LIFE Project Number

LIFE10 NAT/SI/142 Progress Report

Covering the project activities from 01/01/2012 to 30/01/2015

Reporting Date

29/01/2015

LIFE+ PROJECT NAME or Acronym

Restoration of the Ljubljanica River corridor and improvement of the river's flow regime

Project Data	
Project location:	Ljubljana, Slovenia
Project start date:	01/01/2012
Project end date:	31/12/2015
Total budget:	1.188.015,00 €
EC contribution:	584.382,00 €
(%) of eligible costs:	50 %

Beneficiary Data	
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1 Executive summary

The project has two main objectives: the restoration of Ljubljanica River corridor biodiversity and the improvement of the ecological functions of heavily degraded section of Ljubljanica River from Ljubljana to the mouth of the Sava River and upstream along the Sava River. This area is an important habitat for fragmented and seriously deprived fish populations which are targeted in this project (Danube Salmon *Hucho hucho*, Danube Roach *Rutilus pigus* and Striped Chub *Leuciscus souffia*). Nowadays the water level upstream of the dams on Ljubljanica River is too low and the main channel has no connection to tributaries during the low flows. This represents a major obstacle for habitat connectivity between the river sections. The restoration and upgrading of facilities on the river will allow free migration of fish species along the entire water body. During this project once uniform fish population along the rivers Sava and Ljubljanica will be reunited again.

1.1 General progress

After two years of implementation of the project there was at the beginning of year 2014 delay in the course of actions according to the schedule. In last year we have focused on catching up the delays and closing the actions that should already be completed. We expect that we will be able to eliminate all delays until March 2015.

One of the most important tasks in past year was gathering all the necessary permits and documentation that will allow us to start with actions C2 (restoration of fish passes) and C3 (modernization of barrier's lifting system). To be able to solve administrative problems with permitions we have intensively communicated with all partners, and have collected a lot of working material. There has been a lot of external communication with national, regional and local institutions, and other stakeholders relevant for the project implementation especially fisheries associations and other nongovernmental organizations.

All preparatory actions (A1, A2 and A3) are completed, the sill in Zalog has been successfully reconstructed, the reconstruction of fish passes is being conducted right now, the modernization of the barrier will start in February 2015 and the fish monitoring is in progress, dissemination actions, overall project operation and monitoring are ongoing.

1.2 Assessment as to whether the project objectives and work plan are still viable

According to the progress of the project in last year and implementation of the actions we can conclude that project objectives will be reached at the end of the project. We are working now according to the work plan with only minor deviations which are expected to be abolished.

1.3 Problems encountered

The project has been running for quite some time in which we have encountered various problems that were solved more or less successfully.

One of the technical problems was collapse of a fish pass in Fužine which acquired different approach to reconstruction as initially planned and described in the project proposal. The same measures were not appropriate any more due to questionable stability of entire fish pass construction. Alternative technical solution was developed, focused on ensuring the elements for better operation of the fish pass. Project team has prepared a new plan and the work is currently in progress and will be concluded by the end of February 2015.

We have also faced some technical problems at the Ambrožev trg barrier where the plans for improvement of the barrier had to be completely changed due to technical heritage to which the barrier belongs. Because of that no changes in external appearance of the building are allowed. We have requested for non-substantial modification on this action and it was approved. The new plans for improvement of the barrier are prepared, and the work will start in February 2015 and will be finished by the end of March 2015.

Monitoring of fish migration didn't start as soon as it should due to company Geateh financial problems, high water flow and unsuitable weather conditions (years 2013 and 2014 were very rainy, annex 1). The delay in monitoring was solved with handing over the work to external assistance and is now in progress.

Difficult cash flow situation in Slovenia, lack of bank support and shrinking of the market brought numerous enterprises out of business. Because of the financial crisis and cash flow problems also companies on the project have struggled to ensure all the necessary funds and employees to perform actions for which they were responsible.
Company Geateh has been subjected to severe financial pressure in the business sector for the period of four years. Despite having slight profits every year, cash flow problems started to threaten motivation of employees while the market of consultancy services was shrinking constantly (table 1). In the year 2010 there were nine employees on average while by 2014 it was reduced to four employees. The problems of company Geateh on the project were solved with changes in implementation and in costs construction of action E2 which were approved by Comission on 22 August 2014. According to that modifications faculty has taken over implementation of action E2 and relieved company Geateh of additional work and costs.
Company Purgator inženiring was facing the same problems which were solved with merger with company Purgator which was confirmed with an Amendment No 1 to Grant agreement for project signed on 09 September 2014.
Due to financial crisis which has caused problems to both partners delays on the project has occurred. With different solutions we have managed to ensure that implementation of tasks on the project did not stopped and that they will be successfully completed.

Table 1: Consequences of financial crisis for company Geateh (significant drop in income)

Year	2008	2009	2010	2011	2012	2013
Net income [€]	672,862	539,293	514,386	567,205	432,790	180,127

2 Administrative part

Coordinating beneficiary of the project "Ljubljanica connects" is University of Ljubljana, Faculty of civil and geodetic engineering, Chair of hydrology and hydraulic engineering. There are also two associated beneficiaries on the project, companies Purgator d.o.o. and Geateh d.o.o.

After the initial problems with work organisation among the partners now the division of the work is functioning. The coordinating beneficiary has convened several meetings during the year. Partners have mainly discussed implementation of current actions in progress and were trying to solve problems which have encountered. The meetings were held on 16 January 2014, 05 March 2014, 29 May 2014, 19 August 2014, 26 August 2014, 16 September 2014 and 30 October 2014. During the year the coordination between partners was also held over the e-mails and phone calls. Associated beneficiaries have participated on meetings and were informing coordinating beneficiary about the progress on actions for which they were responsible.

The progress of work on the project was also checked within the formal ad-hoc visit by the technical desk officer Dørte Pardo López on 30 June 2014. On this meeting all the beneficiaries have participated.

In December 2013 the associate partner Purgator inženiring d.o.o. has merged with the company Purgator d.o.o. Because of the merger the change of the partner was carried out. It was confirmed with an Amendment No 1 to Grant agreement for project signed on 09 September 2014.

The Project steering group consists of one representative from each partner and of one representative from co-financers (figure 1). The role of the steering group is to review the situation on the project and to help find solutions when necessary. The steering group meets approximately once a year.

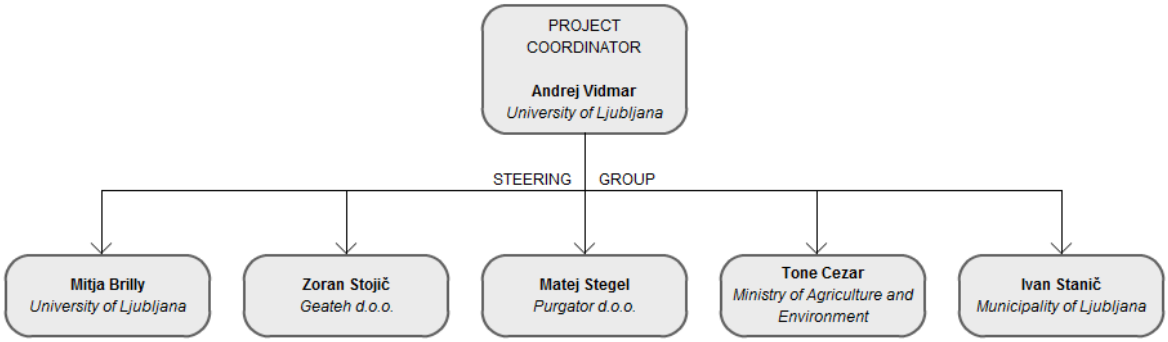


Figure 1: Organigram of the project steering group

The Project team consist of experts from different fields that are employed by one of the partners in the project (figure 2). Number of employees by the Faculty of civil and geodetic engineering is changing but there are constantly people who perform tasks of project coordinator, project manager, environmental engineer (researcher) and administrator. In company Purgator the number of employees on the project is changing between 2 and 4

according to the extension of current tasks. In company Geateh number of employees has been constantly three (researcher, biologist and administrator).

The Project team has changed after non-substantial modifications (confirmed by Commission on 22 August 2014). Faculty took over implementation of action E2 and is now employing biologist who before worked for Geateh (figure 2, italic) and who works with faculty's environmental engineers.

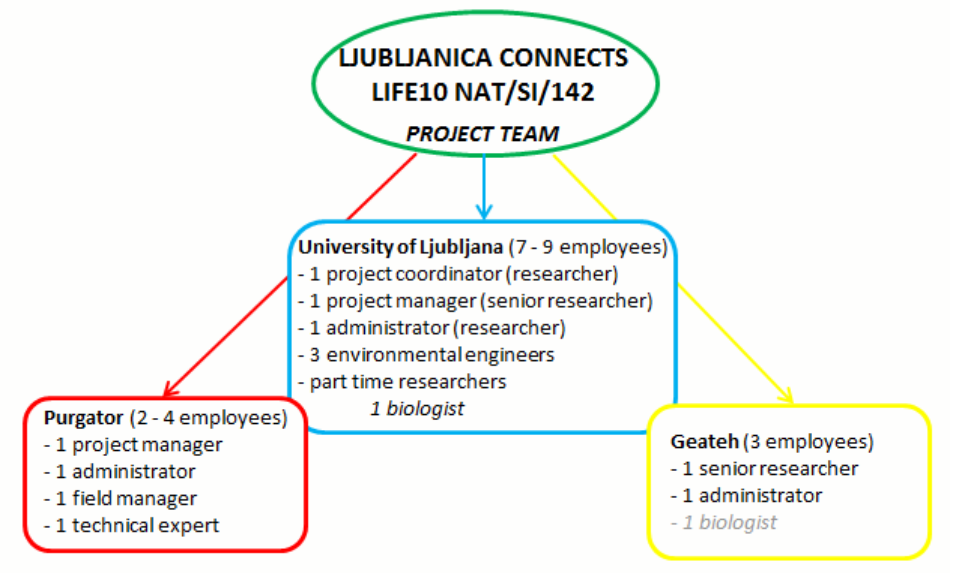


Figure 2: Organigram of the project team

In accordance with Grant agreement Activity reports foreseen there have already been three reports delivered since the start of the project: Inception report, Progress report n°1 and Mid-term report.

We evaluate that the cooperation between the partners is successful. Progress of the project is on track according to the timetable. There is no extension expected.

3 Technical part

3.1 Actions

3.1.1 Action A1: Preliminary study of the habitat, hydrological and hydraulic conditions in the Ljubljanica river corridor, estimation of Danube Salmon, Danube Roach and Striped Chub population

Action A1 is completed.

What has been done?

- review of historical records and existing documents in fishing clubs Barje and Vevče, and review of the Fisheries management plan of fishing clubs Barje, Vrhnika, Dolomiti and Vevče (October 2012 – September 2013),
- visit to archives and libraries of the Fisheries Research Institute of Slovenia, National institute of biology and National and University Library, and search for reports and literature (July 2012 – April 2013),
- electrofishing, measurements and marking of fish in cooperation with expert Meta Povž PhD, ichthyologic society and fishing associations Barje, Vevče, Dolomiti and Vrhnika (performed on 18 September 2013 and 26 September 2013),
- collecting the data from the existing measuring network on the Ljubljanica River (November 2012 – January 2013),
- checking situation on the field in cooperation with fishing associations Barje, Vevče, Dolomiti and Vrhnika (field trips on 04 July 2013, 23 August 2013, 28 August 2013, 29 October 2013 and 24 December 2013).

Figure 3: Catching of fish and measuring its characteristics

Were the objectives achieved?

- investigation of past river channels on Ljubljanica River, ✓
- overview and description of fish population in Ljubljanica River, ✓
- investigation of habitat conditions in Ljubljanica River, ✓
- establishment of database about Ljubljanica River hydrological regime, ✓
- overview of target populations, ✓
- collection of literature and reports about the topic. ✓

Problems encountered:

- the action was completed after the deadline in the timetable because of the difficulties in communication with local fishermen who have very strict limitations about when an electrofishing can be performed. Action A1 has been completed in December 2013 but late completion has caused a delay in start of implementation of action E2.

Please find report on action A1 in Mid-term report, annex 1.

3.1.2 Action A2: Preparatory actions for implementation of concrete conservation (restoration) actions

Action A2 is completed.

What has been done?

- obtaining all the necessary documents (water consent, consent of the Institute of the Republic of Slovenia for Nature Conservation, nature conservation consent, consent of the Fisheries Research Institute of Slovenia, consent of the Institute for the Protection of Cultural Heritage of Slovenia, pending permit for reconstruction, project for execution and technical documentation),
- we have signed the contracts for implementation of reconstructions (action C1 – company HIP plus d.o.o.; action C2 – company ELQ d.o.o.; action C3 – company Montavar projekt d.o.o.),
- geodetic measures and terrestrial laser scanning at sites were performed (October 2013),
- development of hydraulic model (January 2013),
- review of documentation related to all locations and entering in the objects for detail inspection.

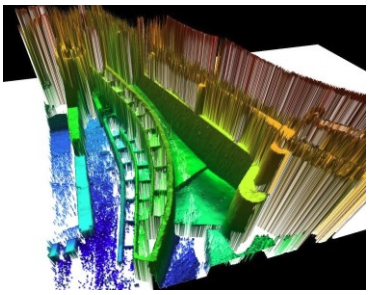


Figure 4: 3D terrestrial scan of fish pass in Fužine

Were the objectives achieved?

- obtaining all the necessary permits, ✓
- obtaining detailed geodesy of the project area, ✓
- preparation of initial hydraulic model of the project area, ✓
- preparation of technical documentation and documentation for public tender contract, ✓
- assessment of the present state of the fish passes. ✓

Problems encountered:

- the owner of the object on Ambrožev trg was unknown which was the obstacle when we have started to gather all the permits and trying to enter locked fish pass. In cooperation with competent employees of Slovenian Environment Agency and Municipality of Ljubljana we have reached an agreement about reconstruction works and got the contact of person responsibly for fish pass key who ensure us the entry when it was needed.

Please find presentation of hydraulic model in Mid-term report, annex 2.

3.1.3 Action A3: Eco hydrological survey

Action A3 is completed.

What has been done?

- installation of 17 water stations along the Ljubljanica River,
- development of 3 water stations with online connection,
- development of hydraulic model,
- installation of 17 measuring devices for temperature and 3 for water quality (oxygen concentration) along the Ljubljanica River.

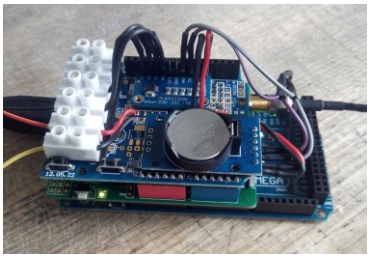


Figure 5: Development of element for on line connected stations

Were the objectives achieved?

- construction of water stations, ✓
- establishment of hydrologic model, ✓

- monitoring of water temperature and quality. ✓

Problems encountered:

- constant online connection can be really expensive which was not foreseen in the initial financial structure of the project, therefore we have decided to develop those stations on our own to ensure cheaper way of data transmission. The stations are developed and installed on sites. The measured data will be presented in real time on our web site when it will be needed.

Please find map of positions of water stations in Mid-term report, annex 3 and presentation of the hydrological model in Mid-term report, annex 4.

3.1.4 Action C1: Reconstruction of the sill in Zalog

Action C1 is completed.

What has been done?

- the project documentation and the technical design for reconstruction were prepared by company Hidrotehnik d.d. in July 2013,
- implementation of reconstruction of the sill was performed by company HIP Plus d.o.o. in September and October 2013 (there were 2 trees removed, 1184 m^3 material used to build access path and sill, 94 m^3 material used to built packed rock fill for protection of river bank and 18 willow cuttings planted to preserve the natural appearance after reconstruction),
- we are measuring changes in water level near the sill (we have observed rise of water level immediately after the reconstruction, measurements and data collecting are still ongoing as part of the action E3).

Figure 6: Reconstruction of sill

Were the objectives achieved?

- reconstruction of the sill, ✓
- increasing the water abundance in the river channel during low flow conditions. ✓

Problems encountered:

- the implementation of action was postponed according to the timetable due to fishermen strict rules about interference in the river during low flow which was present for almost the whole summer (annex 1). Reconstruction was finally performed in September and October 2013.

Please find preliminary report on implementation of action C1 in Mid-term report, annex 5 and As-built documentation for action C1 in Annex 2.

3.1.5 Action C2: Reconstruction of fish passes at the Fužine weir and Ambrožev trg

Action C2 has started.

What has been done?
- in negotiations with the owner of Fužine fish pass (company B&B Vevče Paper mill) was reached an agreement about the measures which will be used to renovate fish pass and about co-financing of this action,
- the project documentation and the technical design for reconstruction were prepared by company DK-proTIM d.o.o. in October 2014,
- reconstruction of the fish passes is being performed in January and February 2015 by company ELQ d.o.o.

Were the objectives achieved?
- reconstruction of the fish pass at the Fužine weir, *in progress*
- reconstruction of the fish pass at the Ambrožev trg barrier. *in progress*

Problems encountered:
- in November 2013 fish pass in Fužine has collapsed which resulted in need to prepare new reconstruction plans. They had to be planned more carefully due construction which is more worn out as expected. We have prepared new plans which showed that the costs of newly proposed reconstruction are much lower due to reconstruction of a whole fish pass and not only its parts separately. Reconstruction of whole object is less complicated and therefore cheaper.

Figure 7: Collapsed fish pass

3.1.6 Action C3: Improvement of Ambrožev trg barrier

Action C3 has started.

What has been done?
- building permit and the technical design were prepared by company Montavar d.o.o.

Were the objectives achieved?
- modernization of barrier's lifting system to enable precise water level regulation. *in progress*

Problems encountered:
- Ambrožev trg barrier is protected as a technical heritage therefore on the building no actions that would affect its original appearance should be taken. Because of that restriction initial plans for improvement of the barrier's lifting system had to be modified, preparation of new plans was more demanding and took more time than expected,
- due to specific requirements only a few contractors can do the modernization. Because of that and due to constant high water flow and rainfall (annex 1) we expect a short delay in implementation of action according to the time table (figure 8).

	2014		2015	
	III	IV	I	II
Predicted	X	X	X	
Actual	X	X	X	X

Figure 8: Progress of action C3

3.1.7 Action D1: Public awareness and education campaign about river corridor restoration on national and local levels

Action D1 is in progress.

What has been done? (figure 9)
- establishment of project web site and its updating with current news,
- we have designed and published brochure (October 2013) and distributed it among project partners, students, national and private institutions and other societies,
- three yearly bulletins were published (in year 2012, 2013 and 2014) and distributed,
- we have prepared and distributed poster in Slovenian language among project partners and others; also one poster in English was designed and printed on canvas for presentation of project on international workshops,
- shorter version of film was already filmed and was published on YouTube and shown in the faculty lobby, longer version of film will be prepared until summer 2015,
- we have prepared flyer in English and distributed it on international workshops (Slovakia and Estonia, September 2014),
- we have already had a few special lectures and presentations (January 2014, March 2014, October 2014) and we are planning to have a few more.

Were the objectives achieved?
- promotion of the project with web site, brochure, yearly bulletins, poster and educational film, ✓
- organization of special lectures, presentations and roundtables. ✓

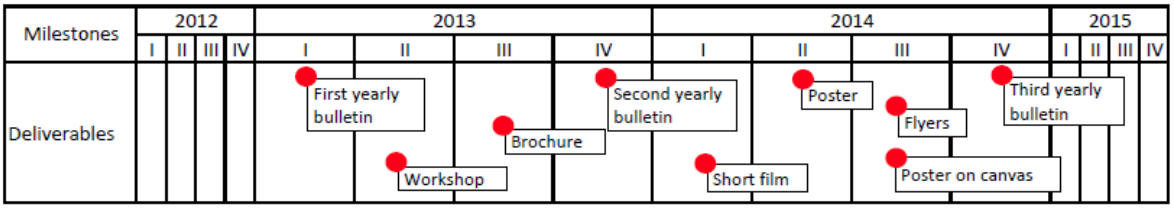


Figure 9: Deliverables of action D1

Please find:
- brochure of the project in Mid-term report, annex 6,
- bulletin for year 2013 in Mid-term report, annex 7,
- bulletin for year 2014, annex 3,
- flyer, annex 4,
- example of a poster on a smaller format, annex 5.

3.1.8 Action E1: Coordination and administration of the project by the project coordinator and the project steering group

Action E1 is in progress.

What has been done?
- full time project coordinator (Andrej Vidmar) is responsible for supervising and coordinating the technical part of the project and part time project manager (Mitja Brilly) is responsible for monitoring of administrative part of the project,

- meetings of the steering group are held once a year (13 November 2012, 14 February 2013, 16 January 2014).

Were the objectives achieved?

- management of the project, ✓
- meetings of the steering group. ✓

Problems encountered:

- due to the financial crisis partners on the project have difficulties in providing enough funds to cover costs of action implementation (table 1) which has caused the dealys. During intensive meetings and discussions project coordinator, project manager and partner's representative were looking for different solutions. Based on solutions that have been found actions will be successfully implemented until the end of the project regardless financial crisis.

3.1.9 Action E2: Monitoring and evaluation of the project restoration achievements

Action E2 is in progress.

What has been done?

- monitoring fish migration on the fish passes with camera with on-line connection (equipment has already been purchased, monitoring will start in February 2015 after the fish pass reconstruction),
- analysing recordings from the cameras on the fish passes to define fish species migrating through fish passes (start in March 2015),
- marking caught fish with VIE (Visible Implant Elastomer) tags before returning them into the river (21 October 2014, expected also in April 2015),
- implementation of fish monitoring by boat and electrofishing in different time of year (21 October 2014, expected also in April 2015, August 2015 and October 2015).

Figure 10: Fish marking

Were the objectives achieved?

- monitoring of fish migration through fish passes, *will start after completing action C2 (02/2015)*
- obtaining data about different fish species using fish passes, *will start after completing action C2*
- study migration of targeted fish species on the research area, *in progress*
- implementation of fish monitoring. *in progress*

Problems encountered:

- the start of action E2 was postponed. There were two reasons for that: late start of action A1 (action E2 is its continuation) and a lot of rain in year 2014 when rivers had constant high flow and flooded a lot (annex 1). Until now only one fish tagging was performed instead of two as it was planned. The second one will probably be performed in April 2015 and than we will be able to start monitoring fish migration. Due to lack of data final results probably won't be as extensive as we have expected at the beginning of the project but the action objectives will still be reached and functioning of reconstructed objects will be confirmed.

Please find preliminary report about first fish tagging in action E2 in annex 6.

3.1.10 Action E3: Management of the eco hydrological survey system and hydraulic model

Action E3 is in progress.

What has been done?

- field trips are performed every month to different locations with water stations where we gather data and check operation of water stations and repair it if necessary (until now approximately 120 field controls of measuring stations were performed to Ambrožev trg, Fužine, Zalog, Vrhnika, Močilnik, Planina, Želimeljščica, Kamin, Borovnica, Gradaščica, Barje and Ig),
- discharge measurements were performed on the Ljubljanica River and on its tributaries (for example measurements were performed on 21 February 2014 on Unica River, 25 February 2014 on lake in Planina, 26 February 2014 on Iščica River, 2 April on Ljubljanica River near Kamin, 4 April and 8 April 2014 on Ljubljanica River near headway bridge),
- according to measured and analysed data hydraulic model is updated and calibrated.

Figure 11: Performing discharge measurements in Planina

Were the objectives achieved?

- verification of water stations operation, ✓
- collection of data from water stations, ✓
- measurements of water discharge, ✓
- calibration of hydraulic model. ✓

3.1.11 Action E4: Networking with other LIFE and/or non-LIFE projects

Action E4 is in progress.

What has been done?

- we have organised workshop about *Hucho hucho* and its status on 18 June 2013,
- we have participated on international meeting River revitalisation Workshop in Slovakia, from 3 to 4 September 2014,
- we have participated on Riverine LIFE Platform Meeting in Estonia, from 10 to 12 September 2014,
- we have formed organisation team for preparing the international conference which will be held in October 2015.

Figure 12: Participation on workshop in Slovakia

Were the objectives achieved?

- organisation of workshop, ✓
- participation on other LIFE+ restoration sites, ✓
- organization of international thematic conference. *October 2015*

Please find Electronic book of abstracts from workshop in Mid-term report, annex 8.

3.2 Envisaged progress until next report

The next report according to the Grant agreement Activity reports foreseen is Final Report which will be prepared after the end of the project. Until then all the actions will be completed and we expect that also all objectives will be reached.

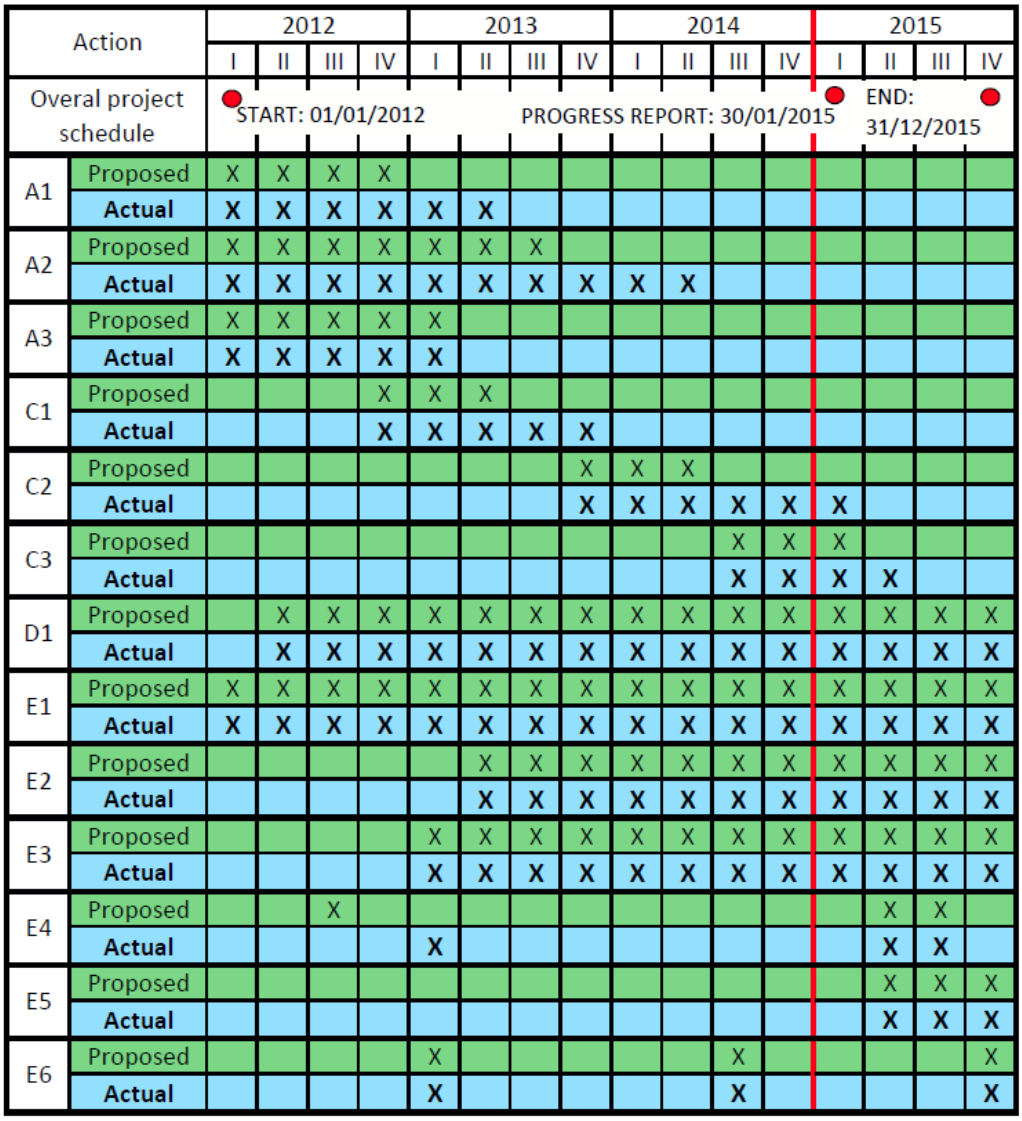
Activities that will take place during the last year of the project are focused towards the goal to achieve all project objectives (table 2).

Table 2: Foreseen activities in the last year of the project and its deadlines

Action	Expected deadline	Foreseen activity
C2	February 2015	Reconstruction of both fish passes, preparation of final project documentation and report
C3	March 2015	Modernization of barrier's lifting system, preparation of final project documentation and report
All Concrete conservation actions FINISHED by end of March 2015		
D1	August 2015	Longer film is recorded and distribution of it has started
D1	July 2015	Second project brochure and posters are prepared and distributed
D1	October 2015	Yearly bulletin is prepared and distributed
D1	December 2015	All special lectures and presentations on the project are given (we expect to have some after the end of the project too)
D1	December 2015	Updating web site
E1	February and December 2015	Meeting of a steering group, in mean time meetings with project team about once every three months
E2	April 2015	Second tagging of fish
E2	February 2015	Installation of cameras for monitoring fish migration
E2	November 2015	Monitoring of fish migration, analysis of data, preparation of final report
E3	December 2015	Field trips to gather data, control of operation of water stations and measurements of discharge (this will continue also after the end of the project)
E4	October 2015	Organisation of international conference

Progress of the project right now and situation on actions that is expected during the last year are presented with a Gantt chart (figure 13).

Figure 13: Gant chart of current situation on project



3.3 Impact

There are three sites included in the project where major restoration actions are being implemented but so far the impact can only be evaluated for sill in Zalog where reconstruction has already been finished. The first indicators about achieving the desired impact are positive. There we have observed noticeable rise in the water level as a result of reconstruction. But in last year water level was constantly high due to persistent rain and impact of reconstructed sill on upstream oxbow and its habitat can not yet be estimated.

Impact of other restoration measures will be evaluated during last year of the project. Monitoring on which evaluation will be based will start right after completion of reconstructional measures on the sites.

3.4 Activities outside LIFE

University of Ljubljana, Faculty of civil and geodetic engineering is an educational institution, therefore the data, knowledge and experiences that we get in scope of a project are used in different ways outside the project framework. A few activities that were already conducted are:

- graduation thesis using data collected within the project or focusing on topics that are treated within the project,
- inclusion of foreign students who come for practice during their study into research work on the project,
- discharge measurement in rivers that are not included in the project but are connected to Ljubljanica River,
- presentation of project's results on different (non-LIFE) conferences and meetings in Slovenia and abroad,
- publishing articles based on project and its results in different journals.

Figure 14: Two students from Poland on study practice in Ljubljana, visiting project sites

4 Financial part

4.1 Costs incurred

Table 3: Costs on the project according to categories from 1 January 2012 to 30 December 2014

Budget breakdown categories	Total cost in €	Costs incurred in €	% of total costs
1. Personnel	**563,621.00** ***586,987.00**	514,445.89	91.2 % *87.6 %
2. Travel and subsistence	**20,460.00** ***23,578.00**	6,618.43	32.3 % *28.1 %
3. External assistance	**176,386.00** ***229,988.00**	88,765.92	50.3 % *38.6 %
4. Durable goods			
Infrastructure	**0**	0	
Equipment	**312,287.00** ***237,201.00**	124,978.07	40.0 % *52.7 %
Prototype	**0**	0	
5. Land purchase / long-term lease	**0**	0	
6. Consumables	**31,600.00** ***26,600.00**	2,034.91	6.4 % *7.7 %
7. Other Costs	**7,200.00**	11,611.25	161,3 %
8. Overheads	**76,461.00**	52,397.76	68.5 %
TOTAL	**1,168,765.00**	800,937.23	68.5 %

*situation after non-substantial modifications (submitted on 31 July 2014, accepted on 22 August 2014)

Costs that were planned at the beginning of the project and costs that incurred from the start of the project to 30 December 2014 are presented in table 3. In three years almost 70 % of total estimated costs were spend.

On 31 July 2014 we have submitted request for non-substantial modifications which has been evaluated positively. Due to that request some changes in financial structure are also made. The biggest changes are made between Equipment and External assistance costs. There are two reasons for this change. Due to financial problems of company Geateh which was responsible for implementation of action E2 University of Ljubljana took over implementation of action and didn't buy equipment but has rather hired the experts who already have the appropriate equipment. The second reason is different way of barrier's modernization on Ambrožev trg due to technical heritage protection. The cost of equipment will be much lower but the costs of planning were higher so the funds were reassigned. Some funds were used for external assistance (planning of new hidden barrier's lifting system) and some for equipment on action E2 (monitoring and evaluation). The new situation is presented in table 3 and is marked with blue colour and *.

Changes in costs structure after acceptance of request for non-substantial modifications has given us more room to divide work among our employees and external experts by raising expected costs in categories Personnel and External assistance in order to ensure

implementation of all actions. Calculations of suggested transfers of funds were done carefully and with aim to ensure successfully achievement of all project objectives regardless of cost reductions in few categories.

So far funds have been exceeded only in category Other Costs for 4,411.25 €. In this category there are included all minor services or items (printing of brochures, postage, medical examinations of employees …) that are important for realization of actions but can not be presented under other categories. Since these costs can not be transferred to any other category we will continue to assign them as other costs but we will make sure not to exceed the total cost of category for more than 30,000 €.

Relatively high incurred costs are noted for category Personnel (table 3). The reason for more than 90 % (87 % after modification) of funds spent is excess of costs for salaries in company Purgator d.o.o. Question of funds in category Personnel and solutions for ensuring adequate funds by the end of the project will be discussed on next steering group meeting which will probably be held in February 2015.

First four actions (table 4) are completed and costs were exceeded only for action C1. In this case exceeded amount will be covered by transferring funds from action C2 External assistance as explained and confirmed with request for non-substantial modifications. At the moment we do not expect that the costs will be exceeded for more than 10 % or 30.000 € for any other currently ongoing action.

Table 4: Costs on the project according to actions

Action number and name	Foreseen costs	Spent so far	Remaining	Projected final cost
Action A1 (completed)	39,931.00	30,618.88	9,312.12	30,618.88
Action A2 (completed)	30,321.00	30,137.83	183,17	30,137.83
Action A3 (completed)	77,238.00	77,825.31	-587,31	77,825.31
Action C1 (completed)	91,531.00	116,327.25	-24,796.25	116,327.25
Action C2	188,750.00	64,841.51	123,908.49	75,000.00
Action C3	210,017.00	24,597.99	185,419.01	160,000.00
Action D1	44,465.00	42,052.41	2,412.59	55,000.00
Action E1	197,760.00	175,981.27	21,778.73	210,000.00
Action E2	134,528.00	102,907.39	31,620.61	140,000.00
Action E3	70,180.00	72,704.64	-2,524.64	75,000.00
Action E4	6,789.00	4,500.00	2,289.00	14,000.00
Action E5	12,045.00	6,045.00	6,000.00	12,000.00
Action E6	8,000.00	0	8,000.00	8,000.00
TOTAL	**1,111,555.00**	**748,539.47**	**363,015.52**	**1,003,909.27**

Annexes

Annex 1: Hydrogram of Ljubljanica River

Annex 2: As-built documentation for action C1

Annex 3: Bulletin 2014

Annex 4: Flyer

Annex 5: Example of poster

Annex 6: Preliminary report on action E2

Annex 7: Answers to annexes from correspondence between beneficiaries and commission

Annex 1:

Hydrograph of Ljubljanica River

GRAPHICAL DIPSPLAY OF HIGH WATER FLOW ON LJUBLJANICA RIVER IN YEARS 2013 AND 2014

The main reason for late start of concrete restoration actions (C1, C2 and C3) and for delay in fish monitoring (action E2) is very high flow of Ljubljanica River in past two years. The discharge is presented with hydrograph and with duration curve on next two pages.

From hydrograph we can see that in comparison with water discharge in year 2012 (light blue curve) the discharge was higher for the whole time in year 2013 (green line) except in August and almost through the whole year 2014 (blue line). The most obvious exception is caused by high water peak in June 2012. There is a big difference between discharges in those three years especially in February and March 2014 when water was much higher than it was in previous years (maximum difference in discharge between 2012 and 2014 is more than 250 m^3/s in late February which exceeds even the maximum discharge in 2012).
Average values of discharge shows that in year 2013 discharge was approximately 25 m^3/s higher than in year 2012 and 10 m^3/s higher than long term average (measured from 1947 to 2013). Differences in average annual discharge are even higher in year 2014 when average annual discharge was higher for 40 m^3/s in comparison with average value from year 2012 and for 26 m^3/s than long term average.

On duration curve there is presented number of days when discharge was at least a certain value on y axis; for example minimum discharge in year 2014 was equal to 13 m^3/s, therefore in every day of the year the discharge was at least as much or more so duration of that discharge was 365 days.
From duration curve we can see that measured daily discharges were lover than long term average discharge for 280 days in year 2012, for 215 days in year 2013 and only for 160 days in year 2014.

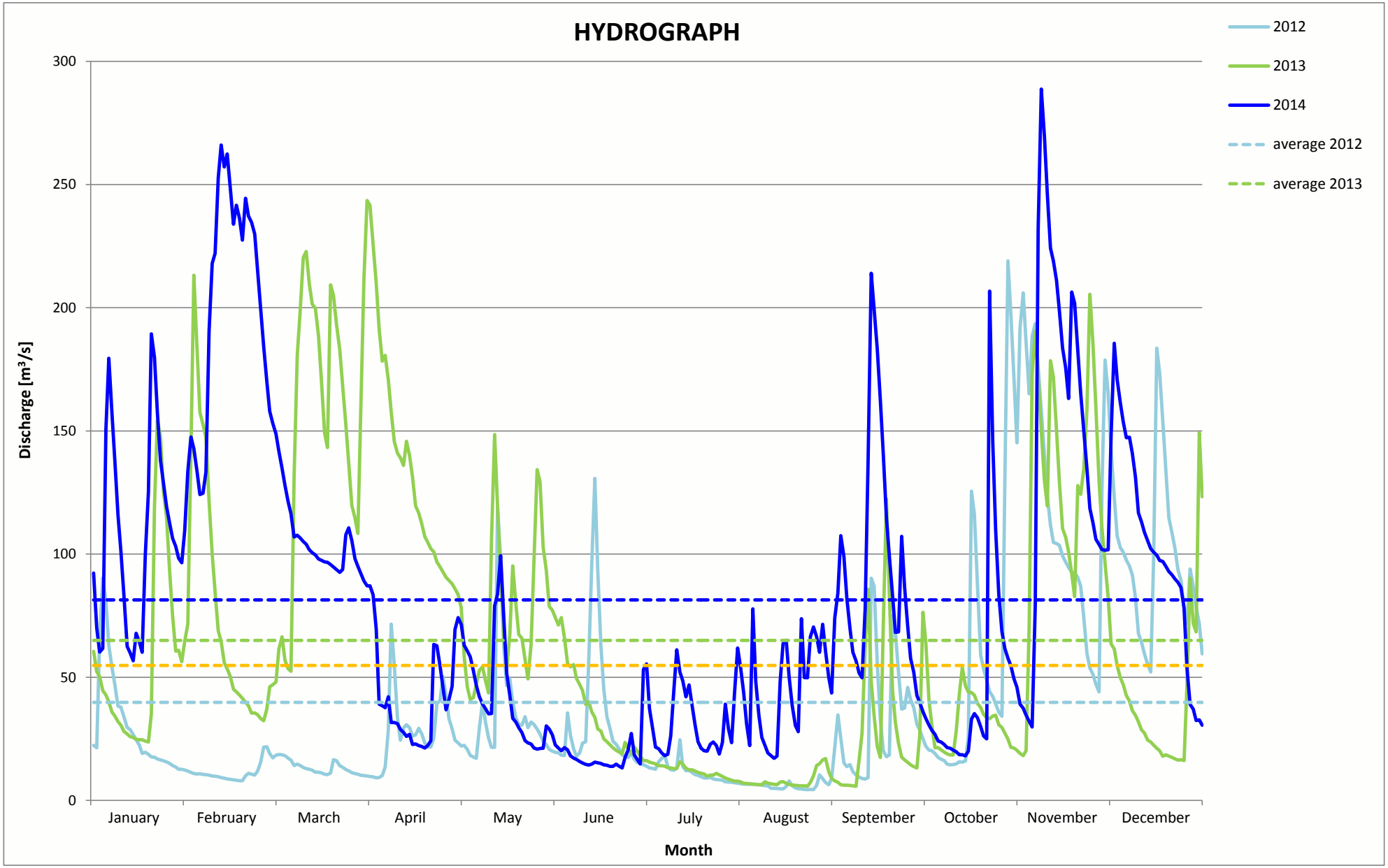
Consequences of extreme water flow on implementation of project actions:

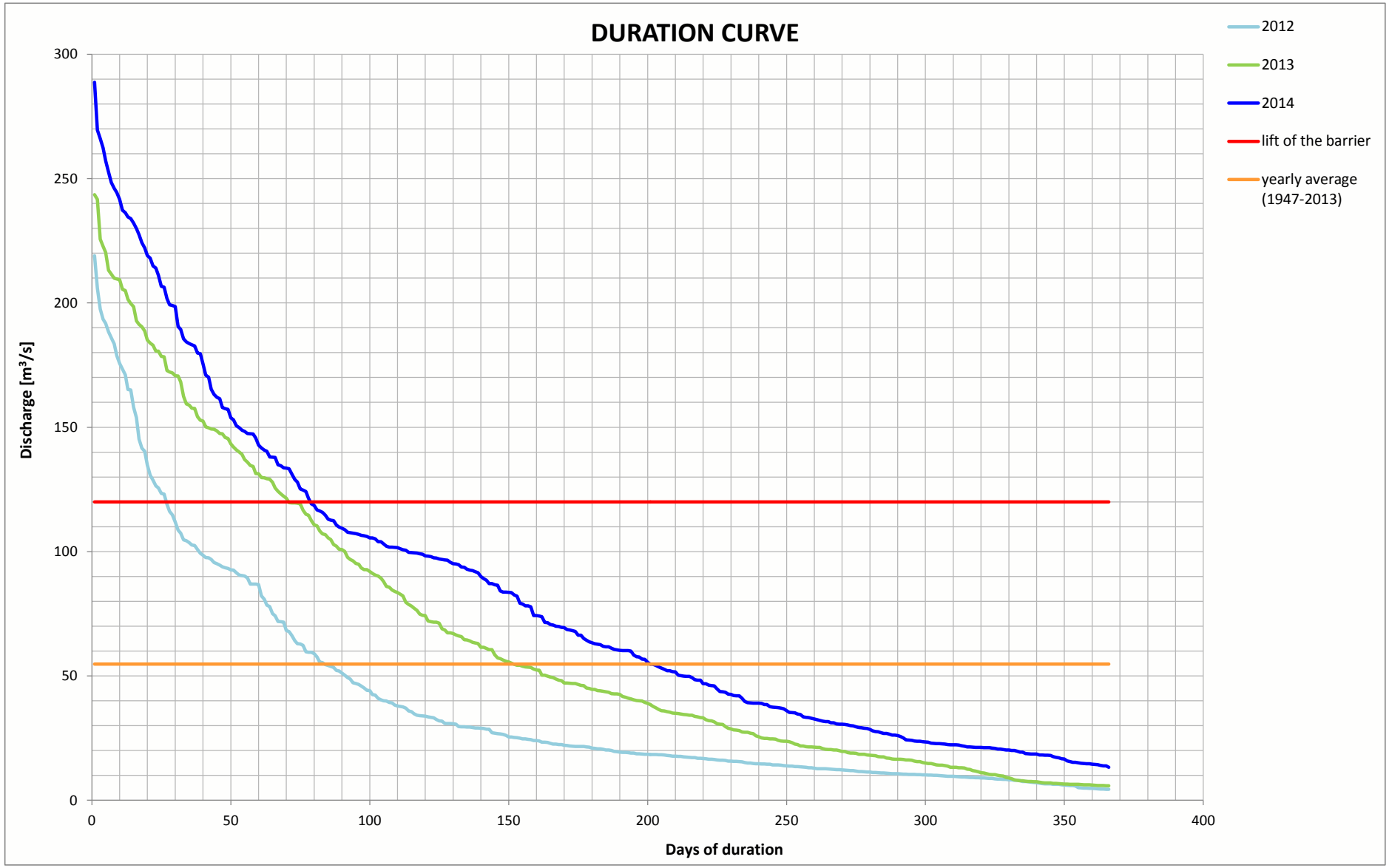
For reconstruction of sill in Zalog (action C1) everything was prepared at begging of the summer 2013. The actual implementation of action was postponed due to fishermen strict rules about interference in the river during low flow which was present for almost the whole summer (situation in summer 2013 on hydrograph). Reconstruction was finally performed in September and October 2013.

During the implementation of action C2 workers need to enter into the fish passes. Due to high water flow which has not decreased for more than a week from mid October to late December 2014 such work was too dangerous and was postponed until establishment of more secure working conditions.

During the implementation of action C3 barrier will be lifted and in inoperative state. That means that measures can be performed when we will have guarantee that for at least 14 days there will be no need to regulate water level with the barrier. That means that there is no rain expected or that flow of the river is so low that even one rainfall event will not cause a critical rise in water level. Because of constant high water flow implementation of action on site was not possible yet.

Fish monitoring within the action E2 can't be performed when water flow is too high because of dangerous turbulence of the water, poor visibility and murky water which enables safe fish harvest. Due to such conditions present almost trough the whole year not so many research expeditions were performed as we have planned.


HYDROGRAPH
2012
2013
2014
average 2012
average 2013
300
250
200
150
100
50
0
Discharge [m³/s]
January
February
March
April
May
June
July
August
September
October
November
December
Month


DURATION CURVE
2012
2013
2014
lift of the barrier
yearly average (1947-2013)
Discharge [m³/s]
300
250
200
150
100
50
0
0
50
100
150
200
250
300
350
400
Days of duration

Annex 2:

As-built documentation for action C1

REPUBLIKA SLOVENIJA
MINISTRSTVO ZA KMETIJSTVO IN OKOLJE

Univerza v Ljubljani
Fakulteta za gradbeništvo in geodezijo

PURGATOR

GEATEH
Načrtovanje in izvajanje, d.o.o.

LJUBLJANICA POVEZUJE LIFE10NAT/SI/142
Obnovitev koridorja Ljubljanice in izboljšanje rečnega vodnega režima

C1 - PRAG V ZALOGU

REKONSTRUKCIJA VODNOGOSPODARSKE UREDITVE

PID

št.	načrt	št. načrta
0	VODILNA MAPA	13-13-00
3	NAČRT GRADBENIH KONSTRUKCIJ IN DRUGI GRADBENI NAČRTI	13-13-03
9	GEODETSKI POSNETEK	GEOGRAD d.o.o.

Št. projekta:
13-13

Številka mape:
1

Maribor, november 2013

DK-PROTIM d.o.o.
Spodnjevaška pot 36
2000 Maribor
Slovenija

0 – VODILNA MAPA

Investitor:

REPUBLIKA SLOVENIJA
MINISTRSTVO ZA KMETIJSTVO IN OKOLJE

Univerza v Ljubljani
Fakulteta za gradbeništvo in geodezijo

PURGATOR

GEATEH
Načrtovanje in izvajanje, d.o.o.

Objekt: ***LJUBLJANICA POVEZUJE LIFE10NAT/SI/142***
Obnovitev koridorja Ljubljanice in izboljšanje rečnega vodnega režima

C1 - PRAG V ZALOGU

Vrsta projektne dokumentacije: ***PID***

Za gradnjo: ***REKONSTRUKCIJA VODNOGOSPODARSKE UREDITVE***

Projektant:

DK-PROTIM d.o.o.
Spodnjevaška pot 36
2000 Maribor

DK-PROTIM d.o.o.
2000 MARIBOR

.....
(žig)

Odgovorna oseba projektanta:

mag. Darko Kočar, univ. dipl. inž. grad.

.....
(podpis)

Odgovorni vodja projekta:

mag. Darko Kočar, univ. dipl. inž. grad.

mag. DARKO KOČAR
univ. dipl. inž. grad.
IZS G-0567

.....
(osebni žig, podpis)

Številka projekta: ***13-13***

Izvod št.: ***1 2 3 4 5 6***

Kraj in datum izdelave projekta: ***Maribor, november 2013***

0.2 KAZALO VSEBINE VODILNE MAPE št. 13-13-00

0.3 KAZALO VSEBINE PROJEKTA št. 02-14

0.4 SPLOŠNI PODATKI O OBJEKTU IN SOGLASJIH

Zahtevnost objekta:	**nezahteven objekt**	
Klasifikacija celotnega objekta:	2 GRADBENI INŽENIRSKI OBJEKTI 21 Objekti transportne infrastrukture 215 Pristanišča, plovne poti, pregrade in jezovi ter drugi vodni objekti 2152 Pregrade in jezovi **21520 objekt za urejanje vodotoka in ureditev struge**	
Klasifikacija posameznih delov objekta:	*Delež v skupni uporabni površini objekta*	*Šifra podrazreda*
	100%	CCSI 21520
Druge klasifikacije		
Navedba prostorskega akta:	• **Prostorske sestavine planskih aktov občine:** • **Prostorski ureditveni pogoji:** • **Prostorski izvedbeni načrt:**	
Lokacija:	Ljubljana-Zalog, **k.o. Kašelj**	
Seznam zemljišč z nameravano gradnjo:	**Parcela št.** 2553/1, 3540, **obe k.o. Kašelj**	
Seznam zemljišč preko katerih potekajo priključki na gospodarsko javno infrastrukturo:	/	
Seznam zemljišč preko katerih poteka priključek na javno cesto:	**Parcela št.** 3540, **k.o. Kašelj**	
Navedba soglasij in soglasij za priključitev:	*Soglasja v območju varovalnih pasov*	
	Soglasja v varovanih območjih	**REPUBLIKA SLOVENIJA - MKO, AGENCIJA REPUBLIKE SLOVENIJE ZA OKOLJE,** Urad za upravljanje z vodami, Sektor za porečje reke Save, Oddelek območja Srednje Save, Einspillerjeva 6, 1000 Ljubljana, št.: **35500-628/2013**, z dne **05.08.2013**
		REPUBLIKA SLOVENIJA - MKO, AGENCIJA REPUBLIKE SLOVENIJE ZA OKOLJE, Vojkova 1b, 1001 Ljubljana, št.: **35620-2808/2013-2**, z dne **10.07.2013**
		ZAVOD ZA RIBIŠTVO SLOVENIJE, Sp. Gameljne 61a, 1211 Ljubljana-Šmartno, št.: **4205-5/2013/4**, z dne **15.07.2013**

		ZAVOD ZA VARSTVO KULTURNE DEDIŠČINE SLOVENIJE, Območna enota Ljubljana, Tržaška cesta 4, 1000 Ljubljana, št.: **35102-0070/2013/2**, z dne **31.01.2013**
	Soglasja za priključitev	**Kanalizacija in Vodovod:** **Električno omrežje:** **Telekomunikacijsko omrežje:**
Način zagotovitve minimalne komunalne oskrbe:	*Oskrba s pitno vodo*	/
	Oskrba z elektriko	/
	Odvajanje odpadnih voda	/
	Dostop do javne ceste	/
ocenjena vrednost objekta	**53.981,80 €**	
odmiki od sosednjih zemljišč	**- odmiki so obstoječi – vzdrževalna dela na pragu Zalog C1**	

0.5 PODATKI O IZDELOVALCIH PROJEKTA

"0" Vodilna mapa:	Odgovorni vodja projekta:	DK-PROTIM d.o.o., Spodnjevaška pot 36, 2000 Maribor, info@dk-protim.si, tel.: 041 677 987 mag. Darko Kočar, univ. dipl. inž. grad., IZS G-0567
	Sodelavci:	Peter Grginič, univ. dipl. inž. grad.

mag. DARKO KOČAR
univ. dipl. inž. grad.
IZS G-0567

"3" Načrt gradbenih konstrukcij in drugi gradbeni načrti:	Projektant:	DK-PROTIM d.o.o., Spodnjevaška pot 36, 2000 Maribor, info@dk-protim.si, tel.: 041 677 987
	Odgovorni projektant:	mag. Darko Kočar, univ. dipl. inž. grad., IZS G-0567
		mag. DARKO KOČAR univ. dipl. inž. grad. IZS G-0567
Sodelavci:		Peter Grginič, univ. dipl. inž. grad.

ELABORAT:
Geodetski posnetek

Izdelovalec: GEOGRAD podjetje za geodetske storitve, d.o.o.,
Tbilisijska ulica 59
1000 Ljubljana
info@geograd.si, tel.: 031 370 501

Odgovorni izdelovalec: Samuel Čuk, univ. dipl. inž. geod.,
IZS Geo0132

0.9 ZBIRNO PROJEKTNO POROČILO

Sanacija je izvedena skladno s tehnično dokumentacijo za vzdrževalna dela projektanta Hidrotehnik d.o.o., Slovenčeva 97, 1000 Ljubljana, št. projekta: R-481/13, julij 2013 potrjeno dne 05.08.2013 s strani Ministrstva za kmetijstvo in okolje, Agencije Republike Slovenije za okolje, Oddelek območja Srednje Save ter s preostalimi izdanimi soglasji.
Spremembe, ki so nastale med gradnjo so minimalne in sicer je bilo potrebno več materiala pri izvedbi dostopne poti v strugi saj predhodno izveden geodetski posnetek in stanje na terenu nista bila višinsko enaka. Globina struge in tolmuna je bila večja na sami lokaciji kot pa je to prikazoval geodetski posnetek, preostala dela pa so izvedena v skladu z zahtevami soglasodajalcev.

0.10 IZKAZI

Niso potrebni.

3 – NAČRT GRADBENIH KONSTRUKCIJ IN DRUGI GRADBENI NAČRTI

Investitor:

REPUBLIKA SLOVENIJA
MINISTRSTVO ZA KMETIJSTVO IN OKOLJE

Univerza v Ljubljani
Fakulteta za gradbeništvo in geodezijo

PURGATOR

GEATEH
Načrtovanje in izvajanje, d.o.o.

Objekt: ***LJUBLJANICA POVEZUJE LIFE10NAT/SI/142***
Obnovitev koridorja Ljubljanice in izboljšanje rečnega vodnega režima

C1 - PRAG V ZALOGU

Vrsta projektne dokumentacije: ***PID***

Za gradnjo: ***REKONSTRUKCIJA VODNOGOSPODARSKE UREDITVE***

Projektant:

DK-PROTIM d.o.o.
Spodnjevaška pot 36
2000 Maribor

DK-PROTIM d.o.o.
2000 MARIBOR

.....
(žig)

Odgovorna oseba projektanta:

mag. Darko Kočar, univ. dipl. inž. grad.

.....
(podpis)

Odgovorni projektant:

mag. Darko Kočar, univ. dipl. inž. grad.

mag. DARKO KOČAR
univ. dipl. inž. grad.
IZS G-0567

.....
(osebni žig, podpis)

Odgovorni vodja projekta:

mag. Darko Kočar, univ. dipl. inž. grad.

mag. DARKO KOČAR
univ. dipl. inž. grad.
IZS G-0567

.....
(osebni žig, podpis)

Številka načrta: ***13-13-03***

Izvod št.: ***1 2 3 4 5 6***

Številka projekta: ***13-13***

Kraj in datum izdelave projekta: ***Maribor, november 2013***

3.2 KAZALO VSEBINE NAČRTA št.: 13-13-03

VSEBINA NAČRTA
»NAČRT GRADBENIH KONSTRUKCIJ IN DRUGI GRADBENI NAČRTI«

3.4 TEHNIČNO POROČILO

3.4. TEHNIČNO POROČILO

Kazalo:

3.4.1. SPLOŠNO

Projektna dokumentacija prikazuje izvedena ohranitveno – obnovitvena dela na pragu na Ljubljanici v Zalogu v okviru projekta LIFE+ - Obnovitev koridorja Ljubljanice in izboljšanje rečnega vodnega režima - Ljubljanica povezuje (Ljubljanica connects).

Prag se nahaja na Ljubljanici v Zalogu nad železniško progo Ljubljana - Zidani most. Reka Ljubljanica na dani lokaciji predstavlja naravno vrednoto državnega pomena. Pri izvedbenih delih izvedenih v skladu s tehnično dokumentacijo za vzdrževalna dela projektanta Hidrotehnik d.o.o., Slovenčeva 97, 1000 Ljubljana, št. projekta: R-481/13, julij 2013 potrjeno s strani Ministrstva za kmetijstvo in okolje, Agencije Republike Slovenije za okolje, Oddelek območja Srednje Save. Prav tako je bilo upoštevano naravovarstveno soglasje Ministrstva za kmetijstvo in okolje, Agencije Republike Slovenije za okolje kot tudi soglasje Zavoda za ribištvo Slovenija (ZRS). Soglasje Zavoda za varstvo kulturne dediščine ni bilo potrebno.

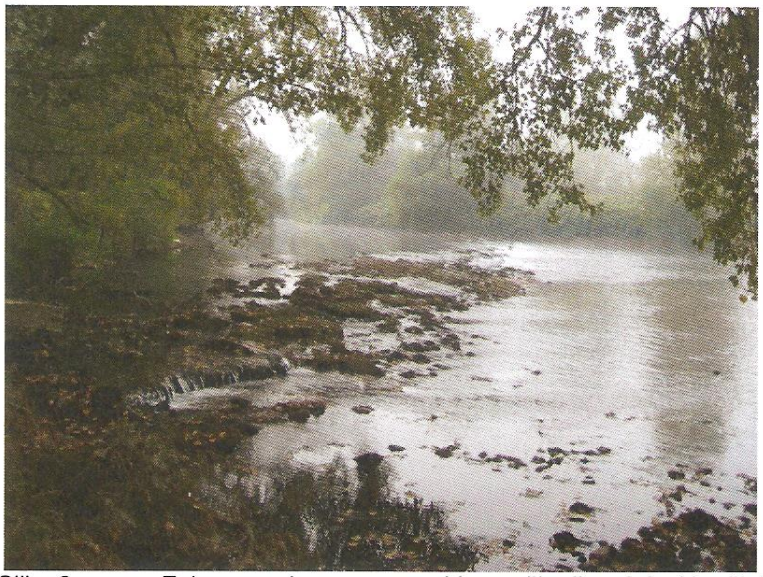
Slika 1: prikaz območja ureditve - prag v Zalogu

Gre za kamniti prag, kateri drži niveleto Ljubljanice na gorvodnem odseku. Objekt igra ključno vlogo pri ohranjanju stabilnosti obstoječih obrežnih zgradb. V primeru njegove porušitve bi se nivo vode gorvodno bistveno znižal, kar bi predvsem v primeru nizkih vodostajev lahko imelo uničujoč vpliv na ribe in ostale vodne organizme, hkrati pa bi lahko prišlo do porušitve obstoječih obrežnih zavarovanj, saj bi bili temelji v »zraku«.

Prag je bil močno poškodovan. Na posameznih mestih so bile opazne vrzeli, kot posledica odnesenih skal. Poškodbe so bile najizrazitejše ob levi brežini.

Obnovitvena dela so zajemala spopolnitev nastalih vrzeli na gorvodni strani pragu in dodatno stabilizacijo praga na ustrezni niveleti z vgradnjo dveh nizov večjih skal. Skale so se vgrajevale posamično z večjimi razmiki, tako da je bilo omogočeno prehajanje

ribjega življa. S izvedeno stabilizacijo praga se ohranja njegova stabilnost in gorvodna niveleta.



Slika 2: prag v Zalogu pred posegom – vidne poškodbe ob levi brežini

V predhodnem kot tudi obstoječem stanju je prag prehoden za vse vrste rib, tako v nizkem kot srednjem vodostaju. Zaradi navedenega se v samo jedro praga in njegovo podslapje ni posegalo.

Obnovitvena dela so izvedena tako, da se zagotovi stabilnost praga, ohranja prehodnost za ribe ter vzpostavi habitat ugoden za ribe in ostale vodne organizme. Poleg stabilizacije praga je bilo potrebno sanirati cca 18,0 m desne brežine vzdolž praga.

3.4.2. OPIS IZVEDENIH DEL

Izvedena dela so razdeljena v dva sklopa in sicer izvedena dela za stabilizacijo praga in izvedena dela za sanacijo poškodovane desne brežine.

3.4.2.1. STABILIZACIJA PRAGA

Prag se je na gorvodni strani stabiliziral z vgradnjo lomljenca. Vgradilo se je dva niza skal dim. cca 80-100 cm. Na samem prelivu praga se je ohranilo predhodno stanje. Stabilizacija praga je izvedena na skupni dolžini 89,40m

Vgradnja dodatnih skal se je začela za stabilnimi predhodnimi skalami, ne glede na tlorisni potek - dopustna/zaželjena razgibana, ne ravna linija. Kjer je bilo mogoče se je skalo delno vkopalo/vgreznilo v temeljna tla. Skale so se vgrajevale posamično. Med posameznimi kamni je bilo potrebno zagotoviti vmesne luknje, ki ribam omogočajo prehod. Skale tudi niso višinsko poravnane. Reže med skalami se je zapolnilo z izkopnim materialom - prodec dim. do 20 cm. Zasip z izkopnim materialom in drobnejšimi frakcijami lomljenca je bil potreben za stabilizacijo objekta. Hkrati se je z vgradnjo različno debelega materiala v reže ustvarjal med skalami raznolik habitat za vodne organizme. Ob desni brežini med profili A in B kjer je bil prag v solidnem stanju

je bilo potrebno vgraditi le 1 niz skal. V nadaljevanju pa so vgrajena 2 niza.

Z obnovitvenimi deli se je sledilo že predhodnim ribjim koridorjem. Med izvedbo del so potekale tudi konzultacije in uskladitve z ribiči.

3.4.2.2. SANACIJA DESNE BREŽINE

Desna brežina v območju praga je bila vidno poškodovana, med izvedbo del na pragu pa so nastale dodatne manjše poškodbe. Brežina je sanirana na dolžini cca 18,0m.

Višina brežine je na prizadetem odseku znašala okoli 2,9 m. Brežino se je profiliralo v nagibu (med 1:1.3 in 1:15), tako da se je čim bolj prilagodilo predhodnemu stanju in hkrati zagotovilo ustrezno stabilnost. Do višine .cca 2,0 m je zavarovana s kamnito zložbo v suho z lomljencem dim. 50-100 cm, preostanek brežine pa se je dobro utrdilo in ozelenilo z zatravitvijo in sadnjo vrbovih potaknjencev. Potaknjence se je sadilo tudi med zložbo. Linija zavarovane brežine se smiselno priključuje na gor in dol vodno stanje.

Zaščita s kamnom se je izvedlo tako, da se je kamen zložil v projektiranem profilu. Posamezni kamni imajo zanesljivo ležišče in so v končnem stanju zaklinjeni tako, da ne more priti do rušenja pobočja zaradi nestabilnosti posameznih kamnov. Vgrajevalo se je le kamne debeline od 0,50 m na vrhu in do 1,00 m v temelju. Posebno pozornost se je namenilo stabilnosti pete zložbe. Reže med kamni zložbe so se zapolnile z izkopnim materialom iz struge in zaklinile z manjšim lomljencem ter v gornjem delu brežine so se ozelenile z zatravitvijo ter po celotni brežini z vrbovimi potaknjenci. Zložba se je vgrajevalo strojno, grobo. Površina zložbe je hrapava. Gladke površine kamnov se se obrnile navznoter. Posamični preveliki oz. močno štrleči kamni so se vgradili mestoma v dnu brežine. Prehodi med različnimi nagibi zložbe so izvedeni zvezno. Prehod med brežino in priobalnim pasom je prav tako zvezen, ne oster.

3.4.3. IZVEDBA

Izvedba del je izvedena iz struge in sicer na gorvodni strani. Za potrebe del se je izvedlo dostopno pot v strugi, ki tudi hkrati predstavlja zagat. Dostop v strugo je bil iz desne brežine po občinski cesti.

Za dostop do struge se je preko travnika uredila dostopna pot širine 4,00 m in dolžine cca 9,0m. Na travniku se je odrinil humus, položil filc in pot dodatno utrdilo s tamponom debeline 16-32mm. Po končanih delih se je pot odstranila in teren vzpostavil v primerno stanje – humusiranje, planiranje in zatravitev.

Slika 3: lokacija dostopne poti do struge

Obstoječo obrežno zarast se je ohranilo v največji možni meri. Na mestih kjer se je zaradi dostopa odstranilo vegetacijo, se je posek izvedel na način, da je omogočal njeno vzpostavitev v prvotno stanje. V koreninske sisteme se ni posegalo. Redčila so se posamezna manjša drevesa in veje. Debla večjih dreves se je ohranilo.

Za dostop v strugo je bila izvedena dostopna rampa iz odpadnega lomljenca in jalovine širine 4,0m in v nagibu 1:2,5., katero se je po končanih delih odstranilo ter ob gradnji prizadete brežine ustrezno saniralo.

Med profili A in B se je transport odvijal po obstoječem pragu, katerega je bilo potrebno sanirati z dodatno količino lomljenca. Od profila B dalje je bilo potrebno zgraditi novo dostopno pot v strugi. Med profilom B in C se je izvedel zagat višine 0,30 m, ki je bila hkrati dostopna pot širine 3,50 m – 4,00 m. Za zagat se je uporabila jalovina in odpadni lomljenec dim. 30-50 cm v razmerju 30% / 70%. Naprej od profila C se je zagat dvignil na višino 0,50 m. Po navedeni tehnologiji se je izvajala pot dokler je to teren dopuščal. Na območju kjer je za pragom bil globlji tolmun (profil D in E) se je tolmun najprej zapolnil s kamnometom iz lomljenca 30-50 cm do nivoja praga ter na njem utrdil zagat iz jalovine in lomljenca v višini 0,50 m. Po zaključku del se je zagat odstranil, kamnomet v tolmunu za pragom pa ohranil, saj le-ta predstavlja dodatno stabilizacijo praga.

Odtok vode med izvedbo del je potekal po desnem robu praga med profili A in C. Za potrebe odvodnje vode se je dobavila in vgradila cev premera 800 mm ter dolžine 6,0 m katero se je po končani gradnji demontiralo in odstranilo.

Posekano drevje, vejevje se je odpeljalo na ustrezno deponijo.

Dela so potekala na naslednjih parcelah:

- parc. št. 2553/1 – k.o. Kašelj – vodotok v lasti RS
- parc. št. 3540 – k.o. Kašelj – pot v lasti MOL

Slika 4: prag v Zalogu po sanaciji

3.4.4. UPOŠTEVANI POGOJI IN OMEJITVE

Ljubljanica na obravnavanem odseku predstavlja naravno vrednoto državnega pomena, zato je med izvedbo del bilo potrebno dosledno upoštevati vse pogoje in omejitve podane s strani Ministrstva za kmetijstvo in okolje, Agencije Republike Slovenije za okolje, Oddelek območja Srednje Save. Prav tako naravovarstveno soglasje Ministrstva za kmetijstvo in okolje, Agencije Republike Slovenije za okolje kot tudi soglasje Zavoda za ribištvo Slovenija (ZRS).

Dela so bila izvajama v koordinaciji s pristojno ribiško družino RD Vevče.

Poseg se je izvajal na gorvodni strani pragu, v samo telo in podslapje praga se ni posegalo.

Zemeljska dela so se izvajala tako, da je bil v čim večji možni meri zmanjšan vpliv kaljenja vode. Začasna deponija je bila urejena izven območja sklenjenega sestoja drevesne in grmovne vegetacije. Zagotovljeni so bili vsi tehnični in drugi ukrepi za preprečitev onesnaženja reke (odtekanje olja, goriva v tla in strugo vodotoka). Pri izvedbi del so bili zagotovljeni ukrepi za varno delo.

3.4.5. ZAKLJUČEK

Z izvedbo ukrepov je dodatno stabiliziran prag, saj je ključen za vzdrževanje nivelete Ljubljanice ter sanirana poškodovana desna brežina. Ob znižanju nivelete bi bila ogrožena stabilnost gorvodnih obrežnih zavarovanj ter ob nizkih vodostajih tudi obstoj ribjega življa.

Hidravličnih in poplavnih razmer se s temi ukrepi ne spreminjajo – višina pragu in širina struge ostajata enaki kot prej, tako da se pogostnost poplav zaradi ureditve ne bo niti povečala niti zmanjšala.

Končne količine so podane v popisu izvedenih del z obračunom

Ob zaključku del so ob gradnji prizadete površine povrnile v primerno stanje – očistile, splanirale in ozelenile.

3.4.6. PRILOGE

3.4.6.1. POPIS IZVEDENIH DEL Z OBRAČUNOM

C1 REKONSTRUKCIJA PRAGU V ZALOGU - PID

POPIS IZVEDENIH DEL Z OBRAČUNOM

1.0	**PRIPRAVLJALNA DELA**			
1.01.	POSEK GRMOVJA			
	10,00	m^2	2,00 €	20,00 €
1.02.	STROJNI POSEK DREVES FI 10-20			
	1,00	kos	20,00 €	20,00 €
1.03.	STROJNI POSEK DREVES FI 20-30			
	1,00	kos	20,00 €	20,00 €
1.04.	GEODETSKA DELA			
	72,00	m	2,00 €	144,00 €
1.05.	IZDELAVA DOSTOPNE POTI			
	36,00	m^2	15,00 €	540,00 €
1.06.	IZDELAVA DOSTOPNE RAMPE Z NASIPOM			
	30,00	m^3	40,00 €	1.200,00 €
1.07.	IZDELAVA ZAGATNEGA NASIPA V STRUGI			
	280,00	m^3	35,00 €	9.800,00 €
1.08.	IZDELAVA DOSTOPNE POTI V STRUGI			
	832,00	m^3	40,00 €	33.280,00 €
1.09.	POSTAVITEV TABLE			
	1,00	kpl	100,00 €	100,00 €
	SKUPAJ 1.0.			**45.124,00 €**
2.0.	**ZEMELJSKA DELA**			
2.01.	STROJNI IZKOP			
	75,00	m^3	5,00 €	375,00 €
2.02.	STROJNI ZASIP			
	22,00	m^3	3,00 €	66,00 €
2.03.	PLANIRANJE			
	136,00	m^2	3,00 €	408,00 €
	SKUPAJ 2.0			**849,00 €**

3.0	**ZAVAROVALNA DELA**			
3.01.	KAMNITA ZLOŽBA V SUHO			
	54,00	m^3	40,00 €	2.160,00 €
3.02.	KAMNITA ZLOŽBA V SUHO			
	40,00	m^3	40,00 €	1.600,00 €
	SKUPAJ 3.0			**3.760,00 €**
4.0	**ZAKLJUČNA DELA**			
4.01.	ZATRAVITEV Z NEGOVANJEM			
	136,00	m	3,00 €	408,00 €
4.02.	SADNJA VRBOVIH PODTAKNJENCEV Z NEGOVANJEM			
	18,00	kos	4,00 €	72,00 €
	SKUPAJ 4.0			**480,00 €**
5.0.	**PREOSTALA DELA**			
5.01.	PRIPRAVA VARNOSTNEGA NAČRTA			
	1,00	kos	300,00 €	300,00 €
5.02.	PID			
	1,00	kos	2.420,00 €	2.420,00 €
5.03.	GEODETSKI POSNETEK IZVEDENIH DEL			
	1,00	kos	399,00 €	399,00 €
5.04.	DOBAVA IN POLAGANJE CEVI ZA ODVOD VODE fi 800, l=6,00m (obračun porabljenega časa za dobavo, vgrajevanje in demontažo z odvozm po končanem delu)			
a/	Bager CATERPILLAR CAT 323 DLN			
	3,00	ur	55,00 €	165,00 €
b/	Kamion s tankovsko prikolico SCHWARTZMULLER 40t			
	3,00	ur	78,00 €	234,00 €
c/	PK delavca			
	4,00	ur	13,70 €	54,80 €
5.03.	GEODETSKI POSNETEK IZVEDENIH DEL			
	10,00	m3	19,60 €	196,00 €
	SKUPAJ 5.0			**3.768,80 €**

A. PROJEKTNA DOKUMENTACIJA:
B. SOGLASJA IN DOVOLJENJA:

REKAPITULACIJA IZVEDBA DEL:

1.0. PRIPRAVLJALNA DELA	**45.124,00 €**
2.0. ZEMELJSKA DELA	**849,00 €**
3.0. ZAVAROVALNA DELA	**3.760,00 €**
4.0. ZAKLJUČNA DELA	**480,00 €**
5.0. PREOSTALA DELA	**3.768,80 €**
SKUPAJ:	**53.981,80 €**
DDV 22%	**11.876,00 €**
SKUPAJ Z DDV	**65.857,80 €**

Annex 3:

Bulletin 2014

LJUBLJANICA POVEZUJE

Glasilo projekta LIFE10NAT/SI/142: Obnovitev koridorja Ljubljanice in izboljšanje rečnega vodnega režima

Letnik 3, Številka 1, ISSN: 2335-2773

SPREMLJANJE MIGRACIJE RIB

Ena izmed pomembnejših akcij projekta LIFE Ljubljanica povezuje je akcija E2, spremljanje in ocena uspešnosti izvedenih obnovitvenih ukrepov. Namenjena je predvsem spremljanju migracije rib, s katerim bi lahko potrdili delovanje obnovljenih ribjih stez. Tako je bila 21. 10. 2014 opravljena prva ihtiološka raziskava v sklopu te akcije. Ribe so izlavljali člani Hrvaškega ihtiološkega društva ob sodelovanju ribičev ribiške družine Vevče.

Ribe smo lovili v sedmih točkah na 2 km dolgem odseku reke Ljubljanice od Plečnikove zapornice do jezu v Vevčah. V času raziskave je bila temperatura vode 15^{0}C. Ostalih fizikalno-kemijskih parametrov nismo merili, saj so te meritve izvedene v drugih fazah projekta.

Izlov rib z uporabo električnega agregata v Grubarjevem kanalu

Cilj izlovov je bil loviti in markirati ciljne vrste na projektu LIFE Ljubljanica povezuje, to so sulec, platnica in blistavec. Pri delu pa smo v markiranje vključili tudi podust, saj je pomembna za preživetje sulca oziroma njegovega zaroda in mladic.

Celovite ihtiološke raziskave v projektu niso predvidene, zato je bila velikost populacij posameznih rib ocenjevana subjektivno. Pri oceni smo se oprli na pogostost pojavljanja posamezne vrste rib, kar smo označevali z oznakami posamič, redko, pogosto, zelo pogosto ali masovno. Ujete ciljne vrste pa smo prešteli in označili.

Izlov rib

Omeniti moramo, da v času trajanja izlovov nismo ujeli nobenega blistavca, ene od ciljnih vrst obravnavanega Natura 2000 območja na Ljubljanici. Predel raziskav ni ustrezen habitat za to ribjo vrsto, saj je Ljubljanica globoka in sorazmerno počasi tekoča reka, blistavec pa je riba manjših in hitro tekočih vodotokov.

V samo enem dnevu raziskav smo v enkratnem izlovu popisali 15 različnih vrst rib in ocenili njihovo pogostost pojavljanja.

Na osnovi subjektivne ocene o stanju populacij ocenjujemo, da so populacije vseh popisanih vrst v dobrem stanju. Na 2 km dolgem odseku smo ujeli 6 sulcev, kar je veliko za enkraten izlov na sorazmerno kratkem pregledanem odseku vodotoka. Velikosti ujetih sulcev dokazujejo, da se na obravnavanem območju razmnožuje.

Eden izmed ujetih sulcev

Pri izlovu smo pričakovali več platnic. Domnevamo, da je bil izlov manj uspešen, ker smo jih lovili šele proti koncu novembra, ko se po vodotokih že razporejajo za prezimovanje. Očitno nismo naleteli na jato ampak le na posamezne primerke.

Merjenje dolžine ribe

Populacijo podusti smo ocenili kot kvalitetno, saj smo ujeli kar nekaj primerkov vseh velikosti.

Na obravnavanem odseku smo opazili tudi zelo pogosto pojavljanje lipana vseh velikosti, kar dokazuje, da se v Ljubljanici uspešno razmnožuje.

Izlove rib na obravnavanem odseku bomo spomladi 2015 ponovili in preverili, ali so markirane ribe uspele prečkati ribje prehode na Plečnikovi zapornici in na Fužinskem jezu bodisi gorvodno ali dolvodno.

V času raziskave smo markirali 6 sulcev, 14 platnic in 27 podusti. Ribe smo markirali z injiciranjem rdečega in rumenega barvila v podkožje za očesom, v nekaterih primeri pa v hrbtno plavut.

Označevanje rib

Prispevek je povzet po poročilu o opravljeni akciji

MERITVE HITROSTI VODE

V Ljubljanici živi veliko vrst rib, ki se večinoma selijo gorvodno do rečnih pritokov, kjer se drstijo. Z izgradnjo zapornic na reki je prekinjena povezanost toka in s tem živim organizmom onemogočena migracija po toku navzgor in navzdol.

Za migracijo rib vzdolž vodotokov ni dovolj samo gradnja ribjih stez, te morajo tudi delovati tako, da jih ribe najdejo in da jih lahko uporabijo pri prečkanju ovir v gorvodni smeri. Eden izmed najpomembnejših dejavnikov, ki vplivajo na to, ali bodo ribe ribje steze uspešno uporabljale, je hitrost toka vode na iztoku iz ribje steze kot tudi v sami ribji stezi.

Priprave na meritve v stezi

Študentka, ki piše diplomo v povezavi s projektom, je ob pomoči dveh naših raziskovalcev v ribji stezi na Ambroževem trgu izvedla meritve hitrosti in globine vode. Pri meritvah smo uporabili SonTek-ov Dopplerjev merilec pretočnih hitrosti FlowTracker Handheld ADV, s katerim lahko natančno izmerimo pretočne hitrosti. Pretočne hitrosti smo izmerili v več ključnih točkah vzdolž ribje steze. Meritve smo opravljali v notranjosti steze, ki je vkopana v breg reke Ljubljanice.

Notranjost ribje steze

Merski časovni interval na posameznem merskem mestu je bil 45 s. Poleg hitrosti smo izmerili tudi dimenzije prekatov in globino vode v posameznih prekatih. S tem smo preverili, če ribja steza omogoča nemoten prehod rib.

Merilec pretočnih hitrosti

Končni obdelani rezultati meritev bodo objavljeni v diplomski nalogi študentke in v poročilu projekta Life.

Avtor prispevka: Matej Sečnik

Pri izvedbi projekta je zelo pomembno povezovanje in sodelovanje z drugimi projekti ter izmenjava izkušenj in uporabnih rešitev s strokovnjaki, ki pri teh projektih sodelujejo. V okviru povezovanja z drugimi evropskimi projekti, ki se osredotočajo na območja Natura 2000, smo se v septembru udeležili dveh mednarodnih delavnic na Slovaškem in v Estoniji.

River revitalisation workshop na Slovaškem

3. in 4. septembra smo obiskali mesto Zvolen na Slovaškem, kjer je potekala Delavnica o oživitvi vodnega okolja (River Revitalisation Workshop). Delavnico sta organizirala Ministrstvo za okolje Republike Slovaške, Državni zavod za ohranjanje narave, Raziskovalni inštitut za vode in Slovaško vodno podjetje. V dveh dneh so se v okviru delavnice izvedle predstavitve in dve strokovni ekskurziji.

Prvi dan sta bili organizirani dve ekskurziji, ena na reko Hron in druga na reko Slatino. Udeležili smo se obeh.

Naslednji dan so potekale predstavitve različnih projektov iz več Evropskih držav in diskusije, ki so jih spodbudile te predstavitve. Pri raznolikih projektih se namreč srečujemo s podobnimi problemi, ki pa jih vsak rešuje na svoj način. Tako smo si tekom diskusije izmenjali mnenja in izkušnje.

Naši predstavniki na Slovaškem

Predstavljena je bila iniciativa Karpatskih držav za ohranjanje močvirij, predstavniki iz Avstrije so govorili o pristopih za trajnostni razvoj hidroelektrarn ter o projektu AIM - gibanje v alpskem prostoru, Ukrajinski predstavniki so obravnavali vpliv malih hidroelektrarn na ribje populacije in ekološko stanje v Ukrajini ter sanacijo ekološkega stanja v gorskih gozdovih po intenzivni sečnji, Slovenski predstavniki pa smo seveda predstavili projekt Ljubljanica povezuje.

Ekskurzija na reko Hron

Ekskurzija na reko Hron nas je popeljala vse od njenega izvira, preko meandrov do nižinskega dela. Tako smo se najprej odpeljali do izvira reke na območju gorovja Nizke Tatre, ki se nahaja na 980 m nadmorske višine. Območje izvira je lepo urejeno, z informacijskimi tablami in pokritim prostorom za počitek. V bližini se nahaja tudi hidrološka merilna postaja.

Pri izviru reke Hron

Po tem smo sledili toku reke in si z avtobusa ogledali meandrirajočo strugo, ki teče po zaščitenem območju Natura 2000. Ogledali smo si tudi zaporedje manjših vodnih pregrad Dolný Harmanec, ki z vodo oskrbujejo eno izmed najstarejših hidroelektrarn na Slovaškem ter dve novejši mali hidroelektrarni, v sklopu katerih sta bili zgrajeni tudi ribji stezi.

Prva mala hidroelektrarna, ki smo si jo ogledali, leži na območju manjših rek Motyčky – Jelenec in je v lasti privatnika, ki je njeno upravljanje prevzel od očeta ter temeljito obnovil hidroelektrarno.

Ribja steza na mali hidroelektrarni

Na koncu smo si pod vodstvom projektanta ogledali še malo hidroelektrarno Hronská Dúbrava na reki Hron. Čeprav tudi ta objekt spada v skupino malih hidroelektrarn, je bil veliko večji od prve, ki smo si jo ogledali, saj izkorišča moč večje reke. Sorazmerno s tem je večja tudi ribja steza, ki smo si jo ogledali v sklopu te hidroelektrarne.

Ribja steza na mali hidroelektrarni Hronská Dúbrava

RIVERINE LIFE PLATFORM MEETING V ESTONIJI

Med 10. in 12. septembrom smo odpotovali v Estonijo, kjer je bilo v mestu Tartu organizirano srečanje platforme LIFE projektov na rekah. Ob pomoči Wildlife Estonia so dogodek organizirali v zunanji nadzorni skupini LIFE Astrale.

Srečanje je bilo tridnevno, predstavitve projektov so bile razdeljene na prvi in tretji dan, v dnevu med predstavitvami pa je bila organizirana ekskurzija na reko Emajogi.

Vse predstavitve so se nanašale na revitalizacijo rek in izboljšanje okolja za ribje in druge živalske populacije. Predstavljeni so bili različni projekti: Danska projekta Houting in Smooth, ReMiBar, Vindel in UC4LIFE, ki se izvajajo na Švedskem, Belgijski projekt Life Grote Nete, Free Fish iz Bulgarije, Wald – Wasser – Wildnis, ki teče v Nemčiji, projekt Margal Ulla iz Španije in Slovenski projekt Ljubljanica povezuje. Sodelovali pa so tudi predstavniki Svetovne organizacije za zaščito jesetra (*Acipenseridae*).

Med posameznimi predstavitvami so potekale diskusije, namenjene izmenjavi izkušenj in rešitev podobnih problemov, s katerimi se srečujemo vsi vpleteni v projekte, katerih cilj je revitalizacija naravnega okolja ogroženih vrst živali in rastlin.

Predstavitev projekta Ljubljanica povezuje

EKSKURZIJA NA REKO EMAJOGI

Reka Emajogi v prevodu pomeni »Mati vseh rek«. Ogledali smo si njen zgornji tok, kjer teče skozi močvirje, prepredeno z meandri in mrtvicami, ki je zaščiteno z Naturo 2000. Reka Emajogi, ki je dolga približno 100 km, je sicer glede na svoje značilnosti razdeljena na tri odseke.

V zgornjem toku, od naselja Võrtsjärv do vasi Kärevere, teče reka skozi prostrano in ravninsko zamočvirjeno področje, ki je del naravnega rezervata Alam-Pedja. Na tem močno vijugastem odseku reke Emajogi težko točno določimo območje reke, saj se poplavna območja včasih lahko raztezajo kar nekaj kilometrov od struge reke in nimajo točno določene meje.

Srednji del reke teče od vasi Kärevere skozi mesto Tartu do naselja Kavastu. V tem delu je struga reke bolj ravna in točno določena ter teče skozi plitvo dolino, ki je globoka največ 10 m.

V spodnjem toku reka teče skozi zamočvirjeno nižavje, poznano kot Emajõe Suursoo. Izliva se v jezero Peipsi.

Reka Emajogi

Barka Jommu

Dan na reki smo preživeli na barki Jommu, ki je izdelana kot replika tipičnih zgodovinskih plovil, ki so bila s svojo posebno obliko izdelana za plovbo po jezeru Peipsi in območju reke Emajogi. Barka je bila zgrajena ročno z uporabo tradicionalnih metod in materialov. Splavljena je bila leta 2006.

Na barko smo se vkrcali v edini vasi, ki je na močvirnatem območju še ostala naseljena. Najprej smo se zapeljali gorvodno ter si ogledali nekaj iztokov iz mrtvic, ki so bili odprti med izvedbo projekta Happyfish, ki so nam ga njegovi koordinatorji predstavili med plovbo. Po tem smo sledili toku reke ter opazovali močvirje in mrtvice ter osamljene ribiče ob reki. Na barki smo si v spodnjem dnevnem prostoru ogledali tudi film o njeni gradnji in si privoščili skromno vendar okusno kosilo posadke na ladji. Barka nas je v popoldanskih urah pripeljala vse do mesta Tartu.

Plovba po reki Emajogi

Avtorica prispevka: Katarina Zabret

SODELOVANJE S ŠTUDENTI

Projekt Ljubljanica povezuje je zelo zanimiv tudi za naše študente, zato se potrudimo, da so tudi oni seznanjeni s potekom projekta. V ta namen organiziramo predavanja, kjer jim predstavimo projekt, njegove cilje in akcije, s katerimi se ukvarjamo. Po predstavitvah so pogoste dolge diskusije, polne vprašanj, ki smo jih zelo veseli.

Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo sodeluje pri izvedbi magistrskega študija Erasmus Mundus Flood Risk Management, ki poteka pod okriljem UNESCO-IHE. Cilj študijskega programa Erasmus Mundus je izboljšanje kakovosti visokošolskega izobraževanja in spodbuditi dialog in razumevanje med ljudmi in kulturami s pomočjo mobilnosti in akademskega sodelovanja. Ta program sledi celovitemu pristopu in je oblikovan tako, da pokriva širok spekter tem - od naravnih procesov do modelov, od odločitev do obravnave socio-ekonomskih posledic in institucionalnega okolja, zato predstavlja pomemben napredek na področju izobraževanja o vodah za Evropo.

Študentje tega študijskega programa vsako leto zadnji del tretjega semestra preživijo na naši fakulteti. Pri predmetu "Poplavna ogroženost" smo jim januarja 2014 predstavili pomen zapornic na Ambroževem trgu ter projekt LIFE Ljubljanica povezuje. Skupaj smo obiskali Ambrožev trg, kjer smo si ogledali zapornice in z merilcem ADP - HydroSurveyor & RiverSurveyor izvedli meritve pretoka reke Ljubljanice.

Študenti programa Erasmus Mundus na Ambroževem trgu

Poletno študijsko prakso v tujini sta v avgustu na Fakulteti za gradbeništvo in geodezijo Univerze v Ljubljani opravljali študentki Alexandra in Justyna, ki na Tehnični univerzi Rzeszow na Poljskem zaključujeta prvo stopnjo bolonjskega študija okoljskega gradbeništva. V okviru prakse sta dva tedna sodelovali tudi na projektu Ljubljanica povezuje. Obiskali sta ribji stezi na Fužinah in na Ambroževem trgu, kjer sta videli tudi sistem zapornic. Seznanili sta se z monitoringom ekohidroloških parametrov, ki ga izvajamo in si ogledali nekaj merilnih postaj. Pripravili sta pregled literature o ribjih stezah in izdelali nekaj splošnih smernic za njihovo obnovo.

Justyna in Alexandra v Ljubljani

Projekt, njegov potek in naš napredek na njem pa večkrat predstavimo tudi našim študentom med predavanji. Tako smo oktobra projekt predstavili študentom drugega letnika druge stopnje bolonjskega študija Vodarstvo in okoljsko inženirstvo, po novem letu pa bomo predstavitev izvedli še za nekatere druge letnike.

Avtorica prispevka: Katarina Zabret

GOLJEVŠČKOV SPOMINSKI DAN

V prostorih Fakultete za gradbeništvo in geodezijo vsako leto poteka Goljevščkov spominski dan, ki ga organizirata Oddelek za okoljsko gradbeništvo UL FGG in IHR Hidroinštitut. Na njem se vsako leto zvrstijo različne zanimive predstavitve prispevkov vodarske stroke. Na letošnjem že 33. Goljevščkovem dnevu 6. 3. 2014 sta Matej Sečnik in Katarina Zabret predstavila dva prispevka, ki sta povezana s projektom Ljubljanica povezuje.

Udeleženci 33. spominskega Goljevščkovega dne

Razvoj sistema za oddaljen dostop do podatkov (Matej Sečnik)

Na porečju Ljubljanice je predvidena postavitev več samodejnih vodomernih postaj. S podatki teh postaj bi lažje uravnavali zapornici na Ambroževem trgu in Grubarjevem prekopu, posledično pa bi se izboljšal rečni režim Ljubljanice. Cilj je razvoj sistema, ki omogoča merjenje hidroloških podatkov ter prenos teh podatkov na strežnik v realnem času. Na trgu obstaja kar nekaj produktov, ki omogočajo izvedbo tega sistema, vendar imajo ti produkti visoko ceno in so združljivi samo z določeno strojno opremo (senzorji). Zato smo se usmerili v razvoj sistema, ki poleg nizke cene postavitve in vzdrževanja omogoča popolno svobodo pri načinu delovanja. Uporabili smo mikrokrmilnik Arduino. Izdelana je bila knjižnica, ki skrbi za komunikacijo med osrednjim strežnikom, mikrokrmilnikom in priključenimi instrumenti. Na mikrokrmilnik lahko priključimo mnogo analognih oziroma digitalnih instrumentov, njihove meritve pa posredujemo v osrednji nadzorni računalnik Podatki med vodomernimi postajami in nadzornim računalnikom se prenašajo preko mobilnega omrežja GSM/GPRS v internetno omrežje in naprej do nadzornega računalnika. Povezava med vodomernimi postajami in nadzornim računalnikom je tako rekoč neprekinjena in je cenovno zelo ugodna. Podatki se prenašajo samodejno po prednastavljeni periodi.

Ljubljanica povezuje - projekt, ki oživlja migracijo rib v Ljubljanici (Katarina Zabret)

Ljubljanica povezuje je LIFE projekt, ki se osredotoča na strugo reke Ljubljanice, ki povezuje dve zaščiteni območji Nature 2000 – Ljubljansko barje in območje Sava – Medvode – Kresnice. To območje je namreč življenjsko okolje razdrobljenih in ogroženih populacij sulca (*Hucho hucho*), platnice (*Rutilus pigus*) in blistavca (*Leuciscus souffia*). Dandanes je vodna gladina gorvodno od jezov na Ljubljanici prenizka, zato glavna struga reke pri majhnih pretokih ni povezana s pritoki, kar predstavlja tudi veliko oviro za habitatno povezanost med rečnimi odseki. Z različnimi akcijami v sklopu projekta želimo izboljšati naravno stanje na reki Ljubljanici in omogočiti migracijo rib med ovirami na reki. Osnovo projekta predstavlja preliminarna študija, ki zajema analizo ekološkega statusa in habitatnih pogojev ter oceno populacij ciljnih vrst rib. V sklopu hidrološke raziskave je vzdolž Ljubljanice postavljenih 17 merilnih postaj, ki merijo temperaturo in gladino vode ter vsebnost kisika. Glavni del projekta pa predstavljajo ohranitveno-obnovitvena dela na pragu v Zalogu, na ribjih stezah na Fužinskem jezu in na Ambroževem trgu ter obnova zapornic na Ambroževem trgu.

Predstavitev Katarine Zabret

Avtorja prispevka: Matej Sečnik in Katarina Zabret

PRETOK ZAJEZENE LJUBLJANICE

Pretoki rek se v Sloveniji pogosto določajo z uporabo pretočne krivulje (tako imenovane Q-H krivulje). Pretočna krivulja je krivulja, ki prikazuje zvezo med gladino vode v vodotoku in pretokom ter omogoča transformacijo zabeleženih vodostajev v pretoke. Informacijo o trenutnem pretoku tako lahko dobimo s pomočjo merjenja vodostaja (na projektu za to uporabljamo meritve s tlačno sondo), ki ga povežemo z odčitkom pripadajočega pretoka s pretočne krivulje. Te metode merjenja pretokov pa ne moremo uporabiti za reko Ljubljanico. Reka Ljubljanica je v območju od zapornice na Ambroževem trgu do naselja Vrhnika pod zajezbo. To pomeni, da ima lahko Ljubljanica pri isti gladini več različnih pretokov (povratni tok). Zato je pomembno, da v merjenem profilu poleg višine vode spremljamo tudi pretočne hitrosti.

Pretočne hitrosti lahko zmerimo z uporabo instrumentov, ki delujejo na principu Dopplerjevega pojava.

Hidrometrično krilo (levo) in instrument Starflow (desno)

Dopplerjev pojav je fizikalni pojav, kjer zaradi gibanja vira, opazovalca ali obeh nastane navidezna razlika v valovni dolžini zvoka. Zvočni valovi, ki prihajajo od objektov premikanja oziroma se od teh odbijajo, se od zvočnih valov objektov, ki mirujejo, razlikujejo po višini tona. Hitrost in smer delcev, ki se v vodi premikajo (lebdeči delci, majhni zračni mehurčki), se lahko izračunata s pomočjo Dopplerjevega pojava.

Primer instrumenta, s katerim lahko merimo pretočne hitrosti, je merilec Sontek ADP. Ta instrument deluje na podobnem principu kot merilec Starflow s tem, da ga ne namestimo na dno vodotoka, ampak v brežino struge.

Merilec pretočnih hitrosti Sontek ADP

Za merjenje pretočnih hitrosti lahko uporabimo tudi instrument Starflow. Ultrazvočni merilec Starflow je instrument, ki se uporablja za merjenje pretočnih hitrosti, globine in temperature vode. Zasnovan je tako, da se namesti na dno vodnega kanala.

Za merjenje hitrosti vode merilec Starflow izkorišča delce, ki se gibljejo z vodo. Če poznamo hitrost zvoka v vodi, lahko izračunamo hitrost odboja in posledično dobimo povprečno hitrost okoliške vode. Hitrost vode lahko izmeri v obe smeri. Ta lastnost je zelo uporabna pri merjenju pretokov rek, ki so pod vplivom plimovanja, ali so regulirani z zapornicami oziroma tam, kjer se pojavlja povratni tok.

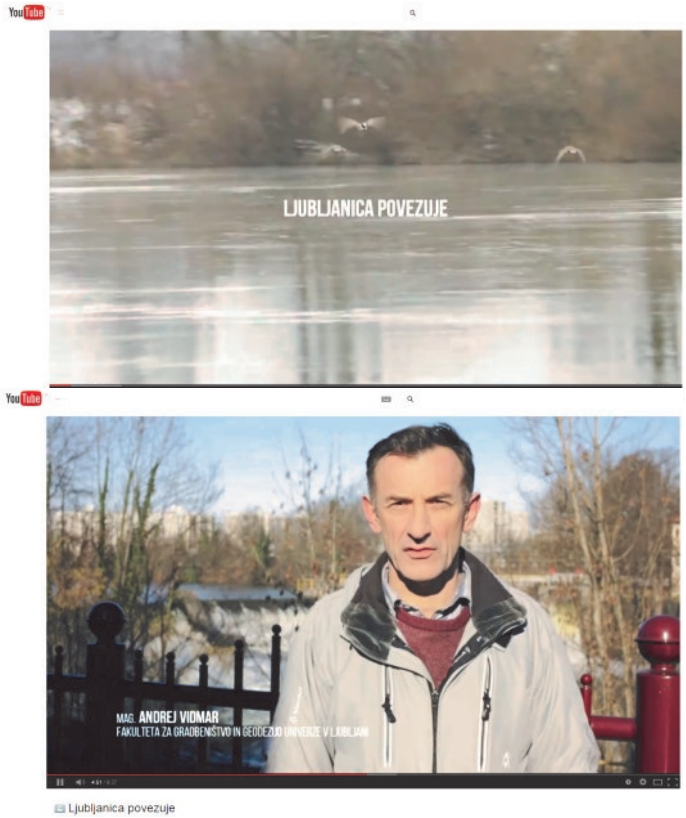
Instrument meri tudi temperaturo vode, ki jo uporablja za izračun hitrosti zvoka v vodi.

Avtor prispevka: Matej Sečnik

16.1.2014 - Na Fakulteti za gradbeništvo in geodezijo, na Katedri za splošno hidrotehniko, je potekal tretji sestanek upravnega odbora. Udeležili so se ga direktor Geateha Zoran Stojič ter njegov sodelavec Tomi Leon, predstavnik Purgatorja Metod Dolinšek, Tone Cezar iz Urada za urejanje voda ARSO in Mitja Brilly, Andrej Vidmar ter Katarina Kavčič s Fakultete za gradbeništvo in geodezijo. Na srečanju so prisotni preverili časovne okvire izvajanja projekta in glede na trenutno stanje določili nove, obrazložili so izvajanje konkretnih ukrepov ter naredili načrt dela za tekoče leto.

Sestanek upravnega odbora

24. 3. 2014 - Pripravljen je prvi, krajši predstavitveni film projekta. Objavili smo ga na spletni strani You Tube, vrti se v avli fakultete, prikazovali pa ga bomo tudi na srednjih šolah v Ljubljani.



Posnetka iz predstavitvenega filma

17.05.2014 - Prispel je novi večkanalni optični temperaturni senzor Silixa XT-DTS, ki meri temperaturo s pomočjo optičnega vlakna na vsakih 25 centimetrov, v dolžini do 10 kilometrov. Natančnost meritve je vsaj 0,1°C na razdalji 5 km. To natančnost instrument doseže v manj kot treh minutah. Pri daljšem intervalu meritve se natančnost izboljša do 0,01°C.

30. 6. 2014 - Obiskala nas je gospa Dorte Pardo Lopez, uslužbenka Evropske komisije v Bruslju, ki je svoj obisk na »LIFE info dnevu« v Ljubljani združila še z obiskom dveh slovenskih projektov. Pogovarjali smo se o poteku akcij na projektu.

3. - 4. 9. 2014 - Udeležili smo se mednarodne delavnice River revitalisation Workshop na Slovaškem, kjer smo predstavili naš projekt in si izmenjali mnenja in izkušnje z drugimi aktualnimi projekti. Na ekskurziji ob reki Hron smo si ogledali male hidroelektrarne in pripadajoče ribje steze.

10. - 12. 9. 2014 - Odpotovali smo v Estonijo na Riverine LIFE Platform Meeting. Na srečanju so bili predstavljeni različni LIFE projekti iz več evropskih držav, predstavili pa smo tudi projekt Ljubljanica povezuje. V okviru diskusije smo obravnavali različne probleme, s katerimi se pri izvedbi projektov srečujemo. S strokovnjaki s področja ribjih stez smo iskali rešitve za obnovo stez v okviru našega projekta. Udeležili pa smo se tudi ekskurzije na reko Emajogi, kjer se je uspešno zaključil Life projekt Happy Fish.

21. 10. 2014 - Izvedli smo drugo akcijo izlova in označevanja rib v Ljubljanici v sklopu akcije E2. Izlov in markiranje smo izvedli v sedmih različnih točkah na 2 km dolgem odseku reke Ljubljanice.

S prispevkom LIFE, finančnega instrumenta Evropske unije

Spletna stran projekta: http://ksh.fgg.uni-lj.si/ljubljanicaconnects

Uredniški odbor: Mitja Brilly, Andrej Vidmar, Katarina Zabret

Izdala in založila: Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo

Tisk: Birografika Bori d.o.o., Ljubljana

Naklada: 200 izvodov

Leto izdaje: 2014

Annex 4:

Flyer

Project Partners

University *of Ljubljana*

Faculty *of civil and geodetic engineering*

Chair of Hydrology and Hydraulic Engineering

PURGATOR

GEATEH Načrtovanje in izvajanje, d.o.o.

LJUBLJANICA CONNECTS

LIFE10 NAT/SI/142

The Application and Outcomes

The project started on 1st January 2012 and will last until 31st December 2015.

Within the project three groups of measures will be performed: concrete restoration actions, ecohydrological and fish monitoring.

The entire reconstruction and modernization of the technical measures will enable free migration of fish species along the whole river channel. Once uniform fish population of the Ljubljanica and Sava Rivers, will be united again.

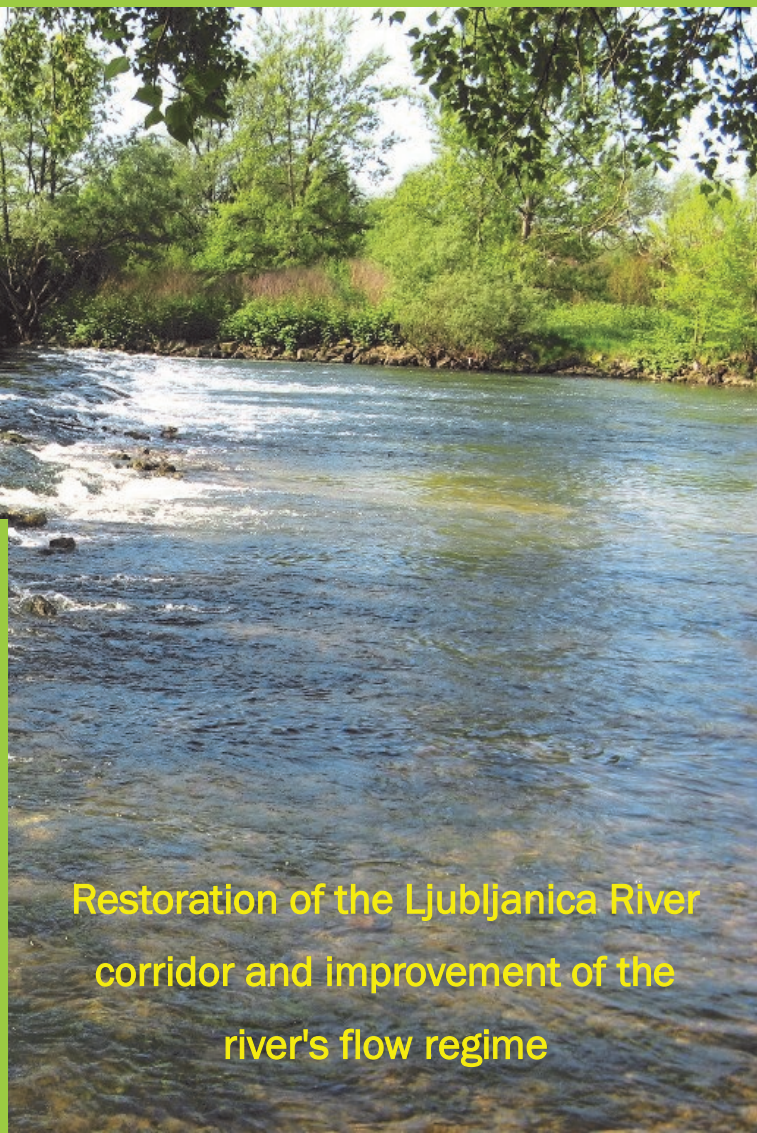
The results of ecohydrological observations will be used for hydrological modelling of the Ljubljanica River. The model might later be used for automatization of the river gate managing system.

The data gathered from fish monitoring will contribute to a better understanding of fish migration along the Ljubljanica and Sava River.

CONTACT US

http://ksh.fgg.uni-lj.si/ljubljanicaconnects

This project has been funded with support from the European commission. This publication reflects only the view of the author, and the Commission cannot be held responsible for any use which may be made of the information contained therein.



Restoration of the Ljubljanica River corridor and improvement of the river's flow regime





The Initial Situation

The heavily degraded area of the Ljubljanica River corridor upstream and downstream of the Ljubljana urban area is an important habitat for the fragmented and heavily endangered population of Danube Salmon (*Hucho hucho*), Danube Roach (*Rutilus pigus*) and Striped Chub (*Leuciscus souffia*). Nowadays, the water level upstream of the weir on the Ljubljanica River is too low, therefore during low flow conditions the main Ljubljanica River channel is not connected to its tributaries. This represents a great obstacle for the habitat connectivity along the river reaches which is worsened by the improperly working fish passes.



The Project Objectives

The main objectives of the project are to restore the biodiversity of the Ljubljanica River corridor and to improve the ecological function of the area.

Additionally, the project objective is to promote relatively simple river restoration measures for improving the ecological status of the river to meet the requirements of the Water Framework Directive. The project also aims to raise the awareness of general public, local stakeholders and decision makers at local and national level who due to past river management still consider the Ljubljanica River mainly as a threat rather than a vital element of the environmental quality.

The ecohydrological survey will present the foundation for working plan preparation, implementation of restoration actions and additional habitat conservation and restoration works.

The Project Actions

The most visible actions on the project are concrete restoration measures: reconstruction of the sill, upgrade of two fish passes of which one is severely damaged and the modernization of barrier's lifting system.

Throughout the duration of the project ecohydrological monitoring on 17 newly constructed water stations is performed and discharge is measured with HydroSurveyor system.

The impact of the measures is evaluated using the data collected with fish migration monitoring. Fish harvest is performed in cooperation with fishermen, then fish is measured and tagged before released into the water.

Annex 5:

Example of poster

PROJEKT LIFE 10NAT/SI/142

LJUBLJANICA POVEZUJE

OBNOVITVENE AKCIJE

Obnova praga v Zalogu

Obnova ribjega prehoda ob Fužinskem jezu

Posodobitev sistema zapornic in ribjega prehoda pri Ambroževem trgu

Sodelovanje študentov Msc Flood Risk Management pri meritvah

HIDROLOŠKE MERITVE

Meritve na Planinskem polju

OPAZOVANJE POPULACIJ IN SPREMLJANJE MIGRACIJE CILJNIH VRST

(sulec, platnica in blistavec)

Izlov rib

Monitoring rib pred izpustom v reko

Označevanje rib za sledenje njihovemu gibanju

PARTNER NA PROJEKTU:

Geateh d.o.o.

VODILNI PARTNER:

Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo

Katedra za splošno hidrotehniko

Univerza v Ljubljani

Fakulteta za gradbeništvo in geodezijo

PARTNER NA PROJEKTU:

Purgator d.o.o.

S prispevkom LIFE, finančnega instrumenta Evropske unije

Spletna stran projekta: http://ksh.fgg.uni-lj.si/ljubljanicaconnects

Annex 6:

Preliminary report on action E2

Report on fish harvest which was performed on 21 October 2014 as part of action E2 on project LIFE Ljubljanica connects

On 21 October 2014 ichtyological research was performed on Ljubljanica River from Plečnik barrier to weir in Vevče as part of LIFE project Ljubljanica connects.

Fish were caught on 2 km long part o the river in 7 locations. In time of research water temperature was 15^0C. Other physical-chemical parameters were not measured as those measurements are performed in other phases of the project.

The aim of this research was to catch and tag targeted fish species of the project (Danube Salmon *Hucho hucho*, Danube Roach *Rutilus pigus* and Striped Chub *Leuciscus souffia)*. In research we have included also Common Nase (*Chondrostoma nasus*) especially because of its importance for survival of Danube Salmon and its fries and juveniles.

Complete ichtyological research is not planned as part of the project so size of each fish specie's population was evaluated subjectively. We have described its frequency of occurrence as individually, rarely, often, very often or massively. Fish species that were caught were counted and tagged.

During the research no Striped Chub were caught. We believe that the river section when harvest was performed is not appropriate area for this fish species as water is very deep and has slow flow. Striped Chub is known as fish who loves smaller and fast flowing streams.

In only one day of research we have caught 15 different fish species and estimated their frequency of occurrence.

Based on subjective estimation of populations' condition we estimate that all registered fish populations are in good condition. On 2 km long river reach we have caught 6 Danube Salmons which is quite a lot for only one day of fish harvest on quite a short section of the river. Sizes of caught Danube Salmons show that this fish is reproducing in this river.

We have expected to catch more Danube Roach but we assume that harvest was less successful due to our timing. At the end of October this fish species is already preparing for wintering. It looks like we haven't encountered the whole flock but only on individual examples.

Population of Common Nase is quality as we have caught fish examples of all sizes.
In the selected section we have registered a very high incidence of *Thymallus thymallus* in all sizes. This shows that this fish is successfully reproducing in Ljubljanica River. According to the fishermen from fishing club Vevče it has been introduced into the river every year.

That kind of research will be repeated on the same river section in spring 2015 and check if marked fish managed to cross fish passes on Ambrožev trg in Fužine.

During the research there have been marked 6 Danube Salmons, 14 Danube Roaches and 27 Common Nases. The fish were marked with injecting of red or yellow colorant into the subcutaneous tissue behind the eye (figure 1) or into dorsal fin (figure 2).

Figure 1: Injecting into subcutaneous tissue behind the eye
(left: Danube Roach, right: Danube Salmon)

Figure 2: Injecting into dorsal fin

Figure 3: Measurements of fish length

Prepared by:
Meta Povž, PhD

Annex 7:

Answers to annexes from correspondence between beneficiaries and commission

ANSWERS TO ANNEXES FROM CORRESPONDENCE BETWEEN BENEFICIARIES AND COMMISSION

LIFE10 NAT/SI/000142 Ljubljanica connects – Mid-term report, received on 11 June 2014

Technical issues

A1: Please be reminded to enrich and complete the documents "Proposals for minimisation and/or elimination of negative impacts" and resubmit it with your next progress report.

Action A1 was planned as a general overview of the situation which has mainly consisted of review of literature and searching in the databases. Habitat conditions were analysed by field work which was only the pre stage of action E2. There were not enough data available at that point to give more extent proposal for elimination of negative impacts. During action E2 more field work will be performed and more data will be gathered which will allow a better assessment of measures needed for minimisation of negative impacts. Because of that a more extensive description will be prepared at the end of project and presented with Final Report.

A2: I urge you to complete the collection of all the needed technical documentation for actions C2 and C3 and to obtain all the pending permits needed for actions C1-C3.

Action A2 has been completed and all the necessary documentation was obtained. More important documents and permits will be presented with Final Report as part of project documentation.

A3: Please report upon the issue of the on-line connection between the water stations in the field and the computer at your premises. This issue, pending since the last monitoring visit (September 2013) was too briefly mentioned in the Mid-term Report. Therefore, you are invited to provide further information with the next Progress Report.

The issue of the on-line connection was discussed during the ad-hoc visit in June 2014 and was also described in request for non-substantial modifications from 31 July 2014. The explanation is also given hereinafter.

As part of this action the installation of 3 online stations was foreseen. These 3 stations are already developed and are ready to be set on the field but it hasn't been done yet although we have declared action to be completed. Here we would like to explain why we did so.
The online connection can be understood on different ways. The station has online connection if you can get data from the station while you are at the office – on the field we already have that kind of stations. But most people treat online connection as something that allows constant access to data measured on the field through a specific web page for each user interested. This we haven't done yet because we don't need it yet. As after LIFE action we plan to use the constantly measured data to operate the barrier on the Ambrožev trg when it will be modernized (action C3) but until than the online connection would only produce enormous amount of data that uses a lot of free memory space. However we plan to test the system so that we will make this data available on our web site sometimes during the year 2015.

C1: Please provide updates about the water permit requested by the officers from the Inspection for Environment service and assess the impact on the action.

We have acquired Water permit on 15 April 2014. It is attached at the end of this annex.

C2: Please put all efforts to solve all the open problems regarding this action (damage assessment report, free access to the weir and pending authorisation from the Ministry of Culture), in order to start and complete the works as soon as possible.

Action C2 is in progress and all the necessary documentation and access to the keys were arranged. More important documents and permits will be presented with Final Report as part of project documentation. Work has already started and will be finished by the end of February 2015.

D1: I acknowledge that the web site was improved. However, you are invited to improve it further by extending dissemination part and providing more useful links.

We regularly update web page with new news. In February or March it will be updated also with information and photo galleries on concluded actions.

D1: Please provide the distribution list of the brochure.

The distribution list of the brochure:

Name	Distribution
Purgator inženiring d.o.o. Geateh d.o.o. MKO Direktorat za okolje ARSO Oddelek območja srednje Save Javni zavod Krajinski park Ljubljansko barje Zavod Republike Slovenije za varstvo narave Ribiška družina Barje Ribiška družina Vevče MOL Oddelek za urejanje prostora Zavod za ribištvo Slovenije Papirnica Vevče d.o.o. LUTRA TC VODE	Send by mail
Students on faculty Visitors on faculty Participants at various meetings, workshops and lectures	Personal hand over

D1: Please inform whether you have hired a film producer and make the film, once completed, available on the project web's site.

We have hired a company which is dealing with film production, recording and distribution. The company is called AV Studio and the contract that we have signed with them is attached at the end of the annex. Link to shorter version of film is already available on our web site.

D1: Please organise the pending round table as soon as possible and report about the installation of notice boards, posters on the exhibition and articles in paper.

Dissemination action is in progress. In year 2014 we had organised special lectures, oral and poster presentations (described in report, chapters 3.1.7 and 3.1.11), also articles are being prepared. The whole list of deliverables will be presented with Final Report.

E4: Please be reminded to accelerate the networking activities with ongoing and concluded LIFE projects covering the similar topics.

We have participated on two international workshops where we have met representatives from other LIFE and non LIFE project across the Europe. We are still in contact with some of them. In June 2015 we plan to participate on another international conference in Netherlands and to get a few more contacts. List of projects with which we had contacts will be presented with Final Report.

Financial issues

All of listed specific problems regarding the Personnel costs, omissions in the Travel category and explanation and invoices or contracts for External assistance and Durables - Equipment will be as suggested described and presented with the Final report.

As acquired there is description of performing the function of "Project Manager":
The function of project manager has been carried out since the start of the project by Mitja Brilly it only wasn't clearly stated in financial tables. When fulfilling those tables a few mistakes and omissions were done. We will eliminate those mistakes until the end of the project when submitting financial tables together with Final Report.

In company Purgator d.o.o. they have already prepared explanations about functions of their employees. The letter of explanation is attached at the end of the annex.

LIFE10 NAT/SI/000142 Ljubljanica connects – Non-substantial modifications, received on 22 August 2014

I understand that the Ambrozev trg barrier must remain visually identical as today and therefore, all technical improvements have to be hidden inside. However, it is not clear why costs are decreasing by more than 50.000€ in this action. Please justify with your next report.

The requirement for new solution for "invisible" modernization of the barrier forced us to examine in details all the possibilities for this measure. We found a much more simple

solution which is based on replacement of barriers engine. This solution is very specific and there is only one company in Slovenia that has proper employees with adequate knowledge and equipment to do it. The costs (in preliminary approximately calculation) have decreased so much because this measure will consist mainly of replacement of the engine and not on replacement of the whole lifting system and the barrier as initially planned. The engine itself will be more expensive than hydraulic drive planned at the beginning but cost of the whole procedure of modernization will be much lower because fabrication and installation of flap sill with bearings and flap won't be needed anymore.

REPUBLIKA SLOVENIJA
MINISTRSTVO ZA KMETIJSTVO IN OKOLJE

AGENCIJA REPUBLIKE SLOVENIJE ZA OKOLJE

Oddelek območja Srednje Save

Einspielerjeva 6, 1000 Ljubljana

T: 01 309 45 40
F: 01 309 45 92
E: gp.arso@gov.si
www.arso.gov.si

PREJETO
22 -04- 2014

Številka: 35506-1734/2014-2
Datum: 15.04.2014

Agencija Republike Slovenije za okolje, izdaja na podlagi petega odstavka 8. člena Uredbe o organih v sestavi ministrstev (Uradni list RS, št. 58/03, 45/04, 86/04-ZVOP-1, 138/04, 52/05, 82/05, 17/06, 76/06, 132/06, 41/07 64/08-ZViS-F, 69/10, 40/11, 98/11, 17/12, 23/12, 82/12, 109/12, 24/13, 36/13, 51/13) in 153. člena Zakona o vodah (ZV-1, Uradni list RS, št. 67/02, 110/02-ZGO-1, 2/04-ZZdrl-A, 41/04-ZVO-1, 57/08, 57/12, 100/13), v zadevi izdaje vodnega soglasja stranki Purgator d.o.o., Novi trg 9, 6230 Postojna, naslednje

V O D N O S O G L A S J E

I.

Stranki Purgator d.o.o., Novi trg 9, 6230 Postojna, se daje vodno soglasje h tehnični dokumentaciji za vzdrževalna dela »Ljubljanica povezuje Life10/NAT/SI/I42«, št. proj. R – 481/13, Ljubljana, julij 2013, ki ga je izdelal projektant Hidrotehnik Vodnogospodarsko podjetje d.d., Slovenčeva 97, 1000 Ljubljana, na zemljiščih parc. št. 2553/1 in 3540, k. o. Kašelj, na območju Mestne občine Ljubljana.

II.

Vodno soglasje preneha veljati, če v dveh letih od dneva, ko je postalo dokončno, ni bila vložena zahteva za izdajo gradbenega dovoljenja oziroma ni bila začeta gradnja ali drug poseg v prostor, če gradbenega dovoljenja po predpisih, ki urejajo graditev objektov, ni treba pridobiti.

III.

V tem postopku stroški niso nastali.

IV.

Investitor mora skleniti pogodbo v skladu z 49. členom Zakona o vodah (ZV-1, Uradni list RS, št. 67/02, 57/08, 57/12, 100/13), s katero se uredijo razmerja med upravljavcem vodne infrastrukture in investitorjem glede medsebojnih pravic in obveznosti ter vzdrževanja vodne infrastrukture.

O b r a z l o ž i t e v :

Stranka Purgator d.o.o., Novi trg 9, 6230 Postojna, je z vlogo z dne 07.03.2014 podala na Agencijo RS za okolje zahtevek za izdajo vodnega soglasja h tehnični dokumentaciji za vzdrževalna dela »Ljubljanica povezuje Life10/NAT/SI/I42«, št. proj. R – 481/13, Ljubljana, julij 2013, ki ga je izdelal projektant Hidrotehnik Vodnogospodarsko podjetje d.d., Slovenčeva 97, 1000 Ljubljana, na zemljiščih parc. št. 2553/1 in 3540, k. o. Kašelj, na območju Mestne občine Ljubljana.

Vlogi je bilo priloženo:

1. Tehnična dokumentacija za vzdrževalna dela »Ljubljanica povezuje Life10/NAT/SI/I42«, št. proj. R – 481/13, Ljubljana, julij 2013, Hidrotehnik Vodnogospodarsko podjetje d.d., Slovenčeva 97, 1000 Ljubljana.

Postopek izdaje vodnega soglasja se vodi po določbah Zakona o vodah (ZV-1, Urad ni list RS 67/2002,110/02-ZGO-1, 2/04-ZZdrI-A, 41/04-ZVO-1, 57/08, 57/12, 100/13). V 150. členu ZV-1 je tako določeno, da se lahko poseg v prostor, ki bi lahko trajno ali začasno vplival na vodni režim ali stanje voda, izvede samo na podlagi vodnega soglasja. Za izdajo tega upravnega akta iz 153. člena ZV-1 pa je po petem odstavku 8. člena Uredbe o organih v sestavi ministrstev (Uradni list RS, št. 58/03, 45/04, 86/04-ZVOP-1, 138/04, 52/05, 82/05, 17/06, 76/06, 132/06, 41/07, 64/08-ZViS-F, 69/10, 40/11, 98/11, 17/12, 23/12, 82/12, 109/12, 24/13, 36/13, 51/13) pristojna Agencija Republike Slovenije za okolje.

Vodno soglasje se izda na podlagi predpisane dokumentacije. Vsebino vloge, ki potrebna za pridobitev vodnega soglasja podrobneje določa Pravilnik o vsebini vlog za pridobitev projektnih pogojev in pogojev za druge posege v prostor ter o vsebini vloge za izdajo vodnega soglasja (Uradni list RS, štev. 25/09).

V skladu z 49. členom Zakona o vodah (ZV-1, Uradni list RS, št. 67/02, 57/08, 57/12, 100/13) lahko pri gradnji vodne infrastrukture, namenjene varstvu pred škodljivim delovanjem voda, kot investitor sodeluje tudi oseba, zainteresirana za varstvo pred škodljivim delovanjem voda, ki presega obseg varstva, ki ga zagotavljata država ali lokalna skupnost, skladno z določbami ZV-1, če s tem soglaša ministrstvo. Razmerja med upravljavcem vodne infrastrukture in investitorjem glede medsebojnih pravic in obveznosti ter vzdrževanja vodne infrastrukture se uredijo s pogodbo. Prošnjo za sklenitev pogodbe je potrebno nasloviti na Agencijo RS za okolje, Vojkova 1b, 1000 Ljubljana.

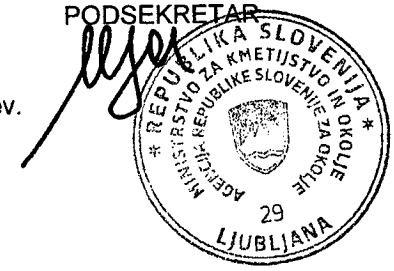
Skladno z 12. odstavkom 153. člena ZV-1 je bilo treba tudi določiti, da to vodno soglasje preneha veljati, če v dveh letih od dneva, ko je postalo dokončno, ni bila začeta gradnja, ki je predmet te odločbe.

Ta odločba je prosta upravne takse na podlagi 28. člena Zakona o upravnih taksah (Uradni list RS, št. 106/10 – uradno prečiščeno besedilo; v nadaljevanju: ZUT-UPB5).

Po petem odstavku 213. člena, v povezavi s 118. členom Zakona o splošnem upravnem postopku (Uradni list RS, št. 24/06-ZUP-UPB2, 105/06-ZUS-1, 126/07, 65/08 in 8/10) je bilo treba odločiti tudi o stroških tega upravnega postopka. Glede na to, da v tem postopku stroški niso nastali, je bilo o njih odločeno, kot je razvidno iz izreka te odločbe.

POUK O PRAVNEM SREDSTVU: Zoper to odločbo je dovoljena pritožba na Ministrstvo za kmetijstvo in okolje, Dunajska cesta 22, Ljubljana v roku 15 dni po vročitvi te odločbe. Pritožbo se lahko vloži pisno, tako da se izroči neposredno organu ali pošlje po pošti, lahko pa se vloži ustno na zapisnik. Pritožbo je treba vložiti pri Agenciji Republike Slovenije za okolje, Vojkova 1b, 1000 Ljubljana. V skladu s 35. točko 28. člena Zakona o upravnih taksah ZUT-UPB5 se za pritožbo upravna taksa ne plača.

Tonček Cezar, univ.dipl.inž.grad.
PODSEKRETAR



Vročiti:

- Purgator d.o.o., Novi trg 9, 6230 Postojna, osebna vročitev.

Dostaviti:

- Agencija RS za okolje, Vodna knjiga, po e-pošti;
- UE Ljubljana, izp. Moste-Polje, po e-pošti.

POGODBA

o snemanju in produkciji dveh filmov za projekt LIFE10NAT/SI/142 Ljubljanica povezuje

ki jo skleneta:

Naročnik:
Univerza v Ljubljani, Fakulteta za gradbeništvo in geodezijo, Jamova cesta 2, 1000 Ljubljana, matična št: 1626981000, ID za DDV: SI98643339, ki jo zastopa dekan prof. dr. Matjaž Mikoš

in

Izvajalec:
AV studio d.o.o., Koroška cesta 55, 3320 Velenje, matična št. 1469134000, ID za DDV:SI41565070, TRR št.: SI56 0242 6008 9076 798 pri NLB d.d., ki ga zastopa Vidka Žgank, direktorica

PREDMET POGODBE

I. člen

Predmet pogodbe so kreativna zasnova, scenarij, teksti in storyboard za oba filma ter snemanje, produkcija, grafične zasnove, montaža in export filmov po ponudbi z dne 20. 12. 2013, ki je sestavni del te pogodbe.

Oba filma dolžine deset (10) in trideset (30) minut sta pripravljena v slovenskem in angleškem jeziku.

II. člen

Filma, ki sta predmet te pogodbe, bosta pripravljena v skladu s tehničnimi zahtevami in pravili. Izvajalec se zaveže, da bodo delo izvedli strokovno usposobljeni kadri. Snemanje in produkcija bosta izvedena v skladu s finančnimi načrti investitorja.

III. člen

Izvajalec je dolžen pripraviti krajši, deset minutni film v elektronski obliki v roku dveh (2) mesecev po podpisu te pogodbe.

POGODBENA CENA

IV. člen

Pogodbena cena za izvedbo storitev po tej pogodbi znaša EUR 12.880,00 brez DDV.

PLAČILNI POGOJI

V. člen

Naročnik bo pogodbeno ceno iz prejšnjega člena te pogodbe plačal na transakcijski račun izvajalca v roku 30 dni od datuma prejema računa, izstavljenega na osnovi opravljene storitve.

VI. člen

Odgovorni osebi za realizacijo pogodbe sta:

- s strani naročnika: mag. Andrej Vidmar, vodja projekta LIFE Ljubljanica povezuje
- s strani izvajalca: Žiga Brodnik, vodja projektov AV studio d.o.o.

SPLOŠNE ODLOČBE

VII. člen

Pogodba, pri kateri kdo v imenu ali na račun druge pogodbene stranke, predstavniku ali posredniku organa ali organizacije iz javnega sektorja obljubi, ponudi ali da kakšno nedovoljeno korist za:

- pridobitev posla ali
- za sklenitev posla pod ugodnejšimi pogoji ali
- za opustitev dolžnega nadzora nad izvajanjem pogodbenih obveznosti ali
- za drugo ravnanje ali opustitev, s katerim je organu ali organizaciji iz javnega sektorja povzročena škoda ali je omogočena pridobitev nedovoljene koristi predstavniku organa, posredniku organa ali organizacije iz javnega sektorja, drugi pogodbeni stranki ali njenemu predstavniku, zastopniku, posredniku;

je nična.

VIII. člen

Pogodbeni stranki sta sporazumni, da bosta eventualna nesoglasja in spore reševali prvenstveno sporazumno. Če se stranki ne bosta mogli sporazumeti, bo o njunem sporu odločalo stvarno pristojno sodišče v Ljubljani.

Vse medsebojna razmerja, ki s to pogodbo niso zajeta, bosta stranki urejali sporazumno.

IX. člen

Ta pogodba stopi v veljavo z dnem, ko jo podpišeta obe stranki. Pogodba je sestavljena v treh (3) izvodih, od katerih izvajalec prejme en (1) izvod, naročnik pa dva (2).

NAROČNIK:

UL FGG

Dekan:
prof. dr. Matjaž Mikoš

(podpis)

Datum: 20.1.2014

Št. pogodbe: 6/2014

Priloga:
- Ponudba z dne 20. 12. 2013

Fakulteta za gradbeništvo in geodezijo 10 UNIVERZA V LJUBLJANI

IZVAJALEC:

AV STUDIO d.o.o.

Direktorica:
Vidka Žgank

(podpis)

Datum: 17.1.2014

Št. pogodbe: _____

Av studio 3
AV Studio d.o.o.
Koroška cesta 55, SI-3329 Velenje

Explanation of Direct Personnel Costs and categories
Associate beneficiary – Purgator d.o.o.
(for Progress report January 2015 and Final Report)

Early stages of implementation of project activities, assigned to us, as associate beneficiary in the Partnership agreement (part of Action A2 and Direct Conservation Actions C1 and C2), have required fast activation of human resources in order to facilitate complex challenges connected to the implementation. Late commencement of the project activities in 2012 has contributed to the urgent needs.
Numerous issues had to be addressed before actual commencement of reconstruction works could commence. To be able to implement the required assignment we had to engage professional workforce capable of performing the envisaged tasks, as the company initially had no employees.

Budget lines, envisaged in the project proposal, has foreseen the engagement of more people on a part time basis, (director, administrator, accountant, calculant, responsible designer, designer, technician, site manager, geodesist, worker, qualified worker), but due to capacities of our company, we have identified the needs of the project in human resources, and organized ourselves for implementation accordingly.
It has been decided by management to engage three professionals and a secretarial assistance to be able to fulfill project obligations, namely:

1. **Project manager – Mr. Metod Dolinšek,**
   - engaged at the project from February 2013 until September 2014;
   - 100% of work time allocated and charged to the project until February 2014, since then 50% of time allocated and charged to the project

2. **Field and contracting manager - Mr. Matej Stegel,**
   - engaged at the project from September 2012 until October 2013;
   - 80% of work time allocated and charged to the project

3. **Technical expert – Mr. Andrej Vengust,**
   - engaged at the project from September 2012 until August 2013
   - 100% of work time allocated and charged to the project

4. **Administrative assistance – Ms. Rebecca Možina**
   - engaged at the project as part time assistance from February 2013 until November 2015
   - engagement "on the needs" basis

The dynamics of employments has followed the challenges of the project and has intensified from January 2013 until fall 2013. From August 2014 no experts are on the project budget. Only part time Administrative assistance is charged to the project, even though we are still implementing project activities.

Even at early stages, during the Inception period, we have repeatedly cautioned the Coordinating Beneficiary, that according to our calculations and actual market prices, the funds for the project actions are not distributed in line with the expected costs of activities, and the funds allocated to us are not sufficient.
We suggested the changes in the project implementation plan and in budget lines during the inception phase and have continued to address the issue regularly at the project meetings.

In October 2013, after completion of C1 action, we have proposed to the beneficiary partner to make changes in the project budget lines distribution in accordance with the project needs. The changes shall not affect general budget line totals, but would make available to us extra funds, needed for completion of actions. Following the prolonged negotiations and discussions, the proposal was accepted by Coordinating beneficiary in May 2014. The new description of categories for staff and distribution of funds for personnel is presented in the following table:

Action number	**Type of contract**	**Category/Role in the project**	**Daily rate (rounded to the nearest €)**	**Number of person-days**	**Number of person-months**	**Direct personnel costs**
C1	temporary	Project manager	117	220	11,0	25.814
C1	permanent	Field and contracting manager	204	210	10,5	42.897
C1	temporary	Technical expert	70	240	12,0	16.887
C1	permanent	Administrative assistance	35	200	10,0	6.954
C2	temporary	Project manager	147	176	8,0	25.814
C2	permanent	Field and contracting manager	195	55	2,5	10.724
C2	temporary	Technical expert	85	22	1,0	1.876
C2	permanent	Administrative assistance	32	176	8,0	5.668

The actual implementation of actions has been delayed due to different external as well as internal reasons, but the implementation of all direct conservation actions is close to completion.

The main reasons for the surpassing the allocated funds for personnel costs are:

- unrealistic calculation of costs during the preparation of project proposal, with underestimated costs linked to implementation of envisaged conservation actions C1 and C2, as well as the distribution of funds between the actions
- delayed implementation of Action C1, as the permit for renovation works had set the time when works in the river are allowed
- delays in implementation of Actions C2a and C2b as a consequence of flooding, collapse of the fish pass, and the need to develop new renovation plan
- high water levels in 2014, as a consequence of extremely rainy year, not allowing the renovation to start as water levels remained high

- lack of project financial resources to be made available to us in summer 2014 to engage external expertise needed for preparation of documentation and obtaining of permits
- temporary suspension of Contract signed with Coordinating beneficiary in April 2014

It is expected that total sum for Personnel costs, spent by our company should not exceed 135.000 € until end of the project, as bulk of our engagement ends with completion of C2 actions, planned to be completed early in 2015.

Postojna, 22. January 2014

Sincerely,

Metod Dolinšek,
project manager
Purgator d.o.o.