives: River restoration. Expected results:	Yes, action completed in 03/2018.	Implementation was around six months ahead of schedule. The construction cost (13,000 $\in$ ) was a little bit lower as estimated in the proposal (16,000 $\in$ ).
	• 0.1 km of dynamic river ( soft ) banks		Results Abiotic Monitoring (2021):
	• 0.2 ha of natural-near dynamic		• 0.35 km of dynamic river ("soft") banks
	river area ("active channel")		• 0.20 ha of natural-near dynamic river area ("active channel")
			• 4.13 ha additional potential for dynamic river area ("ac- tive channel")
			Results Biotic Monitoring (2021):
			<ul> <li>loss of 0.1 ha 3220, additional 0.35 ha of HD habitat type 3240, 7240*</li> </ul>
C.10 Revitalisation Lech Downriver of Johannesbrücke:Objectives: River restoration.Yes, act pleted in0.4 km of dynamic river ("soft") banks0.4 km of dynamic river ("soft") banksYes, act pleted in		Yes, action completed in 12/2020.	The action was finished in 07/2022. Construction work begang in 01/2019, after a delay of around 1.5 years. Reason: intensive coordination with forestry and conservation. The construction costs were finally about 425,000 $\in$ , and thus significantly higher than proposed (103,000 $\in$ ), although the action now in- cludes an additional side arm, which had to be redesigned again in 06/2022 after a debris flow.
			Results Abiotic Monitoring (2021):
			<ul> <li>2.0 km of dynamic river ("soft") banks (reactivating Koppenbach stream)</li> </ul>
			• 2.72 ha of natural-near dynamic river area ("active channel")
			• 22.96 ha additional potential for dynamic river area ("active channel")
			Results Biotic Monitoring (2021):

Action	Foreseen in the revised proposal	Achieved	Evaluation
			<ul> <li>loss of 1.15 ha 3240, additional 1.20 ha of HD habitat type 3220, 3230, 7240*</li> </ul>
C.11 Revitalisation Lech Federal Bor- der to Lechschlucht	Objectives: River restoration. Expected results: • 0.63 km of dynamic river ("soft")	Yes, action completed in 06/2019.	Materially and in cost, the action was nearly per the proposal (351,500 to 402,000 €). However, a delay of around 1 year was incurred owing to intensive coordination with the power station operator E-Werk Reutte.
	• 6.5 ha of natural-near dynamic		Results Abiotic Monitoring (2021):
	river area ("active channel")		• 0.2 km of dynamic river ("soft") banks (estimated)
			• 1.0 ha of natural-near dynamic river area ("active chan- nel")
			• 5.43 ha additional potential for dynamic river area ("ac- tive channel")
			Results Biotic Monitoring (2021):
			<ul> <li>loss of 0.36 ha 3220, additional 0.6 ha of HD habitat type 3240</li> </ul>
C.12 Implementa- tion of Species Pro-	Objectives: Population support actions for selected protected goods.	Yes, action completed in 10/2021.	For C.12 - species protection actions - the total budget was about $550,000 \in$ instead of $200,000 \in$ , as $400.000 \in$ could be awad with C.1.C.11 and C.12
tection Actions.	Expected results:		Saved with C.1-C.11 and C.13.
	• stable populations of the common sandpiper <i>Actitis hypoleucos</i> , little ringed plover <i>Charadrius dubius</i> and of rose-winged grasshopper		<ul> <li>Results: see annex C.12</li> <li>38 additional amphibian water bodies with a total area of 1.05 ha (see Table 1)</li> <li>8 additional waters for habitate for the Bilok's/Siberian</li> </ul>
	• a minimum of 8 additional water bod-		bluet ( <i>Coenagrion hylas</i> )
	<ul> <li>ies, of which</li> <li>2 are dedicated to amphibians</li> <li>2 are dedicated to crayfish</li> <li>2 are dedicated to small fish</li> </ul>		• 4 additional tributaries for small fish (C.3, C.4, C.10, C. 14) with a total length of 2.6 km were created
			<ul> <li>7.4 ha additional habitats (riparian meadows) for the</li> </ul>
			rare butterfly Coenonympha hero)

Action	Foreseen in the revised proposal	Achieved	Evaluation
	• 2 additional locations with minia- ture bulrush ( <i>Typha minima</i> )		• 4 revitalisation sites (C.5, C.6, C.9 and C.10) with 1.000 young plants of dwarf bulrush ( <i>Typha minima</i> ).
			Results Abiotic Monitoring (2021): see annex D.2
			• 23 ha of additional "active channel", 7.1 ha additional gravel bars for common sandpiper <i>Actitis hypoleucos</i> , little ringed plover <i>Charadrius dubius</i> and of rose-winged grasshopper
			Results Biotic Monitoring (2020-2022): see annex D.3
			• Increase in breeding pairs of common little ringed plover <i>Charadrius dubius</i>
			Consistent population sizes of sandpiper <i>Actitis hypoleucos</i>
			• Positive effects on amphibians, invertebrats, small fish, FFH-Habitats and dwarf bulrush (see annex D.3):
			Note: As the stone crayfish <i>(Austropotamobius torrentium)</i> be- came extinct in the project area at the beginning of the LIFE project, the newly created habitats for the stone crayfish cannot fulfill their function for the time being; a nationally funded species protection project, which breeds stone crabs and places them in suitable waters, is intended to remedy this in the fu- ture; a first successful offspring and reintroduction to the Tyro- lean Lech succeeded in July 2020 as part of a state-funded pro- ject.
C.13 Revitalisation Lech Forchach Hängebrücke	Objectives: River restoration. Expected results: • additional 1.3 km of "soft" banks	Yes, was completed in 03/2022.	Additional costs of 788,000 € were according to the 1 <sup>st</sup> amend- ment request 2019 spent for river widening, removing bank protection and new suspension bridge. The action was on schedule.
			Results Abiotic Monitoring (2021):

Action	Foreseen in the revised proposal	Achieved	Evaluation
	• additional 7 ha of dynamic river habitat (HD habitat type 3220)		<ul> <li>additional dynamic river area ("active channel"): 6,59 ha</li> <li>additional potential for dynamic river area ("active channel"): 6.50 ha</li> <li>Results Biotic Monitoring (2021):</li> <li>loss of 1,06 ha 3240, additional 6,23 ha of HD habitat two 2220, 2220</li> </ul>
C.14 Revitalisation Lech Lechaschau	<ul> <li>Objectives: River restoration.</li> <li>Expected results: <ul> <li>additional 2 km of "soft" banks (0.75 km removed bank protection + 1.3 km unprotected banks along sidechannels</li> <li>additional 1.4 ha of dynamic river habitat (HD habitat type 3220)</li> </ul> </li> </ul>	Yes, action completed in 06/2022.	Additional costs of 298,000 € were according to the 2 <sup>st</sup> amendment request 2021 spent for removing bank protection and creating and restoring additional side-waters. The action was on schedule.         Results Abiotic Monitoring (2021):         • additional dynamic river area ("active channel"): not investigated         • additional potential for dynamic river area ("active channel"): 5.12 ha
D.1 Monitoring LIFE Actions – Coordination and Synthesis	Objectives: Success evaluation of LIFE actions Expected results: • Creation of a work programme. • Monitoring Synthesis Report	Yes	<ul> <li>Action completed on schedule.</li> <li>Results: see Deliverable D.1</li> <li>Monitoring Concept (Report): Work programme for the monitoring of Abiotics and Biotics</li> <li>Monitoring Synthesis Report (09/2022)</li> </ul>
D.2 Monitoring LIFE Actions – Abiotics	Objectives: Evaluation of success. Expected results: • pre-monitoring results	Yes, Pre- and Post-Monitoring	Action completed on schedule. Results:

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<ul><li> post-monitoring results</li><li> analysis and interpretation</li></ul>	completed. Data available.	• Report on the results of Abiotic-Monitoring (2021); see Deliverable D.2
D.3 Monitoring LIFE Actions – Bi- otics	<ul> <li>Objectives: Evaluation of success.</li> <li>Expected results: <ul> <li>pre-monitoring results</li> <li>post-monitoring results</li> <li>analysis and interpretation</li> </ul> </li> </ul>	Partially, Monitoring of small fish, am- phibians, birds, insects/arachnids and vegetation completed. Data are available. Monitoring of crayfish can- celled.	<ul> <li>Pre-monitoring of crayfish was cancelled, as the stone crayfish is supposed extinct since 2017.</li> <li>Results: <ul> <li>Reports on the results of Biotic-Monitoring (2021, 2022); see Deliverable D.3</li> </ul> </li> </ul>
D.4 LIFE Project Performance Indi- cators:	<ul> <li>Objectives: Evaluation of success.</li> <li>Expected results: <ul> <li>An overview of the project implementation status.</li> <li>Key project indicators</li> </ul> </li> </ul>	Yes, an overview table concerning the current project implementation status was up- dated every quar- ter of a year. The Key Project Indicators were compiled in an Excel file and transferred to the EC database	<ul> <li>Action completed on schedule.</li> <li>Results:</li> <li>see Deliverable D.4 <ul> <li>overview table concerning the current project implementation status</li> </ul> </li> <li>see Other annexes <ul> <li>14_KPI_Key_Performance_Indicators.xls</li> </ul> </li> </ul>
D.5 Ecosystem functions	Objectives: Evaluation of success. Expected results:	Yes	Action completed on schedule. Results:

Action	Foreseen in the revised proposal	Achieved	Evaluation
	Report.		Report on the results of Monitoring Ecosystem func- tions (08/2022); see Deliverable D.5
D.6 Socio-Eco- nomic Effects	Objectives: Evaluation of success. Expected results: • Report.	Yes	<ul> <li>Action completed on schedule.</li> <li>Results:</li> <li>Report on the results of Monitoring Socio-Economic Effects (11/2021); see Deliverable D.6</li> </ul>
E.1 Dissemination of Results (Obliga- tory Part)	Objectives: Dissemination of results. Expected results: • Homepage • 16 LIFE info boards • Layperson's Report	Yes, he website has been online since 02/2017.	<ul> <li>Action is on schedule.</li> <li>Results: <ul> <li>www.life-lech.at; website has been online since 02/2017; will online until 30/09/2027, then implemented in the Nature Park Tyrolean Lech website</li> <li>17 info boards have been created and mounted; see Deliverable E.1.2</li> <li>The Lay Report was printed and published in 08/2022; 1.000 DE + 500 EN; see Deliverable E.1.3</li> </ul> </li> </ul>
E.2 Guided Tours and Events	<ul> <li>Objectives: Information of the inhabitants, dissemination of results.</li> <li>Expected results: <ul> <li>Media work, including a logo</li> <li>Visitor information in the Naturparkhaus</li> <li>Touring Exhibition</li> <li>Visitor infrastructure at the Lech</li> <li>International Wild River Symposium</li> </ul> </li> </ul>	Yes	<ul> <li>Action completed.</li> <li>Results: <ul> <li>Project logo (see Deliverable E.2.1 - mid-term report)</li> <li>Groundbreaking ceremony with its attendant PR work has taken place in 24/05/2017 (see Other annexes 07)</li> <li>Closing ceremony in 19/08/2022 (see Other annexes 07).</li> <li>40 excursions</li> <li>11 action days</li> <li>Visitor information was done both constantly in the Naturparkhaus and punctually by action days and field</li> </ul> </li> </ul>

Action	Foreseen in the revised proposal	Achieved		Evaluation
				trips in the years 2017-2019; due to the Corona pan- demic the action had to be greatly reduced in 2020-2021
				• Touring exhibition (6 Roll-ups) was travelling through the region (see Other annexes 3.2.3).
				• The visitor facility (see Other annexes E.2.4) was imple- mented nearby the hanging bridge Forchach in 08/2020 and officially opened in 08/2022. This constitutes a change from the proposal. The importance of the Forchach location strongly suggests this change.
				• The 2nd international Wild River Symposium Tyrolean Lech was successfully held in September 2021 after several postponements due to the Corona pandemic (see Other annexes E.2.5)
E.3 Information	Objectives: Information of the inhabit-	Yes		Action completed.
Material	ants, dissemination of results.			Results:
	<ul><li>Expected results:</li><li>New edition of the Flusserleb-</li></ul>			• Revised "Flusserlebnisführer Lech / River Experience Guide Lech" (see Deliverable E.3.1).
	<ul><li>nisführer Lech ("River Experi- ence Guide Lech")</li><li>Tilt Effect Postcard</li></ul>			• The info-folder was published in 12/2019 in an edition of 5000 pieces, of which 4000 were DE and 1000 EN (see Deliverable E.3.3)
	<ul><li>Info-folder "LIFE Tiroler Lech"</li><li>Video/film "LIFE Tiroler Lech"</li></ul>			• The video/film (see annex E.3.4) and the Tilt Effect Postcard (Deliverable E.3.2) had their premiere at the Wild River Symposium Tyrolean Lech in 09/2021.
E.4 Networking	Objectives: Exchange of experience, dis-	Incomplete		Action completed.
with Other Projects	semination of results.	5.3.2.1	<u>E.4.3</u>	Results:
	Expected results:		<u>Or-</u>	• Participation in the kick-off meeting in Brussels on
	• Participation in the kick-off meet- ing		<u>gani-</u> sation	06/10/2016

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<ul> <li>Participation in LIFE platforms</li> <li>Organisation of a LIFE platform</li> <li>Field trips to other LIFE projects</li> <li>Participation in the Auendialog- foren ("National Riparian Forest Dialogue Fora")</li> </ul>	of LIFE <u>Plat-</u> form <u>hat to</u> <u>be</u> <u>can-</u> <u>celled</u> <u>due to</u> <u>Co-</u> <u>rona</u> <u>pan-</u> <u>demic</u>	<ul> <li>Participation in 5 LIFE Platforms (Seekirchen 2017, Bad Mitterndorf 2018, Marchegg 2019, Anthering 2021, Krems 2022).</li> <li>Networking-excursion on 07/05/2019 to Isar river in Bavaria accompanied by a remarkable experience ex- change (see Other annexes E.4 12_). The return visit took place on 27/7/2021.</li> <li>3 Participations in nation-wide Riparian Forest Dialogue Fora (Linz 11/2017, video conference 11/2020, Anther- ing 06/2021)</li> </ul>
F.1 Project Man- agement	Objectives: Project management. Expected results: Project management by the BWV Tirol Project coordination Reporting Audit report	Yes	<ul> <li>Action completed. Results:</li> <li>Project management and project coordination have been commissioned since 2016 and worked up to 12/2022 including 43 project team meetings and 10 meetings of the steering group</li> <li>Reporting: Progress Report I 31/12/2017, Mid-term report 31/10/2018, Progress Report II 31/12/2019, Progress Report II 31/01/2022, Final Report 30/09/2022</li> <li>Audit report: by MOORE BG&amp;P Wirtschaftsprüfung GmbH 8010 Graz (see Deliverable F.1.4)</li> </ul>
F.2 GIS Manage- ment	Objectives: Management of geographical data (GIS data). Expected results: • GIS data made available	Yes	<ul> <li>Action completed.</li> <li>Results: <ul> <li>LIFE Lech project server for data exchange ongoing since 2017</li> </ul> </li> </ul>

Action	Foreseen in the revised proposal	Achieved	Evaluation
	<ul> <li>Compilation of the digital completion project</li> <li>Update of the LPD</li> </ul>		• Digital final project including a documentation of all data collected during the project (see Deliverable F.2);
F.3 After LIFE Plan	Objectives: Verification of the sustaina- bility of the LIFE actions. Expected results: • After LIFE Plan (Report)	Yes	<ul><li>Action completed.</li><li>Results:</li><li>After LIFE Plan (Report; see Deliverable F.3)</li></ul>

### 5.3.3 Project amendments and how they led to the results achieved

According to the project proposal, 11 river restoration actions (C.1-C.11) were originally planned. Savings in the construction work through self-management and the sale of wood and gravel could save considerable financial resources (around  $\notin 0.8$  million), which were used, after consultation with CINEA and 2 project amendments (2019 and 2021), for 2 additional river restoration actions C.13 and C.14.

With the Action C.13, not only the suspension bridge was renewed in 2019 (thus making a contribution to visitor information and visitor guidance), but also through riverbed widening, an additional 1.4 km of "soft" dynamically shaped riverbanks, 6.6 hectares of "active channel" and potentially further 6.5 hectares of active channel were created.

In December 2021, CINEA approved the implementation of the further restoration action C.14 Lechaschau in another amendment. A further 1.7 ha of soft banks and potential for 5 ha of active channel were created.

With the amendments, the goal of additional 10 km "soft" (dynamically shaped) riverbanks could already be achieved within the project period. The goal of creating 25 ha of new dynamically shaped river space ("active channel") was almost achieved (23 ha). If there had been a major flood event, the target would probably have been met. However, there is potential for 62 ha of active channel in the coming decades.

Without the amendments (additional measures C.13 and C.14), at the end of the project the additional soft banks would have covered 10 km, the additional active channel 16 ha, the potential for additional active channel 50 ha.

### 5.3.4 Replication efforts

There have been numerous efforts to present the river restoration actions on the Tiroler Lech to a broad specialist audience (see chapter 6.4.5). Remarkable is the exemplary role played by the LIFE Lech project for

- the Natura 2000 area "East Tyrolean glacier rivers Isel, Schwarzach and Kalserbach", where also a life project is in consideration
- the interreg project lifelineMDD for the Mur-Drava-Danube region. The experiences from the LIFE Lech project were made available to a large group of experts especially in south-eastern Europe. The LIFE Lech project provided best-practice examples for the types of "measures erodible ("soft") banks", "lowering of the foreland" and "structures to enhance erosion". The experiences from the LIFE Lech project got part of the "River Restoration Toolbox" (pages 23, 32, 35, 40, 43): <u>https://www.interreg-danube.eu/uploads/media/ap-proved\_project\_output/0001/51/d958d8def5538a2c4ef1334dd922b50efb03e9dc.pdf</u>

### 5.3.5 Effectiveness of the dissemination activities

All dissemination activities foreseen in the proposal were successfully carried out until they were abruptly interrupted by the COVID19 pandemic in March 2020. Until then, in the nature park house in Elmen, around 8,000 people were informed about the activities of the LIFE project every year. There were regular excursions, guided tours and days of action. From the beginning of the pandemic, these had to be greatly reduced, postponed or even cancelled. Nevertheless, the goals were essentially achieved. The fact that the wild river symposium was able to take place in September 2021 after being postponed twice was decisive for the success of the dissemination actions.

## 5.4 Analysis of benefits

### 5.4.1 Direct / quantitative environmental benefits (for details see also chapter 7)

The <u>abiotic</u> monitoring, which assessed the river morphological development in the LIFE action sites, showed that around 14 km of "soft", unsecured riverbanks have been created so far, from which around 23 ha of new, dynamically shaped river areas have emerged. How-ever, the potential is far higher. In connection with large floods, up to 62 hectares of additional dynamic areas are possible in the measures.

The <u>biotic</u> monitoring examined the effects of the actions on the indicator groups "small fish", amphibians, insects and arachnids, bird species breeding on gravel banks, cattails and FFH habitat types. As far as the small fish are concerned, the first successes were recorded for minnows and bullheads. The new riverbed widenings, side channels and structured banks proved to be particularly favourable. The reactivation of the Koppenbach at the Baggersee in Forchach (C.10) and several old side channels in the Lechaschau area (C.14) also have high potential for grayling and stone crayfish. The two characteristic gravel bank breeding birds on the Tiroler Lech, common sandpiper *Actitis hypoleucos* and little ringed plover *Charadrius dubius*, also benefited from the revitalisation measures. For both species, the mapping in 2022 revealed significantly more territories than in the comparative surveys in 2012 (see chapter 5.1.21.3; Table 3).

Regarding amphibians, in particular the protected species Great Crested Newt *Triturus cristatus*, Tree Frog *Hyla arborea* and Natterjack Toad *Bufo calamita* showed a slightly positive trend in the first year after the completion of 38 new amphibian water bodies. However, a well-founded statement as to whether the measures taken were successful will only be possible in the near future. The same applies to the target species of insect monitoring (specialized ripicole grasshoppers, giant riverside wolf spiders). Due to the short period of investigation, no noticeable changes in the stocks could be detected in them. However, the newly created potential habitats are seen as a positive approach to promoting in-sect populations on the Tyrolean Lech.

The conservation and resettlement of the dwarf cattail *Typha minima* on the Tyrolean Lech has been funded since 2003, most recently in the years 2017-2021 as part of the LIFE-Lech II project a total of 1000 young plants were planted and sod transplants were carried out for the first time in Europe. The population development 2003-2021 shows that the total number of shoots has increased significantly over the years. The new settlements have grown well and are spreading via root suckers. However, whether self-sustaining stocks can develop will become apparent in the next few years and will depend on the flood dynamics at the loca-tions. Finally, the monitoring of the FFH habitat types showed above all a quantitative increase in the dynamically shaped habitat types 3220, 3230, 3240, 7240\* within in the LIFE action sites (see chapter 5.1.21.6, Table 4). Also an improvement in the state of preservation has already been observed.

Conclusion: The loss of natural river habitats, mentioned as relevant threat in the proposal, was significantly reduced.

### 5.4.2 Qualitative environmental benefits

With the initial actions C.1-C.14 implemented, a foundation has been made for further re-dynamisation of the Tyrolean Lech, particularly in the upper course, which saw few actions during the first LIFE project. It can be expected that the initial measures trigger the formation of dynamically shaped gravel bars and pioneer habitats along Lech river. These are necessary to ensure the permanent survival of highly specialized, highly endangered species using these gravel bars as habitats, like the German tamarisk *Myricaria germanica* (within HD habitat type 3230), the miniature bulrush *Typha minima* (in 7240, 3230, 3240), the common sandpiper *Actitis hypoleucos*, the little ringed plover *Charadrius dubius*), the rose-winged grasshopper *Bryodemella tuberculata*, the grayling *Thymallus thymallus* etc.

Since the revitalisation measures C.1-C.11, C.13 and C.14 only include the removal of groynes and longitudinal riverbank protections but no technical objects, no regular maintenance work is required. The river engineering measures are designed in such a way that they can be left to its own and develop through morphodynamic processes in the coming decades. There are no plans for ongoing care or maintenance, i.e. the river restoration measures are effective in the long term even without human intervention.

In addition for the further sustainable development of the Natura 2000 area Lechtal a management plan was developed as Action A.2 within the LIFE project. In a joint process, stakeholders from the fields of nature conservation, forestry, agriculture, tourism, water management and fisheries agreed on 175 individual measures on the "pillars" of nature conservation, environmental education, recreation, regional development and research in several working group meetings. They are to be realised in the next 10 years and thus continue the positive development of the wild river landscape of the Tyrolean Lech.

Concerning the new suspension bridge at the Lech near Forchach, the Municipality of Forchach confirmed the maintenance of the suspension bridge in a letter dated 15.7.2021 (see appendix).

### 5.4.3 **Economic benefits** (for details see chapter 6)

The monitoring of the socio-economic impact showed that more than 80% of the costs, around 5 million euros, were spent in the region and thus benefited the regional economy. At BBA Reutte alone, an average of 10 people were employed and financed by the project, the Tiroler Lech Nature Park increased their staff in order to take on further tasks for the LIFE project. A further 900,000 euros in labour costs flowed into the regional economy.

As far as tourism is concerned, there are tangible indirect effects. The Lechweg, a popular long-distance hiking path, originated from an idea in the first LIFE project. In the meantime, it has become a valuable brand in tourism. The LIFE project contributed to further increasing the attractiveness of the Lech and its landscape. In the surveys carried out among stakeholders, the wild river Lech proved to be the "main player in tourism" that has shaped the image of the region for years. The LIFE project strengthened this positioning and increased awareness in Europe. In an online survey, a large majority of 70% approve of the LIFE project's restoration and conservation measures.

The land needed for action C.3 Grünau had been transferred to a municipal land agricultural community (owned by the municipality). Since they were now under public ownership, they were no longer eligible for funding through LIFE. Through excellent mutual understanding and support for the project on the part of the municipality, a cost-effective acquisition of the areas outside LIFE was possible. Furthermore, the municipality of Elmen offered areas for the implementation of action C.5 in a simple, unbureaucratic way. The municipality of Forchach turned over the areas needed for action C.10 in exchange for areas from the lands and waters in public ownership. Consequently, there were no costs for the purchase of land for the LIFE project.

### 5.4.4 Social benefits

In the medium and long term, the LIFE actions will support the stabilisation of the Lech riverbed and increase retention area, therefore support the adaptation to climate change and contribute to the fulfilment of the EU Floods Directive.

The widening of the river resulted in a total of 200,000 m2 of additional retention areas, which serve as a buffer in the event of flood and reduce the risk of flooding downstream. Larger or more frequent floods, caused by climate change, can thus drain away better. The river widenings increase the discharge capacity of the Tyrolean Lech in the project area, stabilise the riverbed and even raise it. The areas around the river continue, therefore, to serve flood retention purposes or even do so increasedly. This attenuates flood waves and avoids a deterioration of the situation in the downstream area. The extreme flood of 2005 left a strong impression in this regard. The large-scale river widenings of the first LIFE project (2001-2007) attenuated the flood wave and reduced damage substantially. This also led to an increased acceptance of river revitalisation actions among the inhabitants.

Conclusion: Socio-economically based skepticism towards protection efforts in the region could be reduced. With regard to the effects of the C-actions on stabilising the riverbed and rising groundwater level, however, no quantitative evidence could be provided in the short project period.

### 5.4.5 Replicability, transferability, cooperation

The first LIFE project at the Tyrolean Lech (2002-2007) already had proved to be a motor for the implementation of the Natura 2000 area and the Tiroler Lech Nature Park. The 2<sup>nd</sup> LIFE project at the Tyrolean Lech (2016-2022) further raised awareness and was an excellent example for the economic, ecological and social opportunities that arise through LIFE for European Protected Areas in peripheral regions. Thus, it also served as a model for similar regions in Tyrol where river land-scape and people share narrow spaces. This is particularly true for the Natura 2000 area "East Tyrolean glacier rivers Isel, Schwarzach und Kalserbach."

The LIFE project in Tirol Lech was also a sought-after location for excursions by NGOs, universities and administrative experts. Around 40 excursions and 11 action-days were carried out, with around 700 experts and students, 140 pupils and 700 other interested people being informed about the project. A total of 15 NGOs were directly or indirectly involved in the project.

Important platforms for knowledge transfer on the Lech revitalisation efforts were the national LIFE platforms in Austria (5 participants) and the 2nd Wild River Symposium on September 22-24, 2020 in Breitenwang. 80 experts took part and numerous contacts to other LIFE projects in middle Europe could be made.

### 5.4.6 Best Practice lessons

The method chosen - to initiate dynamics by removing short or longer sections of bank protection rather than by large-scale "building" - has proved itself. This method of approach lowers costs and simplifies the legal process of authorisation, as forest clearings and actual construction work is minimised. In particular, this avoids loss of HD protected goods for the most part, which simplifies the authorisation under environment laws. Changes in the character of the habitats are left to natural processes as far as possible, which also softens possible conflicting goals with regard to the HD.

### 5.4.7 Innovation and demonstration value

Representatives of LIFE Lech have repeatedly been invited to speak in Tyrol and its neighbouring countries, in which it was possible for them to present the Tyrolean Lech as a model for a consensus-driven cooperation between conservation and flood protection, not least in connection with LIFE funding. Examples would be on 06/02/2018 during the 1<sup>st</sup> Salzachsymposium in Burghausen (DE), at the Forum Alpinum on 03/06/2018 in Weißenbach or a lecture for a NGO on 04/10/2018 in Lienz. In this way, the LIFE Lech project has some persuasive power for, for instance, the declaration of Natura 2000 areas or the combined implementation of conservation (by revitalisation) and flood protection projects.

Within the LIFE Lech project measures to improve the sediment balance were successfully implemented. Bedload deficit, the resulting riverbed incision, and the associated loss of morphological dynamics jointly represent one of the largest river engineering and ecological problems along Europe's rivers. The successful LIFE Lech river restoration project even found its way into the "River Restoration Toolbox", which was created in the interreg project lifelineMDD for the Mur-Drava-Danube region. It presents types of measures to increase bedload input using natural erosion processes. The LIFE Lech project provided best-practice examples for the types of "measures erodible ("soft") banks", "lowering of the foreland" and "structures to enhance erosion". The experiences from the LIFE Lech project are thus made available to a large group of experts especially in southeastern Europe. For more see "River Restoration Toolbox" (pages 23, 32, 35, 40, 43): https://www.interreg-danube.eu/uploads/media/approved\_project\_output/0001/51/d958d8def5538a2c4ef1334dd922b50efb03e9dc.pdf

### 5.4.8 Policy implications

The LIFE project enjoyed the full support of the Federal Tyrolean government. Vice-governor, Josef Geisler, responsible for water management and Mag. Ingrid Felipe, responsible for conservation in Tyrol, are active advocates of the ideas of the LIFE project at various opportunities. In their speeches at the groundbreaking ceremony on 24/05/2017 in Elmen as well as at the closing ceremony on 19/08/2022, they showed enthusiasm about the project and assured their full support (see figure below). The project partner Bavaria also showed great interest and firm support, f.e. as Martin Grambow (Bavarian State Ministry of the Environment and Consumer Protection) emphasised at the kick-off event. This shows once more that LIFE projects at rivers are particularly suited to implementing goals of both WFD and HD in a coordinated manner, even across state borders and to mutual advantage.

The project municipalities, united in the planning group Upper Lechtal, also showed firm approval as could be seen in the closing ceremony on 19/08/2022 in Forchach, were the new suspension bridge was officially opened. This successful event was not only attended by prominent representatives of the Tyrolean government and its departments, the tourism associations, the "Tiroler Lech" nature park and the municipalities, but also around 100 interested parties, guests and locals.

Regarding unexpected difficulties in implementation, it transpired that putting the HD into practice, especially where river revitalisation projects are concerned, leads to conflicting goals within the conservation efforts, as well as conflicting opinions even among experts. In particular, the question of whether it is more important to conserve existing protected habitats or to instigate rejuvenated habitats is one that can only be answered in a dialogue of stakeholders, the specialised government divisions and experts.

The newly finished management plan for the Natura 2000 area Tiroler Lechtal (Action A.2) lays out the strategies, protection goals and actions for the Tiroler Lech Nature Park. In the future, it will strongly support conservation work in the Tiroler Lech Nature Park.



Prominent participants at the LIFE closing ceremony on 19/08/2022 in Forchach; From left: Reinhard Lentner (Tyrolean government), Tyrolean vice-governor Ingrid Felipe, President of the Federal Tyrolean Parliament Sonja Ledl-Rossmann, Rosemarie Hingsamer (CINEA), vice-governor Josef Geisler, N.N., Mayor Karl Heinz Weirather (Municipality Forchach), Markus Federspiel (Tyrolean government, water management), Wolfgang Klien (BBA Reutte);

For more information see:

https://www.tirol.gv.at/meldungen/meldung/zurueck-zum-ursprung-tiroler-lech-fliesst-wieder-innatuerlichen-bahnen/

https://www.tirol.gv.at/presse/mediathek/video/life-projekt-dynamic-river-system-lech/

https://www.youtube.com/watch?v=mff9YdYuvXA

# 6 Key Project-Level Indicators

Project specific data were the first time included into the KPI database webtool within the 1<sup>st</sup> Progress Report (31/12/2017). An update was made in 01/2018 when the webtool itself was also updated. The final update was made in October 2022.

The values reported are still justified and consistent with the environmental, economic and social benefits reported in the preceding section. There are no significant deviations from the targets set initially.

### 7.3 Nature - Target habitats:

The LIFE Lech river restoration actions resulted in more dynamic floodplain, more "active channel" (plus 23 ha), more gravel and sand deposits and finally more FFH-habitat-types 3220, 3230, 3240, 7240\*. The expansions enabled the largest area increase for FFH-Type 3220 (plus 11.5 ha) but also additional area for the colonization of tamarisk (FFH type 3230), dwarf cattails (FFH type 7240\*) and lavender willow (FFH type 3240); see Table 6, below).

Due to the short time between completion of the construction measures and post-monitoring, complete achievement of the specifically defined target (25 ha of dynamic river habitats) could not yet be quantitatively verified. Overall, however, a positive trend is already emerging for the target habitats 3220, 3230 and 3240 with a total gain of 12.26 ha of dynamic habitats so far. It can be assumed that these habitats will expand over the next few years, or after more severe flood events with lateral erosion, to other areas and will reach, in the long term, the area-specific target.

The loss of "static" alluvial forests (FFH-type 91E0; 7.4 ha) which were supported by historical bank protections, does not cause any major concerns. In the long term, the positive effects of the project will prevail.

FFH- habitat	EEU habitat traa (nome)	Pre-Monitoring 2017	Post-Monitoring 2021	difference
type (Code)	rrn-naonai-type (name)	Area (ha)	Area (ha)	Area (ha)
3220	Alpine rivers and the herbaceous vegetation a- long their banks	112.05	123.56	11.51
3230	Alpine rivers and their ligneous vegetation with <i>Myricaria germanica</i>	0.3	0.54	0.24
3240	Alpine rivers and their ligneous vegetation with <i>Salix elaeagnos</i>	12.72	13.04	0.32
7240*	Alpine pioneer formations of Caricion bicoloris- atrofuscae	0.09	0.63	0.54
Gesamt		125.16	137.77	12.61
91E0*	Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxi-</i> nus excelsior	32.77	25.36	-7.41

### Table 6: Development of relevant FFH habitat types within the LIFE Lech project

### 7.4 Nature - Target species:

As biotic monitoring D.3 shows, positive effects on target species have been achieved.

The two characteristic gravel bank breeding birds on the Tiroler Lech, common sandpiper *Actitis hypoleucos* and little ringed plover *Charadrius dubius*, also benefited from the revitalisation measures. For both species, the mapping in 2022 revealed significantly more territories than in the comparative surveys in 2012 (see Table 3).

As far as the small fish are concerned, first successes were recorded for the bullhead *Cottus gobio*. The new riverbed widenings, side channels and structured banks proved to be particularly favourable. Regarding amphibians, the protected species Great Crested Newt *Triturus cristatus*, showed a positive trend in the first year after the completion of 38 new amphibian water bodies. The same applies to the target species of Siberian bluet *Coenagrion hylas*. The stone crayfish *Austropotamobius torrentium* also shows a positive trend again, after he had become extinct due to an outbreak of crayfish plague in 2017. However, parallel to the LIFE project, a nationally funded project dealt with the reintroduction of stone crayfish in the Tyrolean Lechtal. These efforts have so far been successful.

### 10.2 NGOs:

A total of 14 NGOs were directly or indirectly involved in the project: Natopia (Nature and environmental education), Lechtal Alps, Tiroler Lech Nature Park, Mountain Rescue Service / Mountain Police, Tourism Board Lechtal, Tourism Board Reutte, District Chamber of Agriculture, Tyrolean Fisheries Association, District Hunters' Association, Regional Development Agency Ausserfern, WWF, Environmental Ombudsman, Farmers' Association, Biodiversity Initiative.

### 11. Information:

Information on the LIFE lech project is provided on website (~9,000 user between 2017-2022), 17 information boards, poster exhibition on tour, 65 articles in print media, 20 videoclips, leaflets etc., 52 event (excursions, symposium), etc.

### 12. Capacity bulding:

Around 40 excursions and 11 action-days were carried out, with around 750 experts and students, 140 pupils and 700 other interested people being informed about the project. In total: more than 1,600 people.

### 13. Jobs:

Additional jobs created: BBA 2020-2022 (0,25), NPTL 2017-2021 (0,25); total: 0,5

### 14. Economic growth:

BWV-T (Federal water management authority Tyrol): 50.000 Euro estimated budget per year for maintanance of actions C.1.C.13 + C.14; = 250.000 Euro in 5 years; Lech: Implementing N2000 Management Plan: 50.000 per year; = 250.000 Euro in 5 years;

Regional Tyrolean Government Department Environmental protection together with Nature Park Tyrolean Lech: Implementing Natura 2000 Management Plan: 50.000 per year; = 250.000 Euro in 5 years

Budget for continuation of LIFE-Monitoring: 20.000 Euro

Total: 520.000 Euro

#### Table 7: KPI – Values 2018 - 2027

Indica-		start value	End value	Beyond end	Unit /	Notes
tor code		2018	2022		Einneit	
1.5.	Conservation or improvement of the status of an area or segment	0	14	14	km	Additional 13 river restoration stretches with a total of around 14 km of "soft" banks without pro- tections
1.6.	Persons with improved capacity or knowledge due to project actions		km		km	
	Persons with improved capacity or knowledge due to project actions/ Personen mit verbesserten Fähgkeiten	20.800	20.800	20.800	Number of residents within or near the project area	Nature park newspaper to all households; based on the population of the neighboring communities as of 01/25/2022
	Persons with improved capacity or knowledge due to project actions/ Personen mit verbesserten Fähgkeiten	8.400	33.000	70.000	Number of short term visitors within or near the project area (e.g. tourists)	The indicator refers to the number of yearly visitors in the Klimmbrücke Nature Park House; 2017: 7243; 2018: 8401, 2019: 7937, 2020: 4031, 2021: 3431; 2022: 8.000; expected 2023-2027: 8.000 visitors/a (= about 40.000 visitors in addition)
7.3.	Annex I Habitats Directive					
	3220-Alpine rivers and the herbaceous vegetation along their banks	112,05	123,56	130	ha	Based on LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021); Note: the informa- tion refer to the 13 stretches of measures, not to the whole Natura 2000 area
	Habitat Condition	favourable	favourable	favourable		
	Habitat Trend	= (stable)	+ (improving)	+ (improving)		
	3230-Alpine rivers and their ligneous vegetation with Myricaria germanica	0,3	0,54	0,6	ha	Based on LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021); Note: the informa- tion refer to the 13 stretches of measures, not to the whole Natura 2000 area
	Habitat Condition	unfavourable - inadequate	favourable	favourable		
	Habitat Trend	- (declining)	+ (improving)	+ (improving)		
	3240-Alpine rivers and their ligneous vegetation with Salix elaeagnos	12,7	13,04	15	ha	Based on LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021); Note: the informa- tion refer to the 13 stretches of measures, not to the whole Natura 2000 area
	Habitat Condition	favourable	favourable	favourable		
	Habitat Trend	= (stable)	+ (improving)	+ (improving)		
	3140-Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	5,31	5,25	5,3	ha	Based on LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021); plus additional 1,05 ha newly created ponds for amphibians and Siberian bluet (action C.12)
	Habitat Condition	- (declining)	+ (improving)	= (stable)		
	Habitat Trend	unfavourable - inadequate	favourable	favourable		
	7240-Alpine pioneer formations of the Caricion bicoloris-atrofuscae	0,09	0,63	0,7	ha	Based on LIFE-Monitoring Vegetation/Typha minima, N. Müller (2017-2021) Note: the information refer to the 13stretches of measures, not to the whole Natura 2000 area
	Habitat Condition	unfavourable - inadequate	favourable	favourable		
	Habitat Trend	- (declining)	+ (improving)	= (stable)		
	91E0-Alluvial forests with Alnus glutinosa and Fraxinus excelsior	32,77	25,36	25	ha	Based on LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021); This habitat type is actually not typical for the riverine landscape of the Lech and was favoured due to river obstructions in the past and therefore increased disproportionate; During the LIFE project the riparian

Indica- tor code		start value 2018	End value 2022	Beyond end value 2027	Unit / Einheit	Notes
						forest area has decreased in favour of pioneer habitats, but will develop back into riparian forest in the long term;
	Habitat Tren	1 = (stable)	- (declining)	= (stable)		
	Habitat Condition	n favourable	favourable	favourable		
7.4.	Annex II Habitats Directive species / European Red List: Birds					
	Cottus gobio/Fish					Based on LIFE-Monitoring Fish, C. Moritz (2017-2021); Note: length of inhabited feature in km refers to the newly constructed side channels since 2017; the abundance refers to the stretches of measures with fish surveys, not to the whole Natura 2000 area
	Species Are	a 0	2,63	2,63	length of inhabited feature in km	
	Population cour	t 120	202	280	number of individu- als	Based on LIFE-Monitoring Fish, C. Moritz (2017-2021)
	Species Statu	s unfavourable - inadequate (U1)	unfavourable - inadequate (U1)	favourable		
	Species Tren	1 + increase	+ increase	1 stable		
	Charadrius/dubius					Based on Master thesis of Eberhard (2012), Lassacher (2012) and Sodja (2022); Note: area infor- mation refer to the 13 stretches of measures, not to the whole Natura 2000 area (LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021));
	Species Are	a 112,35	124,1	103,6	ha	
	Population cour	t 13	13	18	p - number of pair	
	Population cour	t 13	15	23	p - number of pair	Based on Master thesis of Eberhard (2012), Lassacher (2012) and Sodja (2022);
	Species Statu	s vulnerable	vulnerable	vulnerable		
	Species Tren	I F flucturing	0 stable	+ increase		
	Actitis/hypoleucos					Based on Master thesis of Eberhard (2012), Lassacher (2012) and Sodja (2022); Note: area infor- mation refer to the 13 stretches of measures, not to the whole Natura 2000 area (LIFE-Monitoring "Vegetation / FFH Habitats" (Revital, 2017-2021));
	Species Are	a 125,05	137,14	145,6	ha	
	Population cour	t 20	26	29	p - number of pairs	
	Population cour	t 13	29	48	p - number of pairs	Based on Master thesis of Eberhard (2012), Lassacher (2012) and Sodja (2022);
	Species Statu	s vulnerable	vulnerable	vulnerable		
	Species Tren	1 (0) stable	+ (increasing)	+ (increasing)		
	Coenagrion hylas/Arthropods					Based on studies and monitorings of LIFE I and II (Müller & Vorauer 2005, 2006, Vorauer 2014, Landmann 2019, 2022, Landmann & Gstrein 2020, Landmann & Landmann 2020)
	Species Are	a 0,1	0,26	0,26	ha	
	Population Cour	t 140	260	300	number of individu- als	

Indica- tor code		start value 2018	End value 2022	Beyond end value 2027	Unit / Einheit	Notes
	Species Status	favourale (FV)	favourale (FV)	favourale (FV)		
	Species Trend	<ul> <li>decrease</li> </ul>	+ increase	0 stable		
	Triturus cristatus/Amphibians					Based on LIFE-Lech Prä- und Postmonitoring (Glaser 2018, 2021)
	Species Area	0,5	0,95	0,95	ha	
	Population Count	35	123	150	number of	
					individu- als	
	Species Status	unfavourable -	unfavourable	unfavourable -		
		inadequate	- inadequate	inadequate		
		(U1)	(U1)	(U1)		
	Species Trend	<ul> <li>decrease</li> </ul>	+ increase	0 stable		
10.2.	NGOs					
	Number of involved NGOs	0	14	14	number	Natopia (association), Lechtal Alps, Nature Park Tiroler Lech, mountain rescue service, TVB Lechtal (agency for tourism), TVB Reutte (agency for tourism), district chamber of agriculture, Tyrolean fishing association, district master of hunters, regional development agency of Ausser- fern, WWF, Environmental Ombudsman Tyrol, district chamber of agriculture and farmers' association, citizen's initiative "Biodiversität"
11.1	Website (mandatory)					
		0	8.856	15.000	No. of unique visits	8.856 visits until 28.9.2022; in average 100 new visits/month = 1.200 visits/year; x 5 years = 6.000 visits in 5 Jahren = $8.900 + 6.000 = 14.900$ (ca. 15.000) visits between 2018 and 2027;
11.2.	Other tools					
	Number of different publications made (Jour- nal/conference)	0	4	6	number	<ul> <li>2. International LIFE Lech Symposium Wild River Landscapes 22-24 September 2021 Breitenwang Reutte Tyrol Austria</li> <li>Tagungsband (proceedings) 2. International LIFE Lech Symposium 2021</li> <li>Landmann M. et al. 2021: European damselfly</li> <li>Auenmagazin No. 22/2022: in prep.</li> </ul>
	Number of different displayed information created (posters, information boards)	0	28	0	number	<ul> <li>17 LIFE Lech Info boards placed nearby each action</li> <li>6 Rollups for travelling exhibition (2017-2022)</li> <li>1 Banner</li> <li>4 Beachflags</li> </ul>
	Number of articles in print media (e.g. newspaper and magazine articles)		71	0	number	
	2017	0	4	0	number	<ul> <li>Naturmagazin "Grenzenlose Natur" – Frühjahr 2017</li> <li>VNÖ-Newsletter (Verband der Naturparke Österreichs) – Dezember 2017</li> <li>Ankündigung des LIFE Lech Projekts auf der HP des NPTL</li> <li>Ankündigung der Meilensteine des LIFE Lech Projekts auf der HP des NPTL</li> </ul>
	2018	0	5	0	number	<ul> <li>Pressebericht – LIFE Lech Homepage ist online – Winter 2018</li> <li>Jahresbericht 2017 (Naturpark Tiroler Lech) – Frühjahr 2018</li> <li>Naturmagazin "Grenzenlose Natur" – Frühjahr 2018</li> <li>VNÖ-Newsletter (Verband der Naturparke Österreichs) – Sommer 2018</li> <li>Gemeindezeitung Elbigenalp "Duarfer Zeitung" (03 / Juli 2018)</li> </ul>
	2019	0	30	0	number	<ul> <li>28 Pressemeldungen siehe Anhang (Rundschau, Tiroler Tageszeitung, Bezirksblätter)</li> <li>Jahresbericht 2018 (Naturpark Tiroler Lech) – Frühjahr 2019</li> <li>Naturmagazin "Grenzenlose Natur" – Frühjahr 2019 (Ankündigung Veranstaltungen und Bericht)</li> </ul>

Indica- tor code		start value 2018	End value 2022	Beyond end value 2027	Unit / Einheit	Notes
	2020	0	15	0	number	<ul> <li>02./03.01.2020: Rückblick auf 2019 - Rundschau</li> <li>27./28. Mai 2020: "Bagger schaufeln Liebesnest" (Rundschau, Reuttener)</li> <li>24./25. Juni 2020: Wolfgang Klien (Rundschau, Kronen Zeitung)</li> <li>22./23. Juli 2020: 7 Pressemeldungen (Rundschau, Tiroler Tageszeitung, Bezirksblätter)</li> <li>Jahresbericht 2019 (Naturpark Tiroler Lech) – Frühjahr 2020</li> <li>Naturmagazin 2020 des Naturpark Tiroler Lech</li> <li>Artikel im Magazin eco.mont – Journal on Protected Mountain Areas Research and Management am 02. Juli 2020</li> </ul>
	2021	0	9	0	number	<ul> <li>Pressemeldung am 25. Feburar 2021 (Tiroler Tageszeitung)</li> <li>Pressemeldung am 03./04. März 2021 (Bezirksblätter Reutte)</li> <li>Pressemeldung am 07./08. April 2021 (Rundschau)</li> <li>Pressemeldung am 07./08. April 2021 (Bezirksblätter Reutte)</li> <li>Pressemeldung am 12./14. Mai 2021 (Bezirksblätter Reutte)</li> <li>Pressemeldung am 29./30. September 2021 (Rundschau)</li> <li>Pressemeldung am 06./07. Oktober 2021 (Rundschau)</li> <li>Jahresbericht 2020 (Naturpark Tiroler Lech)</li> <li>Naturmagazin "Grenzenlose Natur" – Frühjahr 2020</li> </ul>
	2022	0	8	0	number	<ul> <li>Rundschau 31. Jänner 2022 - Das Tüpfelchen aufs I</li> <li>Tiroler Fischereiverband TFV 01/2022 - Neuer Fischlebensraum am Lech</li> <li>Tiroler Tageszeitung, online 13.08.2022 - Juwel Koppenbach in den Lechauen: Neues Leben in Karibikfarben</li> <li>Falter 34/22, S.44: Alles fließt</li> <li>Land Tirol / LHStc Geisler / LHStvin Felipe / Umwelt / Naturschutz / Wasserwirtschaft, 20.8.2022: Zurück zum Ursprung: Tiroler Lech fließt wieder in natürlichen Bahnen. LIFE-Projekt "Dynamic River System" nach sechs Jahren Laufzeit abgeschlossen. Inkl. Video</li> <li>Dolomitenstadt: Der Lech fließt wieder in natürlichen Bahnen, 22.8.2022</li> <li>Mein Bezirk.at, 21.8.2022: LIFE-Projekt am Lech - Hochwasserschutz und Renaturierung erfolgreich abgeschlossen.</li> <li>ORF.at, 20.8.2022: Nach 20 Jahren: Lech nahezu ursprünglich</li> </ul>
	Other distinct media products created (e.g. differ- ent videos/broadcast/leaflets)	0	20	0	number	<ul> <li>1 Guidebook "Flusserlebnisführer LECH New edition"</li> <li>1 Folder LIFE Tiroler Lech DE EN</li> <li>5 short films according to E.3.4 Video Film LIFE Tiroler Lech;</li> <li>1 Tilt Effect Postcard ("Kippeffekt-Postkarte")</li> <li>12 short clips to convey the objectives and tasks of the LIFE project, edited via Facebook channel of Nature Park Tyrolean Lech</li> </ul>
	Number of Hotline/information centers created		1	1	number	specific LIFE Lech context/information at Infocenter Naturparkhaus Tiroler Lech
	Number of events/exhibitions organised	0	52	0	number	
	2017	0	6		number	<ul> <li>05.05.2017, Exkursion des Landesbetriebs Gewässer BW – Regierungspräsidium Freiburg, BBA Reutte, Geschiebefalle, C.2, Forchach Johannesbrücke – C.10 und C.5</li> <li>24.05.2017, Auftaktveranstaltung LIFE Lech, Elmen Maßnahmengebiet C.5 und NPH</li> <li>20.06.2017, Helfiade in Elbigenalp</li> <li>16.10.2017, Universität Innsbruck – Reinhard Lentner, Leopold Füreder, Vortrag und Exkursion</li> <li>19.10.2017, Universität Innsbruck – Reinhard Lentner, Leopold Füreder, Vortrag und Exkursion</li> <li>26.10.2017, Tag der offenen Türe im Landhaus in Innsbruck</li> </ul>

Indica- tor code		start value 2018	End value 2022	Beyond end value 2027	Unit / Einheit	Notes
	2018	0	13		number	<ul> <li>30.04.2018, Universität Innsbruck – Reinhard Lentner, Leopold Füreder, Konrad Pagitz, Vortrag und Exkursion</li> <li>15.05.2018, Exkursion Hochschule Nürtingen – Naturparkhaus Klimmbrücke, C.5 Elmen Nussau, C.1 Stanzach-Vorderhornbach und Geschiebesperre Hornbach (28 TN)</li> <li>04.08.2018, Exkursion "Die Ufer-Tamariske" – Forchach (11 TN)</li> <li>17.12.2018, Exkursion Wasserwirtschaftsamt – Forchach (11 TN)</li> <li>23.05.2018, Umweltbaustelle "Typha minima" mit VS Musau (Standort entbuschen), Unterpinswang (24 TN)</li> <li>25.06.2018, Umweltbaustelle "Typha minima" (Standort entbuschen), Kieswerk Pinswang (2 TN)</li> <li>04. – 06.06.2018, Forum Alpinum "Naturpark Tiroler Lech", Breitenwang</li> <li>02.08.2018, Vortrag "Naturpark Tiroler Lech &amp; LIFE Lech", Lienz (40 TN)</li> <li>03.10.2018, Vortrag / Schulung Naturführer "LIFE Lech – Das Projekt", Elmen, Naturparkhaus (10 TN)</li> <li>07.12.2018, Vortrag "LIFE Lech – Das Projekt, das Arten- und Hochwasserschutz vereint", Elmen, Naturparkhaus (22 TN)</li> <li>16.07.2018, Informationsveranstaltung LIFE Lech, Forchach</li> <li>30.07.2018, ORF-Sommerfrische, Hägerau</li> </ul>
	2019	0	15		number	<ul> <li>50.07.2018, ORF-Sommerinische, Hagerau</li> <li>16.04. CSU-Politikerinnen-L-number-</li> <li>02.05. NaturführerInnen-Kurs von Natopia1number-</li> <li>17.05. Fortbildung "Natur im Fokus" Landesumweltanwaltschaft1number-</li> <li>22.05. Hochschule Nürtingen1number-</li> <li>31.05. NaturführerInnen-Kurs von Natopia1number-</li> <li>07.06. Abt. 4 Umwelt- und Klima, Landesregierung Vorarlberg1number-</li> <li>07.06. NABU-Reisen1number-</li> <li>01.07. Neue Mittelschule Fließ1number-</li> <li>09.07. Lokalaugenschein Zwergrohrkolben mit Nationalpark Donau-Auen und Christina Kollnig1number-</li> <li>21.07. Aktionstag LIFE Riverfest1number-</li> <li>02.08. Betriebsausflug, Brandstätter-1number-</li> <li>20.08. ORF-Sommerfrische mit LIFE-Programm1number-</li> <li>24.09. Bäuerinnen aus dem Bregenzer Wald1number-</li> <li>10.10. LehrerInnenfortbildung Vortrag + Exkursion1number-</li> <li>27.11. Naturmark-Aktionstag Volksschule Elmen1number-</li> </ul>
	2020	0	8		number	<ul> <li>07.07.2020 Wildfluss-Führung, Universität Salzburg</li> <li>06.10.2020 Lech-Exkursion (Gegeneinladung zur Exkursion an die Isar 2019)  ug. Corona abgesagt</li> <li>12.06. Ausflug von Ornithologen</li> <li>16.06. Betreuung Journalistinnen mit Präsentation zum LIFE Lech-Projekt</li> <li>09.07. NaturführerInnen-Kurs von Natopia</li> <li>12.09. Chronistentag</li> <li>06.10. Präsentation an Hr. Barnikel</li> <li>10.10. Aktionstag: Lange Nacht der Museen in der Burgenwelt Ehrenberg</li> </ul>
	2021	0	9		number	<ul> <li>09.06.2021 AG Managementplan ,,Aktionstag" (Lokalaugenschein)</li> <li>27.07.2021 LIFE Lech-Exkursion (Gegeneinladung zur Exkursion an die Isar 2019) (Bericht siehe Anhang)</li> </ul>

Indica- tor code		start value 2018	End value 2022	Beyond end value 2027	Unit / Einheit	Notes
						<ul> <li>24.09.2021 Exkursion im Rahmen des LIFE-Lech-Symposiums</li> <li>21.05.2021 NaturfüherInnen-Kurs von Natopia</li> <li>18.06.2021 NaturführerInnen-Kurs von Natopia</li> <li>27.07.2021 Vortrag LIFE Lech-Projekt</li> <li>17.09.2021 Vortrag Lechweg Verein</li> <li>23.09.2021 Vortrag ,LIFE und Naturpark gehen Hand in Hand" am LIFE-Lech-Symposium</li> <li>23.09.2021 Aktionstag: Öffentlicher Auftritt am LIFE-Lech-Symposium</li> </ul>
	2022	0	1		number	19.08.2022, Abschlussfeier LIFE Lech; Eröffnung Hängebrücke Forchach
12.1	Networking (mandatory)					
	Other	0	730	1000	number	
	2017	0	120		number	<ul> <li>Auftaktveranstaltungen LIFE Lech, Elmen (NPH und C.5) (24.05.17): 80</li> <li>LIFE Lech Präsentation bei Helfiade, Elbigenalp (20.06.17): 20</li> <li>Tage der offenen Tür im Landhaus Innsbruck (26.10.17): 20</li> </ul>
	2018	0	261		number	<ul> <li>Informationsveranstaltung LIFE Lech, Gemeinde Forchach (16.07.18): 20</li> <li>ORF-Sommerfrische, Hägerau (30.07.18): 80</li> <li>Forum Alpinum "Naturpark Tiroler Lech" (04.06.18-06.06.18): 50</li> <li>Vortrag NPTL &amp; LIFE Lech, NPH für NABU Deutschland (02.08.18): 39</li> <li>Vortrag NPTL &amp; LIFE Lech, Lienz (03.10.18): 40</li> <li>Vortrag/ Schulung Naturführer*innen "LIFE Lech - Das Projekt", NPH (04.12.18): 10</li> <li>Vortrag "LIFE Lech - Das Projekt, das Arten - und Hochwasserschutz vereint" (07.12.18), NPH: 22</li> </ul>
	2019	0	286		number	<ul> <li>ORF-Sommerfrische mit LIFE-Programm (20.08.19): 80</li> <li>CSU-Politikerinnen (16.04.19): 8</li> <li>NABU-Reisen (17.06.19): 45</li> <li>Aktionstag LIFE Riverfest (21.07.19): 80</li> <li>Betriebsausflug, Brandstätter (02.08.19): 17</li> <li>Bäuerinnen aus dem Bregenzer Wald (24.09.19): 56</li> </ul>
	2020	0	43		number	<ul> <li>ÖA Lange Nacht der Museen in der Burgenwelt Ehrenberg (10.10.20): 10</li> <li>Ausflug von Ornithologen (12.06.20): 7</li> <li>Betreuung Journalistinnen mit Präsentation zum LIFE Lech-Projekt (16.06.20): 2</li> <li>Chronistentag (12.09.20): 23</li> <li>Präsentation an Hr. Barnikel (06.10.20): 1</li> </ul>
	2021	0	20		number	<ul> <li>Vortrag NPTL + LIFE Verein Lechweg, NPH (17.09.21): 20</li> </ul>
	Students (in higher education)	0	375	500	number	
	2016	0	<u>40</u> 60		number number	<ul> <li>Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 40</li> <li>Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 30</li> <li>LIFE Lech Exkursion + Vortrag Universität Innsbruck (Lentner, Füreder) (16.10.2017); Exkursion mit Übung "Naturkundliche Fachplanung"; inklusive Baubegleitung zu C.10/C.13: 15</li> <li>LIFE Lech Exkursion + Vortrag Universität Innsbruck (Lentner, Füreder) (19.10.2017): 15</li> </ul>
	2018	0	77		number	<ul> <li>Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 30</li> <li>Lehrer*innenfortbildung Vortag und Exkursion (10.10.2019): 10</li> <li>Exkursion Hochschule Nürtingen (22.05.19): 26</li> <li>Exkursion Hochschule Nürtingen (24.05.19): 26</li> </ul>
	2019	0	92		number	<ul> <li>Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 30</li> <li>Lehrer*innenfortbildung Vortag und Exkursion (10.10.2019): 10</li> </ul>

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						Exkursion Hochschule Nürtingen (22.05.19): 26
						• Exkursion Hochschule Nürtingen (24.05.19): 26
	2020	0	66		number	Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 40
						LIFE Lech Wildflussführung, Universität Salzburg (07.07.20): 26
	2021	0	50		number	• Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 30
						• 2. Internationales LIFE-Lech-Symposium (22.0924.09.2021), Breitenwang: 20
	2022	0	30		number	Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 30
	2022-2027	0	30		number	Lehrveranstaltungen (Universität Innsbruck) - Vorlesung, Seminar: 150
	Pupils (of school age)	0	144	200	number	
	2017	0	0		number	
	2018	0	24		number	• Umweltbaustelle "Thypha minima" VS Musau (Standortentbuschung) (23.05.18): 24
	2019	0	120		number	• Exkursion Neue Mittelschule Fließ (01.07.19): 100
						Naturpark-Aktionstag Volksschule Elmen (27.11.19): 20
	Professionals - experts in the field	0	374	400	number	
	2017	0	62		number	LIFE Lech Exkursion des Landesbetriebs Gewässer Baden-Würtemberg - Regierungspräsid-
						ium Freiburg (05.05.2017): 12
						• Teilnahme LIFE Plattform Seekirchen am Wallersee 2.53.5.2017 – Projektvorstellung durch
	2018	0	50			• Teilnanme am bundesweiten Auendialogioren, Linz, Daniela Poell, (21.11.2017): 20
	2018	0	52		number	• Exkursion wasserwirtschaftsamt Kempten (1/.12.2018): 11
						Exkursion "Die Oler-Tamariske" (04.08.18): 11     Tailaahma LIEE Diettform Aussessiand 5.6.6.2019     20
	2010	0	120		numbor	IEIE Plattforma Marshaggi 00, 10.04 2010; Projektario w Klion, 20
	2019	0	120		number	<ul> <li>LIFE Platform Marchegg: 0910.04.2019; Projektprasentation W. Kilen: 30</li> <li>Naturfikrankanan Kura van Nataria (02.05.10); 20</li> </ul>
						<ul> <li>Naturfumentinen-Kurs von Natopia (02.03.19): 20</li> <li>LIEE Look Joon Evilymoin (7.5.8.5.2010): 20</li> </ul>
						<ul> <li>LIFE Lech Isar Exkursion (7.5-6.5.2019): 50</li> <li>Earthildong "Natur in Ealgas" Landagementation valuation of (17.05.10): 10</li> </ul>
						<ul> <li>Following Natur III Fokus Landesumwentanwanschaft (17.05.19): 10</li> <li>Exkursion/Vortrag Abt 4 Umwelt und Klime Londesregierung Vorerlberg (07.06.10): 14</li> </ul>
						<ul> <li>Exkulsion/voltrag Aot. 4 Uniweit- und Kinna, Landestegterung volaribeig (07.00.19). 14</li> <li>Lokalaugenschein Zwergrobskolben mit Nationalnark Donau Auen und Christine Kollnig.</li> </ul>
						(09 07 19). 6
						<ul> <li>Besuch LIFE-Projekt Untere March Auen am Tiroler Lech: Franz Steiner (viadonau): 23 -</li> </ul>
						25.10.2019: 10
	2020	0	17		number	NaturführerInnen-Kurs von Natopia (09.07.20)     17
	2021	0	123		number	• Vortrag NPTL + LIFE Naturführerausbildung, NPH (18.05.21): 15
						• Vortrag NPTL + LIFE Naturführerausbildung, NPH (21.05.21): 13
						• LIFE Lech Exkursion (Gegenbesuch IsarexpertInnen) (27.07.21): 15
						• 2. Internationales LIFE-Lech-Symposium (22.0924.09.2021), Breitenwang: 80
13.	Jobs	-			number	
14.	Contribution to economic growth	-			€	
14.1.	Running cost/operating costs	-	6.093.220	-	€	
14.3.	Future funding	-				